Universal Armament Interface
Platform/Store Interface Control Document

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REFERENCE
INTERFACE CONTROL DOCUMENTS

The documents listed below were used as source data in creating the baseline requirements for this Interface Control Document.

BICD-1025-001	Smart Rack Interface Control Document Dated 26 February 2001
JSICD-1546-001 Rev E	JASSM Interface Control Document
JICD-MDA-001 Rev 6	Interface Control Document Joint Direct Attack Munition (JDAM) To Host Aircraft Core Interface Dated 17 December 2004
U0050039 Rev F	Joint Standoff Weapon Interface Control Document Dated 10 October 2002
U0060614 Rev F	Interface Control Document For The Joint Unitary Fuze Of The Joint Stand-Off Weapon Unitary System Dated 14 August 2000
MCICD-1851-001	Interface Control Document for the MALD to the Host Aircraft Core Interface Dated 19 November 2004 ICNs: ICN-RMS-CORE-0001 ICN-RMS-CORE-0002 ICN-RMS-CORE-0003F ICN-RMS-CORE-0004A ICN-RMS-CORE-0005 ICN-RMS-CORE-0006C ICN-RMS-CORE-0007A ICN-RMS-CORE-0008C ICN-RMS-CORE-0009B ICN-RMS-CORE-0010
SICD-11859-001 Rev E	Host Aircraft With Small Diameter Bomb System Interface Control Document Dated 23 February 2005 ICNs: ICN-087 ICN-088 ICN-089 ICN-091 ICN-098

WICD-1526-001 Rev E	WCMD Interface Control Document (ICD) Dated 13 July 2004 ICNs: ICN-TEAS-CORE-0067R1 ICN-MMTI-CORE-0065R4
RR43297 Rev G	Interface Control Document Enhanced Laser Guided Bomb, EGBU-28C/B, Guided Bomb Unit To Host Aircraft Dated 16 November 2004

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF TABLES

LIST OF TABLES

LIST OF TABLES

LIST OF FIGURES

LIST OF FIGURES

1.0 INTRODUCTION

The Universal Armament Interface (UAI) initiative was established for the purpose of decoupling integration of new stores (weapons, carriage systems, and sensors) on platforms (aircraft, ships, ground vehicles) from platform Operational Flight Program (OFP) update cycles, while reducing the overall cost and time required for integration. One of the elements deemed necessary to support the UAI goals was a common platform/store functional and logical interface (via the MIL-STD-1760 electrical interface) definition, which could be configured through externally supplied data to support the interface requirements of various store types. Due to programmatic considerations, a decision was made to focus the initial UAI provisions toward the MIL-STD-1760 Global Positioning System/Inertial Navigation System (GPS/INS) guided class of conventional air-to-ground stores and associated carriage devices. Future updates will include air-to-air, anti-radiation, and other stores.

1.1 Scope

The UAI Platform Store Interface Control Document (PSICD) defines a generic logical and functional interface for use between platforms and MIL-STD-1760 stores (including associated smart carriage devices). Within this document, the term Interface Control Document (ICD) refers to the PSICD. Included is a composite set of functional capabilities and data communication messages to support the interface functions of existing and projected stores within the subject store class. These capabilities may be configured through an externally (to the platform) supplied Configuration Data Set (CDS) to support the requirements of a particular store type (normally a subset of the overall composite functional capabilities and message provisions) on a given platform type, without a change to the basic platform OFP. The CDS is controlled by the platform authority and is loaded into the platform by an external data transfer method (i.e., data transfer device, data link, etc.).

This ICD contains the following sections and associated content:

Section 1 (this section) establishes the document scope and provides background information for the document user.

Section 2 identifies the applicable documents that are referenced in the ICD. It further establishes the order of precedence of the applicable documents and identifies the versions of the documents applicable to this ICD. It also contains a list of acronyms and definitions.

Section 3 describes the functional interface. It describes transactional requirements for functional operation of the store with the platform such as initialization, built-in-test, targeting and mission data transfer, and release sequencing.

Section 4 defines the communication interface requirements for the platform and store. Applicable standard protocols are referenced, and specific usage of the protocols is described including the use of protocol options.

Section 5 defines the post-launch communication interface requirements. This section is currently reserved, since post-launch platform/store interface requirements are not currently defined for stores within the subject class.

Section 6 contains the message requirements, message descriptions, and detailed message data sheets for communication over the platform/store interface. All logical data exchange over the information channels is defined in terms of digital message and word formats.

Section 7 contains the message requirements, message descriptions, and detailed message data sheets for post launch communication between the platform and store. This section is currently reserved pending definition of post-launch communication requirements for the subject class of stores.

1.2 Updating

This ICD represents a common interface definition for application across a variety of systems and programs and will not be unilaterally changed without appropriate coordination and consideration of the impact on platform/store functional interoperability. The UAI Super Joint Interface Control Working Group (SJICWG) is the authority for coordination and approval of any necessary ICD changes. The SJICWG structure and operating procedures are described in the UAI Interface Control Plan (ICP) (UAI-ICP).

Section 3.9 contains the requirements for the Configuration Data Set (CDS) that provides data to the platform to configure the platform/store interface to the specific needs of the store.

1.2.1 Definition and Use of Terms

Terms used in this document to state requirements or provide other information are defined as follow:

a. **Platform.** Any system that is capable of carrying and interfacing with MIL-STD-1760 compatible store(s). The term includes aircraft (fixed and movable wing airplanes, helicopters, gliders, airships, and unmanned aerial vehicles), ground vehicles (armored vehicles, trucks, man-portable, and fixed installations) and nautical vehicles (boat, ship, or submersible).

b. **Store(s).** All stores capable of carriage by and interfacing with MIL-STD-1760 compatible platform(s). Stores include, but are not limited to, carriage systems, missiles, rockets, bombs, torpedoes, buoys, chaff, flares, pods, small munitions, and fuel tanks. When necessary to enhance document clarity or categorize requirements by store type, a UAI store is categorized as either a carriage system or mission store.

- **Carriage system(s).** Any system mounted on a platform on a non-permanent basis as a store, designed for carriage, suspension, employment, and jettison of mission stores or submunitions. Stores that are carriage systems include suspension and release equipment (S&RE) and dispensers.

The platform/carriage system interface is MIL-STD-1760 compatible; however, the carriage system/mission store interface can be either a MIL-STD-1760 compatible interface or carriage system unique interface.

- **Mission store(s).** All stores excluding carriage systems (suspension and release equipment and dispensers). Stores that are mission stores include, but are not limited to, missiles, rockets, bombs, torpedoes, buoys, chaff, flares, pods, small munitions, and fuel tanks. Mission stores carried by either a platform(s) and/or carriage system(s) are required to have a MIL-STD-1760 compatible interface. However, mission stores carried only on carriage system(s) can have either a MIL-STD-1760 compatible interface or carriage system unique interface.

c. Platform annex, store supplement, and carriage system supplement inputs are identified and numbered in this ICD. All platform annex references are identified as **{ann_xxxx}**, and all mission store and carriage system supplement references are identified as **{sup_xxxx}**. Requirement numbers are numbered based on the section in which they occur. 1xxx are in Section 1, 2xxx are in Section 2, etc.

d. All CDS variables identified in this ICD will be of the format <u>CDS <variable name></u> **{cds_xxxx}**, underlined and numbered. Requirement numbers are numbered based on the section in which they occur. 1xxx are in Section 1, 2xxx are in Section 2, etc.

e. Plain text (i.e., text not containing the above key words) is used to provide background information, state facts, and to describe capabilities and features. Such text does not express a requirement of this ICD.

f. The terms "should", "must", and "will" are kept to a minimum in this document to prevent requirement ambiguities.

1.2.2 Formatting Rules and Standards

Formatting rules and standards used in this document are defined as follows:

1. The convention for referring to interface messages, words, and bits is as follows:

   [uua{-vvv{/ww{-xx}{/yy{…zz}}}}]

   Where:

   uu = 2-digit message number

   a = The letter 'R' or 'T' where 'R' indicates a message transmitted from the platform to the store and 'T' indicates a message transmitted from the store to the platform.

   vvv = 3-digit MDT file format identifier or 1-digit message version number.

   ww = 2-digit word number. If a range of words (i.e. '-xx' follows) then this is the first word.

   xx = 2-digit word number for the last word in a range of words.

yy = 2-digit bit number. If part of a range of bits (i.e. '…zz' follows) then this is the first bit.

zz = 2-digit bit number for the last bit in a range of bits.

{ } = items in brackets indicate that the element is optional.

Examples:

[06T/02/13] denotes message subaddress 06, transmit from store, data word 2, and bit 13.

[13R-005/28/06] denotes message subaddress 13, receive by store, identifier 005, data word 28, and bit 6.

[02T/02-30] denotes message subaddress 02, transmit from store, data words 2 through 30.

[13R-005/14-15] denotes message subaddress 13, receive by store, identifier 005, data words 14 through 15.

[01R/02/00…07] denotes message subaddress 01, receive by store, data word 02, bits 00 through 07.

For carriage systems, identification of the bits or fields in multiple data words that apply to multiple individual stores in sequence is separated by a comma.

Example: [10R/12-15/03…07, 11…15] denotes message 10R, data bits 03 through 07 apply to store 1, 3, 5, and 7 in words 12-15, and data bits 11 through 15 apply to store 2, 4, 6, and 8 in words 12-15. Reference Section 6.10R for further clarity of this concept.

2. A range of multiple message data words is denoted by a dash "-" between word numbers in all instances including the Word ID field on Word Description Sheets.

Examples: [02T/02-30] denotes message subaddress 02, transmit from store, data words 2 through 30.

[13R-005/14-15] denotes message subaddress 13, receive by store, identifier 005, data words 14 through 15.

3. A range of Multiple Bits is denoted by a three periods "…" between bit numbers.

Example: [01R/02/00…07] denotes message subaddress 01, receive by store, data word 02, bits 00 through 07.

4. If a specific value is indicated for the word or bit(s), it is indicated inside the brackets preceded by an equal sign (i.e., [22T/02/03 = 1]).

   a.   Indicated values are decimal values unless indicated otherwise.

   b.   Hexadecimal values are followed by an (H)

   c.   Octal values are followed by (O)

   d.   Binary values are followed by (B)

5. Platform and store requirements are not limited to Section 3. General communication requirements including message formatting requirements are located in Section 4. Requirements unique to a particular message are located with the message in Section 6.

6. Platform and store (including carriage system) requirements do not receive individual paragraph numbers. Instead, they will be bolded and indented for rapid identification. Requirement numbers are numbered based on the section in which they occur. 1xxx are in Section 1, 2xxx are in Section 2, etc.

Example:

Platform Requirements

The platform shall **{ps_xxxx}** …

Carriage System Requirements

The carriage system shall **{css_xxxx}** …

Store Requirements

The store shall **{ss_xxxx}** …

Mission Store Requirements

The mission store shall **{ss_xxxx}**…

7. UAI version information is displayed in enclosed brackets with bold red font using the following notation: **[Starting Version,Ending Version]** with the ",Ending Version" included only if it is applicable. No version information (i.e. no red bold brackets) indicates applicability to all versions. The following examples are provided for clarification.

Examples:

[A02] = applicable to version A02 and all subsequent versions

[A02,A04] = applicable to versions **[A02]** through **[A04]**

[A01,A01] = applicable only to version **[A01]**

a. Sections have the version information at the end of the section name, and the version information applies to all sub-sections unless the sub-section is marked to indicate that it is applicable to subsequent versions.

b. Paragraphs have the version information at the beginning of the paragraph, and the version information applies only to that paragraph.

c. Titles of tables and figures have the version information at the end of the title.

d. Requirements and annex/supplement callouts have the version information after their number, as shown in the examples below.

Examples:

　　　　"The platform shall **{ps_xxxx}[A03]** …"

　　　　"The carriage system may **{csm_xxxx}[A02,A04]** …"

　　　　"The mission store supplement **{sup_xxxx}[A02]** …"

e. Requirements and annex/supplement callouts that have minor differences between versions have the version information within the requirement or annex/supplement callout. This is only done when the differences between versions can be identified conveniently and easily, as in a list of items. There are no overlap between the versions called out. Examples are shown below.

　　Examples:

　　　　"The platform shall **{ps_xxxx}** … including the following items:

　　　　　a. Item 1…　　　　　　　{applies for all versions}

　　　　　b. **[A01,A01]** Item 2　　{applies only for **[A01]**}

　　　　　b. **[A02]** Item 2　　　　{applies for **[A02]** and later}…"

　　　　"The platform shall **{ps_xxxx}** … including the following items:

　　　　　a. Item 1　　　　　　　　{applies for all versions}

　　　　　b. Item 2　　　　　　　　{applies for all versions}

　　　　　c. **[A02]** Item 3　　　　{applies for **[A02]** and later}…"

f. Message and word pages in section 6 that are different based on versions are shown by one of two methods:

i. Minor differences between versions are shown in a single message or word page with the version information indicated on a line-by-line basis preceding the applicable lines. Figure 4.2-1 shows a message page in which word 24 differs between versions. The following example shows a word page (excerpt) depicting two different scenarios:

　　Example:

[A01,A01] Reserved	-09-0	Set to logic 0
[A02] WDL Key 3 Received Received	-09-B	1 = Valid <u>MDT-WDL Crypto 3</u> [13R-027] loaded in mission store WDL transceiver
GeoZone Data Erased	-10-0	Set to logic 1 when all GeoZone data is erased
[A01, A01] Crypto Data Zeroized	-11-D	Set to logic 1 when GPS crypto data has been zeroized
[A02] Crypto Data Zeroized	-11-D	Set to logic 1 when all crypto data has been zeroized

ii. More extensive differences between versions are shown with separate message or word pages with the version information appearing after the Message Name (for message pages) or Word Name (for word pages) to indicate applicability for the entire message or word page.

Message pages only include version information for a word if the word name changes based on the version (i.e., changes to the internal bit pattern, scaling, or limits in a word which do not result in the word name changing are not shown on the message page).

8. MIL-STD-1760 signal names like Interlock [Discrete] are underlined.

9. Generic names for MIL-STD-1760 signals like Conditioning Power and Operating Power are underlined.

10. Functional sequence tables are included only to explain complex inter-relationships and are not implied requirements.

11. For carriage system power, "apply" means to route or generate, whereas "route" explicitly means that the carriage system does not generate the particular power - rather it simply switches it to the particular store.

12. UAI uses bit numbering 00 to 15 with 00 being the most significant bit.

1.3 General Description

The stores covered by this ICD interface to the platform directly via a MIL-STD-1760 Class 2 Aircraft Station Interface (ASI). Mission stores carried on carriage systems may interface to the carriage system via individual MIL-STD-1760 Carriage Store Station Interfaces (CSSIs), or via individual miniature store interfaces. Carriage system functionality for control and release of the stores as well as the associated multi-level communication transactions is included as part of the overall functionality described in this ICD, since it affects the platform OFP requirements for employment of the carried stores. It is not necessary for a platform/store interface to contain High Bandwidth1 (HB1), High Bandwidth3 (HB3) and Low Bandwidth (LB) for UAI compliance.

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2.0 APPLICABLE DOCUMENTS

2.1 General

The following documents form a part of this ICD to the extent specified herein.

2.2 Specifications

2.3 Standards

2.3.1 Military Standards

MIL-STD-1553B Notice 4 15 January 1996	Interface Standard for Digital Time Division Command/Response Multiplex Data Bus
MIL-STD-1760D 1 August 2003	Interface Standard for Aircraft/Store Electrical Interconnection System
MIL-STD-3014 20 February 2004	Interface Standard for Mission Data Exchange Format
MIL-STD-3016 Draft	Miniature Mission Store Interface
MIL-STD-6016C w/Change 1 28 March 2005	Department Of Defense Interface Standard, Tactical Data Link (TDL) 16 Message Standard
MIL-STD-6017 01 April 2004	Department Of Defense Interface Standard Variable Message Format (VMF) MIL-STD-6017

2.3.2 Civilian Standards

ANSI X3.4-1977	American National Standard Code for Information Interchange
AS5609 April 2004	Aircraft/Store Common Interface Control Document Format

2.4 Project Specific Documents

UAI-MPICD-R03 01 February 2010	Universal Armament Interface (UAI) Mission Planning Interface Control Document
UAI-ICP-R02 12 January 2009	Universal Armament Interface (UAI) Interface Control Plan (ICP)

2.5 Other Documents

WGS 84	World Geodetic Survey 1984
ICD-GPS-059C, w/ IRN-001 through -005 28 July 1998	GPS User Equipment ICD for MIL-STD-1553 Multiplex Bus Interface
ICD-GPS-169 19 February 2003	GPS User Equipment Interface Control Document for MIL-STD-1553 Multiplex Bus Interface of SAASM-Based DoD STANDARD GPS UE Radio Receivers
ICD-GPS-200C IRN -001 through -004 12 April 2000	Navstar GPS Space Segment/Navigation User Interface

ICD-GPS-203 Current Issue	Navstar GPS Selective Availability and Anti-Spoofing Requirements (SECRET) (U)
ICD-GPS-204A Current Issue	The Standard Receiver Performance Tests (U)
ICD-GPS-224 Current Issue	Navstar GPS Selective Availability and Anti-Spoofing Receiver Design Requirements (SECRET) (U)
ICD-GPS-225 Current Issue	Navstar GPS Selective Availability and Anti-Spoofing Host Application Equipment Design Requirements with the Precise Positioning Service Security Module (SECRET) (U)
HQ USAF CGRS Briefing Version 5	Agile Airspace Control Common Geographic Reference System via Link 16, by Lt Col Brett 'Plink' Plentl, AFC2ISRC/CCT
WDLN ICD Baseline Version 1.0 - CH. 1 18 May 2005	Weapons Data Link Network (WDLN) Advanced Concept Technology Demonstration (ACTD) Interface Control Document (ICD)

2.6 Precedence

In the event of a conflict between this ICD and other referenced documents, the contents of this ICD take precedence.

2.7 Acronyms

Acronym	Definition
3PS	Third Party IFTU Source
A/C	Aircraft
AC	Alternate Controller
AC	Alternating Current
Acft	Aircraft
ACO	Airspace Control Order
ACP	Airspace Control Plan
ACTD	Advanced Concept Technology Demonstration
add	Addendum
AFAPD	Air Force Application Program and Development
AGL	Above Ground Level
AM	Amplitude Modulation
ann	Annex
ANSI	American National Standards Institute
AOA	Angle of Attack
APC	Armored Personnel Carrier
AS	Anti-Spoofing
ASCII	American Standard Code for Information Interchange
ASI	Aircraft Station Interface
ASI	Aircraft Store Interface
ASK	Amplitude Shift Keying
ATO	Air Tasking Order
AUR	All-Up Round
Az	Azimuth
Batt	Battery
BC	Bus Controller
BCVm	Black Crypto Variable Monthly

Acronym	Definition
BGUV	Black Group Unique Variable
BHI	Bomb Hit Indication
BIA	Bomb Impact Assessment
BIP	Black Initialization Parameter
BIT	Built-in-Test
BKAUPD	Black Algorithm Update Parameter
Blk	Block
BM	Bus Monitor
BRU	Bomb Release Unit
BSTR	Basic, or Binary, String
CC	Common Component
CC	Current Controller
CDF	Configuration Data File
CDS	Configuration Data Set
CEM	Combined Effects Munition
CEP	Circular Error Probable/Probability
CGRS	Common Grid Reference System
Char	Character
Cic	Amplitude of the Cosine Harmonic Correction Term to the Angle of Inclination
CICWG	Common Interface Control Working Group
Cis	Amplitude of the Sine Harmonic Correction Term to the Angle of Inclination
CLAR	Composite Launch Acceptability Region
CMBRE	Common Munitions Built-in-Test/Reprogramming Equipment
CNM	Complementary Navigation Message
COM	Component Object Model
Comd	Commanded
COMP	Computation
Config	Configuration
Corr	Correction
cos	Cosine
COTS	Commercial Off-the-Shelf
CPC	Common Planning Component
CPU	Central Processing Unit
CR	Cross Range
Crc	Amplitude of the Cosine Harmonic Correction Term to the Orbit Radius
CRD	Common Route Definition
Crit	Critical
Crs	Amplitude of the Sine Harmonic Correction Term To the Orbit Radius
Crus	Crusing
CS	Carriage System
CSCI	Computer Software Configuration Item
CSI	Carriage Store Interface
csm	Carriage System May
css	Carriage System Shall
Ctls	Controls
CTS	Commit to Separate Store
CTSS	Committed to Store Separation
Cuc	Amplitude of the Cosine Harmonic Correction Term to the Argument of Latitude

Acronym	Definition
Cus	Amplitude of the Sine Harmonic Correction Term to the Argument of Latitude
CW	Command Word
DC	Direct Current
DEST	Destination
DGPS	Differential Global Positioning System
DL	Data Link
Dly	Delay
DMPI	Designated (or Desired) Mean Point of Impact
DOD	Department of Defense
DPI	Desired Point of Impact (or dispense)
DR	Down Range
DTC	Data Transfer Cartridge
DTD	Data Transfer Device
DTED	Digitized Terrain Elevation Data
DTG	Day Time Group
DTM	Data Transfer Module
DTUC	Data Transfer Unit Cartridge
ECEF	Earth Centered Earth Fixed
ECM	Electronic Countermeasures
EGBU	Enhanced Guided Bomb Unit
EH	Ellipsoid Height
El	Elevation
EMCON	Emissions Control
ENU	East, North, Up
Env	Environmental
EO	Electro-Optical
EW	Early Warning
FEBA	Forward Edge of the Battle Area
FLOT	Forward Line of Troops
FM	Frequency Modulation
FOM	Figure of Merit
FOM	Fly-Out Model
FPA	Flight Path Angle
FPM	Flight Performance Model
FPS	Feet Per Second
FSCL	Fire Support Coordination Line
FSK	Frequency Shift Keying
FTS	Flight Termination System
GBU	Guided Bomb Unit
GeoZone	Geographic Zone
GFI	Government Furnished Information
GMT	Greenwich Mean Time
Gnd	Ground
GPS	Global Positioning System
grd	Ground
GUID	Global Unique Identifier
GUV	Group Unique Variable
HAE	Height Above Ellipsoid

Acronym	Definition
HB	High Bandwidth
HDBK	Handbook
Hdg	Heading
HUD	Heads Up Display
Hz	Hertz
i_0	Inclination Angle
IAW	In Accordance With
IBIT	Initiated Built-In Test
ICD	Interface Control Document
ICN	Interface Change Notice
ICP	Interface Control Plan
ICR	Interface Control Report
ICSG	Interface Control Steering Group
ICWG	Interface Control Working Group
ID	Identification, Identifier
IDL	Initialization Data Load
IDOT	Rate of Change of the Nominal Orbital Inclination Angle (i_0)
IEEE	Institute of Electrical and Electronics Engineers
IFTU	In-Flight Target Update
IIR	Imaging Infrared
IMU	Inertial Measurement Unit
INIT	Initialization
INS	Inertial Navigation System
Instr	Instruction
Int	Integral
Integ	Integration
Intg	Integration
Invld	Invalid
IODC	Issue of Data Clock
IODE	Issue of Data Ephemeris
Iono	Ionosphere
IP	Internet Protocol
IP-ATDL	Internet Protocol-Advanced Tactical Data Link
IPV4	Internet Protocol Version 4
IPV6	Internet Protocol Version 6
IR	Infrared
IR	In-Range
ISM	Installable Software Module
ITP	Integrated Target Planner
IZ	In-Zone
JICWG	Joint Interface Control Working Group
JMPS	Joint Mission Planning System
JROC	Joint Requirements Oversight Council
JROCM	Joint Requirements Oversight Council Memorandum
JTIDS	Joint Tactical Information Distribution System
JUID	JTIDS Unit ID
LADAR	Laser Detection and Ranging
LAR	Launch Acceptability Region

Acronym	Definition
LB	Low Bandwidth
LEP	Linear Error Probable/Probability
LIDAR	LIght Detection And Ranging
LOAL	Lock On After Launch
LOBL	Lock On Before Launch
LOS	Line of Sight
LSB	Least Significant Bit
LSP	Least Significant Part
LSW	Least Significant Word
MA	Moment Arm
Max	Maximum
MDS	Mission Data Set
MDT	Mass Data Transfer
Mech	Mechanism
MIDB	Modernized Intelligence Data Base
MiDEF	Mission Data Exchange Format
MIL-STD	Military Standard
Min	Minimum
MMSI	Miniature Munition Store Interface
MMW	Millimeter Wave
ms	Mission Store
MSB	Most Significant Bit
msec	Milliseconds
msg	Message
MSL	Mean Sea Level
msn	Mission
MSP	Most Significant Part
MSS	Mobile Satellite Services - Packet Switched
MSS-CS	Mobile Satellite Services - Circuit Switched
MSW	Most Significant Word
MTID	MSS Terminal ID
MU	Memory Unit
MUX	Multiplex
Nav	Navigation
NED	North, East, Down
NPG	Network Participation Group
NSA	National Security Agency
NVM	Non-Volatile Memory
OFP	Operational Flight Program
OOB	Out-of-Bounds
OPS No	Operational Parameter Set Number
ORD	Operational Requirements Document
PBIT	Periodic Built-In Test
PCO	Power Change Over
PF	Programmable Fuze
PGM	Precision Guided Munition
ph	Phase
PIM	Pulse Interval Modulation

Acronym	Definition
pm	Platform May
PPLI	Precise Participant Location and Identification
Pred	Predictive
PRF	Pulse Repetition Frequency
Pri	Primary
PRN	Pseudo Random Name
Prox	Proximity
ps	Platform Shall
PSICD	Platform Store Interface Control Document
PSK	Phase Shift Keying
Pt	Point
PTAM	Periodic Transfer Alignment Message
PVI	Pilot-Vehicle Interface
Pwr	Power
R	Receive
RADAR	RAdio Detection and Ranging
Rcvd	Received
Rcvr	Receiver
RCVw	Red Crypto Variable Weekly
Rec	Record
Ref	Reference
Rel	Release
REP	Radial Error Probability
RF	Radio Frequency
RGUV	Red Group Unique Variable
RIFL	Reversible In-Flight Lock
RMS	Root Mean Square
Rng	Range
RPL	Reference Point Location
RT	Remote Terminal
RTAM	Reset Transfer Alignment Message
S&RE	Suspension and Release Equipment
SAASM	Selective Availability Anti-Spoofing Module
SAE	Society of Automotive Engineers
SAL	Semi Active Laser
SCA	Software Communications Architecture
SCL	Standard Configuration Load
SCN	Specification Change Notice
SDR	Software Defined Radio
Sec	Secondary
SFW	SubFrame Word
Sim	Simulation
sin	Sine
SJICWG	Super Joint Interface Control Working Group
sm	Store May
SMO	Stores Management Overlay
SMP	Stores Management Processor
SMS	Stores Management System (or Set)

Acronym	Definition
SNN	Stacked Net Number
SPINS	Special Instructions (Part of an Air Tasking Order)
SQRT	Square Root
ss	Store Shall
STN	Source Track Number
sup	Supplement
SV	Satellite Vehicle
SW	Status Word
T	Time
T	Transmit
T/R	Transmit/Receive
TA	Transfer Alignment
TACAN	Tactical Air Navigation
TADIL-J	Tactical Digital Information Link - J Message Standard
TADIL-K	Tactical Digital Information Link - K Message Standard
TC	Transfer Control
TDL	Tactical Data Link
TLI	Time Line Integration
TM	Telemetry
TM/FTS	Telemetry/Flight Termination System
TN	Track Number
TOD	Time of Day
TOF	Time of Flight
TOI	Time of Impact
TOO	Target of Opportunity
TOT	Time on Target
trk	Track
TXA	Transfer Alignment
UAI	Universal Armament Interface
UGLI	UAI Grid Location Identifier
Uncrtnty	Uncertainty
URA	User Range Accuracy
URN	Unit Reference Number
USAF	United States Air Force
USSPACECOM	US Space Command
UTC	Coordinated Universal Time
UV	Ultraviolet
V AC	Volts Alternating Current
V DC	Volts Direct Current
Vel	Velocity
VM	Volatile Memory
VMF	Variable Message Format
WAZ	Wander Azimuth
WDL	Weapon Data Link
WDLN	Weapon Data Link Network
WGS 84	World Geodetic Survey - 1984
WOD	Word of Day
wrt	With Respect To

Acronym	Definition
Xmit	Transmit
Xmitter	Transmitter

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3.0 FUNCTIONAL INTERFACE

3.1 General

Section 3 defines the functional interface between host platforms and UAI compliant MIL-STD-1760 stores. The requirements definition is in terms of a composite set of functional capabilities intended to support existing and future stores within the subject store class. Provisions are included for adapting the platform and carriage system capability set to support the specific needs of a specific carriage system or mission store through an externally provided Configuration Data Set (CDS) associated with the particular store.

Section 3.2 provides general information about the mission data that is transferred across the interface and defines the applicable coordinate systems for position-related data. The notional states and modes for store interface functional operation are presented in section 3.3. Section 3.4 provides notional timelines and event sequencing, while section 3.5 describes the associated events in detail. Sections 3.6 through 3.8 contain analogous information for carriage systems.

3.1.1 Requirements Hierarchy

Requirement wording in this ICD is based on an implied hierarchy of requirements. For the sake of brevity and readability, "shall" statements are written for the platforms and stores to which the requirements apply. However, a specific "shall" statement may not apply to a particular platform or store because of a higher level requirement. As an example, the wording for the "shall" statements associated with a particular digital message state mandatory requirements for platforms or stores using that message. At a more basic level, the platform or store may not be required to implement that message, and if the message is not implemented then the "shall" statements associated with that message would not apply to the platform or store. In a similar manner, if the platform or store chooses not to implement an optional message, then the "shall" statements associated with that message would not apply to the platform or store. However, if the platform or store does implement an optional message, the "shall" statements associated with that message would apply to the platform or store.

3.1.2 General Requirements

The PS ICD is written to cover the entire interface without creating inverse, or associated, requirements for both the store and platform. In order to fully understand the UAI interface, it is necessary to read all the requirements. As an example, the mission store sets Min MDS Received [22T/02/03 = 1] after receipt of Pri Msn Storage Location [22R/04] if the MDS is determined to be valid. There is not a corresponding platform requirement to check that bit for any purpose. Platform developers must be aware of such store requirements when designing the platform mechanization.

3.1.2.1 Store Command/Response Requirements

Figure 3.1.2-1 depicts UAI platform command to store response timing. Unless specified otherwise in this ICD, the standard UAI command receipt to store response timing is 40

msec [i.e., to/from a mission store (Figure 3.1.2-1, E-E) and to/from a carriage system (Figure 3.1.2-1, B-B)]. The standard UAI platform command to carriage system response timing involving communications with a mission store is 80 msec (Figure 3.1.2-1, A-A).

For other non-standard cases, platform/store response timing requirements are captured in this and other sections of this ICD as platform CDS time variables and are derived from the mission store/carriage system supplement.
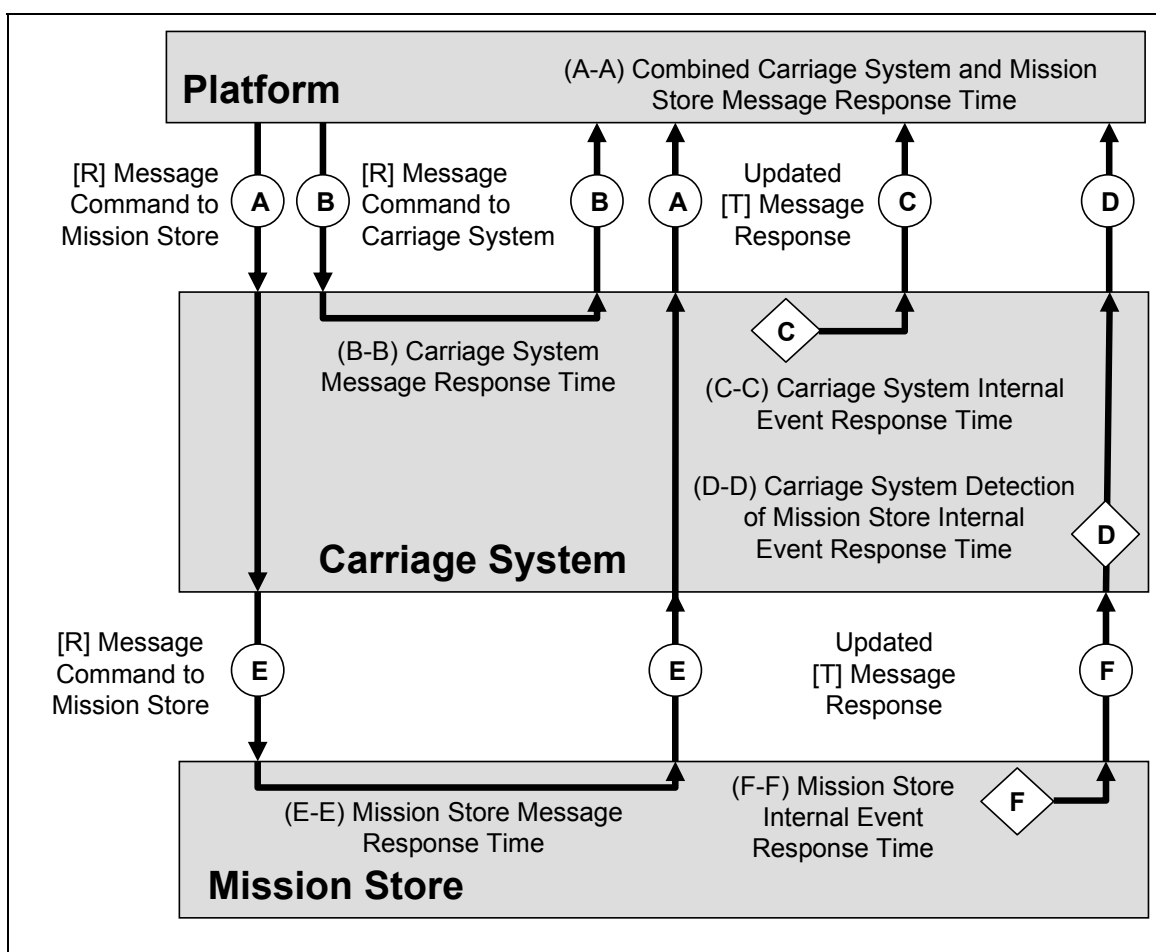
Figure 3.1.2-1 UAI Command/Response Time Definitions

Carriage System Requirements

The carriage system shall **{css_3001}** update Transmit [T] message data from a mission store after receipt of the corresponding platform Receive [R] message command(s) within 80 msec (reference Figure 3.1.2-1, A-A), unless specified otherwise in this ICD.

The carriage system shall **{css_3002}** update the corresponding mission store Transmit [T] message data following carriage system detection of a mission store event within 40 msec (reference Figure 3.1.2-1, D-D).

The carriage system shall **{css_3056}** update Transmit [T] message data for corresponding platform Receive [R] message command(s) to the carriage system within 40 msec (reference Figure 3.1.2-1 B-B), unless specified otherwise in this ICD.

The carriage system shall **{css_3057}** update the corresponding carriage system Transmit [T] message data of an associated carriage system event (e.g., changes of state, detection of subsystem fault, etc.) within 40 msec (reference Figure 3.1.2-1, C-C).

Mission Store Requirements

The mission store shall **{ss_3001}** update Transmit [T] message data for the corresponding Receive [R] message command(s) within 40 msec (reference Figure 3.1.2-1, E-E), unless specified otherwise in this ICD.

The mission store shall **{ss_3002}** update the corresponding Transmit [T] data of an associated internal store event (e.g., changes of state, detection of subsystem fault, etc.) within 40 msec (reference Figure 3.1.2-1, F-F).

3.1.2.2 Platform Monitor and Fault Processing Requirements

The ICD explicitly calls out the status indications required of the mission store and carriage system. Sufficient data is provided to allow the platform to successfully monitor and react to status.

Platform Requirements

The platform may **{pm_3001}** monitor and perform fault processing when the store does not respond with the appropriate status as specified in this ICD.

The platform annex **{ann_3001}** documents the platform status indications and fault responses.

3.2 Basic Mission Data and Definitions

The interface discussions in the subsequent sections of this ICD refer to MIL-STD-1553 messages which are used for communication between the platform and store across UAI compliant interfaces.

3.2.1 Mission Data Overview

UAI messages are listed in Table 3.2.1-1, communications protocols, MDT protocols and message duty cycle requirements are defined in section 4, and individual message detail requirements are defined in section 6.

Table 3.2.1-1 UAI Message Traffic Summary

Message Group Number	Message Name	Message Number	Word Count	Platform Required (Note 1)	Carriage System Required	Mission Store Required	Comments
1. Required for all platforms, carriage systems, and mission stores.							
	Platform Description	[01R]	30	Yes	Yes	Yes	
	Store Description	[01T]	30	Yes	Yes	Yes	
	Periodic Transfer Alignment	[02R]	29	Yes	Yes	Yes	
	Time	[03R]	12	Yes	Yes	Yes	
	Reset Transfer Alignment	[05R]	29	Yes	Yes	Yes	
	Moment Arm	[09R]	13	Yes	Yes	Yes	
	Store Control	[11R]	30	Yes	Yes	Yes	
	Store Monitor	[11T]	30	Yes	Yes	Yes	
	Environmental Data	[15R]	16	Yes	Yes	Yes	
	Mission Control	[22R]	16	Yes	Yes	Yes	
	Mission Monitor	[22T]	30	Yes	Yes	Yes	
2. Required when platforms use time tag method of time stamping.							
	Synchronize With Data Word	[MC17R]	1	Note 2	Yes	Yes	
3. Required for platforms, available to mission stores undergoing developmental testing, as documented in the store supplement.							
	Store Internal Parameters 1	[02T]	30	Yes	Yes	Note 2	
	Store Internal Parameters 2	[03T]	30	Yes	Yes	Note 2	
4. Optional for platforms using store-generated LAR data.							
	LAR Control	[06R]	20	Optional	Yes	Yes	
	IR LAR Data	[05T]	30	Optional	Yes	Yes	
	IZ LAR Data	[06T]	30	Optional	Yes	Yes	
5. Required when mission stores supports Mass Data Transfer (MDT).							
	Transfer Control	[14R]	8	Yes	Yes	Note 2	
	Transfer Monitor	[14T]	9	Yes	Yes	Note 2	
6. Required when mission stores requires Mass Data Transfer (MDT) of Preplanned Mission Data.							
	MDT-Mission	[13R-020]	30	Yes	Yes	Note 2	

Table 3.2.1-1 UAI Message Traffic Summary

Message Group Number	Message Name	Message Number	Word Count	Platform Required (Note 1)	Carriage System Required	Mission Store Required	Comments
7. Required when mission stores performs ground target attacks.							
	Modify Mission: Target	[17R-1]	30	Yes	Yes	Note 2	
	Modify Mission: Target	[17T-1]	30	Optional	Yes	Note 2	
8. Required when mission stores performs loiter missions.							
	Modify Mission: Loiter	[17R-2]	30	Yes	Yes	Note 2	
	Modify Mission: Loiter	[17T-2]	30	Optional	Yes	Note 2	
9. Required when mission store is reporting GPS Capable [22T/05/13 = 1].							
	GPS Crypto Data	[12R]	19	Yes	Yes	Note 2	
	Almanac	[13R-005]	30	Yes	Yes	Note 2	
	AS Status/SV Configuration	[13R-007]	30	Yes	Yes	Note 2	
	Ephemeris #1	[13R-010]	30	Yes	Yes	Note 2	
	Ephemeris #2	[13R-011]	30	Yes	Yes	Note 2	
10. Required when mission store is reporting GPS Configuration [22T/16/00…02 > 000 (B)].							
	Complementary Navigation Message (CNM)	[13R-015]	30	See comments	Yes	Note 2	Required if platform is capable of providing CNM data.
11. Required when mission store is DGPS Capable.							
	Differential GPS Data	[18R]	15	See comments	Yes	Note 2	Required if platform is capable of providing DGPS data.
12. Required when mission store supports GeoZones (i.e., GeoZone Enable) as documented in the store supplement.							
	MDT-GeoZone Data	[13R-021]	30	Yes	Yes	Note 2	
	GeoZone Control	[16R]	30	Yes	Yes	Note 2	
	GeoZone Monitor	[16T]	30	Optional	Yes	Note 2	
13. Required when mission store is reporting WDL Onboard [22T/05/11 = 1].							
	MDT-WDL Terminal Initialization	[13R-023]	30	Yes	Yes	Note 2	
	MDT-WDL Key 1-3	[13R-025-027]	30 each	Yes	Yes	Note 2	Non-Crypto data
	MDT-Net Participants	[13R-029]	30	Yes	Yes	Note 2	
	WDL Control	[21R]	30	Yes	Yes	Note 2	

Table 3.2.1-1 UAI Message Traffic Summary

Message Group Number	Message Name	Message Number	Word Count	Platform Required (Note 1)	Carriage System Required	Mission Store Required	Comments
	WDL Monitor	[21T]	30	Yes	Yes	Note 2	
14. Required when mission store is reporting Seeker Onboard [22T/05/15 = 1].							
	Seeker/Sensor Control	[24R]	30	Yes	Yes	Note 2	
	Seeker/Sensor Monitor	[24T]	30	Yes	Yes	Note 2	
15. Required when store is a Type 1 or Type 2 carriage system.							
	Carriage System Control	[10R]	22	Yes	Note 2	No	
	Carriage System Monitor	[10T]	30	Yes	Note 2	No	
16. Required when store is a Type 2 carriage system.							
	Store Summary Status	[20T]	30	Optional	Note 2	No	
	MDT-CS CDS	[13R-024]	30	Yes	Note 2	No	
17. Required when mission store requires crypto data other than GPS Crypto Data [12R]							
	MDT-Growth Crypto	[13R-022]	30	Yes	Yes	Note 2	
18. Required when the mission store needs additional non-WDL key data							
	MDT-Other Store Keys	[13R-028]	30	Yes	Yes	Note 2	Other Non-Crypto key data required by mission store

Notes:
1. The platform supports all UAI messages identified as "Yes" for Platform Required, independent of specific store capabilities.
2. See associated Message Group Number for message requirement rationale.

Platform Requirements

The platform shall **{ps_3001}** be capable of transmitting all Receive [R] messages and receiving all Transmit [T] messages as required in Table 3.2.1-1.

The platform shall **{ps_3156}** transmit Receive [R] messages with the word count defined in Table 3.2.1-1.

The platform annex **{ann_3002}** documents its supported Receive [R] and Transmit [T] messages.

Store Requirements

The store shall **{ss_3003}** accept all Table 3.2.1-1 Receive [R] messages without generating a MIL-STD-1553 Status Word message error.

The store shall **{ss_3086}** respond to all Table 3.2.1-1 Transmit [T] message requests without generating a MIL-STD-1553 Status Word message error.

The store supplement **{sup_3001}** documents the Receive [R] messages required by the store and the Transmit [T] messages for which the store computes data.

3.2.2 Coordinate Systems and Parameter Definitions

Coordinate systems and associated parameters referenced in this document are defined in the following subsections. Key parameters and relevant coordinate frames are summarized in Table 3.2.2-2.

Table 3.2.2-2 Key Parameters and Associated Coordinate Frames

Item	Coordinate Frame
X,Y,Z Velocity	Wander Azimuth
Altitude	Height Above Ellipsoid (HAE)
Yaw, Pitch, and Roll	Platform Body w.r.t. NED
Yaw, Pitch, and Roll Rates	Platform Body
E, N, U Wind Speed	ENU (W to E, S to N, and D to U considered positive)
Moment Arm	Platform Body
Platform g load factor	Platform Body (straight and non-accelerated level flight results in a value of -9.81 m/sec^2)

3.2.2.1 Earth Centered Earth Fixed (ECEF) Coordinate Frame

The ECEF coordinate frame (as defined by WGS 84) is coincident with the X, Y, Z axes that define the WGS 84 Ellipsoid. Thus, the ECEF Z axis (WGS 84 Z axis) is the rotational axis of the WGS 84 Ellipsoid. Figure 3.2.2-1 illustrates the ECEF coordinate frame.

3.2.2.2 North, East, Down (NED) Coordinate Frame

The North-East-Down (NED) coordinate system is a geographic frame with the origin located at the center of inertial measurement within the platform. Down is normal to the WGS 84 reference ellipsoid. North points toward the North pole, which is in the direction of the earth's inertial angular velocity vector projected onto the local horizontal plane. East completes the orthogonal coordinate system. The North and East axes create a plane which is tangential to the WGS 84 ellipsoid. Figure 3.2.2-1 provides a description of the NED coordinate frame.
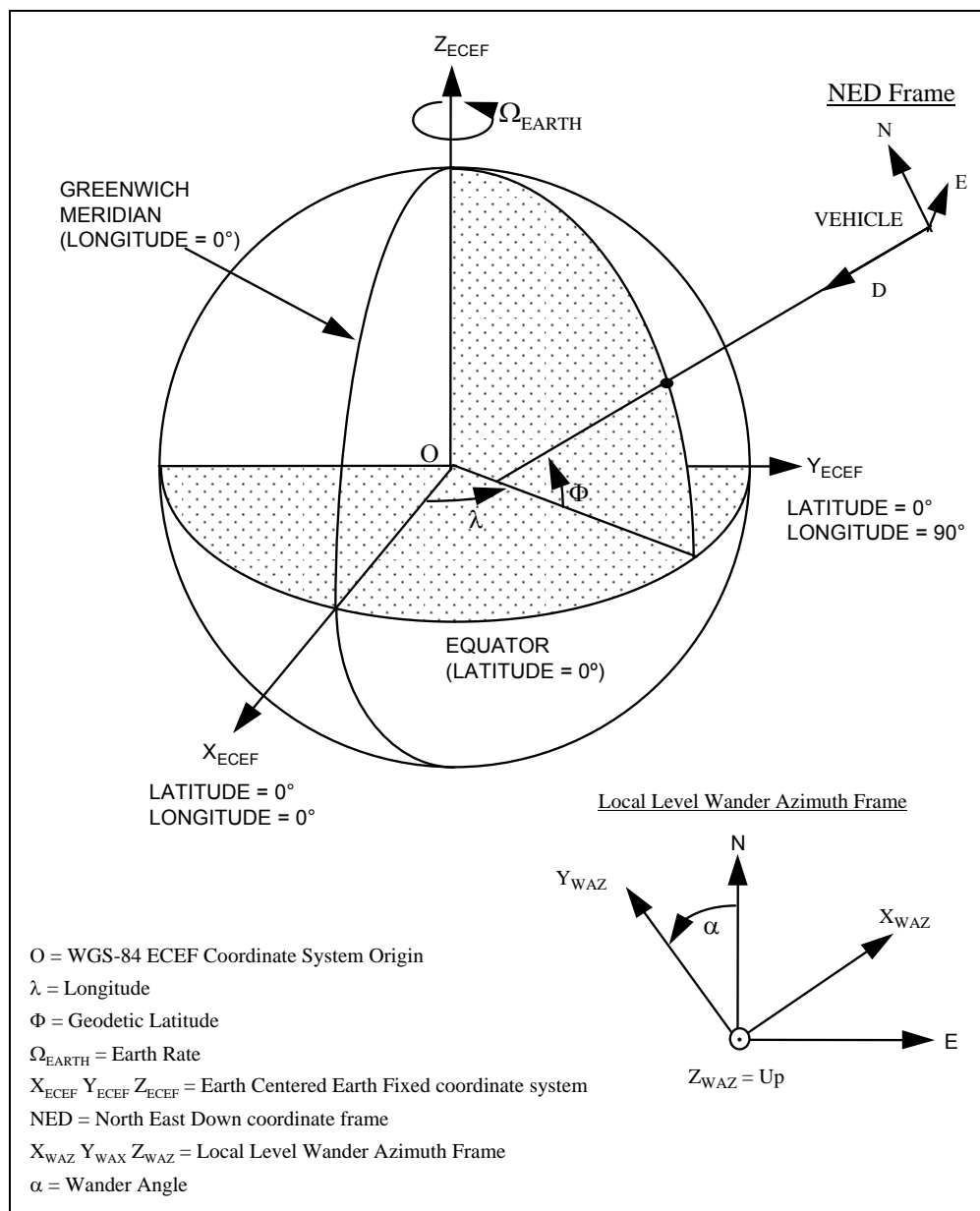
Figure 3.2.2-1 ECEF, NED, and Wander Azimuth Coordinate Systems

3.2.2.3 Local Level Wander Azimuth Coordinate Frame

The Local Level Wander Azimuth coordinate system is defined as X and Y axes in the horizontal plane and Z-up. The Wander Angle is defined as the angle between True North and the Local Level Wander Azimuth Y axis resulting from a positive rotation about the Local Level Wander Azimuth Z axis (right handed, Z-up Cartesian coordinate frame). Figure 3.2.2-1 and Figure 3.2.2-2 provide a description of the Local Level Wander Azimuth coordinate frame.

Y_T = Y axis of the Reference or Truth frame (True local level)
Y_p = Y axis of the Platform frame (Inertial instrument estimate of local level)
$\mathbb{C}$ = Aircraft center line
α_T = Truth frame wander angle
α_p = Platform frame wander angle
ϕ_z = z component of the Truth to Platform frame tilt error vector

True Heading (Ψ) = is the Platform Centerline Axis relative to True North
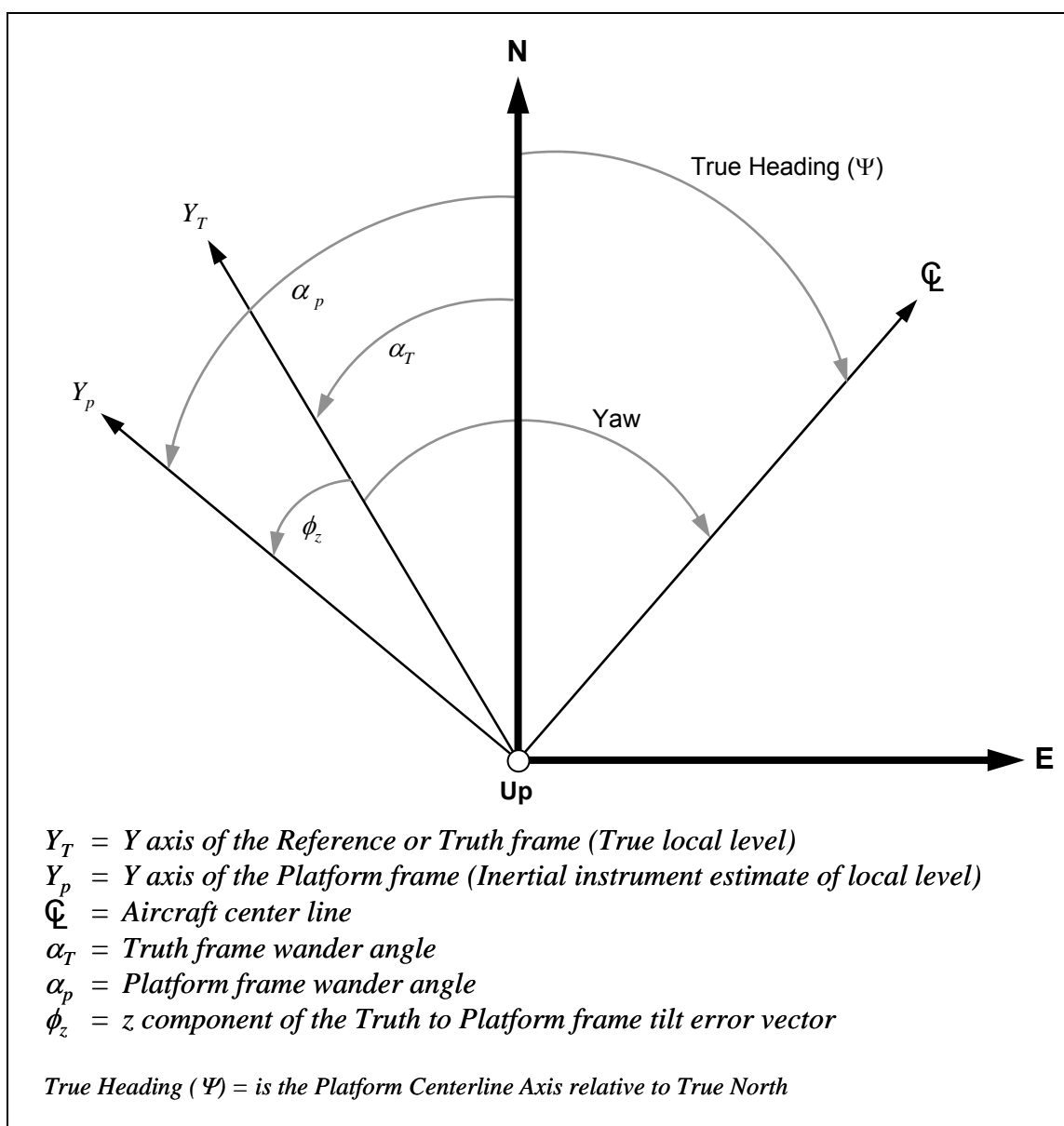
Figure 3.2.2-2 Local Level Wander Azimuth Coordinate Frame Definition

3.2.2.3.1 Definition of Wander Azimuth Coordinate Frame Interrelationships

Figure 3.2.2-3 illustrates the horizontal plane of the Truth Frame (true local level wander azimuth frame) and the Platform Frame (inertial instrument estimate of the true local level wander azimuth frame).

The Platform Frame is slightly misaligned from the Truth Frame by three angles referred to as the platform tilt angles. These angles are represented as the vector angle ϕ, where $\phi = [\phi_x, \phi_y, \phi_z]^T$ (see Figure 3.2.2-3). For strapdown systems, this corresponds to an error in the instrument frame to navigation frame direction cosine matrix.

X_T, Y_T, Z_T	X, Y, Z dimensions in True Coordinate Set
X_C, Y_C, Z_C	X, Y, Z dimensions in Computer Coordinate Set
X_P, Y_P, Z_P	X, Y, Z dimensions in Platform Coordinate Set
Ψ_x, Ψ_y, Ψ_z	Platform misalignments
ϕ_x, ϕ_y, ϕ_z	Platform Tilts
$\Delta\theta_x, \Delta\theta_y, \Delta\theta_z$	Position Error Angle (from Earth's center)
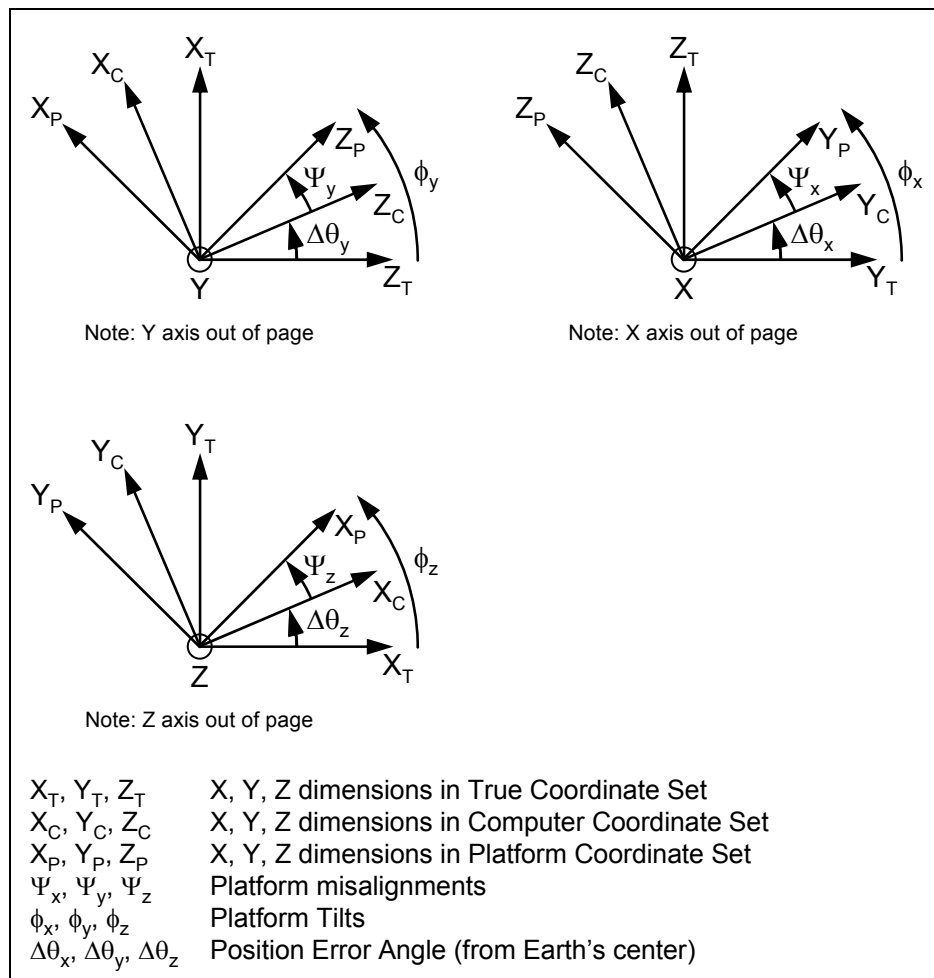
Figure 3.2.2-3 Misalignment Angle, Position Error, and Platform Tilt Relationships

3.2.2.4 Body Coordinate Frame

The Body Coordinate Frame is defined as the x-axis pointing forward through the nose, the y-axis pointing out the right wing, and the z-axis pointing down through the bottom of the platform (reference MIL-STD-1760, Figure B-2). For stores, the top of the vehicle is based on the attachment hooks facing up. The platform body coordinate system orientation with respect to the NED coordinate system is described through the vehicle roll, pitch, and yaw Euler angles. Figure 3.2.2-4 defines the body coordinate frame.

Notes:
1. The platform (or store) body axis is an orthogonal triad of axes X_b, Y_b, Z_b with an origin fixed at the location determined to be optimum for that platform (or store).
2. The X_b axis is positive in the forward direction of the vehicle.
3. The Y_b axis is positive to the right of the forward direction of the vehicle.
4. The Z_b axis is positive down through the belly of the vehicle.
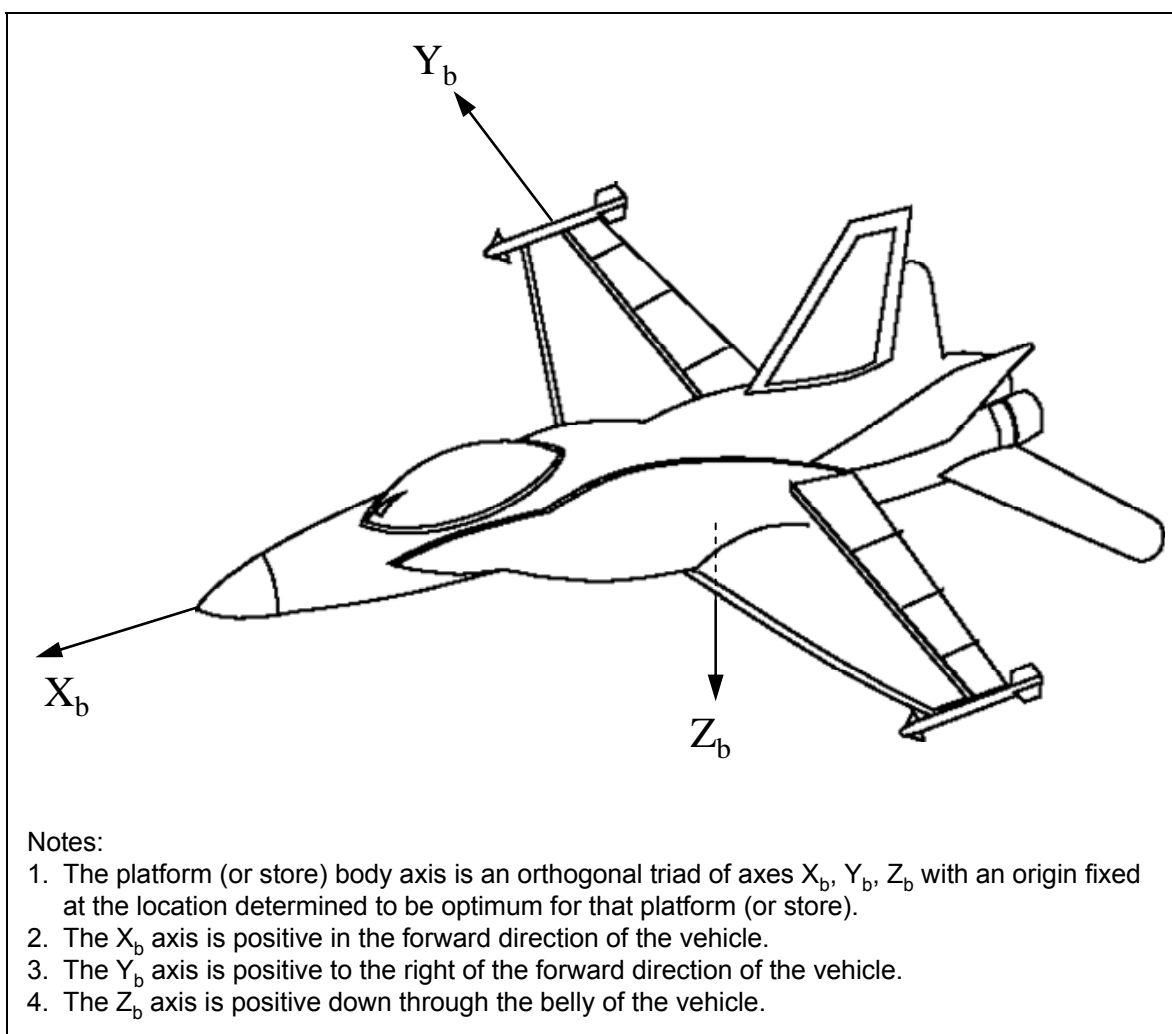
Figure 3.2.2-4 Body Coordinate Frame

3.2.2.4.1 Definition of Euler Angles

Platform attitude is represented by three Euler angle rotations. The corresponding direction cosine matrix [R] that defines the rotations from the NED coordinate frame to the vehicle body frame can be reconstructed using the following equations.

$$[R] = \begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos\phi & \sin\phi \\ 0 & -\sin\phi & \cos\phi \end{bmatrix} \cdot \begin{bmatrix} \cos\theta & 0 & -\sin\theta \\ 0 & 1 & 0 \\ \sin\theta & 0 & \cos\theta \end{bmatrix} \cdot \begin{bmatrix} \cos\psi & \sin\psi & 0 \\ -\sin\psi & \cos\psi & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

Where: ϕ = Vehicle roll angle
θ = Vehicle pitch angle
ψ = Vehicle true heading angle

The roll angle (ϕ) is a positive rotation about the vehicle x body axis, resulting in the right wing going down. The pitch angle (θ) is a positive rotation about the vehicle y body axis resulting in the nose going up. The true heading angle (ψ) is a positive rotation about the vehicle z body axis resulting in the nose moving to the right.

3.2.2.5 Altitude Reference

Altitude data is referenced to height above the WGS 84 ellipsoid (commonly referred to as height above ellipsoid, or HAE) as depicted in Figure 3.2.2-5. In UAI, all altitude data provided to the store is referenced to WGS 84 ellipsoid (HAE) with the possible exception of PTAM altitude, which is selectable. Section 6.02R.1.3 provides further information and requirements.

Platform Requirement

The platform shall **{ps_3135}** use WGS 84 ellipsoid (HAE) as the altitude reference for all altitude information sent to the mission store except as defined for <u>Altitude</u> [02R/22-23].

The platform annex **{ann_3021}** documents the supported altitude reference and all errors induced by translations between references within the platform.

Mission Store Requirements

The mission store shall **{ss_3091}** use WGS 84 ellipsoid (HAE) as the altitude reference for all altitude information required by the store except for <u>Altitude</u> [02R/22-23].
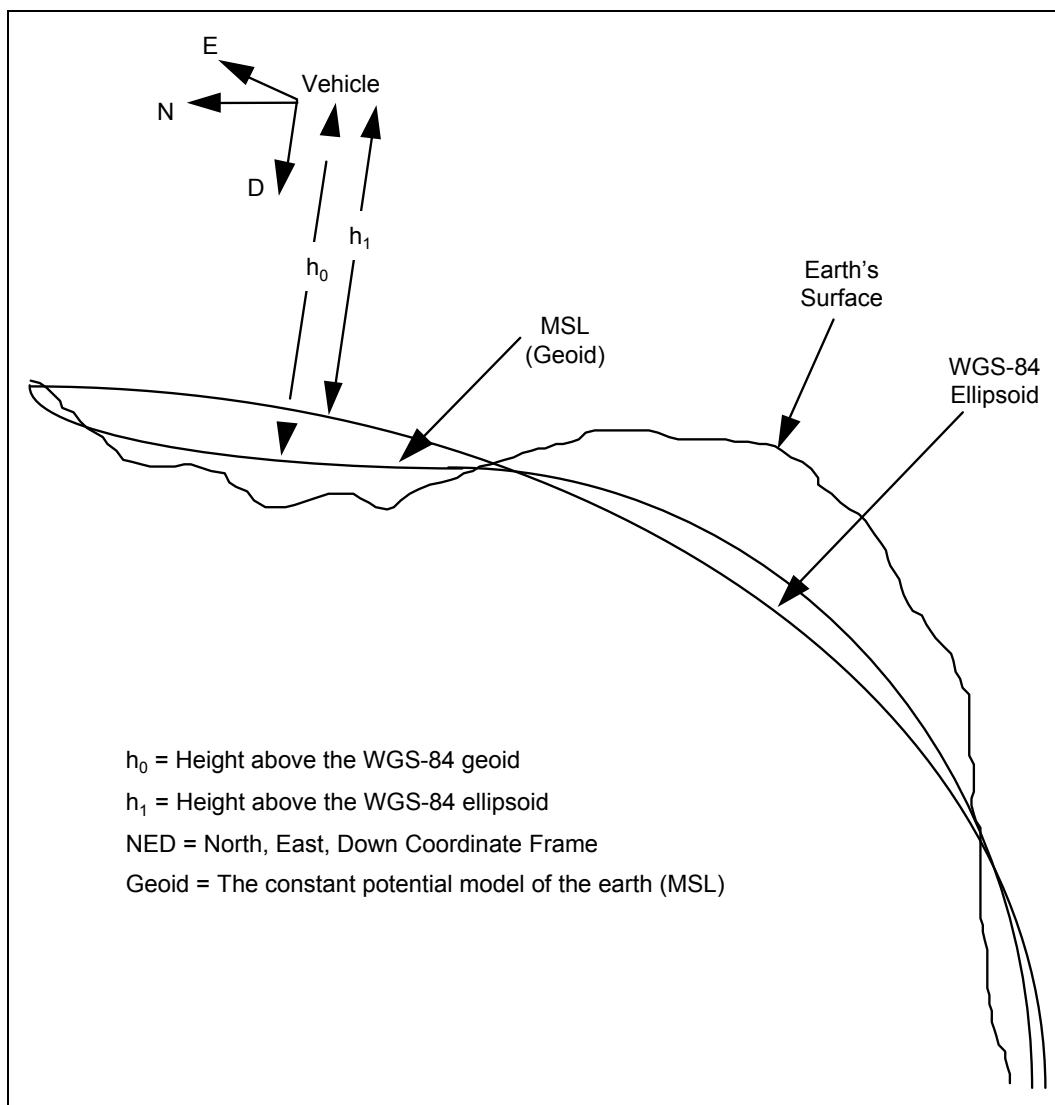
Figure 3.2.2-5 Definition of Altitude Reference

h_0 = Height above the WGS-84 geoid

h_1 = Height above the WGS-84 ellipsoid

NED = North, East, Down Coordinate Frame

Geoid = The constant potential model of the earth (MSL)

3.3 System States and Modes of Operation

The functional requirements for UAI compliant platform/store system interfaces are described in terms of states and modes to facilitate discussion of a nominal mission store employment sequence. This discussion includes those items that can be controlled or monitored across the platform/store interface using UAI messages included in Section 6 of this document. The components that comprise the UAI states and modes represent a notional set for the system and are presented with notional entry and exit transitions in the following section.

Store Requirement

The store supplement **{sup_3002}** documents its unique states and modes, transitions, functionality, timelines.

3.3.1 Off State

This is a captive carriage state in which no Operating Power (115V AC 3 ph [Power] and/or 28V DC1 [Power] and/or 270V DC [Power]) or Conditioning Power (115V AC 3 ph [Power] and/or 28V DC1 [Power] and/or 270V DC [Power]) is applied to the store. The system can remain in this state indefinitely. There are no interface functions supported while in the Off State except MIL-STD-1760 Interlock and Return [Discrete].

State Entry

   The Off State is entered from Initialization, Ready or the Abort State by removing power from the store.

State Exit

   The Off State is exited upon application of power.

3.3.2 Initialization State

The captive carriage state in which Operating Power is applied to the store, and processes necessary to initialize the store are conducted.

State Entry

   The Initialization State is entered from either the Off or Ready State.

   a. Entry from the Off State occurs when Operating Power is applied to the store and the platform initiates MIL-STD-1553 communication.

   b. Entry from the Ready State occurs when any store initialization criteria is no longer satisfied.

State Exit

   The store exits the Initialization State and transitions into any of the following four (4) captive carriage states:

   a. The normal exit is to the Ready State when all store initialization criteria are satisfied.

   b. Exit to the Off State when Operating Power is interrupted or removed.

   c. Exit to the Launch State occurs when the platform initiates the mission store release sequence.

   d. Exit to the Abort State upon command from the platform or when the mission store internally detects an unsafe to release condition.

3.3.3 Ready State

The store has achieved a ready condition when the store initialization criteria are satisfied (as defined in the store supplement), but release has not yet been initiated.

State Entry

   The Ready State is entered once all store initialization criteria are satisfied, enabling the store to complete its mission.

State Exit

> The Ready State is exited into any of the other four (4) captive carriage states.

1. Normal exit is to the Launch State when the platform initiates the mission store release sequence.

2. Exit to the Off State when <u>Operating Power</u> and <u>Conditioning Power</u> are interrupted or removed.

3. Exit to the Abort State upon command from the platform or when the mission store internally detects an unsafe to release condition.

4. Exit to the Initialization State occurs when store initialization criteria are no longer satisfied.

3.3.4 Launch State

Launch State entry is marked by the mission store enabling dedicated release processes to include activation of irreversible functions.

State Entry

> The Launch State is entered when either:

1. <u>Release Consent</u> [Discrete] is present and <u>CTS</u> [11R/04/02] is commanded, or

2. <u>Release Consent</u> [Discrete] is not present and <u>Activate Non-Safety Critical Release Functions</u> [11R/06/05] is commanded,

and the mission store responds with the correct demanded operation. Note: The platform also provides <u>28V DC2</u> [Power].

1. Normally entered from the Ready State.

2. Alternate entry is from the Initialization State.

State Exit

1. Normal exit is to the Free Flight State upon successful completion of all Launch processes including mission store umbilical separation detection.

2. Exit to the Abort State upon command from the platform, when the store internally detects an unsafe to release condition, or mission store fails to complete its release processes as specified in the mission store supplement.

3.3.5 Free Flight State

The Free Flight State is a flight state in which the mission store has successfully separated from the platform and is en route to the designated target. In the absence of Data Link, there is no further communication with the platform.

State Entry

> Entry is from the Launch State.

State Exit

There is no store relevant exit from the Free Flight State.

3.3.6 Abort State

The Abort State is entered from any of the powered system states when commanded or an irrecoverable or safety critical anomaly has been detected by the mission store. The mission store places itself in as safe a condition as possible.

State Entry

1. Entered by command from the platform from the Initialization, Ready, or Launch State.

2. Entered when an irrecoverable or safety critical anomaly has been detected by the store in Initialization, Ready, or Launch State.

State Exit

1. Exit to the Off State when Operating Power is interrupted or removed.

2. Exit to the Off State following any required store battery expiration.

3.3.7 System State Transitions

The control process for initialization and employment of UAI mission stores transitions through a sequence of states starting with the Off State (no power applied), and proceeding through the Initialization, Ready, Launch, Free Flight, and Abort States. A state diagram illustrating the sequence is provided in Figure 3.3.7-1, and the allowable state transitions are illustrated in Table 3.3.7-1. State transitions for specific system applications are defined in the store supplement.
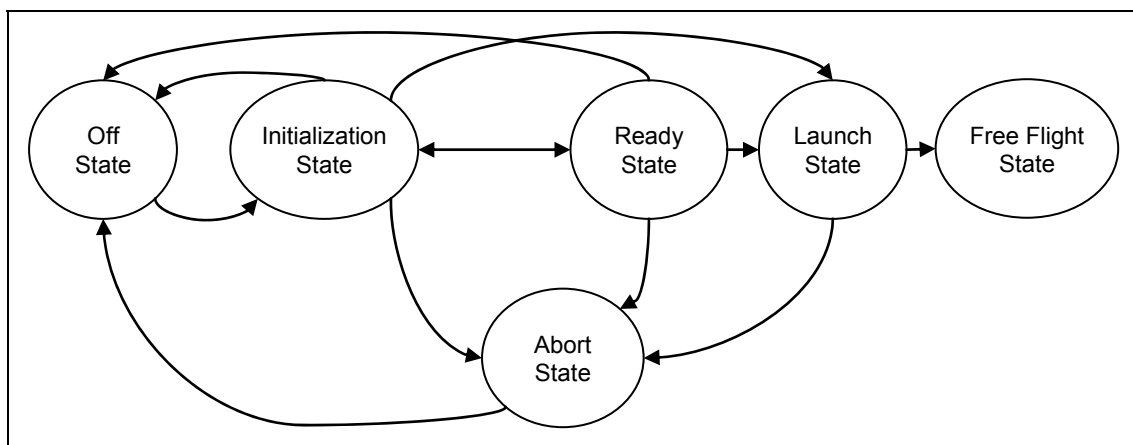
Figure 3.3.7-1 Notional UAI System State Diagram

Table 3.3.7-1 UAI System State Transitions

TO FROM	Off	Initialization	Ready	Launch	Free Flight	Abort
Off	---	N	X	X	X	X
Initialization	A	---	N	A	X	A
Ready	A	A	---	N	X	A
Launch	X	X	X	---	N	A
Free Flight	X	X	X	X	---	X
Abort	A	X	X	X	X	---

N - Normal Transition   A - Alternate Transition   X - Transition Not Allowed

3.4 Store Sequence of Events

Store Requirements

The store supplement **{sup_3003}** documents store event sequencing and timing information.

3.5 System Event Description

This section provides detailed requirements for the interface events and timelines for the platform/store system. Applicability and usage of specific functions is dependent on requirements of the individual store type, as reflected in the associated store supplement and in the platform CDS.

3.5.1 Store Power Application

For platform application of store power, one of following conditions exists:

1. The platform needs to apply power to the store and retrieve the Store Description message to identify the store ID (see section 3.5.1.1); or

2. The platform knows the ID and configuration of the store at the station to which it is ready to apply power, either from a previous power application or other means (see section 3.5.1.2 (mission store), or section 3.8.2 (carriage system)).

3.5.1.1 Store ID Unknown Power Up Sequence

If the platform has not determined store identity, the platform does not know the applicable UAI Configuration Data Set (CDS). Therefore, the platform is unaware of the type of store, or the power the store requires for Operating Power or Conditioning Power. As a result, the platform will default to the MIL-STD-1760 power up sequence as described below to apply power to the store and obtain the Store ID.

3.5.1.1.1 Store ID Unknown Power Up Description

The store Power-up timeline for an intentional powering up of an unknown store type is depicted in Figure 3.5.1-1. A description of the functional sequence shown in Figure 3.5.1-1 is provided in Table 3.5.1-1. Section 6.01T Store Description [01T] provides further information and requirements.
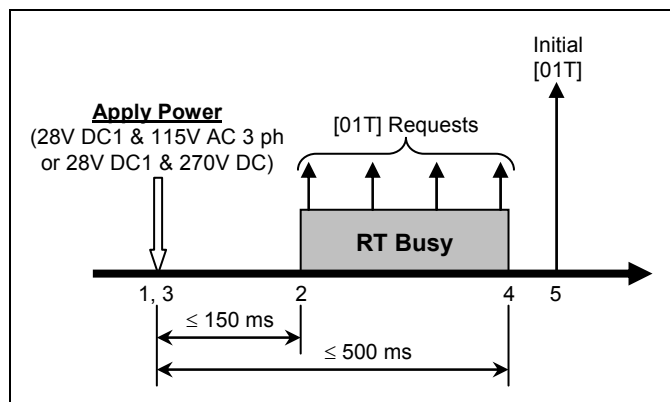
Figure 3.5.1-1 Store ID Unknown System Power-Up Sequence and Timeline

Table 3.5.1-1 Store ID Unknown System Power-Up Functional Sequence

	PLATFORM	STORE
1	Applies <u>28V DC1</u> [Power] and either <u>115V AC 3 ph</u> [Power] or <u>270V DC</u> [Power] (if available) to the store interface.	
2		Store controls its RT to provide its first response as defined by MIL-STD-1760 paragraph 5.2.12.4 if requested by platform within 150 msec of <u>Operating Power</u> being applied.
3	If the Platform can not establish communication with the store after 150 msec, the platform removes power and tries the other power combination (if available) or performs fault processing	
4		Store sets MIL-STD-1553 RT status word busy bit to "unbusy" within 500 msec of application of <u>Operating Power</u> and sets <u>Store Description</u> [01T] with initial values (Reference Table 6.01T-1)
5	Platform determines <u>Store ID (ASCII)</u> [01T/04-11] and determines which interface, legacy or UAI, it will use to attempt communication with the store. If the platform is using the UAI interface, it reads a CDS that matches the <u>Store ID (ASCII)</u> [01T/04-11], then it can remove or turn on <u>Conditioning Power</u> as required. (note: <u>Operating Power</u> may be left on to complete the Power Up Sequence) If <u>Store ID (ASCII)</u> [01T/04-11] indicates the store is a mission store, the requirements of section 3.5.1.2 apply. If <u>Store ID (ASCII)</u> [01T/04-11] indicates the Store is a carriage system, the requirements of section 3.8.2 apply.	

3.5.1.1.2 Store ID Unknown Initial Power Application

MIL-STD-1760 Power is applied to the store for use by its multiplex bus remote terminal and subsystems required for initialization, conditioning, and release sequencing. Store Power is one of five combinations:

1. 28V DC1 [Power] only
2. 270V DC [Power] only
3. 115V AC 3 ph [Power] only
4. 28V DC1 [Power] and 270V DC [Power]
5. 28V DC1 [Power] and 115V AC 3 ph [Power]

If the platform is not aware of the store ID and configuration, it cannot determine the power types required by the store for Operating Power and Conditioning Power. Therefore, the platform must apply power in the MIL-STD-1760 required sequence until it can determine the store ID. The platform never applies 270V DC [Power] and 115V AC 3 ph [Power] simultaneously under any non-fault conditions.

Platform Requirements

The platform shall **{ps_3122}** either apply 28V DC1 [Power] and 115V AC 3 ph [Power] or apply 28V DC1 [Power] and 270V DC [Power] (if available) to initialize the store interface to power up the store multiplex bus remote terminal and other electronic subsystems required to ready the store for identification.

The platform annex **{ann_3019}** documents platform power availability.

Store Requirements

The store shall **{ss_3078}** activate multiplex bus remote terminal and any internal subsystems required for initialization, conditioning, and release sequencing (as applicable) when either of the following power combinations are applied:

a. 28V DC1 [Power] and 115V AC 3 ph [Power]
b. 28V DC1 [Power] and 270V DC [Power].

3.5.1.1.3 Store ID Unknown Communications Initialization

Once power is applied the store MIL-STD-1553 RT initializes, communication is established between the platform and store, and store identification is determined. Section 6.01T Store Description [01T] provides further information and requirements. If the platform identifies a store for which it has a legacy interface and a CDS for UAI, it should use UAI in the event the store supports new capabilities which the legacy integration does not support.

After the platform has received a valid Store Description [01T], decoded the Country Code [01T/02], Store ID Code [01T/03], and Store ID (ASCII) [01T/04-11], and identified the store as a mission store or a carriage system, the requirements of section 3.5.1.2.2 Mission Store ID Known Power-Up or Section 3.8.2 Carriage System Power Up apply.

Platform Requirement

The platform shall **{ps_3123}** use <u>Country Code</u> [01T/02], <u>Store ID Code</u> [01T/03], and <u>Store ID (ASCII)</u> [01T/04-11] to identify the store and determine if the platform intends to initiate communication using UAI.

3.5.1.2 Mission Store ID Known Power Up Sequence

The following power up sequence is used by the platform when store ID is previously determined.

3.5.1.2.1 Mission Store ID Known Conditioning

The platform provides <u>Conditioning Power</u> if required by the mission store. Mission store <u>Conditioning Power</u> is comprised of <u>28V DC1</u> [Power] and/or <u>270V DC</u> [Power] or <u>115V AC 3 ph</u> [Power]. The CDS informs the platform of the type of power to apply for <u>Conditioning Power</u> if any is needed and the time required for mission store conditioning measured from application of <u>Conditioning Power</u>. If the platform applied MIL-STD-1760 power for inventory prior to recognizing the mission store, <u>Conditioning Power</u> and/or <u>Operating Power</u> may already be applied.

<u>Conditioning Power</u> is used to condition mission store internal subsystems and can be applied prior to application of <u>Operating Power</u> to minimize the time following application of <u>Operating Power</u> for the mission store to complete conditioning. <u>Conditioning Power</u> remains applied during all powered states. The mission store multiplex bus terminal is not required to be functional with only <u>Conditioning Power</u> applied.

Platform Requirements

The platform shall **{ps_3002}** apply <u>CDS Conditioning Power</u> **{cds_3035}** to support conditioning of mission store internal subsystems. Note: There is no maximum time for platform application of <u>Conditioning Power</u> prior to the application of <u>Operating Power</u>.

The platform may **{pm_3002}** apply <u>Conditioning Power</u> prior to application of <u>Operating Power</u> for <u>CDS Pre-Operating Pwr Store Conditioning Time</u> **{cds_3005}** to pre-condition mission store subsystems.

The platform shall **{ps_3003}** apply <u>Conditioning Power</u> whenever <u>Operating Power</u> is applied.

Mission Store Requirements

The mission store supplement **{sup_3004}** documents its <u>Conditioning Power</u> requirements and timeline including:

a. Type of Power - Describe the type of power needed for conditioning (<u>28V DC1</u> [Power] and/or <u>270V DC</u> [Power] or <u>115V AC 3 ph</u> [Power]).

b. Power Profile - Describe power quantity required from each platform power source during mission store conditioning.

   c. Power Timeline - Define the time required for mission store conditioning measured from application of Conditioning Power and Operating Power.

   1. Pre-Operating Power Conditioning Requirements - Identify the use of Conditioning Power prior to application of Operating Power, and if used, the minimum time Conditioning Power must be provided prior to Operating Power in order for the mission store to complete conditioning within the minimum time after Operating Power is applied.

   2. Post-Operating Power Conditioning Requirements - Define the minimum time after Operating Power is applied for the mission store to report Conditioning Complete [22T/02/08 = 1] for two scenarios:

      (a) Conditioning Power applied prior to Operating Power and

      (b) Conditioning Power applied in conjunction with Operating Power.

The mission store shall **{ss_3004}** condition its subsystems, as applicable, when Conditioning Power is applied.

3.5.1.2.2 Mission Store ID Known Power-Up

The mission store Power-up timeline for an intentional powering up of the known mission store type is depicted in Figure 3.5.1-2. A description of the functional sequence shown in Figure 3.5.1-2 steps 1 - 4 is provided in Table 3.5.1-2. Section 6.01T Store Description [01T] provides further information and requirements.
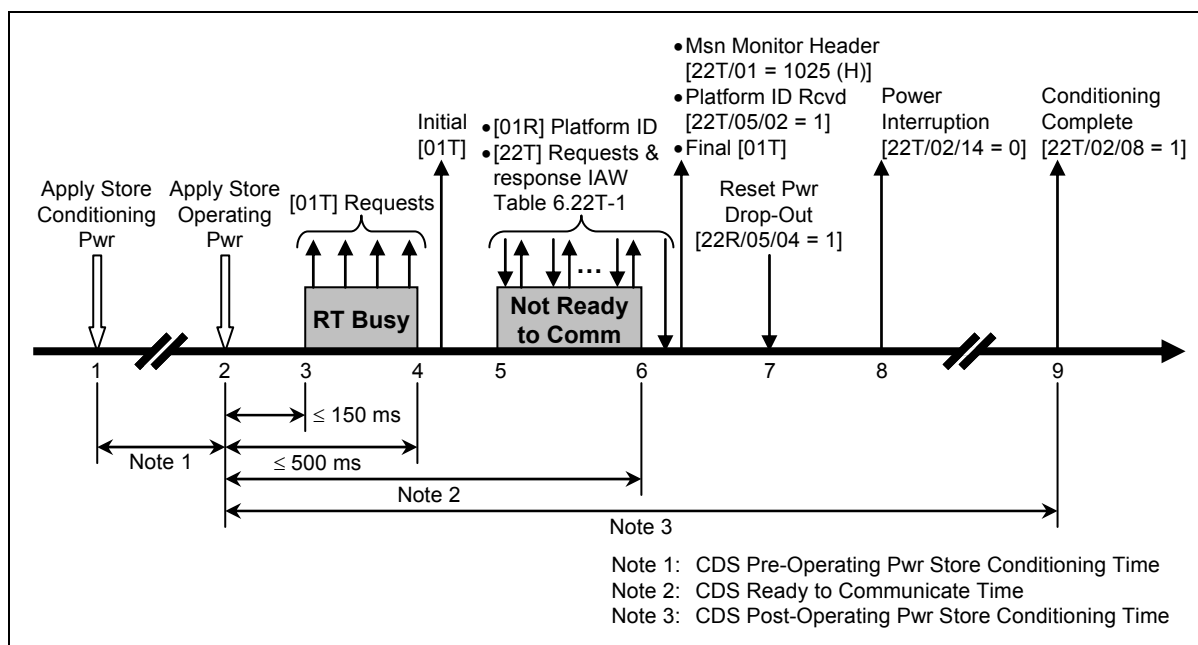
Figure 3.5.1-2 Mission Store ID Known System Power-Up Sequence and Timeline

Table 3.5.1-2 Mission Store ID Known System Power-Up Functional Sequence

	PLATFORM	STORE
1	Applies <u>Conditioning Power</u> in accordance with 3.5.1.2.1 if required by mission store	
2	Applies <u>Operating Power</u> in accordance with 3.5.1.2.2.1.	
3		Mission store controls its RT to provide its first response as defined by MIL-STD-1760 paragraph 5.2.12.4 if requested by platform within 150 msec of <u>Operating Power</u> being applied.
4		Mission store sets MIL-STD-1553 RT status word busy bit to "unbusy" within 500 msec of application of <u>Operating Power</u> and Mission store sets <u>Store Description</u> [01T] with initial values (Reference Table 6.01T-1)

3.5.1.2.2.1 Mission Store ID Known Operating Power Application

<u>Operating Power</u> is applied to the mission store for use by its multiplex bus remote terminal and subsystems required for initialization, conditioning, and release sequencing. <u>Operating Power</u> is not used as the primary power source for critical or irreversible mission store functions. Mission store <u>Operating Power</u> is comprised of <u>28V DC1</u> [Power] and/or <u>270V DC</u> [Power] or <u>115V AC 3 ph</u> [Power]. The CDS parameters inform the platform of the type of power to apply for <u>Operating Power</u>. Some mission stores have a limited allowable time for continuous <u>Operating Power</u> application to avoid overheating of internal components.

Platform Requirements

The platform shall **{ps_3004}** apply <u>CDS Operating Power</u> **{cds_3002}** to power up the mission store multiplex bus remote terminal and other electronic subsystems required to ready the mission store for identification.

The platform annex **{ann_3003}** documents platform handling procedures when <u>CDS Max Operating Power Time</u> **{cds_3001}** is exceeded.

Mission Store Requirements

The mission store shall **{ss_3005}** activate multiplex bus remote terminal and any internal subsystems required for initialization, conditioning, and release sequencing (as applicable) when <u>Operating Power</u> is applied.

The mission store supplement **{sup_3005}** documents its <u>Operating Power</u> requirements and any <u>Max Continuous Operating Power Time</u> on-time limitations.

3.5.1.2.2.2 Mission Store Communications Initialization

The mission store MIL-STD-1553 RT is initialized for operation and communication is established. Sections 6.01T Store Description [01T] and 6.22T Mission Monitor [22T] provide further information and requirements.

Mission Store Requirements

The mission store shall **{ss_3006}** either initialize Store Description [01T] and set MIL-STD-1553 Status Word Busy Bit to a logical "0" (not busy), or set the MIL-STD-1553 Status Word Busy Bit to a logical "1" (busy) within 150 msec of Operating Power application.

The mission store shall **{ss_3007}** set Store Description [01T] and set the MIL-STD-1553 Status Word Busy Bit to a logical "0" (not busy) within 500 msec of Operating Power application.

The mission store shall **{ss_3008}** provide an initial Store Description [01T] IAW Table 6.01T-1 consistent with the content of its legacy [01T] if the mission store supports a legacy interface in addition to UAI.

The mission store supplement **{sup_3006}** documents the content of the legacy Store Description [01T] if the store supports a legacy interface in addition to UAI.

3.5.1.2.2.3 Communication Ready & Interface Configuration

After completion of the mission store identification process, the system power up sequence is completed by the establishment of the UAI Interface configuration that is to be used for communication. Figure 3.5.1-2 steps 4 - 9 illustrate the completion of the power-up timeline and Table 3.5.1-3 describes the process.

Table 3.5.1-3 Mission Store Interface Configuration Process Completion

	PLATFORM	MISSION STORE
4 (cont.)		Within 500 msec of application of Operating Power mission store sets Mission Monitor [22T] according to it default interface configuration as follows: • If UAI interface configuration: Mission Monitor Header [22T/01 = 1025 (H)] with Platform ID Received [22T/05/02 = 0] (Reference Table 6.22T-1). • If non-UAI interface configuration: Mission Monitor Header [22T/01 ≠ 1025 (H)] (Reference Table 6.22T-1).

Table 3.5.1-3 Mission Store Interface Configuration Process Completion

	PLATFORM	MISSION STORE
5	If the platform has a CDS for the store reported Country Code [01T/02], Store ID Code [01T/03], and Store ID (ASCII) [01T/04-11], the Platform initiates establishment of the UAI Interface Configuration by sending Platform Description [01R] followed by monitoring for Mission Monitor Header [22T/01 = 1025 (H)]. Platform ignores the contents of Mission Monitor [22T] when Mission Monitor Header [22T/01 ≠ 1025 (H)]. When Mission Monitor Header [22T/01 = 1025 (H)] then the platform can monitor for Platform ID Received [22T/05/02 = 1]. The sending of Platform Description [01R] and monitoring of Mission Monitor Header [22T/01 = 1025 (H)] with Platform ID Received [22T/05/02] can be done periodically until the mission store responds with Platform ID Received [22T/05/02 = 1] or the platform could wait until CDS Ready to Communicate Time to send Platform Description [01R] and begin monitoring for its receipt.	
6		Mission store is ready to communicate within the Ready to Communicate Time. The mission store indicates "Ready to Communicate" status by responding to Platform Description [01R] as follows: Mission Monitor Header [22T/01 = 1025 (H)] Platform ID Received [22T/05/02 = 1] Power Interruption [22T/02/14 = 1] Sets Valid Subsystem Configuration Data in Mission Monitor [22T] message Sets good Subsystem BIT status unless a subsystem failure is detected Updates Store Description [01T] with the UAI Configuration ID [01T/29/04…15], Country Code [01T/02], the SJICWG assigned Store ID Code [01T/03], the SJICWG approved Store ID (ASCII) [01T/04-11] and any other updates required.

Table 3.5.1-3 Mission Store Interface Configuration Process Completion

	PLATFORM	MISSION STORE
7	Requests Mission Monitor [22T] and Store Description [01T] to obtain updated mission store and subsystem configuration information. Verifies mission store "Ready to Communicate" status (Mission Monitor Header [22T/01 = 1025 (H)] and Platform ID Received [22T/05/02 = 1]), finalizes its UAI Interface Configuration in accordance with UAI Configuration ID [01T/29/04…15] and commands Reset Power Dropout [22R/05/04 = 1]. Platform is now able to select a CDS configuration for the mission store. Platform can provide 28V DC1 On Time [22R/07].	
8		Resets Power Interruption [22T/02/14 = 0].
9		Conditioning Complete [22T/02/08 = 1] within the Post-Operating Pwr Store Conditioning Time as an indication that mission store subsystems are conditioned and mission store is ready to perform IBIT. Mission Monitor [22T] is updated with subsystem PBIT status in BIT Report [22T/10] and the roll-up of the subsystem PBIT status into Critical HW Passed [22T/02/01] and Last BIT Passed [22T/02/07].

Although mission stores are required to set the MIL-STD-1553 Status Word Busy Bit to a logical "0" (not busy) within 500 msec of Operating Power application, communication with the platform can be limited to "canned" transmit data ("T" data) until the mission store mission computer is ready to assume control of the communication with the platform.

With the mission store mission computer in control of communication responses to the platform, Interface Configuration can be established by the exchange of identification messages between the platform and mission store. This function is especially critical for mission stores that support a non-UAI (legacy) platform/store interface in addition to UAI. Following initial application of Operating Power, a mission store that supports multiple interfaces can initialize the Mission Monitor [22T] buffer according to non-UAI Interface Configuration.

The establishment of the Interface Configuration becomes more complicated as future versions of UAI are established to add new capabilities. It is then necessary for the platform and mission store to negotiate which version of the UAI interface is to be used.

To support the interface initialization process, the platform requests the initial Store Description [01T] from the mission store to determine mission store identity, after busy

bit is reset by the mission store following application of Operating Power to the mission store.

    a. Mission stores that either do not support the UAI interface or support both the UAI Interface and a "legacy" platform/store interface (bilingual) report a "legacy" Store Description [01T] by setting the mission store UAI Configuration ID [01T/29/04…15 = 000 (H)].

    b. Mission stores that support only the UAI interface report a UAI Store Description [01T] setting the mission store initial UAI Configuration ID [01T/29/04…15] to the UAI version the store supports. This may reflect a prior version that is superseded in the [01T] update after receipt of Platform Description [01R].

The platform either periodically transmits Platform Description [01R] with UAI Configuration ID [01R/29/04…15] set to the UAI version the platform supports, until the mission store reports Platform ID Received [22T/05/02 =1], or waits until CDS Ready to Communicate Time **{cds_3003}** has elapsed to transmit Platform Description [01R].

Following receipt of Platform Description [01R] and within CDS Ready to Communicate Time **{cds_3003}**, the mission store performs the following:

    a. Configures its interface to a UAI version less than or equal to UAI Configuration ID [01T/29/04…15],

    b. Updates the contents of Store Description [01T] and Mission Monitor [22T] to accurately reflect the configuration (i.e., subsystems, UAI version) of the mission store, and

    c. Sets Platform ID Received [22T/05/02 = 1] and Mission Monitor Header [22T/01 = 1025 (H)] to indicate that it is a UAI compatible store and is ready to respond to platform commands.

The platform requests Store Description [01T] from the mission store to determine the UAI version to use with the mission store. The platform then configures its interface to the same UAI version reported by the store. For example:

    a. If the platform UAI Configuration ID [01R/29/04…15 = A03 (H)] and the mission store UAI Configuration ID [01T/29/04…15 = A02 (H)], then the platform reconfigures itself to use the UAI A02 (H) interface.

    b. If the platform UAI Configuration ID [01R/29/04…15 = A02 (H)] and the mission store UAI Configuration ID [01T/29/04…15 = A03 (H)], then the mission store reconfigures itself to use the UAI A02 (H) interface and sets UAI Configuration ID [01T/29/04…15 = A02 (H)].

The platform is now able to select the CDS configuration using accurate information from the Store Description [01T] and Mission Monitor [22T] to support the fully identified mission store configuration including installed subsystems.

Sections 6.01T Store Description [01T] and 6.01R Platform Description [01R] provide further information and requirements.

Platform Requirements

The platform shall **{ps_3006}** send <u>Platform Description</u> [01R] as the first receive data (platform to store) message, after <u>Operating Power</u> application, to:

    a. Support a determination of when the store is ready to communicate.

    b. Establish the UAI protocol / <u>UAI Configuration ID</u> [01R/29] for platform / store communication.

The platform may **{pm_3003}** continue to send <u>Platform Description</u> [01R] at the rate defined in the platform annex **{ann_3004}** until <u>Platform ID Received</u> [22T/05/02 = 1].

The platform shall **{ps_3007}** verify <u>Mission Monitor Header</u> [22T/01 = 1025 (H)] and <u>Platform ID Received</u> [22T/05/02 = 1] prior to processing any transmit data (mission store to platform) with exception of <u>Store Description</u> [01T].

The platform shall **{ps_3008}** wait to transfer all required initialization data to the mission store until after the mission store reports <u>Mission Monitor Header</u> [22T/01 = 1025 (H)] and <u>Platform ID Received</u> [22T/05/02 = 1].

The platform may **{pm_3004}** send Receive [##R] messages to the mission store while the mission store is reporting <u>Platform ID Received</u> [22T/05/02 = 0], however, the mission store is not required to process, respond, or provide updated mission store status data until <u>Platform ID Received</u> [22T/05/02 = 1].

The platform may **{pm_3005}** perform fault processing if <u>Mission Monitor Header</u> [22T/01 ≠ 1025 (H)] or <u>Platform ID Received</u> [22T/05/02 = 0] in response to a <u>Platform Description</u> [01R] that is transmitted after <u>CDS Ready to Communicate Time</u> **{cds_3003}** following application of <u>Operating Power</u>.

The platform shall **{ps_3009}** request <u>Store Description</u> [01T] to determine mission store UAI compatibility and adjust the platform interface to a UAI version compatible with the mission store if the mission store version is an earlier version of UAI interface than the platform's, after the mission store reports <u>Platform ID Received</u> [22T/05/02 = 1].

The platform shall **{ps_3157}** use the following to configure the appropriate mission store interface and select a final CDS configuration after the mission store reports <u>Platform ID Received</u> [22T/05/02 = 1]:

    1. <u>Store Description</u> [01T]:

        a. <u>Country Code</u> [01T/02]

        b. <u>Store ID Code</u> [01T/03]

        c. <u>Store ID (ASCII)</u> [01T/04-11]

        d. <u>UAI Configuration ID</u> [01T/29/04…15]

    2. <u>Mission Monitor</u> [22T]:

        a. <u>Store Status 1-4</u> [22T/02-05] for installed subsystems

1. FTS Onboard [22T/02/10]

2. Telemetry Onboard [22T/02/11]

3. PF Onboard [22T/02/12]

4. Jammer Onboard [22T/05/07]

5. Programmable Retard Device Onboard [22T/05/10]

6. WDL Onboard [22T/05/11]

7. Data Recorder Onboard [22T/05/12]

8. GPS Capable [22T/05/13]

9. Anti-Jam Capable [22T/05/14]

10. Seeker Onboard [22T/05/15]

b. Programmable Fuze ID [22T/08] if PF Onboard [22T/02/12 = 1]

c. Seeker/Sensor ID [22T/09] if Seeker Onboard [22T/05/15 = 1]

d. GPS Configuration [22T/16/00…02] if GPS Capable [22T/05/13 = 1]

e. Weapon Data Link ID [22T/18] if WDL Onboard [22T/05/11 = 1]

Mission Store Requirements

The mission store shall **{ss_3082}** initialize Mission Monitor [22T] IAW Table 6.22T-1 prior to setting MIL-STD-1553 Status Word Busy Bit to a logical "0" (not busy) after Operating Power application.

The mission store shall **{ss_3010}** be ready to communicate within Ready to Communicate Time as characterized by the following:

a. The mission store is capable of receiving and processing platform commands and data in the Receive [##R] message(s) as defined in this ICD.

b. The mission store is capable of responding with current mission store status data in the Transmit [##T] messages as defined in this ICD.

The mission store shall **{ss_3011}** report its ready to communicate status following receipt of Platform Description [01R] by reporting the following status:

a. Mission Monitor Header [22T/01 = 1025 (H)]

b. Platform ID Received [22T/05/02 = 1]

c. Power Interruption [22T/02/14 = 1]

d. Mission Monitor [22T] updated with valid subsystem configuration data:

1. FTS Onboard [22T/02/10]

2. Telemetry Onboard [22T/02/11]

3. PF Onboard [22T/02/12]

4. Jammer Onboard [22T/05/07]

     5. <u>WDL Onboard</u> [22T/05/11]

     6. <u>Data Recorder Onboard</u> [22T/05/12]

     7. <u>GPS Capable</u> [22T/05/13]

     8. <u>Anti-Jam Capable</u> [22T/05/14]

     9. <u>Seeker Onboard</u> [22T/05/15]

    10.<u>Programmable Fuze ID</u> [22T/08]

    11.<u>Seeker/Sensor ID</u> [22T/09]

    12.<u>Weapon Data Link ID</u> [22T/18]

    13.<u>GPS Configuration</u> [22T/16/00…02]

  e. <u>Mission Monitor</u> [22T] updated with Subsystem BIT status

     1. <u>Critical HW Passed</u> [22T/02/01 = 1] unless a critical subsystem failure is detected

     2. <u>Last BIT Passed</u> [22T/02/07 = 1] unless a subsystem failure is detected

     3. <u>BIT Report</u> [22T/10 = FFFF (H)] unless a subsystem failure is detected

  f. <u>Store Description</u> [01T] updated with

     1. <u>Country Code</u> [01T/02]

     2. <u>Store ID Code</u> [01T/03]

     3. <u>Store ID (ASCII)</u> [01T/04-11]

     4. <u>UAI Configuration ID</u> [01T/29/04…15] compatible with the platform.

The mission store shall **{ss_3013}** configure required platform/station dependent functions based on:

  a. <u>Platform Identity</u> [01R/05-12]

  b. <u>Pylon/Bay ID</u> [01R/13/08…15]

  c. <u>Station ID</u> [01R/13/00…07]

  d. <u>UAI Configuration ID</u> [01T/29]

The mission store supplement **{sup_3007}** documents the platform/station dependent functions it performs using:

  a. <u>Platform Identity</u> [01R/05-12]

  b. <u>Pylon/Bay ID</u> [01R/13/08…15]

  c. <u>Station ID</u> [01R/13/00…07]

  d. <u>UAI Configuration ID</u> [01T/29]

The mission store supplement **{sup_3008}** documents its <u>Ready to Communicate Time</u>.

3.5.2 Conditioning Complete

Some store systems require additional time after the store is ready to communicate to complete conditioning to be able to support full operations and built in test functions. The system store power-up timeline as shown in Figure 3.5.1-2 concludes with the store reporting Conditioning Complete [22T/02/08 = 1], thereby indicating the following store status:

1) Store subsystems have reached a stable operating condition.

2) Store is ready to perform an IBIT if it is IBIT capable.

Platform Requirements

The platform may **{pm_3006}** perform fault processing if Conditioning Complete [22T/02/08 = 0] after exceeding CDS Post-Operating Pwr Store Conditioning Time **{cds_3004}** if Conditioning Power is applied prior to Operating Power in accordance with CDS Pre-Operating Pwr Store Conditioning Time **{cds_3005}**.

The platform may **{pm_3007}** perform fault processing if Conditioning Complete [22T/02/08 = 0] after exceeding the sum total time of CDS Pre-Operating Pwr Store Conditioning Time **{cds_3005}** plus CDS Post-Operating Pwr Store Conditioning Time **{cds_3004}** if Conditioning Power is applied in conjunction with Operating Power.

Mission Store Requirements

The mission store shall **{ss_3014}** set Conditioning Complete [22T/02/08 = 1] when the store subsystems have reached a stable operating condition and the store is ready to perform an IBIT if the store is IBIT capable.

3.5.3 Store Over Temperature Caution/Warning

Some mission stores set Over Temp Caution [22T/05/04 = 1] to indicate component damage/failure or mission compromise due to overheating if not released within 10 minutes, powered down, or cooled down by the platform.

Some mission stores set Over Temp Warning [22T/05/05 = 1] to indicate component damage/failure or mission compromise due to overheating if not released within one minute, powered down, or cooled down by the platform.

If the mission store indicates Over Temp Caution [22T/05/04 = 1] or Over Temp Warning [22T/05/05 = 1], the platform proceeds based on platform specific over temperature condition handling procedures. If the platform does not remove Conditioning Power and Operating Power from the mission store, store damage and/or failure or mission compromise could occur. After a store-dependent cool down time, the platform can re-apply Operating Power. Section 6.22T Mission Monitor [22T] provides further information and requirements.

Platform Requirements

The platform shall **{ps_3144}** delay reapplication of Operating Power to the mission store until after a minimum of CDS Cool Down Period **{cds_3006}**.

3.5.4 Power Interrupt Recovery

Power interrupt recovery allows the platform to detect when a mission store experiences an unintentional loss of Operating Power and take appropriate action in re-initializing the mission store. Following a normal system power up sequence as depicted in Figure 3.5.1-2, power interrupt recovery is enabled by the platform commanding Reset Power Dropout [22R/05/04 = 1] followed by periodic monitoring of Mission Monitor [22T]. The mission store powers-up in the UAI or non-UAI interface configuration IAW Table 6.22T-1 following restoration of Operating Power after an unintentional momentary loss. Sections 6.22R Mission Control [22R] and 6.22T Mission Monitor [22T] provide further information and requirements. Section 3.8.2.10 provides further information and requirements for power interruption recovery of a carriage system and a mission store on a carriage system.

The power interrupt recovery timeline for an unintentional momentary loss of Operating Power to the mission store is depicted in Figure 3.5.4-1. A description of the functional sequence shown in Figure 3.5.4-1 is provided in Table 3.5.4-1.
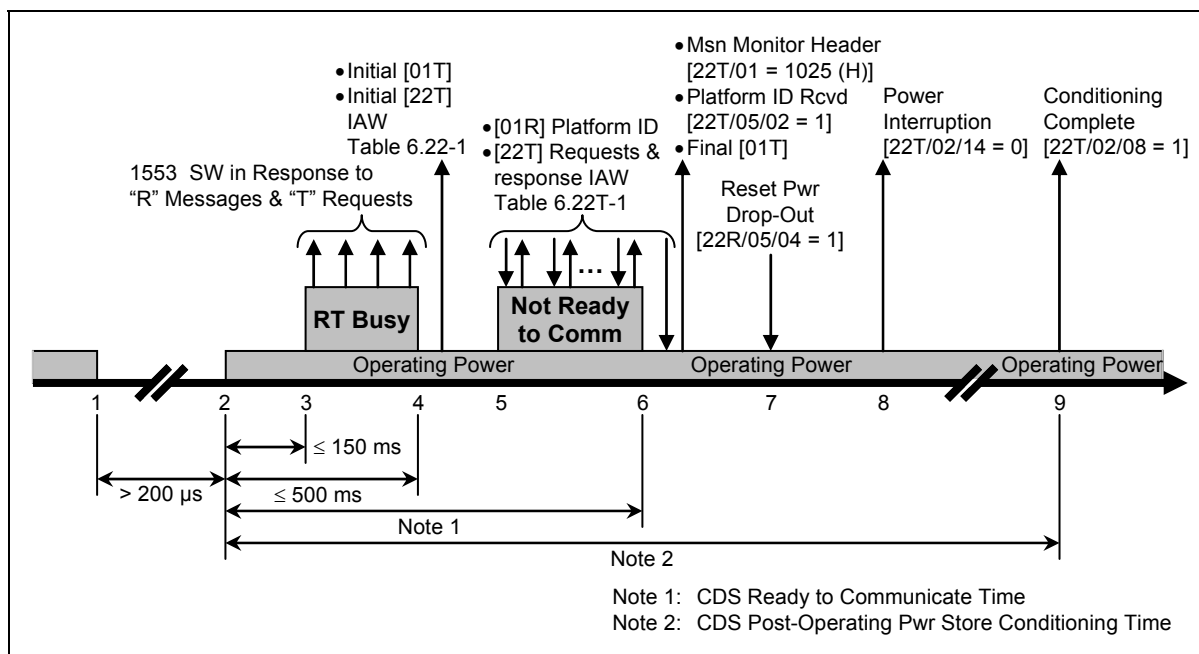
Figure 3.5.4-1 Mission Store Power Interrupt Recovery Timeline

Table 3.5.4-1 Mission Store Power Interrupt Recovery Functional Sequence

	PLATFORM	MISSION STORE
1	Operating Power dropout for > 200 μsec	
2	Operating Power restored.	

Table 3.5.4-1 Mission Store Power Interrupt Recovery Functional Sequence

	PLATFORM	MISSION STORE
3		Mission store RT provides its first response as defined by MIL-STD-1760 paragraph 5.2.12.4 if requested by platform within 150 msec of Operating Power being restored.
4		Mission store sets MIL-STD-1553 RT status word busy bit to "unbusy" within 500 msec of application of Operating Power and: • If UAI interface configuration set Mission Monitor Header [22T/01 = 1025 (H)], Power Interruption [22T/02/14 = 1], Platform ID Received [22T/05/02 = 0] and Store Description [01T] to initial values (Reference Table 6.01T-1 and Table 6.22T-1). • If non-UAI interface configuration: set Mission Monitor Header [22T/01] = CDS Legacy 22T Header, and Store Description [01T] to initial values (Reference Table 6.01T-1 and Table 6.22T-1).
5	Platform detects mission store momentary loss of Operating Power when Mission Monitor Header [22T/01 = 1025 (H)] and Power Interruption [22T/02/14 = 1] or Mission Monitor Header [22T/01] = CDS Legacy 22T Header and initiates power interrupt recovery by sending Platform Description [01R] followed by monitoring for Mission Monitor Header [22T/01 = 1025 (H)] with Platform ID Received [22T/05/02 = 1]. The sending of Platform ID and monitoring of Platform ID Received can be done periodically until the mission store responds with Platform ID Received [22T/05/02 = 1].	
6		Mission store is ready to communicate within the Ready to Communicate Time. The mission store indicates "Ready to Communicate" status by responding to Platform Description [01R] as follows: Mission Monitor Header [22T/01 = 1025 (H)] Platform ID Received [22T/05/02 = 1] Power Interruption [22T/02/14 = 1] Sets Valid Subsystem Configuration Data in Mission Monitor [22T] message Sets good Subsystem BIT status unless a subsystem failure is detected Updates Store Description [01T] with UAI Configuration ID [01T/29/04…15]

Table 3.5.4-1 Mission Store Power Interrupt Recovery Functional Sequence

	PLATFORM	MISSION STORE
7	Verifies store "Ready to Communicate" status (Mission Monitor Header [22T/01 = 1025 (H)] and Platform ID Received [22T/05/02 = 1]), finalizes its UAI Interface Configuration in accordance with UAI Configuration ID [01T/29/04…15] and commands Reset Power Dropout [22R/05/04 = 1]. Platform can provide 28V DC1 On Time [22R/07].	
8		Resets Power Interruption [22T/02/14 = 0].Same as step 8 in Table 3.5.1-3.
9		Conditioning Complete [22T/02/08 = 1] within the Post-Operating Pwr Store Conditioning Time, as an indication that mission store subsystems are conditioned and mission store is ready to perform IBIT. Mission Monitor [22T] is updated with subsystem PBIT status in BIT Report [22T/10] and the roll-up of the subsystem PBIT status into Critical HW Passed [22T/02/01] and Last BIT Passed [22T/02/07].

Platform Requirements

The platform may **{pm_3008}** attempt to re-establish communication with a mission store that becomes unresponsive due to an unintentional loss of Operating Power.

The platform may **{pm_3009}** attempt to re-establish communication with a mission store that responds to both "R" messages and "T" message requests with a busy MIL-STD-1553 remote terminal status while powering up from a momentary unintentional loss of Operating Power.

The platform shall **{ps_3010}** provide the Platform Description [01R] or remove and reapply Operating Power IAW section 3.5.1.2.2.1, in response to detecting either of the following conditions:

    a. Mission Monitor Header [22T/01 = 1025 (H)] and Power Interruption [22T/02/14 = 1] or

    b. Mission Monitor Header [22T/01] = CDS Legacy 22T Header **{cds_3036}**.

The platform may **{pm_3010}** continue to send Platform Description [01R] at the rate defined in the platform annex **{ann_3005}** until Mission Monitor Header [22T/01 = 1025 (H)] and Platform ID Received [22T/05/02 = 1].

The platform shall **{ps_3011}**, subsequent to transmitting a Platform Description [01R] in response to an unexpected power interruption, transfer all required reinitialization data to the mission store after the mission store reports Mission Monitor Header [22T/01 = 1025 (H)] and Platform ID Received [22T/05/02 = 1].

The platform may **{pm_3011}** perform fault processing if <u>Mission Monitor Header</u> [22T/01 = 1025 (H)] and <u>Platform ID Received</u> [22T/05/02 = 0] in response to a <u>Platform Description</u> [01R] that is transmitted after <u>CDS Ready to Communicate Time</u> **{cds_3003}** following a momentary unintentional loss of <u>Operating Power</u>.

The platform may **{pm_3012}** perform fault processing if <u>Conditioning Complete</u> [22T/02/08 = 0] after exceeding <u>CDS Post-Operating Pwr Store Conditioning Time</u> **{cds_3004}** following a momentary unintentional loss of <u>Operating Power</u>.

The platform may **{pm_3013}** provide <u>28V DC1 On Time</u> [22R/07] after the mission store recovers from an unintentional, momentary loss of <u>Operating Power</u> and reports <u>Mission Monitor Header</u> [22T/01 = 1025 (H)] and <u>Platform ID Received</u> [22T/05/02 = 1].

Mission Store Requirements

The mission store shall **{ss_3015}** be insensitive to <u>Operating Power</u> dropouts of less than or equal to 200 microseconds duration.

The mission store shall **{ss_3016}** initialize <u>Store Description</u> [01T] IAW Table 6.01T-1, <u>Mission Monitor</u> [22T] IAW Table 6.22T-1, and set MIL-STD-1553 Status Word Busy Bit Status to a logical "0" (not busy) or set the MIL-STD-1553 Status Word Busy Bit status to a logical "1" (busy) within 150 msec of <u>Operating Power</u> application.

The mission store shall **{ss_3017}** initialize <u>Store Description</u> [01T] IAW Table 6.01T-1, <u>Mission Monitor</u> [22T] IAW Table 6.22T-1, and set the MIL-STD-1553 Status Word Busy Bit Status to a logical "0" (not busy) within 500 msec of <u>Operating Power</u> application.

The mission store supplement **{sup_3010}** documents the effect on its re-initialization timeline (i.e. reduction) if <u>28V DC1 On Time</u> [22R/07] is provided following an unintentional power interrupt recovery.

The mission store supplement **{sup_3066}** documents:

   a. Whether <u>Mission Monitor</u> [22T] is initialized according to the UAI or non-UAI configuration specified in Table 6.22T-1 after application of power and <u>Platform ID Received</u> [22T/05/02 = 0].

   b. Legacy <u>Mission Monitor Header</u> [22T/01] value, if applicable.

3.5.5 Built-In Test (BIT)

The mission store provides a Built-In-Test (BIT) capability to assist the platform in determining store mission readiness. The mission store provides subsystem BIT results to the platform in <u>BIT Report</u> [22T/10].

3.5.5.1 Initiated Built-In-Test (IBIT)

The mission store Initiated BIT (IBIT) is conducted by the store in response to a command from the platform and consists of a comprehensive series of subcomponent tests designed to determine the ability of the mission store to perform its mission. If the

mission store detects an IBIT fault condition it updates the BIT status indications in
Mission Monitor [22T]. IBIT performance can interrupt previously initiated mission store
processes, such as transfer alignment or data loading.

The mission store IBIT timeline is depicted in Figure 3.5.5-1. The IBIT functional
sequence is described in Table 3.5.5-1. Sections 6.11R Store Control [11R], 6.11T
Store Monitor [11T], and 6.22T Mission Monitor [22T] provide further information and
requirements.
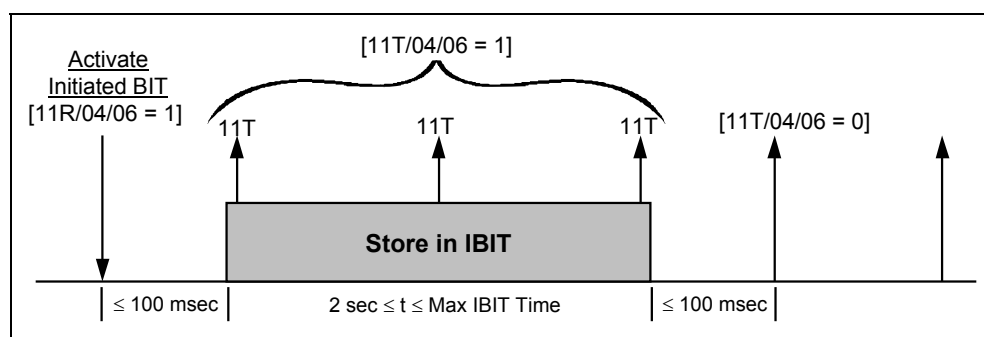
Figure 3.5.5-1 IBIT Timeline

Table 3.5.5-1 IBIT Functional Sequence

	PLATFORM	STORE
1	If store is CDS IBIT Capable, read CDS Max IBIT Time	
2		Conditioning Complete [22T/02/08 = 1]
3	Activate Initiated BIT [11R/04/06 = 1]	
4	Check for Store in Initiated BIT [11T/04/06 = 1] Can perform platform-specific fault processing if IBIT not in progress	Store in Initiated BIT [11T/04/06 = 1] Perform comprehensive BIT of internal subsystems
5	Monitor Store in Initiated BIT [11T/04/06] Can perform platform-specific fault handling procedures if time in IBIT exceeds CDS Max IBIT Time	IBIT complete Update BIT Report [22T/10] and Critical HW Passed [22T/02/01] and Last BIT Passed [22T/02/07] with current IBIT results Store in Initiated BIT [11T/04/06 = 0]
6	When Store in Initiated BIT [11T/04/06 = 0] Request Mission Monitor [22T] message Evaluate BIT Report [22T/10] indications Process any IBIT discrepancies in accordance with platform-specific fault handling procedures	

Platform Requirements

The platform may **{pm_3014}** command Activate Initiated BIT [11R/04/06 = 1] if
CDS IBIT Capable **{cds_3007}**, and the following:

a. Conditioning Complete [22T/02/08 = 1]

b. CTS [11R/04/02 = 0]

c. Erase Command/Authority [11R/06/00 = 0]

d. Store in Initiated BIT [11T/04/06 = 0]

e. Activate Non-Safety Critical Release Functions [11R/06/05 = 0]

The platform may **{pm_3015}** perform platform-specific fault handling procedures if time in IBIT exceeds CDS Max IBIT Time **{cds_3008}**.

Mission Store Requirements

The mission store supplement **{sup_3011}** documents:

a. Whether the store is IBIT capable.

b. Max IBIT Time if applicable.

c. The store IBIT process if applicable.

d. Store response to CTS [11R/04/02 = 1] while Store in Initiated BIT [11T/04/06 = 1].

e. Store response to Activate Non-Safety Critical Release Functions [11R/06/05 = 1] while Store in Initiated BIT [11T/04/06 = 1].

f. BIT Report [22T/10] mapping to store subsystems.

g. Identification of mission store critical hardware.

h. Store response to Erase Command/Authority [11R/06/00 = 1] while Store in Initiated BIT [11T/04/06 = 1].

The mission store shall **{ss_3018}** maintain the last BIT Report [22T/10], Critical HW Passed [22T/02/01], and Last BIT Passed [22T/02/07] indications that existed prior to entering IBIT during the execution of IBIT.

The mission store shall **{ss_3019}** complete all IBIT tests and update BIT Report [22T/10], Critical HW Passed [22T/02/01], and Last BIT Passed [22T/02/07] to reflect the current IBIT results prior to setting Store in Initiated BIT [11T/04/06 = 0].

The mission store shall **{ss_3020}** set Store in Initiated BIT [11T/04/06 = 1] within 100 milliseconds of receiving Activate Initiated BIT [11R/04/06 = 1] and delay the reset of Store in Initiated BIT [11T/04/06 = 0] for a minimum of 2.0 seconds after receipt of Activate Initiated BIT [11R/04/06 = 1].

The mission store shall **{ss_3021}** accept receive messages and provide transmit messages in accordance with MIL-STD-1553 protocol, but is not required to respond to commands with the following exceptions while IBIT is in progress:

a. Abort Release/Launch [11R/06/04 = 1].

b. Erase Command/Authority [11R/06/00 = 1].

Note: In other words, the mission store is required to provide a MIL-STD-1553 status word in response to all receive messages but may ignore all commands and data with the exceptions listed while IBIT is in progress.

The mission store shall **{ss_3022}** retain mission data that was downloaded from the platform prior to IBIT (i.e., not erase it during execution of IBIT).

The mission store shall **{ss_3096}** retain and process data received in a Store Control [11R] that initiates IBIT.

3.5.5.2 Periodic Built-In-Test (PBIT)

PBIT consists of non-interruptive tests that are performed automatically by the mission store on a periodic basis to continually assess its ability to carry out its mission. Results are made available for monitoring by the platform in returned status messages. Performing PBIT does not affect normal mission store operations. Sections 4.1.4 Digital Message Rates and 6.22T Mission Monitor [22T] provide further information and requirements.

Mission Store Requirements

The mission store supplement **{sup_3012}** documents:

a. PBIT execution rate.

b. The store PBIT process including a definition of what subsystems are tested and which subsystem PBIT checks are equivalent to IBIT checks.

c. BIT Report [22T/10] mapping to store subsystems.

d. Identification of critical hardware

The mission store shall **{ss_3023}** perform PBIT on store subsystems and components while Operating Power is applied.

3.5.6 Data Initialization

Data initialization begins after the mission store sets Platform ID Received [22T/05/02 = 1]. During data initialization, the platform provides transfer alignment data, and GPS data to initialize the store navigation system. The platform sends the following initialization data to the store:

- Time Synchronization

- INS Initialization data

- GPS Initialization data

- Other store required initialization data (as applicable).

The mission store processes this information and sets appropriate data received status indications in the Mission Monitor [22T] message provided to the platform. A notional data initialization timeline is provided in Figure 3.5.6-1.
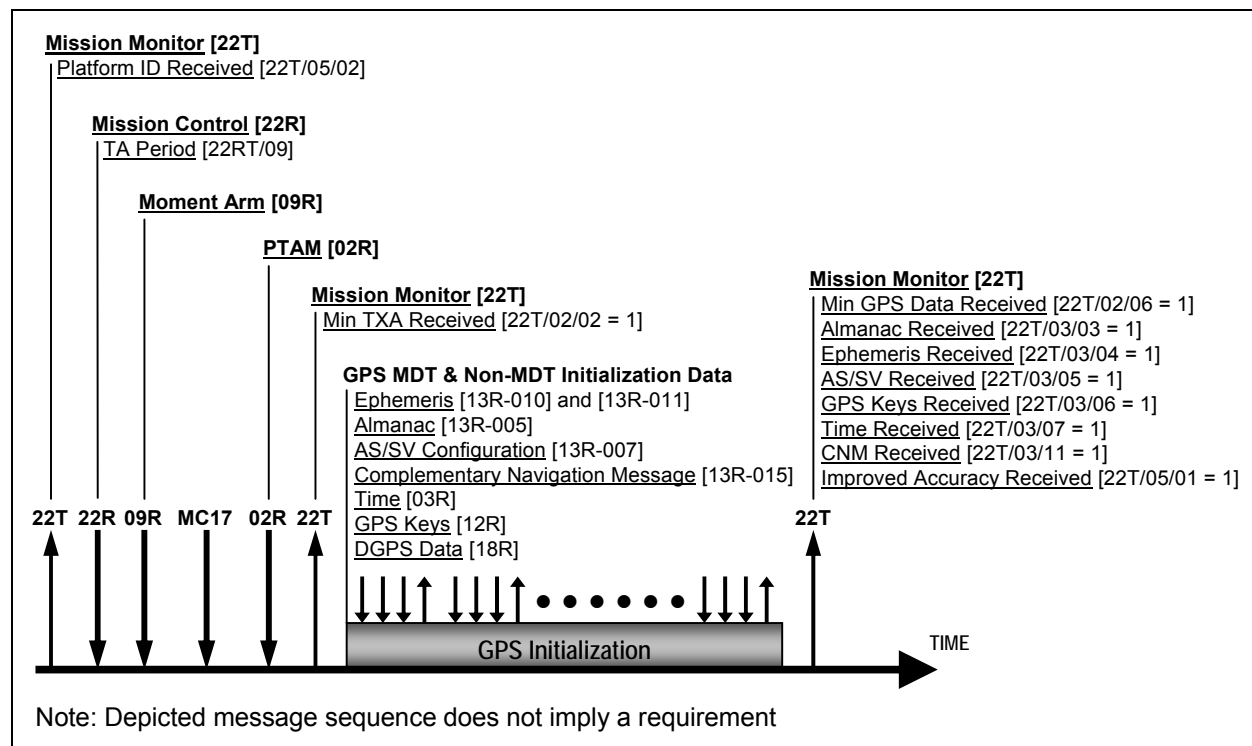
Figure 3.5.6-1 Notional Data Initialization Timeline

3.5.6.1 INS Initialization

INS initialization provides for the exchange of data between the platform and mission store required to initialize the store for a subsequent inertial transfer alignment process.

3.5.6.1.1 Functional Sequence

The INS Initialization functional sequence is illustrated in Table 3.5.6-1. Sections 6.02R Periodic Transfer Alignment Message (PTAM) [02R], 6.09R Moment Arm [09R], 6.22R Mission Control [22R], 6.22T Mission Monitor [22T] and 6.MC17R Synchronize With Data Word [MC17R] provide further information and requirements.

Table 3.5.6-1 INS Initialization Functional Sequence

	PLATFORM	MISSION STORE
	Application of Operating Power	
		Set state of transfer alignment related status bits in Mission Monitor [22T] message to initial values upon setting Platform ID Received [22T/05/02 = 1].

Table 3.5.6-1 INS Initialization Functional Sequence

PLATFORM	MISSION STORE
After detecting <u>Platform ID Received</u> [22T/05/02 = 1]: - Transmit <u>TA Period</u> [22R/09]. - Initiate periodic transmission of <u>Synchronize With Data Word</u> [MC17R] message (if time tag method of time stamping is used) - Transmit <u>Moment Arm</u> [09R]. - Initiate transmission of <u>PTAM</u> [02R] and <u>RTAM</u> [05R] messages after <u>CDS IMU Stabilization Time</u> Note: Message order immaterial.	Read <u>TA Period</u> [22R/09]. Synchronize Store Clock to Platform Clock (if time tag method of time stamping is used). Process <u>Moment Arm</u> [09R] to obtain initial moment arm distances and offset angles of mission store location relative to platform inertial reference frame. Initialize navigation solution with first <u>PTAM</u> [02R] after <u>IMU Stabilization Time</u> complete and set <u>Min TXA Received</u> [22T/02/02 = 1]
Perform fault process if <u>Min TXA Received</u> [22T/02/02 = 0] after transmission of the 1st valid <u>PTAM</u> following expiration of <u>CDS IMU Stabilization Time</u>	

Platform Requirements

The platform shall **{ps_3012}** transmit the following messages to initialize the mission store INS after <u>CDS IMU Stabilization Time</u> **{cds_3009}** has elapsed following <u>Operating Power</u> application:

   a. <u>Mission Control</u> [22R] with <u>TA Period</u> [22R/09].

   b. <u>Moment Arm</u> [09R] with moment arm offset distances and offset angles.

   c. <u>Synchronize With Data Word</u> [MC17R] if time tag method of time stamping is used.

   d. <u>PTAM</u> [02R] messages following <u>CDS IMU Stabilization Time</u> **{cds_3009}**.

Mission Store Requirements

The mission store shall **{ss_3024}** set the initial state of inertial transfer alignment related status bits in the <u>Mission Monitor</u> [22T] as specified in Table 3.5.6-2 upon initial application of <u>Operating Power</u> and setting of <u>Platform ID Received</u> [22T/05/02 = 1].

Table 3.5.6-2 Store Inertial Transfer Alignment Status Initialization

Description	Initial Value	Comments
<u>Min TXA Received</u> [22T/02/02]	0 (B)	<u>IMU Stabilization Time</u> NOT expired, <u>Moment Arm</u> [09R], <u>TA Period</u> [22R/09], and/or <u>PTAM</u> [02R] NOT received.
<u>TXA Good</u> [22T/02/05]	0 (B)	Transfer Alignment not complete.

Table 3.5.6-2 Store Inertial Transfer Alignment Status Initialization

Description	Initial Value	Comments
TXA Quality [22T/04/03…06]	1010 (B)	Transfer Alignment Quality: Decimal Binary Quality 1 0001 (B) Good 10 1010 (B) Bad
Nav Solution Quality [22T/04/13…14]	00 (B)	Navigation Solution is Unsatisfactory

Note:

1. Section 6.22T Mission Monitor [22T] provides additional information and requirements.

The mission store shall **{ss_3025}** process the Mission Control [22R] message to obtain the platform TA Period [22R/09] if used.

The mission store shall **{ss_3026}** process the Moment Arm [09R] message to obtain moment arm offset distances and offset angles of the store.

The mission store shall **{ss_3027}** synchronize its clock with the platform clock for subsequent transfer alignment processing using the Synchronize With Data Word [MC17R].

The mission store supplement **{sup_3013}** documents the time that is required following application of Operating Power that must be allowed for IMU Stabilization Time before the mission store is capable of initializing its navigation solution, report Min TXA Received [22T/02/02 = 1] and begin the transfer alignment process.

The mission store supplement **{sup_3014}** documents the relationship of the values in TXA Quality [22T/04/03…06] and Nav Solution Quality [22T/04/13…14] to mission capability of the store.

3.5.6.2 GPS Initialization

GPS initialization transfers platform GPS subsystem independent data sets to GPS capable stores to support subsequent acquisition of GPS satellite signals by the store. Section 6.22T Mission Monitor [22T] provides further information and requirements.

Mission Store Requirements

The mission store supplement **{sup_3067}** documents whether the store is GPS capable.

3.5.6.2.1 GPS Time

GPS time data is provided in the time stamped Time [03R] message. The mission store derives GPS system time from the Time [03R] data and uses it to facilitate GPS acquisition and validation of other GPS data. Sections 6.MC17R Synchronize With Data Word [MC17R] and 6.03R Time [03R] provide further information and requirements.

Platform Requirements

The platform shall **{ps_3131}** transmit <u>Time</u> [03R] to the mission store if <u>GPS Capable</u> [22T/05/13 = 1].

The platform shall **{ps_3132}** verify <u>Time Received</u> [22T/03/07 = 1] prior to transmitting other GPS data to the store.

3.5.6.2.2 Ephemeris Data

Ephemeris data for GPS satellite constellation is provided to the GPS capable mission store prior to store release. Ephemeris data is used by the store to acquire the GPS constellation for navigation. Ephemeris data is passed to the store via MDT. The platform provides GPS satellite <u>Ephemeris #1</u> [13R-010] and <u>Ephemeris #2</u> [13R-011] MDT data to the store at least once per mission. However, it is recommended that the platform provide <u>Ephemeris #1</u> and <u>Ephemeris #2</u> to the store periodically or whenever new ephemeris is available. Sections 6.13R-010 <u>Ephemeris #1</u> [13R-010] and 6.13R-011 <u>Ephemeris #2</u> [13R-011] provide further information and requirements.

Platform Requirements

The platform shall **{ps_3013}** send at least one set of <u>Ephemeris #1</u> [13R-010] and <u>Ephemeris #2</u> [13R-011] data in the time window of 15 minutes to 15 seconds prior to setting <u>CTS</u> [11R/04/02 = 1] if <u>GPS Capable</u> [22T/05/13 = 1].

Mission Store Requirements

The mission store may **{sm_3001}** ignore ephemeris data received within 15 seconds prior to receipt of a valid <u>CTS</u> [11R/04/02 = 1].

The mission store supplement **{sup_3015}** documents if the store requires <u>Ephemeris #1</u> [13R-010] and <u>Ephemeris #2</u> [13R-011] data and if so, what the age limit is for the data to be considered valid.

3.5.6.2.3 Almanac Data

Almanac data for the GPS satellite constellation is provided to the GPS capable mission store prior to store release. Almanac data is used by the store to acquire the GPS constellation for navigation. Almanac data is passed to the store via MDT. GPS satellite almanac data defines the approximate satellite orbit and can be valid for long time periods (up to 180 days). However, most stores consider a satellite's almanac data to be valid only if it is less than two (2) weeks old. Section 6.13R-005 <u>Almanac</u> [13R-005] provides further information and requirements.

Platform Requirements

The platform shall **{ps_3014}** send at least one <u>Almanac</u> [13R-005] in the time window from <u>Platform ID Received</u> [22T/05/02 = 1] to 15 seconds prior to setting <u>CTS</u> [11R/04/02 = 1], if <u>GPS Capable</u> [22T/05/13 = 1].

Mission Store Requirements

The mission store may **{sm_3002}** ignore almanac data received within 15 seconds prior to receipt of a valid CTS [11R/04/02 = 1].

The mission store supplement **{sup_3016}** documents if the store requires Almanac [13R-005] data and if so, what the age limit is for the data to be considered valid.

3.5.6.2.4 GPS Crypto Data

GPS Crypto Data [12R] is provided to the mission store during data initialization to allow the store to key its GPS receiver. Section 6.12R GPS Crypto Data [12R] provides further information and requirements.

Platform Requirements

The platform shall **{ps_3133}** verify the following GPS data has been transmitted, to the mission store prior to transmitting GPS Crypto Data [12R].

    a. Ephemeris [13R-010] and [13R-011], if available.

    b. Almanac [13R-005].

    c. Complementary Navigation Message (CNM) [13R-015], if supported.

3.5.6.2.5 Differential Global Positioning System (DGPS) Data

A platform capable of receiving DGPS data passes it on to a DGPS Capable mission store. The DGPS Capable mission store uses this data to improve its GPS-aided navigation during post-release fly-out. Section 6.18R DGPS Data [18R] provides further information and requirements.

Platform Requirements

The platform shall **{ps_3015}** transmit available DGPS Data [18R] including updates to the CDS DGPS Capable **{cds_3010}** mission store between Platform ID Received [22T/05/02 = 1] and CTS [11R/04/02 = 1] if the platform is capable of providing DGPS data.

The platform annex **{ann_3006}** documents whether the platform is capable of receiving DGPS data and providing it to the mission store.

Mission Store Requirements

The mission store shall **{ss_3029}** accept DGPS Data [18R] for up to 14 SVs if it is DGPS Capable.

The mission store supplement **{sup_3068}** documents whether the store is DGPS Capable and if so, the age limit for valid data.

3.5.6.2.6 AS Status/SV Configuration

AS Status/SV Configuration [13R-007] data for the GPS satellite constellation is provided to the mission store at least once per mission, when it is available. AS

Status/SV Configuration is passed to the store via MDT. Section 6.13R-007 AS Status/SV Configuration [13R-007] provides further information and requirements.

3.5.6.2.7 GPS RF

In order for mission stores to accurately utilize the platform provided GPS RF, the platform must provide the lever arms (via Moment Arm [09R]) from the platform GPS antenna centroid to the store station and the RF Delay from the platform antenna to the store station. In addition, if the store is carried on a carriage system, the lever arms and RF Delay must be corrected by the carriage system for the offsets induced by the carriage system.

GPS RF routing is not a UAI requirement for platforms, carriage systems, or stores.

The platform HB1 GPS RF capabilities are documented in the electrical interface section of the platform UAI PSICD annex.

Stores that track GPS satellites prior to release develop a more accurate estimate of GPS time allowing a direct Y-Code acquisition and are inherently more jam resistant during the critical post release GPS signal acquisitions. Some platform locations shield the stores GPS antenna from clear views of the satellites. Therefore some platforms route GPS RF to GPS stores via MIL-STD-1760 High Bandwidth 1 (HB1). UAI stores with GPS receivers can receive GPS RF from the platform and route it to the store's GPS receiver to allow the store to track GPS satellites prior to release. Mission stores report GPS acquisition in Satellites in Track [22T/04/00].

Note: Even when the mission store is carried on an external platform station and its GPS antenna has an unobstructed view of at least a portion of the sky, GPS signal multipath due to GPS signal reflection(s) need to be considered.

The use of GPS RF does not change the procedure for initializing GPS Time, as described in 3.5.6.2.1. When the platform provides GPS RF, it also provides GPS Ant Lever Arms [09R/09-11], GPS RF Delay [09R/12], and GPS RF on HB1 [22R/05/01 = 1]. Section 6.09R Moment Arm [09R], Section 6.22R Mission Control [22R], and 6.22T Mission Monitor [22T] provide further information and requirements. Requirements for controlling carriage system routing of mission store HB1 are contained in section 6.10R Carriage System Control [10R].

Platform Requirements

The platform shall **{ps_3017}** route HB1 GPS RF from the platform GPS Antenna System to the selected store(s), if CDS HB1 GPS RF Available **{cds_3011}**, and the platform has the capability of routing HB1 GPS RF to the store station.

The platform shall **{ps_3018}** set HB1 Select [10R/04-11/05 = 1] to command the carriage system to route high bandwidth signal(s) to the selected mission store(s) if the CDS HB1 GPS RF Available **{cds_3011}** (store) and if CDS CS High Band 1-4 Available **{cds_3012}** (carriage system).

The platform annex **{ann_3007}** documents the ability of the platform to route GPS RF to its store stations from its platform GPS antenna and the signal characteristics at the bottom of the umbilical.

Mission Store Requirements

The mission store supplement **{sup_3017}** defines the HB1 GPS RF signal characteristics required by the mission store for effective GPS satellite tracking if the store has the capability to use platform provided GPS RF.

3.5.6.2.8 Complementary Navigation Message

Complementary Navigation Message (CNM) [13R-015] data is provided to the store during data initialization. CNM is passed to the store via MDT. Section 6.13R-015 Complementary Navigation Message (CNM) [13R-015] provides further information and requirements.

3.5.7 Environmental Data

Environmental Data [15R] is used by the mission store to aid in the estimation of atmospheric parameters along the expected flight path both before and after release. The Environmental Data [15R] consists of the current atmospheric parameters being measured or estimated by the platform. Section 6.15R Environmental Data [15R], 6.22R Mission Control [22R] and 6.22T Mission Monitor [22T] provides further information and requirements.

3.5.8 Mission Data Initialization & Selection

A Mission Data Set (MDS) consists of an entire set of data that applies to a single mission (e.g. target, fuze, waypoint, etc.). An MDS can be preplanned through the use of mission planning capabilities or created real time using a platform on-board targeting system. Mission Data can be transferred from the platform to the mission store via MDT or Non-MDT.

Preplanned MDS can be downloaded from the platform to a store via MDT. An MDT Mission Download & Selection Timeline is illustrated in Figure 3.5.8-1.
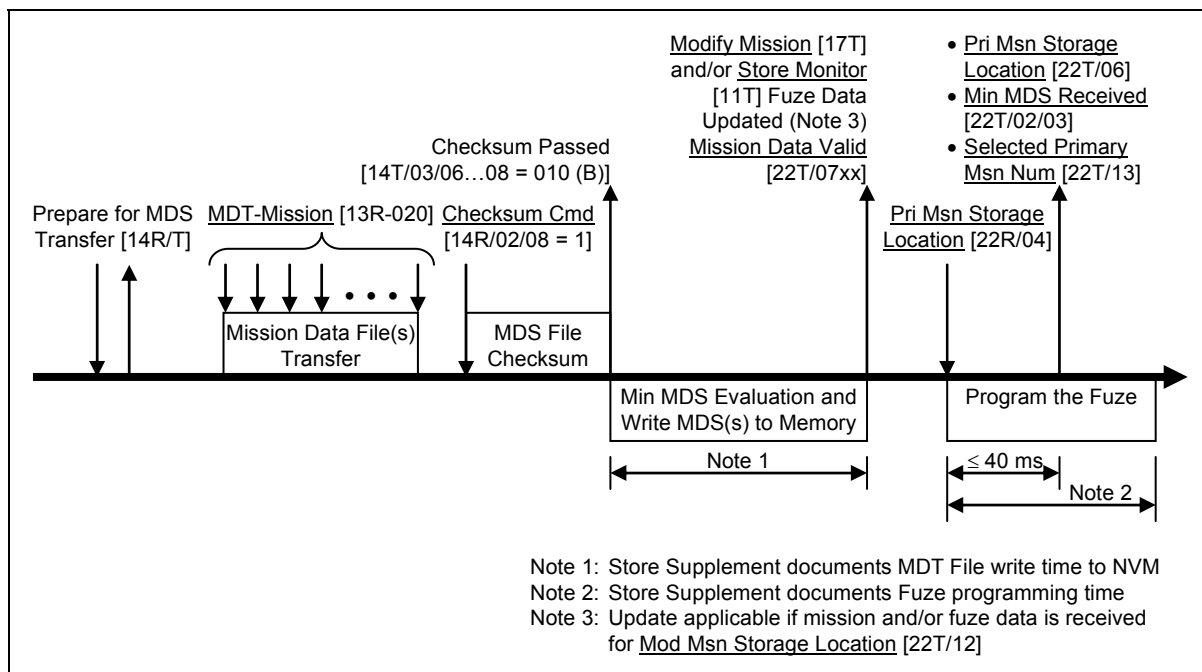
Figure 3.5.8-1 Notional MDT Mission Download / Selection Timeline

Non-MDT mission data is provided to the mission store in the messages listed in Tables 3.5.8-2 and 3.5.8-3.

For Store Control [11R] and Modify Mission [17R], the platform transfers Non-MDT mission data to/from any of one to CDS Max MDS Storage Locations **{cds_6069}**. The remaining Non-MDT messages, with only a couple of exceptions which will be addressed later, apply to the mission store as a whole, and are not associated with any particular mission loaded into that mission store. The Non-MDT, Modify Mission [17R/T], Store Control [11R] and Store Monitor [11T] protocol provides a means for Mission Data to be transferred from platform to store and store to platform for mission data verification and/or editing. A Non-MDT Mission Modification / Selection Timeline is illustrated in Figure 3.5.8-2.

Note: The Notional Timeline is based on Storage Mode [17R/04/00] set for MDS storage in volatile memory (VM). If Storage Mode is set for MDS storage in non-volatile memory (NVM) the write of MDS to memory and Modify Mission [17T] and/or Store Monitor [11T] buffer updates occur within the time specified in 3.5.8.1.2 Non-MDT of Mission Data. All fuze data in Store Control [11R] is stored in VM or NVM as specified by Storage Mode [17R/T/04/00]. Prior to receipt of Storage Mode [17R/04/00], the mission store can store the data in either VM or NVM, as documented in the mission store supplement.
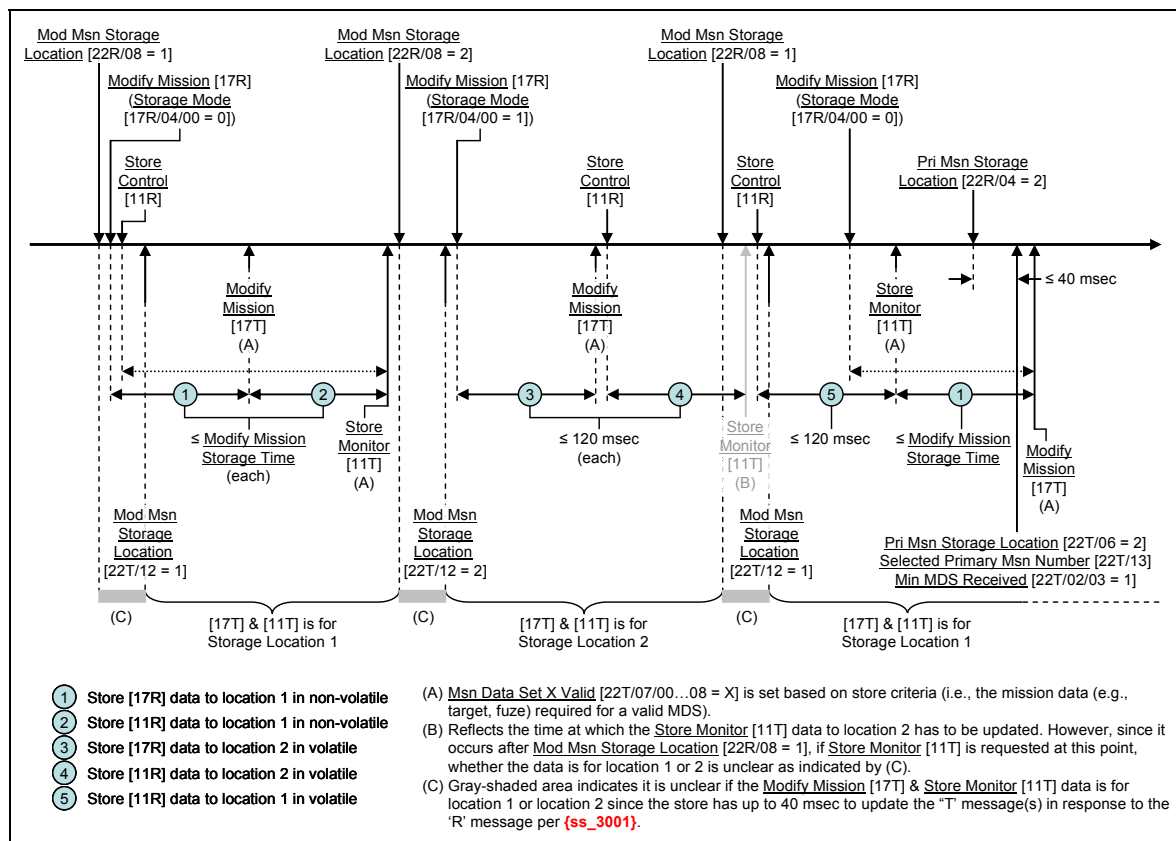
Figure 3.5.8-2 Notional Non-MDT Mission Modification / Selection Timeline

The platform uses Mod Msn Storage Location [22R/08 & 22T/12] along with Modify Mission [17R/T], Store Control [11R] and Store Monitor [11T] to modify and/or inspect any MDS storage locations within the mission store.

All data sent to a particular Mod Msn Storage Location [22R/08] is part of the mission/MDS for that storage location regardless of the storage mode when the data was provided. There are not separate missions/MDSs for a storage location based on memory type (NVM vs. VM).

To modify the mission and/or the fuze settings in a storage location, the platform sends Mission Control [22R] to the mission store with Mod Msn Storage Location [22R/08] set to the desired storage location. MDS data (e.g., target location, flight mode, attack parameters) to be stored in that location are sent to the mission store in Modify Mission [17R]. The MDS fuze settings to be stored in that location are sent to the mission store in Store Control [11R]. To verify the mission data and/or fuze settings for a storage location, the platform sends Mission Control [22R] to the mission store with Mod Msn Storage Location [22R/08] set to the desired storage location. The platform then requests Mission Monitor [22T] (to confirm the storage location) and then either a Modify Mission [17T] and/or Store Monitor [11T] from the mission store.

3.5.8.1 Mission Data Transfers

The transfer of mission data between platform and store can be accomplished via MDT or Non-MDT.

3.5.8.1.1 MDT Mission Data

For MDT Mission Data see Section 4.11 Mass Data Transfer, 4.12 Mission Data Exchange Format (MiDEF) data file, and Section 6.13R-020 <u>MDT-Mission</u> [13R-020]. These sections provide further information and requirements.

3.5.8.1.2 Non-MDT of Mission Data

Non-MDT mission data is useful for incremental updates and targets of opportunity. The composite of Non-MDT messages does not necessarily contain all the elements present in MDT data. The following terms apply:

Corresponding data element - data element in both MDT and Non-MDT

Non-corresponding data element - data element only in MDT.

Figure 3.5.8-3 illustrates these definitions.
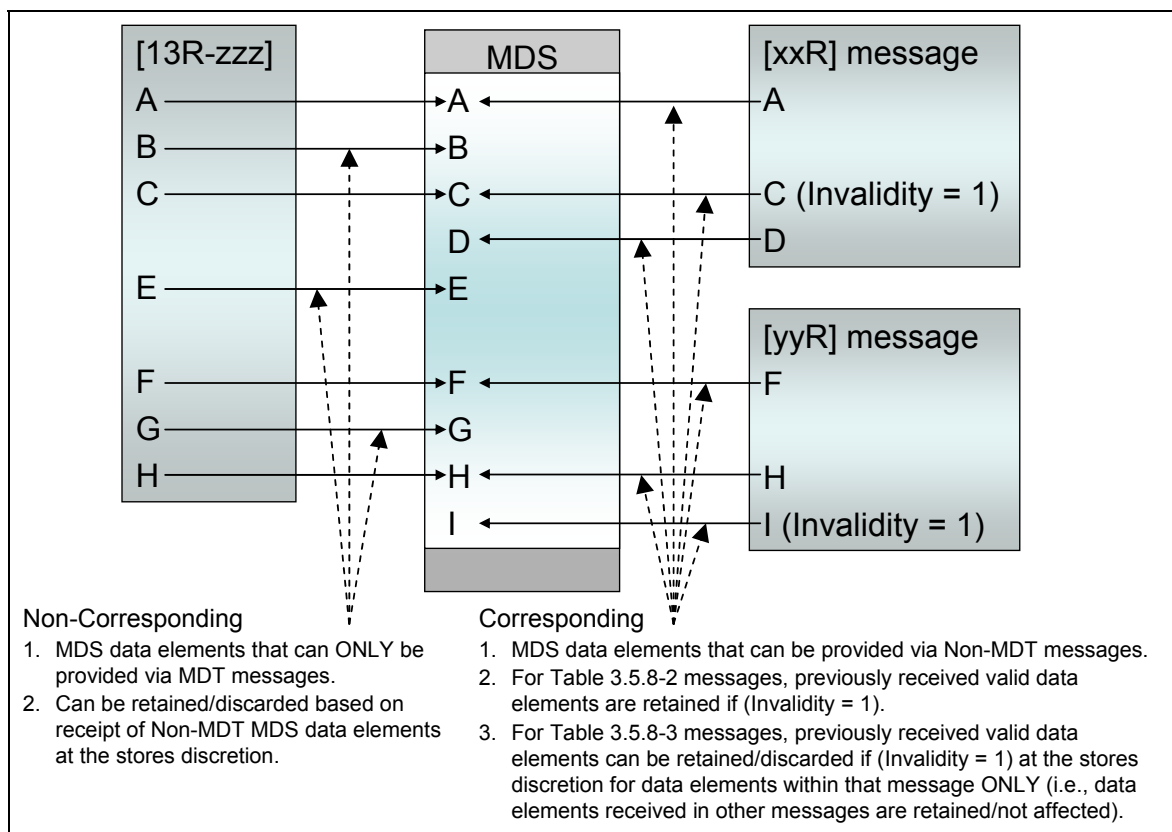
Figure 3.5.8-3 Corresponding vs Non-Corresponding MDS Data

When a Non-MDT mission data message ("[xxR] message" in Figure 3.5.8-3 where xx = any message in Table 3.5.8-2 or 3.5.8-3) is received, the resulting saved data (e.g., "MDS" in Figure 3.5.8-3) is affected as follows:

1) Corresponding data elements marked valid (item A & D) are replaced,

2) Corresponding data elements marked invalid (item C) are:

   a) Retained if the message is in Table 3.5.8-2,

   b) Retained or discarded as documented in the store supplement if the message is in Table 3.5.8-3,

   Example:

   1) Upon receipt of a Modify Mission [17R] with Ingress / Cruise Altitude marked invalid, the mission store would specify in **{sup_3083}** the disposition of the previous Ingress / Cruise Altitude value.

   2) Upon receipt of a WDL Control [21R] with Network IP Address marked invalid, the mission store would be required to retain the previous value for Network IP Address.

   This is particularly important for WDL Control [21R], since due to the message structure, corresponding data elements are likely to be marked invalid. Thus, upon receipt of a WDL Control [21R] with some invalid data elements, the mission store would retain those elements from prior WDL Control [21R] messages.

3) Corresponding data elements associated with other Non-MDT mission data messages (items F, H, I in "[yyR] message" in Figure 3.5.8-3 where yy = any message in Table 3.5.8-2 or 3.5.8-3) are retained.

   Example: Upon receipt of a Modify Mission [17R], corresponding data elements already received in a Store Control [11R] are retained/not affected.

4) Non-corresponding data elements (items B, E, G) are retained or discarded as documented in the store supplement.

   Example: Upon receipt of a Modify Mission [17R], the mission store would specify in **{sup_3083}** the disposition of previously received waypoint data.

**Table 3.5.8-2 Non-MDT Mission Data Messages
with required retention of Invalid Elements**

Store Control [11R/08-29] & [11R/06/03] [1]
GeoZone Control [16R]
WDL Control [21R]
Mission Control [22R]

Note 1: Words [11R/01-07] generally do not contain mission data, with the exception of [11R/06/03]. These words are not listed in Table 3.5.8-2 because they are not to be retained upon receipt of a subsequent Store Control [11R] with those words marked Invalid.

**Table 3.5.8-3 Non-MDT Mission Data Messages
with optional retention of Invalid Elements**

Modify Mission: Target/Loiter [17R]
Seeker/Sensor Control [24R]

Sections 3.5.12.2 Mission Store Pre-Release: Mission Data, 6.11R Store Control [11R], 6.16R/T GeoZone Control/Monitor [16R/T], 6.17R/T-1 Modify Mission: Target [17R/T-1], 6.17R/T-2 Modify Mission: Loiter [17R/T-2], 6.21R/T WDL Control /Monitor [21R/T], 6.22R Mission Control [22R], 6.22T Mission Monitor [22T], and 6.24R Seeker/Sensor Control [24R] contain additional requirements for Non-MDT mission data. The functional sequence for Non-MDT Mission Data Transfer is described in Table 3.5.8-1.

Table 3.5.8-1 Non-MDT Mission Data Transfer Functional Sequence

	PLATFORM	**MISSION STORE**
1	Set Mod Msn Storage Location [22R/08] to identify the storage location for the MDS.	
2		Prepare to receive the specified MDS (via Modify Mission [17R] and/or Store Control [11R]) by setting the Msn Storage Location [22T/12] = Mod Msn Storage Location [22R/08].
3	Ensure the store is ready to receive the specified MDS by verifying the Msn Storage Location Number [22T/12] = Mod Msn Storage Location [22R/08].	
4	Transmit MDS (Modify Mission [17R] and/or Store Control [11R]) to the mission store.	**Pre CTS** Evaluate the new Modify Mission [17R] and/or Store Control [11R] programmable fuze settings for Min MDS parameters and report result in Msn Data Set Valid (1-9) [22T/07/00…08], if applicable, and MDS in Mod Msn Storage Location Valid [22T/07/15]. Update Modify Mission [17T] and/or Store Control [11T] buffer with new MDS even if invalid, write new MDS to memory and report Msn Data Stored [22T/03/00 = 1] even if invalid. **Post CTS** Validate the new Modify Mission [17R] prior to overwriting the MDS data in Mod Msn Storage Location [22R/08], update the Modify Mission [17T] with the new MDS, Set Msn Data Set Valid (1-9) [22T/07/00…08], if applicable, and MDS in Mod Msn Storage Location Valid [22T/07/15] to valid and report Msn Data Stored [22T/03/00 = 1].
5	(Optional) Request Modify Mission [17T], Store Monitor [11T] (fuze settings) and Mission Monitor [22T] to verify MDS.	

Platform Requirements

The platform shall **{ps_3019}** provide the applicable Modify Mission [17R] including the MDS data elements that are required for the particular UAI mission store, in accordance with the CDS.

The platform shall **{ps_3020}** set Mod Msn Storage Location [22R/08] equal to the desired storage location number (one to CDS Max MDS Storage Locations **{cds_6069}** regardless of the storage mode) prior to transmitting one or more Modify Mission [17R] or Store Control [11R] (fuze setting) messages.

The platform shall **{ps_3134}** set Invalidity 1 [11R/02/07…11, 14…15 = 1] and Invalidity 2 [11R/03/00…02, 08…11 = 1] coincident with and after setting CTS [11R/04/02 = 1], to avoid further modification of the programmable fuze settings.

Mission Store Requirements

The mission store shall **{ss_3031}** store the Modify Mission [17R] data in Mod Msn Storage Location [22R/08] in non-volatile memory within Modify Mission Storage Time when Storage Mode [17R/04/00 = 0].

The mission store shall **{ss_3097}** store the Store Control [11R] fuze data in Mod Msn Storage Location [22R/08], in non-volatile memory when Storage Mode [17R/04/00 = 0] in the last received Modify Mission [17R], within:

    a) Modify Mission Storage Time, if Activate Initiated BIT [11R/04/06 = 0], or

    b) Modify Mission Storage Time following completion of IBIT (i.e., Store in Initiated BIT [11T/04/06] transitions to 0), if Activate Initiated BIT [11R/04/06 = 1].

The mission store shall **{ss_3083}** store the Modify Mission [17R] data in Mod Msn Storage Location [22R/08] in volatile memory within 120 msec when Storage Mode [17R/04/00 = 1].

The mission store shall **{ss_3098}** store the Store Control [11R] fuze data in Mod Msn Storage Location [22R/08], in volatile memory when Storage Mode [17R/04/00 = 1] in the last received Modify Mission [17R], within:

    a) 120 msec, if Activate Initiated BIT [11R/04/06 = 0], or

    b) 120 msec following completion of IBIT (i.e., Store in Initiated BIT [11T/04/06] transitions to 0), if Activate Initiated BIT [11R/04/06 = 1].

The mission store shall **{ss_3099}** use Non-MDT mission data marked as valid to replace corresponding data elements in the MDS specified by Mod Msn Storage Location [22R/08].

The mission store shall **{ss_3100}** retain all corresponding data from Non-MDT messages in Table 3.5.8-2 when any other Non-MDT message is received.

The mission store shall **{ss_3165}** retain the saved or current mission data elements in the MDS specified by Mod Msn Storage Location [22R/08] when the data element is marked invalid in Non-MDT mission data messages in Table 3.5.8-2.

The mission store shall **{ss_3033}** validate the current Modify Mission [17R] prior to overwriting the MDS data in Mod Msn Storage Location [22R/08] after CTS [11R/04/02 = 1].

The mission store supplement **{sup_3018}** documents:

    a) The Modify Mission [17R] format required ([17R-1] or [17R-2]).

    b) The complete set of Modify Mission [17R] data elements supported by the mission store.

    c) The minimum set of Modify Mission [17R] data elements required for setting Min MDS Received [22T/02/03].

    d) Time for the mission store to write Modify Mission [17R] data into volatile and non-volatile memory.

    e) How the mission store handles data in any Non-MDT mission data message that is received prior to receipt of Mod Msn Storage Location [22R/08].

    f) The memory type (volatile or non-volatile) Non-MDT mission data occupies in the absence of a previous Storage Mode [17R/04/00] command.

The mission store supplement **{sup_3079}** documents:

    a) The minimum set of Store Control [11R] (for fuze settings) data elements required for setting Min MDS Received [22T/02/03], when the platform sets the fuze via non-MDT.

    b) The complete set of fuze functions, including allowable combinations, in Store Control [11R] which are supported by the mission store, and the mapping to the fuze functions described in section 3.5.19.2 of the store supplement.

    c) The times for the mission store to write Store Control [11R] fuze data into volatile and non-volatile memory.

The mission store supplement **{sup_3080}** documents Modify Mission Storage Time as the time to write both Modify Mission [17R] data and Store Control [11R] fuze data into non-volatile memory.

The mission store supplement **{sup_3083}** documents the disposition of the following data for each supported Non-MDT mission data message:

    1. Corresponding mission data elements marked invalid in Non-MDT mission data messages in Table 3.5.8-3,

    2. Non-corresponding MDT mission data elements.

3.5.8.2 Mission Data Set Validity Check

An MDS is considered valid when it contains valid data for each of the minimum MDS parameters required by the mission store. Section 6.22T Mission Monitor [22T] provides further information and requirements.

Mission Store Requirements

The mission store supplement **{sup_3019}** documents the minimum MDS parameters required for a valid MDS.

3.5.9 Transfer Alignment

Transfer alignment is the process whereby the mission store aligns its internal navigation frame to the platform navigation frame. The process uses platform provided local level velocity, integral velocity, and/or platform attitude rates as the vector quantities to resolve the store inertial orientation. The store accepts the platform navigation system values as the initial conditions for orientation, local level velocity, and position. After INS initialization data has been received, the store uses its inertial instruments to derive the required measurement vector that is compared to the corresponding platform measurement vector collected over the same time interval. The difference between these two vector quantities is then used as the measurement for the store transfer alignment filter. Figure 3.5.9-1 provides a notional block diagram of the transfer alignment process.
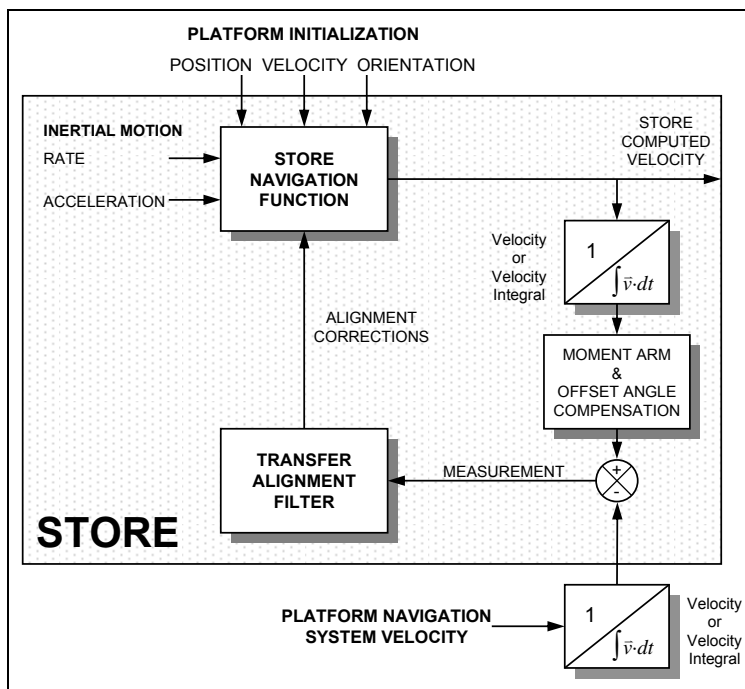
Figure 3.5.9-1 Notional Transfer Alignment Process Block Diagram

A successful transfer alignment results in the difference between the two measurement vectors decreasing and approaching zero as the store navigation function aligns to the platform local level frame. Physical misalignments between the platform navigation frame and the store navigation frame are reflected in the difference between their respective Euler angle estimates (pitch, roll, and yaw). Section 3.2.2.4.1 discusses Euler angles in more detail.

To facilitate the transfer alignment process, the platform transmits Moment Arm [09R] (as required) and periodically transmits the Synchronize With Data Word [MC17R] (if

required), <u>Periodic Transfer Alignment Message</u> (PTAM) [02R] and <u>Reset Transfer Alignment Message (RTAM)</u> [05R] to the store. The platform monitors the status of the store transfer alignment process through status indicators in the <u>Mission Monitor</u> [22T]. The Transfer Alignment functional sequence is illustrated in Table 3.5.9-1.

Table 3.5.9-1 Notional Transfer Alignment Functional Sequence

	PLATFORM	**MISSION STORE**
1	Complete INS Initialization per 3.5.6.1	
2	Send Periodic <u>PTAM</u> [02R] (and <u>RTAM</u> [05R] as required)	Align store INS system based on alignment data provided in <u>PTAM</u> and <u>RTAM</u>. Set transfer alignment status indicators as appropriate: <u>Min TXA Received</u> [22T/02/02] <u>TXA Good</u> [22T/02/05] <u>TXA Quality</u> [22T/04/03…06] <u>Nav Solution Quality</u> [22T/04/13…14]
3	Periodically request <u>Mission Monitor</u> [22T] to monitor transfer alignment status indicators.	
4	Set <u>MA in Transition</u> [02R/03/02=1] if moment arm data changes beyond accuracy limits. Send new <u>Moment Arm</u> [09R] if necessary. Set <u>MA in Transition</u> [02R/03/02=0] once the transition event is complete.	Monitor <u>MA in Transition</u> [02R/03/02] to detect a dynamic moment arm condition and adjust transfer alignment process as needed.

Section 6.02R <u>PTAM</u> [02R], 6.05R <u>RTAM</u> [05R], 6.09R <u>Moment Arm</u> [09R], 6.MC17R <u>Synchronize With Data Word</u> [MC17R] and Section 6.22T <u>Mission Monitor</u> [22T] provides further information and requirements.

Mission Store Requirements

The mission store supplement **{sup_3020}** documents unique store logic/criteria for setting the transfer alignment status indicators (<u>TXA Good</u> [22T/02/05], <u>TXA Quality</u> [22T/04/03…06], <u>Nav Solution Quality</u> [22T/04/13…14]) and the level of store capability corresponding to the various status indicator settings.

3.5.9.1 Platform Alignment Maneuvers

Platform maneuvering facilitates the transfer alignment process and allows the mission store to align more quickly; however, no specific platform maneuvers are required.

3.5.9.2 Transfer Alignment "Off Nominal Conditions"

If the mission store needs to restart its transfer alignment process, it does so automatically. No special actions are required by the platform.

3.5.10 Launch Acceptability Region (LAR)

The UAI Launch Acceptability Region (LAR) interface requires the stores that are released from the platform and Type 2 Carriage Systems to provide various types of

LAR data and IR/IZ Status [22T/04/01…02] to support the platform display of steering and release cues to the operator and as inputs to the platform ranging and release algorithms to facilitate release of the mission store against a selected target in one of two regions, In-Range (IR) LAR or In-Zone (IZ) LAR. Definitions for In-Zone and In-Range LARs are as follows:

a. In-Zone (IZ) LAR - The IZ LAR is defined as a region the platform must release the mission store within in order for it to achieve all mission objectives defined in the primary MDS (i.e. achieve target impact conditions, time on target, achieve all waypoints, etc.). The store supplement documents the IZ criteria.

b. In-Range (IR) LAR - The IR LAR is defined as a region the platform must release the mission store within in order for it to achieve some limited mission objectives defined in the primary MDS (i.e. achieve target impact but not in accordance with specified impact conditions, achieve target impact by ignoring the waypoints and flying direct to target, etc). The store supplement documents the IR criteria.

The UAI LAR interface affords the platform the option of performing the LAR computation entirely on its own or using the store provided LAR data. The platform annex **{ann_3008}** documents whether the platform computes its own LAR or uses store-provided LAR data including IR/IZ Status [22T/04/01…02] from the mission store, to facilitate mission store employment.

Four types of LAR data are provided by the store in addition to IR/IZ Status [22T/04/01…02]:

1. Current IR LAR Data

2. Predictive IR LAR Data

3. Current IZ LAR Data

4. Predictive IZ LAR Data

Current IR LAR Data or Predictive IR LAR Data or an auto toggle of both is provided in IR LAR Data [05T], as commanded by the platform in LAR Control [06R]. Current IZ LAR Data or Predictive IZ LAR Data or a toggle of both is provided in IZ LAR Data [06T], as commanded by the platform in LAR Control [06R]. Each of the four LARs includes LAR boundary data, mission store Time of Flight (TOF) data, LAR Out-of-Bound Indicators, and LAR Limit Indicators. A platform that uses some or all of the store-provided current LAR data, including IR/IZ Status [22T/04/01…02] from the mission store, can initialize the store with LAR Control [06R] to provide the Platform Rel Dly Time [06R/04] to the store for its computation of current LAR data. A platform that uses predictive LAR data from the store must initialize the store with predicted platform flight and/or environmental conditions via LAR Control [06R].

The LAR Out-of-Bound (OOB) Indicators identify platform release parameters that influence the ability of the store to calculate a LAR. The predefined indicators are altitude, airspeed, flight path angle, and ground track. The store-defined LAR Limit Indicators identify additional LAR calculation limitations (e.g., roll, yaw, winds, terminal conditions and other LAR calculation parameters).

Sections 6.06R <u>LAR Control</u> [06R], 6.05T <u>IR LAR Data</u> [05T], and 6.06T <u>IZ LAR Data</u> [06T], and 6.22T <u>Mission Monitor</u> [22T] provide further information and requirements.

3.5.10.1 Current LAR

The store provides current <u>IR LAR Data</u> [05T], current <u>IZ LAR Data</u> [06T] and <u>IR/IZ Status</u> [22T/04/01…02] using current conditions for all LAR independent variables.

The store indicates that the current conditions have exceeded the IR/IZ envelope(s) by setting LAR Out-of-Bound Indicators and/or LAR Limit Indicators. A store can continue providing LAR data for the current conditions adjusted to be within the IR/IZ envelope(s) by setting the applicable LAR Out-of-Bound Indicators or LAR Limit Indicators with the LAR invalidity bits indicating valid data.

The LAR independent variables can be restricted to meet specific mission needs; these restrictions can be unique to In-Zone and/or In-Range envelopes. These restricted IR/IZ envelopes, implemented within the mission store, are the envelope(s) to be used for calculating <u>IR LAR Data</u> [05T] and <u>IZ LAR Data</u> [06T], and for setting IR/IZ LAR Limit Indicators and IR/IZ Out-of-Bound Indicators.

3.5.10.2 Predictive LAR

The platform can use <u>IR LAR Data</u> [05T] and <u>IZ LAR Data</u> [06T] to determine how much the IR LAR and IZ LAR would change in response to a change in the platform flight and/or environmental conditions and/or to facilitate an on-board mission planning capability. When a "Predictive" LAR (In-Zone and/or In-Range) is selected by the platform, the store provides <u>IR LAR Data</u> [05T] and <u>IZ LAR Data</u> [06T] using the predictive conditions provided by the platform in <u>LAR Control</u> [06R]. Predicted conditions include a ground track independent of platform current position or current ground track, altitude, mach, flight path angle, wind at release, and platform release delay time.

The store indicates that the predictive conditions have exceeded the IR/IZ envelope(s) by setting LAR Out-of-Bound Indicators and/or LAR Limit Indicators. A store can continue providing predictive LAR data with predictive conditions adjusted to be within the IR/IZ envelope(s) by setting the applicable LAR Out-of-Bound Indicators or LAR Limit Indicators with the LAR invalidity bits indicating valid data.

The LAR independent variables can be restricted to meet specific mission needs; these restrictions can be unique to predictive In-Zone and/or In-Range envelopes. These restricted IR/IZ envelopes, implemented within the mission store, are the envelope(s) to be used for calculating predictive <u>IR LAR Data</u> [05T] and predictive <u>IZ LAR Data</u> [06T], and for setting IR/IZ LAR Limit Indicators and IR/IZ Out-of-Bound Indicators.

Mission Store Requirements

The mission store shall **{ss_3034}** set LAR invalidity bits [05T/02/00…03 = 1111 (B)], and [06T/02/00…03 = 1111 (B)] until the following criteria is achieved:

1. <u>Min TXA Received</u> [22T/02/02 = 1]

2. <u>Min MDS Received</u> [22T/02/03 = 1]

3. Other criteria as specified in the mission store supplement **{sup_3021}**.

The mission store shall **{ss_3035}** make a first IR LAR Data [05T] and IZ LAR Data [06T] update available to the platform within the time documented in the mission store supplement **{sup_3022}** after the conditions specified above are met.

The mission store shall **{ss_3036}** begin periodic updating of the IR LAR Data [05T] and IZ LAR Data [06T] in accordance with the rate documented in the mission store supplement **{sup_3023}** after the conditions specified above are met.

The mission store supplement **{sup_3024}** documents:

1. The LAR independent variables and the min/max constraints on those variables that serve to define the IR/IZ envelope(s).

2. Restrictions, if any, to the LAR independent variables and the source of those restrictions for the IR envelope and/or IZ envelope that are used in the mission store.

3. The store response to conditions outside the IR envelope.

4. The store response to conditions outside the IZ envelope.

5. The definitions of the LAR Limit Indicators supported by the store.

6. The Out-of-Bound Indicators supported by the store.

7. The In-Zone and In-Range criteria (including tolerances).

8. Response time for providing first IR LAR Data [05T] and IZ LAR Data [06T] update after all conditions are satisfied for commencing periodic updates.

9. The periodic IR LAR Data [05T] and IZ LAR Data [06T] update rate.

10. Additional limitations, if any.

3.5.11 Data Erase Processing

Data erase commands the store to erase all sensitive data and/or zeroize Crypto Data held within store memory. Sensitive data includes classified, targeting, crypto, GeoZone, and mission planning information. Sections 6.11R Store Control [11R] and 6.22R Mission Control [22R] provide further information and requirements for initiating the data erase processes. Sections 6.11T Store Monitor [11T] and 6.22T Mission Monitor [22T] provide detailed store requirements and settings for the data erase process.

3.5.11.1 Erase All Sensitive Data

The platform commands the store to initiate the erase of all sensitive data in any active captive carry state using Erase Command/Authority [11R/06/00]. The store provides the status of the operation using Erase Process Status [11T/05/00]. As the sensitive data is erased, the store updates the appropriate Monitor Mission [22T] status bits as defined below. When all sensitive data erasure is complete the Erase Process Status is cleared as outlined below and as defined in Section 6.11T.2.1.

Platform Requirements

The platform may **{pm_3016}** verify the erase completion of the mission store sensitive data erase process once <u>CDS Sensitive Data Erase Time</u> **{cds_3013}** has elapsed after issuing <u>Erase Command/Authority</u> [11R/06/00 = 1] by monitoring any or all of the following:

   a. <u>Erase Process Status</u> [11T/05/00] transitions from one (1) to zero (0)

   b. <u>Mission Data Erased</u> [22T/04/12 = 1]

   c. <u>GeoZone Data Erased</u> [22T/04/10 = 1], if the mission store is <u>CDS GeoZone Enabled</u> **{cds_3038}**

   d. <u>Crypto Data Zeroized</u> [22T/04/11 = 1], when the mission store uses any crypto data

   e. <u>WDL Key Data Erased</u> [22T/04/15 = 1], when the store is reporting <u>WDL Onboard</u> [22T/05/11 = 1]

Store Requirements

The store shall **{ss_3037}** erase all sensitive data and zeroize all crypto data when <u>Erase Command/Authority</u> [11R/06/00 = 1], to include:

   a. All sensitive data received via MDT transfer:

   - <u>MDT-Mission</u> [13R-020],

   - <u>MDT-GeoZone Data</u> [13R-021],

   - <u>MDT-Growth Crypto</u> [13R-022],

   - <u>MDT-WDL Terminal Initialization</u> [13R-023],

   - <u>MDT-WDL Key 1-3</u> [13R-025-027],

   - <u>MDT-Other Store Keys</u> [13R-028],

   - <u>MDT-Net Participants</u> [13R-029].

   b. GPS Crypto Data received via <u>GPS Crypto Data</u> [12R].

   c. All sensitive GeoZone data received via a Non-MDT transfer <u>GeoZone Control</u> [16R].

   d. All sensitive mission data received via a Mission Data Set Non-MDT transfer <u>Modify Mission</u> [17R].

   e. Any other store specific sensitive data as documented in the store supplement **{sup_3069}**.

The mission store shall **{ss_3038}** indicate completion of the sensitive data erase process when <u>Erase Process Status</u> [11T/05/00] transitions from one (1) to zero (0) and the store reports:

   a. <u>Mission Data Erased</u> [22T/04/12 = 1]

b. <u>GeoZone Data Erased</u> [22T/04/10 = 1], if the mission store is <u>GeoZone Enabled</u>

c. <u>Crypto Data Zeroized</u> [22T/04/11 = 1], when the mission store uses any crypto data

d. <u>WDL Key Data Erased</u> [22T/04/15 = 1], when the store is reporting <u>WDL Onboard</u> [22T/05/11 = 1]

e. <u>Msn Data Set X Valid</u> [22T/07/00…08 = 0], where X = 1-9

f. <u>GPS Keys Received</u> [22T/03/06 = 0]

g. <u>WDL Init Data Received</u> [22T/03/12 = 0]

h. <u>Growth Crypto Received</u> [22T/03/15 = 0]

i. <u>Net Participants Received</u> [22T/03/09 = 0]

j. <u>Min MDS Received</u> [22T/02/03 = 0], if the mission store requires an MDS

k. <u>GeoZone Received</u> [22T/03/08 = 0]

l. <u>Min GPS Data</u> [22T/02/06 = 0]

m. <u>Pri Msn Storage Location</u> [22T/06 = 0]

n. <u>WDL Key 1 Received</u> [22T/04/07 = 0]

o. <u>WDL Key 2 Received</u> [22T/04/08 = 0]

p. <u>WDL Key 3 Received</u> [22T/04/09 = 0]

q. <u>Other Store Keys Received</u> [22T/03/10 = 0]

The store supplement **{sup_3025}** documents its <u>Sensitive Data Erase Time</u> and process.

3.5.11.2 Zeroize Crypto Data

The platform has the capability to command a mission store to zeroize all Crypto Data during any of the active captive carry states using <u>Crypto Data Zeroize</u> [22R/05/05].

Platform Requirements

The platform may **{pm_3017}** verify all Crypto Data is zeroized by reading <u>Crypto Data Zeroized</u> [22T/04/11 = 1] after <u>CDS Crypto Zeroize Time</u> **{cds_3034}** has elapsed from issuing <u>Crypto Data Zeroize</u> [22R/05/05 = 1].

Mission Store Requirements

The mission store shall **{ss_3039}**, if it uses any crypto data, respond to a <u>Crypto Data Zeroize</u> [22R/05/05 = 1] command within the Crypto Zeroize Time, by zeroizing Crypto Data in the store and setting:

a. <u>GPS Keys Received</u> [22T/03/06 = 0]

b. <u>Min GPS Data</u> [22T/02/06 = 0]

    c. <u>Crypto Data Zeroized</u> [22T/04/11 = 1]

    d. <u>Growth Crypto Received</u> [22T/03/15 = 0]

The mission store supplement **{sup_3026}** documents its <u>Crypto Zeroize Time</u> and erasure process.

3.5.12 Mission Store Pre-Release

The Mission Store Pre-Release events define the platform and mission store events and requirements necessary to prepare a UAI mission store for release. Prior to initiating a mission store release, the platform is required to prepare the mission store for release to include: setting store separation constraints, updating the mission store GPS data as needed, updating <u>Environmental Data</u> [15R] as needed, periodically checking the mission store readiness for release, and preparing the platform's Suspension and Release Equipment (S&RE) for mission store release. The platform continues to send periodic messages such as <u>PTAM</u> [02R], <u>Time</u> [03R], <u>RTAM</u> [05R] as needed, and <u>Synchronize With Data Word</u> [MC17R] while the pre-release events are being accomplished.

A notional detailed Store Pre-Release timeline is illustrated in Figure 3.5.12-1.
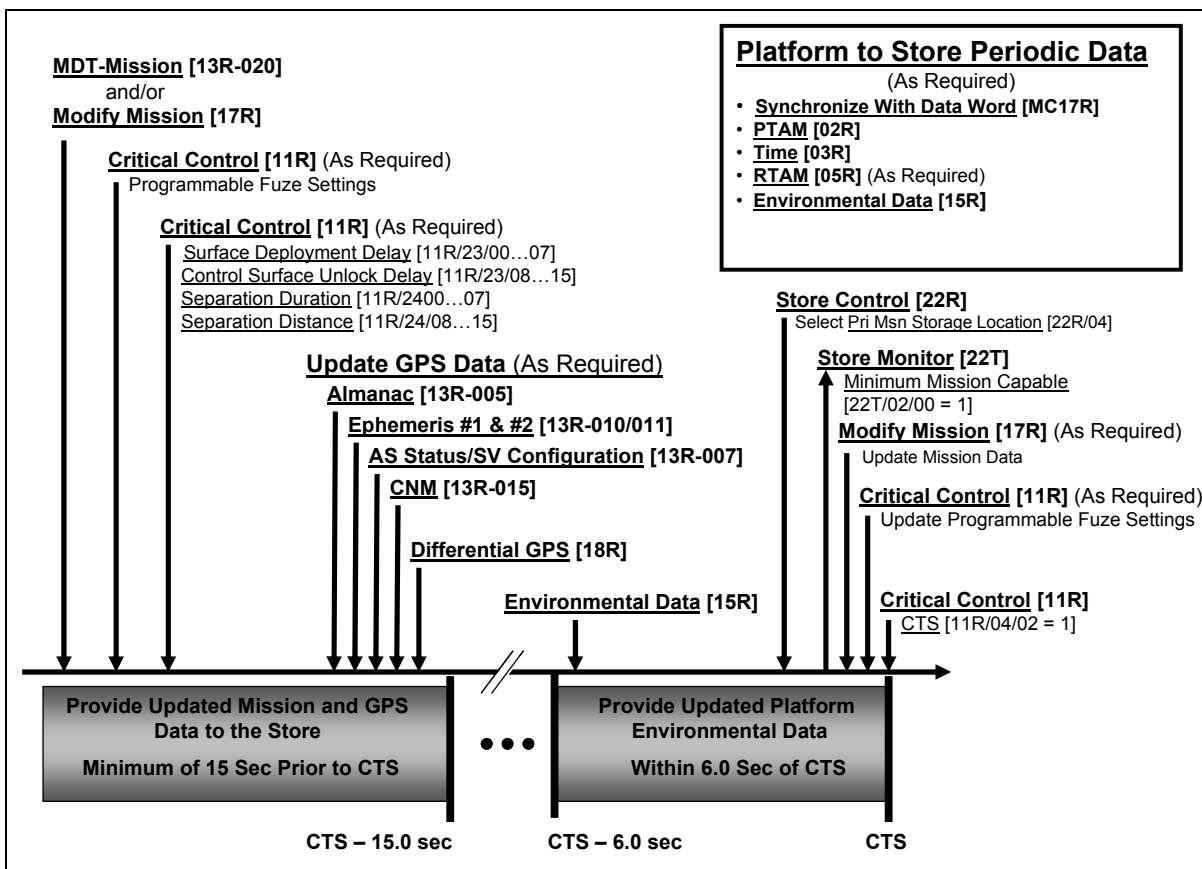
Figure 3.5.12-1 Notional Pre-Mission Store Release Activities Timeline

3.5.12.1 Functional Sequence

A notional functional sequence for the Pre-Mission Store Release events is described in Table 3.5.12-1.

Table 3.5.12-1 Notional Pre-Mission Store Release Functional Sequence

	PLATFORM	STORE
1.	(As Required) Send Mission Data to Store: • MDT-Mission [13R-020] and/or • Mission Control [17R] • Critical Control [11R] Programmable Fuze Settings (As Required).	Update Mission Monitor [22T] • Min MDS Received [22T/02/03] • Minimum Mission Capable [22T/02/00]
2.	Send Surface Delay [11R/23] and Separation Elements [11R/24] to the store: • Surface Deployment Delay [11R/23/00…07] • Control Surface Unlock Delay [11R/23/08…15] • Separation Duration [11R/24/00…07] • Separation Distance [11R/24/08…15]	Update Store Monitor [11T] message: • Surface Deployment Delay [11T/23/00…07] • Control Surface Unlock Delay [11T/23/08…15] • Separation Duration [11T/22/00…07] • Separation Distance [11T/22/08…15] Update Mission Monitor [22T] message: • Surface Delays Received [22T/05/03]
3.	(As Required) Request the Store Monitor [11T] message to verify Surface Delay Monitor [11T/23] and Separation Elements Monitor [11T/22] status. (As Required) Perform fault processing if store does not accept Surface Delay [11R/23] and Separation Elements [11R/24] commands and/or Surface Delays Received [22T/05/03 = 0].	Update Store Monitor [11T] message
4.	(As Required) Provide updated data to store: • Synchronize With Data Word [MC17R] • Mission Control [22R] • PTAM [02R] • Time [03R] • RTAM [05R] • Moment Arm [09R] • Environmental Data [15R]	Update Mission Monitor [22T] message status: • TXA Quality [22T/04/03…06] • Nav Solution Quality [22T/04/13…14] • Time Received [22T/03/07] • Env Data Received [22T/05/06]
5.	(As Required) Provide updated GPS data to store to keep data current for all visible SVs at least 15.0 seconds prior to CTS [11R/04/02 =1]. • AS Status/SV Configuration [13R-007] • Ephemeris #1 & #2 [13R-010/011] • Complementary Navigation Message (CNM) [13R-015] • Differential GPS [18R]	Update Mission Monitor [22T] Data: • Min GPS Data [22T/02/06] • Ephemeris Received [22T/03/04] • CNM Received [22T/03/11] • Improved Accuracy Received [22T/05/01]
6.	(As Required) Update Programmable Fuze Settings prior to CTS [11R/04/02 =1]: Send Critical Control [11R] to store.	

Table 3.5.12-1 Notional Pre-Mission Store Release Functional Sequence

	PLATFORM	STORE
7.	Specify the <u>Pri Msn Storage Location</u> [22R/04] and <u>Sec Msn Storage Location</u> [22R/14] (as applicable) as the MDS(s) the store will execute.	Select the <u>Pri Msn Storage Location</u> [22R/04] as the mission to execute.
8.	(As Required) Request <u>Mission Monitor</u> [22T] to verify store is ready for release: • <u>Minimum Mission Capable</u> [22T/02/00 = 1]	Update the <u>Mission Monitor</u> [22T] message.

3.5.12.2 Mission Store Pre-Release: Mission Data

The platform provides mission data to the mission store via MDT or Non-MDT. The platform provides <u>MDT-Mission</u> [13R-020] mission data to the store a minimum of 15.0 seconds prior to setting <u>CTS</u> [11R/04/02 = 1]. The platform provides any Non-MDT mission data in tables 3.5.8-2 or 3.5.8-3 that is to be stored in VM or NVM to the store prior to setting <u>CTS</u> [11R/04/02 = 1]. In addition, the platform is allowed to provide updated Non-MDT <u>Modify Mission</u> [17R/T] mission data that is to be stored in VM to the store (e.g., to update moving target location) after setting <u>CTS</u> [11R/04/02 = 1], during the store release sequence, until the platform activates the platform S&RE store release mechanism.

After valid MDT and/or Non-MDT mission data is provided to the store, the platform specifies a valid <u>Pri Msn Storage Location</u> [22R/04] and a valid <u>Sec Msn Storage Location</u> [22R/14] (if applicable) to identify the primary MDS and alternate MDS (if applicable) the store will execute.

Sections 4.11 Mass Data Transfer, 6.17R <u>Modify Mission</u> [17R] and 6.22R <u>Store Control</u> [22R] provide further information and requirements.

Platform Requirements

The platform shall **{ps_3022}**:

    a. Provide MDT mission data to the store via <u>MDT-Mission</u> [13R-020] a minimum of 15.0 seconds prior to setting <u>CTS</u> [11R/04/02 = 1], or

    b. Provide Non-MDT mission data that is to be stored in non-volatile memory to the store, and a minimum of <u>CDS Modify Mission Storage Time</u> **{cds_3018}** prior to setting <u>CTS</u> [11R/04/02 = 1], or

    c. Provide <u>Modify Mission</u> [17R] data that is to be stored in volatile memory to the store, and

    d. Specify a <u>Pri Msn Storage Location</u> [22R/04] and/or <u>Sec Msn Storage Location</u> [22R/14] (if applicable), prior to setting <u>CTS</u> [11R/04/02 = 1].

The platform shall **{ps_3023}**, if providing updated mission data after setting <u>CTS</u> [11R/04/02 = 1] and prior to activating the S&RE release mechanism:

    a. Only utilize Non-MDT <u>Modify Mission</u> [17R] to modify/update the mission data in the MDS specified by <u>Mod Msn Storage Location</u> [22R/08].

b. Select <u>Storage Mode</u> [17R/04/00 = 1 (volatile memory)].

c. Only select a <u>Pri Msn Storage Location</u> [22R/04] and/or <u>Sec Msn Storage Location</u> [22R/14] (if applicable) that contain a valid MDS.

Note: The platform is responsible for ensuring that the updated mission data is within the store LAR.

Mission Store Requirements

The mission store shall **{ss_3040}**, prior to <u>CTS</u> [11R/04/02 = 1]:

a. Accept MDT mission data via <u>MDT-Mission</u> [13R-020], or

b. Accept Non-MDT mission data, and

c. Accept <u>Pri Msn Storage Location</u> [22R/04] and/or <u>Sec Msn Storage Location</u> [22R/14] (if applicable).

The mission store shall **{ss_3041}**, after <u>CTS</u> [11R/04/02 = 1] and prior to detecting umbilical separation:

a. Only accept changes to the MDS specified by <u>Mod Msn Storage Location</u> [22R/08] if the data in <u>Modify Mission</u> [17R] contains a valid MDS.

b. Only accept changes to <u>Pri Msn Storage Location</u> [22R/04] and/or <u>Sec Msn Storage Location</u> [22R/14] (if applicable), if the specified mission storage location contains a valid MDS.

3.5.12.3 Mission Store Pre-Release: Programmable Fuze

If the mission store has a Programmable Fuze, the platform provides Programmable Fuze Settings via <u>MDT-Mission</u> [13R-020] or <u>Store Control</u> [11R] (words 8-12, 15-19, and 25-28). The platform passes through Programmable Fuze Settings to the mission store if included as part of <u>MDT-Mission</u> [13R-020] mission data, that is provided to the store, a minimum of 15 seconds prior to setting <u>CTS</u> [11R/04/02 = 1]. However, the platform can use the <u>Critical Control</u> [11R] message to provide, update, or change mission store Programmable Fuze Settings a minimum of <u>CDS Programmable Fuze Setting Time</u> **{cds_3014}** prior to setting <u>CTS</u> [11R/04/02 = 1].

<u>CDS Programmable Fuze Setting Time</u> **{cds_3014}** tells the platform how far in advance of CTS it must send PF data to the store or designate the PF data to be used by the store. It should be set to the larger of: 1) the time it takes the store to program its fuze, 2) <u>CDS Modify Mission Storage Time</u> **{cds_3018}** if [11R] Programmable Fuze Settings are being stored in non-volatile memory, or 3) the time the store takes to load data into volatile memory (120 msec maximum) if [11R] Programmable Fuze Settings are being stored in volatile memory.

UAI allows the platform to provide updates to <u>Mod Msn Storage Location</u> [22R/08] target data after <u>CTS</u> [11R/04/02 = 1], via Non-MDT <u>Modify Mission</u> [17R]. However, to minimize the risk that the mission store is unable to execute its mission, because the fuze is not armed, UAI does not allow the platform to modify Programmable Fuze Settings after <u>CTS</u> [11R/04/02 = 1] because programmable fuzes require a finite amount

of time to accept new settings or can incorporate interlocks that prevent the fuze from accepting new fuze settings during and/or after a mission store release is initiated.

Sections 6.11R Critical Control [11R] and 6.11T Critical Monitor [11T] provide further information and requirements.

Platform Requirements

The platform shall **{ps_3024}**, specify the fuze settings to be programmed into a programmable fuze a minimum of CDS Programmable Fuze Setting Time **{cds_3014}** prior to setting CTS [11R/04/02 = 1], if PF Onboard [22T/02/12 = 1].

Mission Store Requirements

The mission store shall **{ss_3042}** use MDT-Mission [13R-020] programmable fuze settings or Store Control [11R/08-12], [11R/15-19], and [11R/25-28] programmable fuze settings when Pri Msn Storage Location [22R/04 > 0], if received a minimum of Programmable Fuze Setting Time prior to receiving CTS [11R/04/02 = 1] and PF Onboard [22T/02/12 = 1].

The mission store shall **{ss_3085}** ignore changes to Store Control [11R/08-12], [11R/15-19], and [11R/25-28] programmable fuze settings after receiving CTS [11R/04/02 = 1].

The mission store supplement **{sup_3027}** documents the Programmable Fuze Setting Time.

3.5.12.4 Mission Store Pre-Release: Surface Delays and Separation Elements

The mission store departure from the platform vicinity is controlled by the provision of unlock and surface deployment delays along with separation and dispersion parameters. By MIL-STD-1760, dispersion occurs following separation with longer times allowed for separation that dispersion. Particular separation needs are customized via CDS parameters.

The platform provides platform-specific values for these parameters based on the mission store limits and platform requirements "anytime prior to" setting CTS [11R/04/02 = 1], otherwise the mission store uses its default values.

Sections 6.11R Critical Control [11R] and 6.11T Critical Monitor [11T] provide further information and requirements.

Platform Requirements

The platform shall **{ps_3025}** set Dispersion Data [11R/20] to CDS Dispersion Control Values **{cds_3015}** and Dispersion Duration [11R/21] to CDS Dispersion Duration **{cds_3016}** appropriate for the platform station and/or mission store release order, prior to setting CTS [11R/04/02 = 1].

The platform shall **{ps_3027}** set Separation Elements [11R/23] to CDS Separation Duration **{cds_6055}** and CDS Separation Distance **{cds_6056}** and set Surface Delays [11R/24] to CDS Surface Deployment Delay **{cds_6139}** and CDS Control

Surface Unlock Delay **{cds_6140}** appropriate for the platform station, prior to setting CTS [11R/04/02 = 1].

The platform shall **{ps_3026}** verify Dispersion Data [11T/19] is equal to Dispersion Data [11R/20] and Dispersion Duration [11T/20] is equal to Dispersion Duration [11R/21], prior to setting CTS [11R/04/02 = 1].

The platform shall **{ps_3028}** verify Separation Elements [11T/22] are equal to or larger than Separation Elements [11R/23] and Surface Delays [11T/23] are equal to or larger than Surface Delay [11R/24], prior to setting CTS [11R/04/02 = 1].

The platform/store addendum **{add_3001}** documents the values for Dispersion Data [11R/20], Dispersion Duration [11R/21], Separation Elements [11R/23], and Surface Delays [11R/24].

The platform shall **{ps_3029}** provide the capability to load values into the following data entities from the CDS:

    a. Surface Deployment Delay [11R/24/00…07]

    b. Control Surface Unlock Delay [11R/24/08…15]

    c. Separation Duration [11R/23/00…07]

    d. Separation Distance [11R/23/08…15]

    e. Horizontal Dispersion [11R/20/00…01]

    f. Horizontal Dispersion Angle [11R/20/02…07]

    g. Vertical Dispersion [11R/20/08…09]

    h. Vertical Dispersion Angle [11R/20/10…15]

    i. Dispersion Duration [11R/21]

Note: items e through h (Horizontal Dispersion [11R/20/00…01], Horizontal Dispersion Angle [11R/20/02…07], Vertical Dispersion [11R/20/08…09], and Vertical Dispersion Angle [11R/20/10…15]) have been combined into one CDS variable called CDS Dispersion Control Values **{cds_3015}** for ease of handling.

The platform annex **{ann_3009}** documents its implementation of:

    a. Surface Deployment Delay [11R/24/00…07]

    b. Control Surface Unlock Delay [11R/24/08…15]

    c. Separation Duration [11R/23/00…07]

    d. Separation Distance [11R/23/08…15]

    e. Horizontal Dispersion [11R/20/00…01]

    f. Horizontal Dispersion Angle [11R/20/02…07]

    g. Vertical Dispersion [11R/20/08…09]

    h. Vertical Dispersion Angle [11R/20/10…15]

    i. Dispersion Duration [11R/21]

Mission Store Requirements

The mission store shall **{ss_3043}** use <u>Dispersion Data</u> [11R/20], <u>Dispersion Duration</u> [11R/21], <u>Separation Elements</u> [11R/23], and/or <u>Surface Delays</u> [11R/24] parameters received prior to <u>CTS</u> [11R/04/02 = 1].

The mission store shall **{ss_3044}** reject changes to <u>Dispersion Data</u> [11R/20], <u>Dispersion Duration</u> [11R/21], <u>Separation Elements</u> [11R/23], and/or <u>Surface Delays</u> [11R/24] parameters received after <u>CTS</u> [11R/04/02 = 1].

The mission store supplement **{sup_3028}** documents default values for and mission store responses to <u>Dispersion Data</u> [11R/20], <u>Dispersion Duration</u> [11R/21], <u>Separation Elements</u> [11R/23], and <u>Surface Delays</u> [11R/24].

3.5.12.5 Mission Store Pre-Release: Updated GPS Data

If the mission store has a GPS receiver, the platform provides updated GPS data to the store after initialization as it becomes available from various sources on the platform (from a platform GPS receiver, stored platform GPS data, tactical data link, data loaded by a mission planning system on a data transfer device, etc). The platform provides updated GPS data to the store a minimum of 15.0 seconds prior to setting <u>CTS</u> [11R/04/02 = 1]. However, the mission store is not required to use updated GPS data if the platform provides this data within 15.0 seconds of setting <u>CTS</u> [11R/04/02 = 1].

GPS data which may be updated is defined in sections 6.13R-005 <u>Almanac</u> [13R-005], 6.13R-007 <u>AS Status/SV Configuration</u> [13R-007], 6.13R-010/011 <u>Ephemeris #1 & #2</u> [13R-010/011], 6.13R-015 <u>Complementary Navigation Message (CNM)</u> [13R-015], and 6.18R <u>DGPS</u> [18R].

Platform Requirements

The platform shall **{ps_3030}** provide updated GPS Data, when available, via the following messages, to the store a minimum of 15 seconds prior to setting <u>CTS</u> [11R/04/02 = 1], if <u>GPS Capable</u> [22T/05/13 = 1]:

    a. <u>Almanac</u> [13R-005]

    b. <u>Ephemeris #1 & #2</u> [13R-010/011]

    c. <u>Complementary Navigation Message (CNM)</u> [13R-015]

    d. <u>Differential GPS</u> [18R]

Mission Store Requirements

The mission store shall **{ss_3045}** accept updated GPS Data received a minimum of 15 seconds prior to receiving <u>CTS</u> [11R/04/02 = 1], if <u>GPS Capable</u> [22T/05/13 = 1].

The mission store may **{sm_3003}** accept or discard updated GPS Data, if received within 15.0 seconds of or after receipt of <u>CTS</u> [11R/04/02 = 1], if <u>GPS Capable</u> [22T/05/13 = 1].

3.5.12.6 Mission Store Pre-Release: Periodic Data

Prior to the platform setting CTS [11R/04/02 = 1], the platform provides the following periodic, time synchronization, transfer alignment data, and environmental data messages (as required) to the store to prevent store transfer alignment degradation:

 a. Synchronize With Data Word [MC17R]

 b. PTAM [02R]

 c. Time [03R]

 d. RTAM [05R] (As Required)

 e. Environmental Data [15R]

Sections 6.MC17R Synchronize With Data Word [MC17R], 6.02R PTAM [02R], 6.03R Time [03R], 6.05R RTAM [05R], 6.15R Environmental Data [15R] and 4.1.4 Digital Message Rates provide further information and requirements.

3.5.12.7 Mission Store Pre-Release: Store Ready for Release

When the mission store is reporting Minimum Mission Capable [22T/02/00 = 1] with AUR Ready [22T/02/04 = 1], the mission store is ready for release, the mission store is fully mission capable, and the store has the capability to successfully complete its mission.

However, when the mission store is reporting Minimum Mission Capable [22T/02/00 = 1] with AUR Ready [22T/02/04 = 0], the mission store is ready for release, the mission store is not fully mission capable, and the mission store has minimal capability to successfully complete its mission.

Section 6.22T Mission Monitor [22T] provides further information and requirements.

3.5.12.8 Mission Store Pre-Release: S&RE Preparation

Additionally, as part of the store pre-release process, the platform prepares its Suspension and Release Equipment (S&RE) for mission store release (i.e., enable arming solenoids, as applicable, see section 3.5.14.6 for requirements).

3.5.13 Initiation of Platform/Mission Store Release Sequence

To initiate the store release sequence, the platform activates Release Consent [Discrete] and 28V DC2 [Power] a minimum of 20.0 msec prior to sending CTS [11R/04/02 = 1] to the store. The store, in turn, verifies that all store specific conditions necessary to safely separate from the platform are satisfied, before initiating safety critical actions. Sections 6.11R Store Control [11R], 6.11T Store Monitor [11T], and 6.22T Mission Monitor [22T] provides further information and requirements.

The Store Release Sequence Initiation events are shown in Figure 3.5.13-1.
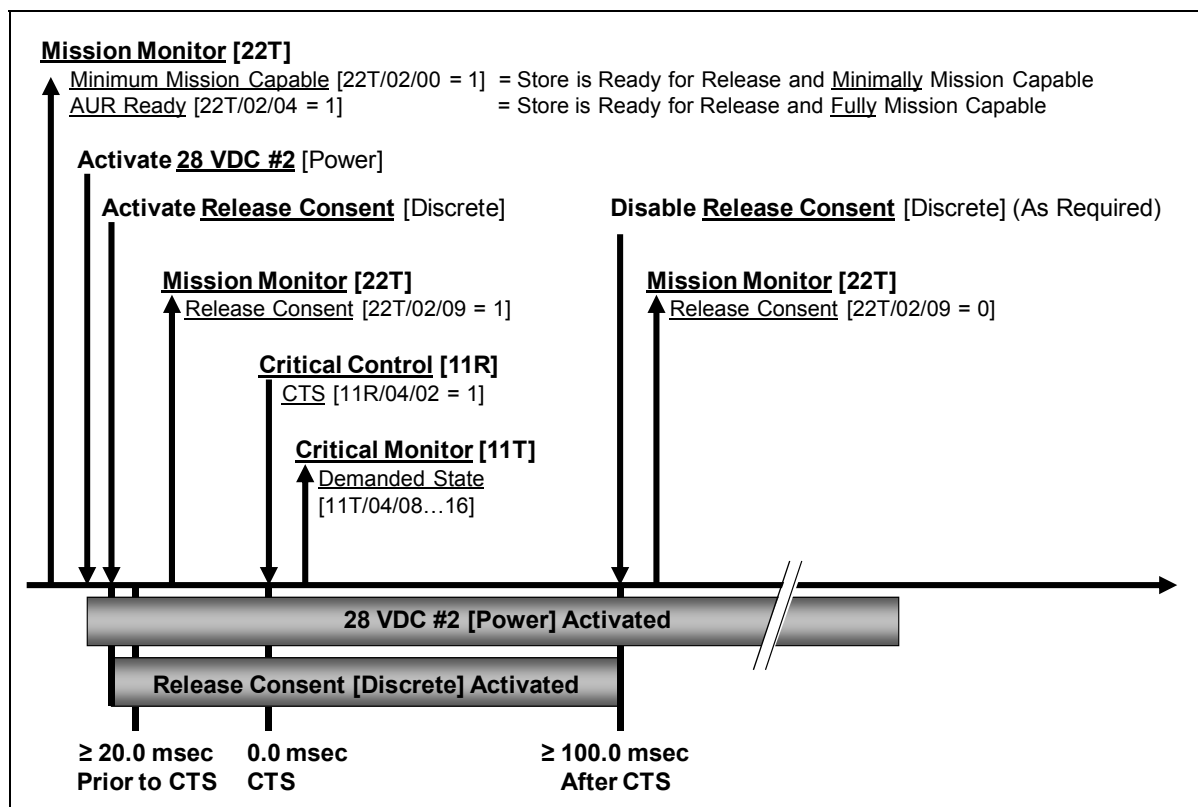
Figure 3.5.13-1 Initial Store Release Sequence Timeline

3.5.13.1 Functional Sequence

The composite functional sequence for the functions of the Initiation of the Platform/ Mission Store Release is described in Table 3.5.13-1.

Table 3.5.13-1 Initiation of Platform/Mission Store Release Functional Sequence

	PLATFORM	STORE
1.	Aircrew Initiates Store Release.	
2.	Verify store is Ready for Release: Minimum Mission Capable [22T/02/00 = 1]	
3.	Initiate the Platform/Store Release Sequence: Activate 28V DC2 [Power] to Store. Activate Release Consent [Discrete] to Store.	Set Release Consent [22T/02/09 = 1] when Release Consent [Discrete] is detected.
4.	Wait a minimum of 20 milliseconds.	
5.	Send CTS [11R/04/02 = 1]	Validate the Store Control [11R] message (per MIL-STD-1760) and Initiate Platform/Store Release Sequence when the following conditions are TRUE: Minimum Mission Capable [22T/02/00 = 1] CTS [11R/04/02 = 1] Release Consent [22T/02/09 = 1]. Update Demanded State [11T/04/08…15] to reflect receipt of a valid CTS [11R/04/02 = 1].

Table 3.5.13-1 Initiation of Platform/Mission Store Release Functional Sequence

	PLATFORM	STORE
6.	(Optional) Disable the <u>Release Consent</u> [Discrete] a minimum of 100 msec after <u>CTS</u> [11R/04/02 = 1].	Set <u>Release Consent</u> [22T/02/09 = 0] when <u>Release Consent</u> [Discrete] is no longer detected.

3.5.13.2 <u>28V DC2</u> [Power]

<u>28V DC2</u> [Power] is a MIL-STD-1760 signal used by most stores to power store safety critical or store irreversible functions (i.e., activating store internal batteries, etc.) during the store release sequence.

Platform Requirements

The platform shall **{ps_3031}** activate <u>28V DC2</u> [Power] to the mission store a minimum of 20 msec prior to setting <u>CTS</u> [11R/04/02 = 1].

Mission Store Requirements

The mission store may **{sm_3004}** use <u>28V DC2</u> [Power] to activate safety critical and/or irreversible functions after receipt of a valid <u>CTS</u> [11R/04/02 = 1].

The mission store shall **{ss_3046}** prevent initiation of any safety critical functions solely as a result of the activation of <u>28V DC2</u> [Power].

The mission store shall **{ss_3047}** not use the presence or absence of <u>28V DC2</u> [Power] as a verification of <u>CTS</u> [11R/04/02 = 1].

The mission store shall **{ss_3048}** not use the presence or absence of <u>28V DC2</u> [Power] as a verification of <u>Release Consent</u> [Discrete].

The mission store supplement **{sup_3029}** documents the safety critical and/or irreversible functions that use <u>28V DC2</u> [Power].

3.5.13.3 <u>Release Consent</u> [Discrete]

<u>Release Consent</u> [Discrete] is a safety critical MIL-STD-1760 discrete signal that serves to validate safety critical commands including <u>CTS</u> [11R/04/02 = 1]. The store updates <u>Release Consent</u> [22T/02/09] status to reflect the current state of <u>Release Consent</u> [Discrete]. Section 6.22T <u>Mission Monitor</u> [22T] provides further information and requirements.

Platform Requirements

The platform shall **{ps_3032}** provide <u>Release Consent</u> [Discrete] to the mission store a minimum of 20 msec prior to setting <u>CTS</u> [11R/04/02 = 1].

The platform shall **{ps_3033}** maintain <u>Release Consent</u> [Discrete] to the mission store until a minimum of 100 msec have elapsed after setting <u>CTS</u> [11R/04/02 = 1].

The platform may **{pm_3018}** remove <u>Release Consent</u> [Discrete] after a minimum of 100 msec have elapsed after setting <u>CTS</u> [11R/04/02 = 1].

Mission Store Requirements

The mission store shall **{ss_3050}** prevent initiation of any safety critical or irreversible events based solely on the presence of the Release Consent [Discrete].

3.5.13.4 Commit to Separate Store (CTS) [11R/04/02]

When the mission store has received a valid CTS [11R/04/02] with Release Consent [Discrete] enabled, the store will transition into the Launch state and execute the store release sequence. Sections 6.11R Store Control [11R], 6.11T Store Monitor [11T], and 6.22T Mission Monitor [22T] provide further information and requirements.

Platform Requirements

The platform shall **{ps_3034}** set CTS [11R/04/02 = 1] for a mission store only when:

 a. Minimum Mission Capable [22T/02/00 = 1].

 b. 28V DC2 [Power] is enabled.

 c. Release Consent [Discrete] is activated.

Mission Store Requirements

The mission store shall **{ss_3051}** initiate internal preparations necessary for release, to include safety critical and irreversible actions, upon receipt of CTS [11R/04/02 = 1] when all of the following conditions exist:

 a. Minimum Mission Capable [22T/02/00 = 1].

 b. Release Consent [Discrete] is activated.

3.5.14 Completion of Platform/Mission Store Release Sequence

The Store Release Sequence Timeline is shown in Figure 3.5.14-1. The platform/mission store primary release functions that are accomplished after CTS [11R/04/02 =1] are:

 a. Mission store activates internal battery(s).

 b. Mission store activates safety critical and/or irreversible functions.

 c. Mission store confirms it is operating on internal power by setting CTSS [11T/04/02 = 1].

 d. Platform removes Conditioning Power and Operational Power from the platform/store interface.

 e.   (Optional) Platform performs a Release Countdown Hold.

 f. Platform activates the S&RE to release the store.

 g. If the mission store release action is successful, the store separates from the platform resulting in umbilical cable disconnection.

 h. If the mission store release action is not successful, hung store processing is performed.
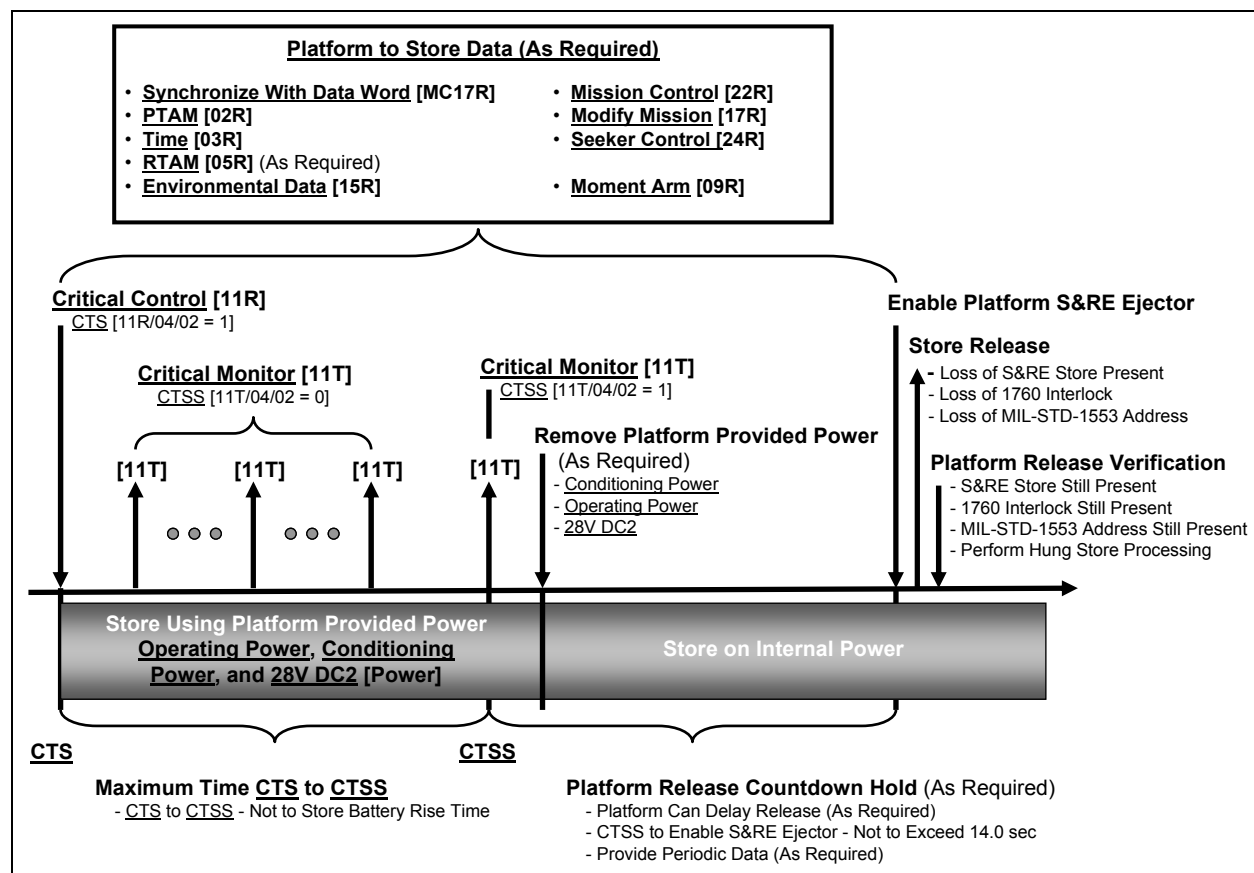
Figure 3.5.14-1 Store Release Sequence Timeline after CTS

3.5.14.1 Functional Sequence

The composite functional sequence for the functions of the Platform/Mission Store Release Sequence after CTS is described in Table 3.5.14-1.

Table 3.5.14-1 Platform/Mission Store Release Functional Sequence after CTS

	PLATFORM	MISSIONSTORE
1	Set CTS [11R/04/02 = 1] with Release Consent [Discrete] activated.	Enter Launch State Activate store safety critical or store irreversible functions (i.e., activating store internal batteries).

2	Provide Updated Periodic Transfer Alignment, Time, and Environmental data to store as required:
	  - Synchronize With Data Word [MC17R].
	  - PTAM [02R].
	  - Time [03R].
	  - RTAM [05R].
	  - Environmental Data [15R].
		Update Mission Monitor [22T] as required.
		Process Transfer Alignment, Time, and Environmental data from platform.

Table 3.5.14-1 Platform/Mission Store Release Functional Sequence after <u>CTS</u>

	PLATFORM	**MISSIONSTORE**
3	Provide Updated Moment Arm and Targeting data to store as required: - <u>Moment Arm</u> [09R]. - <u>Modify Mission</u> [17R]. - <u>Mission Control</u> [22R].	Update <u>Mission Monitor</u> [22T] as required. Process updates to Moment Arm and Targeting data received from the platform.
4	(Optional) Remove <u>Release Consent</u> [Discrete] a minimum of 100 msec after <u>CTS</u> [11R/04/02 = 1].	
5	Request <u>Store Monitor</u> [11T] messages as required to detect <u>CTSS</u> [11T/04/02 = 1]. Perform fault processing if <u>CDS Max Time to CTSS</u> is exceeded.	Set <u>CTSS</u> [11T/04/02 = 1] when: • Store is minimum mission capable • Store internal batteries are functional • Store is operating on internal power • Store internal safe to release checks passed.
6	When <u>CTSS</u> [11T/04/02 = 1] remove power to the store: • <u>Conditioning Power</u> • <u>Operating Power</u> • <u>28V DC2</u> [Power]	
7	(Optional) Platform Launch Countdown Hold Delay store release (as required) after <u>CTSS</u> [11T/04/02 = 1] - Not to Exceed <u>CDS Max Release Hold Time</u> **{cds_3020}**.	Update <u>CTSS</u> [11T/04/02] as required.
8	Activate S&RE store release mechanism. Retain arming lanyard (as applicable) at store separation as specified in the CDS.	Verify store release by verifying MIL-STD-1553 address lines disconnected. Attempt to accomplish mission regardless of <u>AUR Ready</u> [22T/02/04] status at release.
9	Transition to Release Verification after S&RE store release mechanism has been activated long enough to have separated the store.	

3.5.14.2 <u>Committed to Store Separation (CTSS)</u> [11T/04/02]

The mission store sets <u>CTSS</u> [11T/04/02 = 1] when ready for release. Note: To comply with UAI intent, mission stores need to minimize the time between <u>CTS</u> [11R/04/02 = 1] to <u>CTSS</u> [11T/04/02 = 1].

Store Requirements

The mission store shall **{ss_3052}** set <u>CTSS</u> [11T/04/02 = 1], subsequent to receiving a valid <u>CTS</u> [11R/04/02 = 1], when all the following conditions are met:

  a. The store battery has had sufficient time to or has achieved its required operating voltage.

  b. <u>Abort Release/Launch Status</u> [11T/05/04 = 0].

  c. <u>Minimum Mission Capable</u> [22T/02/00 = 1].

  d. <u>Power Interruption</u> [22T/02/14 = 0].

e. Other store specific conditions documented in the mission store supplement **{sup_3030}**.

The mission store supplement **{sup_3031}** documents the store <u>Max Time to CTSS</u>.

3.5.14.3 Power Change Over (PCO)

Power Change Over (PCO) is the process of switching the store from platform provided power to store internal power. When <u>CTSS</u> [11T/04/02 = 1] the platform removes power from the store. Verification of the operation of mission critical store components on store internal power is an important part of this process.

Platform Requirements

The platform shall **{ps_3035}** remove all external power from the platform mission store interface (e.g. <u>Conditioning Power</u>, <u>Operating Power</u>, and <u>28V DC2</u> [Power]) after <u>CTSS</u> [11T/04/02 = 1] is received from the mission store.

The platform shall **{ps_3036}** declare the store failed and abort the mission store release sequence when:

a. The store is reporting <u>CTSS</u> [11T/04/02 = 0] after <u>CDS Max Time to CTSS</u> **{cds_3019}** from setting <u>CTS</u> [11R/04/02 = 1].

b. The store resets <u>CTSS</u> [11T/04/02 = 0] after the mission store sets <u>CTSS</u> [11T/04/02 = 1].

Mission Store Requirements

The mission store shall **{ss_3053}** reset <u>CTSS</u> [11T/04/02 = 0] when any of the following conditions are met:

a. <u>Abort Release/Launch Status</u> [11T/05/04 = 1]

b. <u>Minimum Mission Capable</u> [22T/02/00 = 0]

c. <u>Power Interruption</u> [22T/02/14 = 1]

d. Other mission store specific conditions documented in the mission store supplement **{sup_3032}**

3.5.14.4 Platform/Mission Store Release Sequence Communications

The platform continues to provide periodic messages, moment arm messages (as required), and targeting messages (as required) to the mission store from <u>CTS</u> [11R/04/02 = 1] until activation of the platform S&RE mission store release mechanism.

Platform Requirements

The platform shall **{ps_3037}** continue to transmit the following periodic Receive [R] messages to the mission store during the Platform/Store Release Sequence (from <u>CTS</u> [11R/04/02 = 1] until activation of the platform S&RE mission store release mechanism):

a. <u>Synchronize With Data Word</u> [MC17R]

b. PTAM [02R]

c. Time [03R]

d. RTAM [05R]

e. Environmental Data [15R]

The platform may **{pm_3019}** transmit the following Receive [R] Messages, as required, to the mission store during the Platform/Store Release Sequence (from CTS [11R/04/02 = 1] until activation of the platform S&RE mission store release mechanism):

a. Moment Arm [09R]

b. Modify Mission [17R]

c. Mission Control [22R]

d. Seeker Control [24R]

The platform may **{pm_3020}** request Transmit [T] Messages, as defined in this ICD, during the Platform/Store Release Sequence (from CTS [11R/04/02 = 1] until activation of the platform S&RE mission store release mechanism).

Mission Store Requirements

The mission store shall **{ss_3054}** continue to accept the following Receive [R] Messages during the mission store release sequence until umbilical disconnect (Note: This does not prohibit the mission store from supporting other Receive [R] Messages until umbilical disconnect).

a. Synchronize With Data Word [MC17R]

b. PTAM [02R]

c. Time [03R]

d. RTAM [05R]

e. Environmental Data [15R]

f. Moment Arm [09R]

g. Modify Mission [17R]

h. Mission Control [22R]

i. Seeker Control [24R]

The mission store shall **{ss_3055}** continue to support all implemented Transmit [T] Messages, as defined in this ICD, during the mission store release sequence until umbilical disconnect.

3.5.14.5 Release Countdown Delay

The platform has the option to delay the activation of the mission store release mechanism after receiving CTSS [11T/04/02 = 1]. The mission store is expected to

tolerate a Release Countdown Delay that begins when the platform receives <u>Non-Safety Critical Release Functions Activated</u> [11T/05/05 = 1] or <u>CTSS</u> [11T/04/02 = 1] from the mission store, and ends with the platform activation of its mission store release mechanism.

Platform Requirements

The platform may **{pm_3021}** delay mission store release for a maximum duration of <u>CDS Max Release Hold Time</u> **{cds_3020}** after receipt of <u>Non-Safety Critical Release Functions Activated</u> [11T/05/05 = 1] or <u>CTSS</u> [11T/04/02 = 1], whichever is first, before activation of platform mission store release mechanism.

Note: <u>CDS Max Release Hold Time</u> **{cds_3020}** is less than the maximum Release Countdown Delay as documented in the mission store supplement to account for the maximum platform [11T] sampling latency and the maximum time between platform activation of S&RE and store loss of address lines.

Mission Store Requirements

The mission store shall **{ss_3088}** support a <u>Release Countdown Delay</u> for a minimum duration of 15.0 seconds after setting either <u>Non-Safety Critical Release Functions Activated</u> [11T/05/05 = 1] or <u>CTSS</u> [11T/04/02 = 1], as applicable, until detection of umbilical disconnect.

The mission store supplement **{sup_3033}** documents the maximum <u>Release Countdown Delay</u> (≥ 15.0 seconds) a store can tolerate.

3.5.14.6 Store Release

Store release starts with the platform activation of its Suspension and Release Equipment (S&RE) to release the store and continues until the store transition to free flight. When the S&RE arming solenoids are activated, the S&RE will retain mission store arming lanyards upon mission store release.

Platform Requirements

The platform shall **{ps_3039}** retain or command the carriage system to retain the arming lanyards required for desired store operation, as defined by <u>CDS Active Arming Lanyards</u> **{cds_3021}** during mission store release.

The platform/mission store addendum **{add_3002}** documents the applicable lanyard rigging.

Carriage System Requirements

The carriage system shall **{css_3003}** retain the commanded Arming Lanyards during the mission store release sequence.

The carriage/store addendum **{add_3003}** documents the applicable mission store lanyard rigging.

Mission Store Requirements

The mission store shall **{ss_3057}** arm onboard fuzes and activate other mission store functions documented in the store supplement **{sup_3034}** in response to lanyard retention by the S&RE.

3.5.14.7 Release Verification

Release Verification is performed after the platform has attempted to release the mission store. The platform allows for sufficient time for mission store to separate from the platform and disconnect the platform/mission store umbilical (dependent on specific platform system and S&RE characteristics) before performing release verification. If mission store separation fails to occur within a platform and/or mission store time limit, a hung store condition is determined to exist and platform-specific and/or store specific hung store handling procedures are invoked.

The Release Verification Timeline is presented in Figure 3.5.14-2.
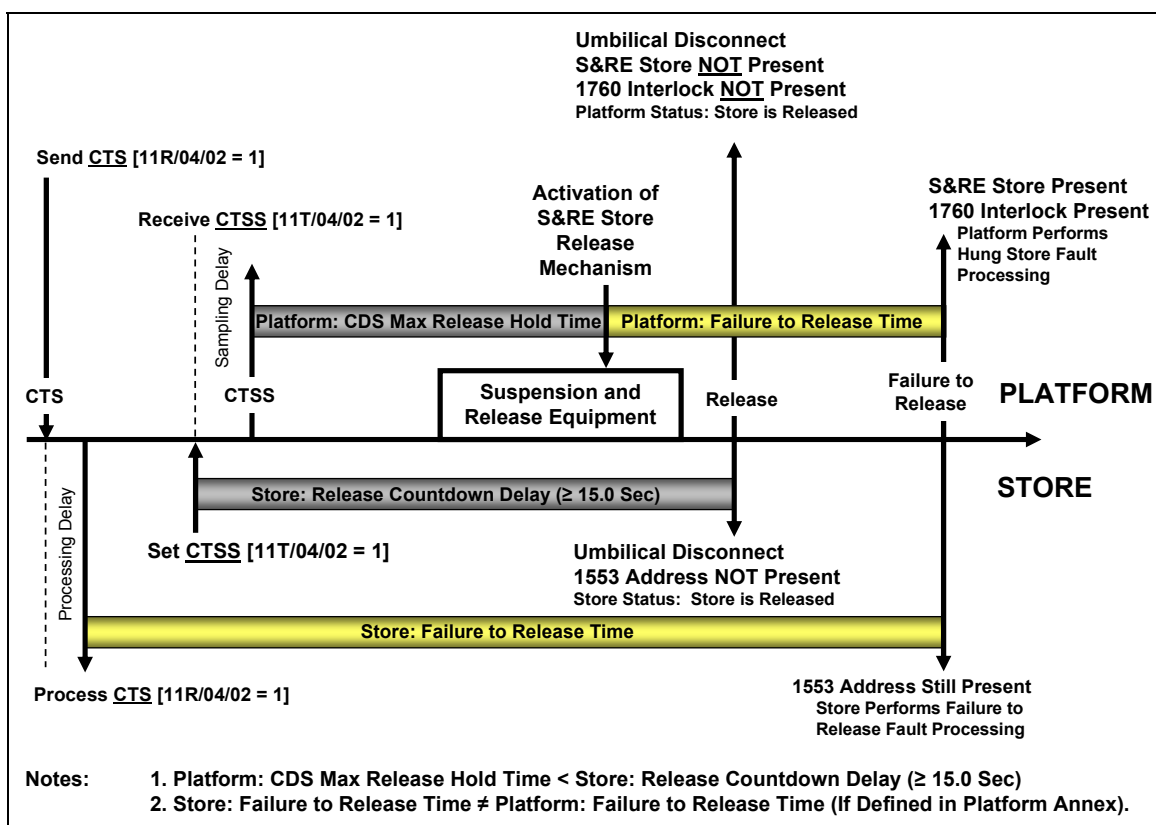
Figure 3.5.14-2 Notional Release Verification Timeline

3.5.14.7.1 Platform Hung Store Determination

The platform hung store determination function provides a means for the platform to determine whether the commanded store release was successful. For the platform, a hung store occurs if the mission store is still present after activating the platform S&RE store release mechanism. The platform uses the absence of the Interlock [Discrete] and Suspension and Release Equipment (S&RE) specific signals (i.e., store presence

switch, mechanical or proximity, in the S&RE) to determine if separation of the store has actually occurred. Section 4.1.5, MIL-STD-1760 Interlock, provides further information and requirements. Section 3.8.6 Mission Store Releases (Armed Release) provides further information and requirements for carriage systems.

Platform Requirements

The platform shall **{ps_3040}** perform platform specific hung store processing, if the store is still present after activation of the platform S&RE store release mechanism.

The platform annex **{ann_3010}** documents the platform specific hung store processing and failure to release fault handling.

The platform annex **{ann_3011}** documents the use of the Interlock [Discrete] and Suspension and Release Equipment (S&RE) specific signals used to determine if store release has occurred.

3.5.14.7.2 Mission Store Failure to Release Determination

For the mission store, failure to release occurs if the MIL-STD-1553 Address Lines [Discrete] are still present after a store specific Failure to Release Time has elapsed since receiving CTS [11R/04/02 = 1]. The MIL-STD-1553 Address Lines [Discrete] are used to indicate mated status of the umbilical connector between the platform and - store to the store in accordance with the provisions of MIL-STD-1760. The mission store uses the absence of the MIL-STD-1553 Address Lines [Discrete] to determine if mission store separation actually occurred. Note: The maximum mission store Failure to Release Time includes the mission store maximum CTS to CTSS release timeline, Max Release Hold Time, plus margin for umbilical separation delays induced by platform S&RE.

Mission Store Requirements

The mission store shall **{ss_3058}** abort its release/launch, put itself in the safest possible configuration, and perform mission store specific failure to release processing, if the MIL-STD-1553 Address Lines [Discrete] are still present after Failure to Release Time after receiving CTS [11R/04/02 = 1].

The mission store supplement **{sup_3035}** documents its Failure to Release Time and mission store response to a mission store detected failure to release.

3.5.15 Free Flight State

A successful mission store release includes a safe separation of the mission store from the platform, transition of the mission store to free-flight and the mission store flying its programmed flight path without re-contacting the platform and platform S&RE after release. The logical interface requirements for facilitating safe separation, transition to free-flight and platform/store deconfliction are defined in this section. The CDS contains the platform/store specific values for the mission store surface controls, separation elements, and dispersion elements as documented in the addendum.

Sections 3.5.12.4 Mission Store Pre-Release: Surface Delays and Separation Elements, 6.11R <u>Critical Control</u> [11R], and 6.11T <u>Critical Monitor</u> [11T] provide additional information and requirements.

Mission Store Requirements

The mission store shall **{ss_3059}** comply with the applicable control surface delays, separation delays, and dispersion/deconfliction controls, as documented in the mission store supplement **{sup_3036}**. Note: The mission store supplement also documents the default parameter values and implementation details.

  a. <u>Surface Deployment Delay</u> [11T/23/00…07]

  b. <u>Control Surface Unlock Delay</u> [11T/23/08…15]

  c. <u>Separation Duration</u> [11T/22/00…07]

  d. <u>Separation Distance</u> [11T/22/08…15]

  e. <u>Horizontal Dispersion</u> [11T/19/00…01]

  f. <u>Horizontal Dispersion Angle</u> [11T/19/02…07]

  g. <u>Vertical Dispersion</u> [11T/19/08…09]

  h. <u>Vertical Dispersion Angle</u> [11T/19/10…15]

  i. <u>Dispersion Duration</u> [11T/20]

3.5.16 Growth Provisions

<u>Growth Function A-H</u> [22R/12/00…07] provide eight (8) individually controlled commands that supports limited store design growth capability outside the standardized UAI functions and messages for those store functions that cannot be controlled using existing UAI interfaces.

<u>Growth Provision 2 Value</u> [22R/13] is a single data value that supports limited store design growth capability outside the standardized UAI functions and messages for those store functions that cannot be controlled using existing UAI interfaces.

The Growth Provision functional sequence is described in Table 3.5.16-1.

Section 6.22R <u>Mission Control</u> [22R] and 6.22T <u>Mission Monitor</u> [22T] provide further information and requirements.

Table 3.5.16-1 Notional Growth Provision Functional Sequence

	PLATFORM	STORE
1.	Determine if growth provisions are enabled by <u>CDS Growth Function A-H Enabled</u> and <u>CDS Growth Provision 2 Enabled</u> • <u>CDS Growth Provision 2 Minimum Value Boundary</u> • <u>CDS Growth Provision 2 Maximum Value Boundary</u>	
2.	Set <u>Growth Function A-H</u> [22R/12/00…07] as commanded by aircrew. Set <u>Growth Provision 2 Value</u> [22R/13] as commanded by aircrew.	Activate <u>Growth Function A-H</u> [22R/12/00…07] as commanded. Use the platform provided <u>Growth Provision 2 Value</u> [22R/13] <u>Update Mission Monitor</u> [22T] to reflect activated <u>Growth Function A-H</u> [22T/28/00…07] and <u>Growth Provision 2 Value</u> being used in <u>Growth Provision 2 Status</u> [22T/29].
3.	(Optional) Indicate <u>Growth Function A-H</u> status on platform display(s).	

3.5.17 General Support Functions

Several interface functions which are for general support or for abnormal condition operation and not specifically associated with one or more state/mode combinations are described in the following subparagraphs.

3.5.17.1 Message Time Stamping

The information in some messages transferred from UAI platforms to stores is extremely time sensitive. For these messages, the store determines the time of data validity from time stamped information provided by the platform. The time stamped UAI messages are <u>PTAM</u> [02R], <u>Time</u> [03R], <u>Modify Mission: Target</u> [17R-1], <u>Seeker/Sensor Control</u> [24R] and <u>Seeker/Sensor Monitor</u> [24T]. UAI supports the time tag time stamping method only as specified by paragraph B.4.1.5.12 of MIL-STD-1760D.

3.5.17.1.1 Estimated Latency Time Stamping

Not supported by UAI.

3.5.17.1.2 Time Tag Time Stamping

In the Time Tag method of time stamping the platform provides the store with platform clock time of data validity after synchronizing the store clock with the platform clock via <u>Synchronize With Data Word</u> [MC17R]. The platform clock is periodically discontinuous over the period of time stamped message traffic; therefore, a Time at Reset value for the platform clock is also provided to the store for use in resolving the time of data validity. Time at Reset pertains to the platform clock that is used to generate the time tags and is the maximum value attained by that clock prior to being reset. Time at Reset should be set to full scale if the platform clock is not reset but instead rolls over.

Figures 3.5.17-1, 3.5.17-2, and 3.5.17-3 give examples of the relationships of the time stamp information used in the Time Tag method.
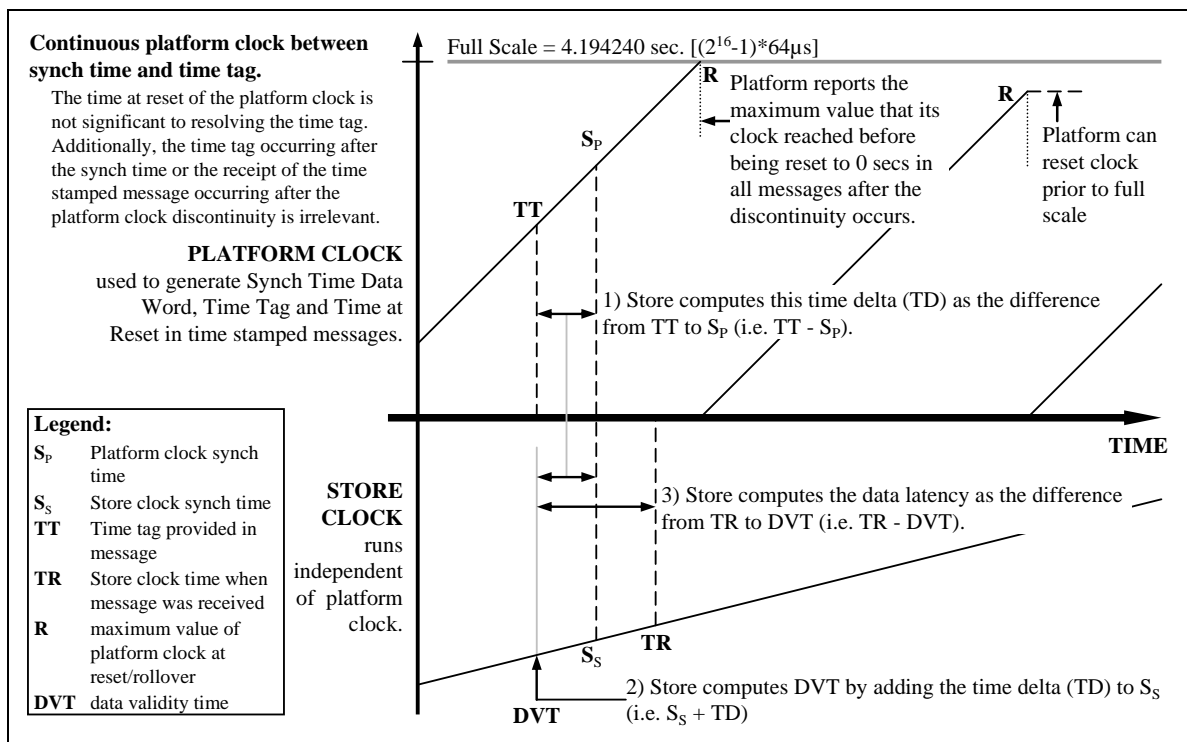
Figure 3.5.17-1 Time Tag Example 1
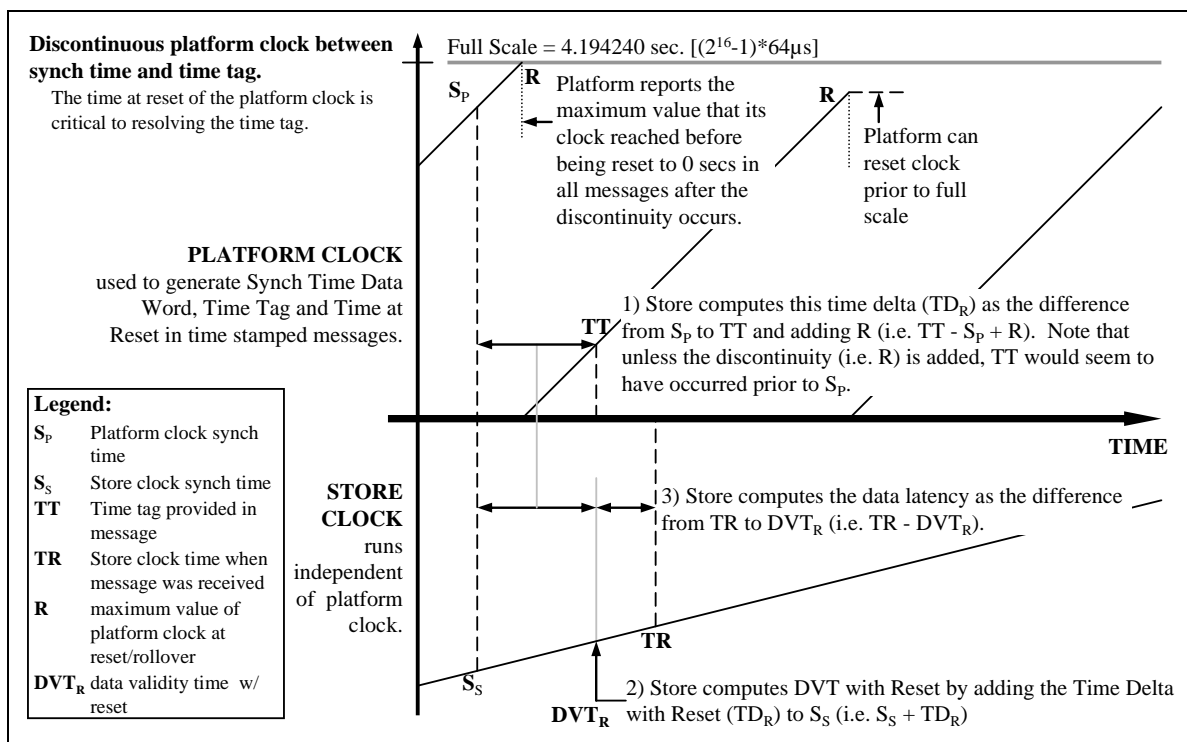
Figure 3.5.17-2 Time Tag Example 2
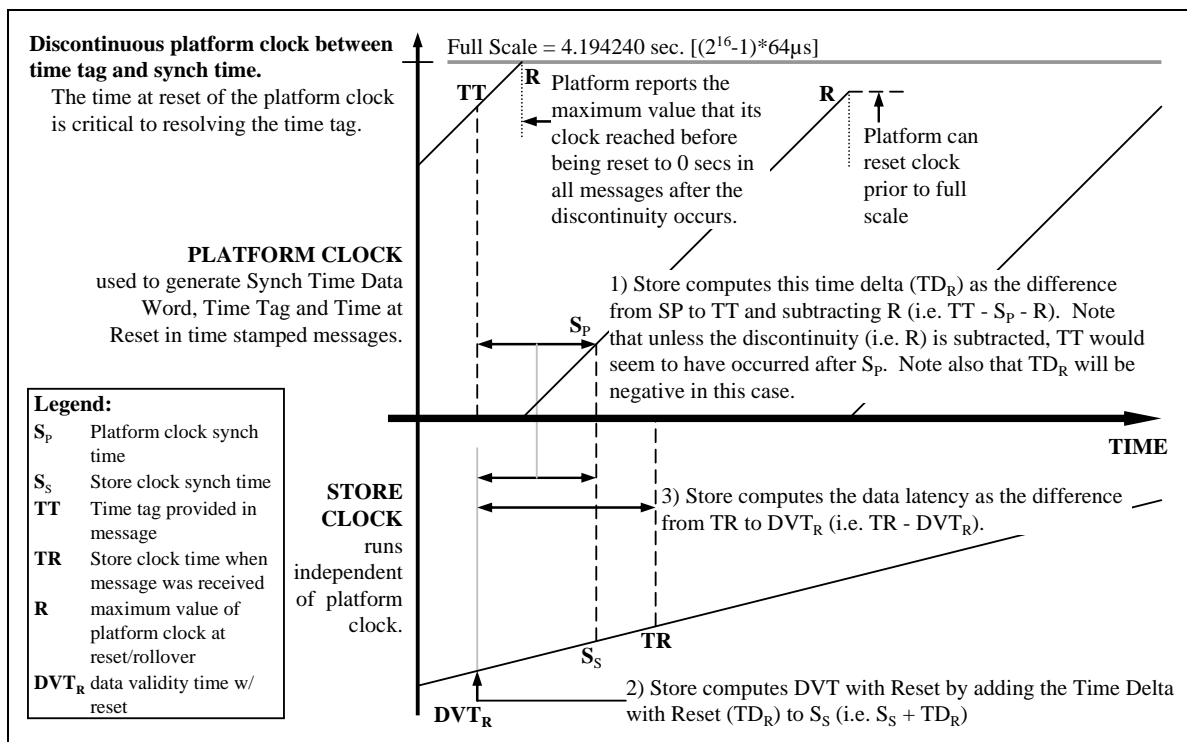
Figure 3.5.17-3 Time Tag Example 3

The following requirements apply to those messages and words where the Time Tag method of time stamping is used:

Platform Requirements

The platform shall **{ps_3052}** determine the time of data validity reference to the platform clock (compensated for known delays between the true time of validity and actual time the time tag was established but not compensated for known transmission delays to the store) and use this value as the time tag.

The platform shall **{ps_3053}** set TA Time Stamp [02R/05] to the time tag of the position and velocity data contained in [02R/06-23].

The platform shall **{ps_3054}** set Attitude Time Stamp [02R/29] to the time tag of the attitude data in words [02R/24-28] if a more accurate time tag value is available for this data, else set Attitude Time Stamp to the same time tag as TA Time Stamp [02R/05].

The platform shall **{ps_3055}** set Time Stamp [03R/09] to the time tag of the Time of Day [03R/02-03] data.

The platform shall **{ps_3056}** set Time Stamp [17R-1/30] to the time tag of the Target Location [17R-1/05-10] and Target Velocity [17R-1/22-23] data.

The platform shall **{ps_3057}** set Seeker Control Time Stamp [24R/15] to the time tag of the Seeker/Sensor Control [24R] data.

The platform shall **{ps_3163}** ensure the platform clock attains a value of 300 msec prior to being reset.

The platform shall **{ps_3058}** set Time at Reset [02R/04, 03R/08, 17R-1/29, 24R/14] to the maximum value that the platform clock attained prior to reset.

The platform shall **{ps_3059}** ensure that the latency of valid time tagged PTAM [02R], Time [03R] and Seeker/Sensor Control [24R] data (i.e., the elapsed time between the validity time of the data and the time of receipt of the data message at the store) is greater than zero but less than or equal to 300 msec.

The platform shall **{ps_3164}** ensure that the latency of valid time tagged Modify Mission: Target [17R-1] data is greater than zero but less than Time at Reset [17R-1/29].

The platform annex **{ann_3023}** documents expected latencies and clock reset process and the value(s) attained when reset.

The platform shall **{ps_3060}** transmit a Synchronize with Data Word [MC17R] to the store a minimum of one time between platform clock resets/rollovers.

Carriage System Requirements

A Type 2 carriage system shall **{css_3005}** transmit a Synchronize with Data Word [MC17R] to the mission store a minimum of one time between carriage system clock resets/rollovers.

A Type 2 carriage system shall **{css_3061}** use the time tag method to provide an accurate time stamp for PTAM Velocity and Position Data [02R/06-23] to the mission store.

A Type 2 carriage system shall **{css_3062}** use the time tag method to provide an accurate time stamp for PTAM Attitude Data [02R/24-28] to the mission store.

A Type 2 carriage system shall **{css_3063}** use the time tag method to provide an accurate time stamp for Time [03R] to the mission store.

A Type 2 carriage system shall **{css_3064}** use the time tag method to provide an accurate time stamp for Modify Mission: Target [17R-1] to the mission store.

A Type 2 carriage system shall **{css_3065}** use the time tag method to provide an accurate time stamp for Seeker/Sensor Control [24R] to the mission store.

The Type 2 carriage system store supplement **{sup_3072}** documents the method(s) used to provide an accurate time stamp and any additional uncertainty added to the time stamp and/or latency added to the transmission of the time stamped messages/data provided to the mission store.

Note: An accurate time stamp is defined as one that maintains the platform's time stamp such that when the time stamp for the data is determined/resolved by the mission store in the mission store's timeline that it is at the same relative time in the platform's timeline when the data was time stamped by the platform.

Mission Store Requirements

The mission store shall **{ss_3066}** compute the data validity time and the data latency of time tagged data using the steps defined in Table 3.5.17-1, or any process/algorithm that produces similar results, and the six time values defined below as applicable to the data being reviewed (for example, for data latency calculations for Time of Day [03R/02-03] data use Time Stamp [03R/09], Time at Reset [03R/08], the latest Synchronize with Data Word [MC17R], and the store clock time of receipt of the Time [03R] message).

  a. TT = Time tag provided in the time stamped message (i.e., TA Time Stamp [02R/05], Attitude Time Stamp [02R/29], Time Stamp [03R/09], Time Stamp [17R-1/30] or Seeker Control Time Stamp [24R/15]).

  b. R = Platform clock Time at Reset (i.e., Time at Reset [02R/04], Time at Reset [03R/08], Time at Reset [17R-1/29]) or Time at Reset [24R/14].

  c. S_P = Platform clock synch time from the Synchronize with Data Word [MC17R] (i.e., Synch Time [MC17R/01]).

  d. S_S = Store clock time of receipt of the Synchronize with Data Word [MC17R].

  e. TR = Store clock time of receipt of the time stamped message.

  f. LR = Latency requirement (e.g., 300 msec for PTAM [02R]).

The mission store may **{sm_3006}** determine whether to accept PTAM [02R] position data based on the data latency, using Time Stamp [02R/05], being greater than or equal to zero and less than or equal to 300 msec.

The mission store may **{sm_3007}** determine whether to accept PTAM [02R] attitude data based on the data latency, using Attitude Time Stamp [02R/29], being greater than or equal to zero and less than or equal to 300 msec.

The mission store shall **{ss_3095}** accept Time [03R] data if the data latency is greater than or equal to zero and less than or equal to 300 msec.

The mission store may **{sm_3008}** determine whether to accept Target Location [17R-1/05-10] and Target Velocity [17R-01/22-23] data based on the data latency being greater than or equal to zero and less than or equal to Time at Reset [17R-1/29].

The mission store may **{sm_3009}** determine whether to accept time stamped data in Seeker/Sensor Control [24R] based on the data latency being greater than or equal to zero and less than or equal to 300 msec.

The mission store supplement **{sup_3082}** documents the maximum latency it can support for PTAM [02R], Time [03R] and Seeker/Sensor Control [24R] data if greater than 300 msec.

Table 3.5.17-1 Time Tag Method Computational Steps

1	Compute Time Delta (TD) with the assumption that a platform clock reset (R) has not occurred between the platform time tagging of the data and synchronization of the platform and store clocks (see Figure 3.5.17-1). This is done by subtracting the platform clock <u>Synch Time</u> [MC17R/01] (S_P) provided in the last <u>Synchronize with Data Word</u> [MC17R] from the Time Tag (TT) provided in the time stamped message. (Note: Computed TD can be positive or negative.) $\quad\quad\quad$ TD = TT - S_P		
2	Compute Data Validity Time (DVT) by adding TD calculated in Step 1 to the Store clock time when it received the last <u>Synchronize with Data Word</u> [MC17R] (S_S). $\quad\quad\quad$ DVT = S_S + TD		
3	Compute Data Latency (DL) by subtracting DVT calculated in Step 2 from the store clock time when it received the time stamped message (TR). $\quad\quad\quad$ DL = TR - DVT The long form from the proceeding steps (i.e. 1 thru 3) is: $\quad\quad\quad$ DL = TR - (S_S + (TT - S_P)) = TR - S_S - TT + S_P		
4	If LR < R and DL is < 0 msec or > LR then perform calculations with the assumption that a platform clock reset (R) has occurred between the platform time tagging of the data and synchronization of the platform and store clocks (see Figures 3.5.17-2 and 3.5.17-3)		
	a	Compute Time Delta with Reset (TD_R) by performing one of the following:	
		i	If DL > LR then compute Time Delta with Reset (TD_R) by adding the platform clock Time at Reset (R) to the Time Delta (TD) calculated in Step 1 (see Figure 3.5.17-2). Unless R is added to TD, the time tag (TT) of the message would seem to have occurred prior to the platform synch time (S_P). (Note: Computed TD_R is positive): $\quad\quad\quad$ TD_R = TD + R = (TT - S_P) + R = TT - S_P + R
		ii	If DL < 0 msec then compute the Time Delta with Reset (TD_R) by subtracting the platform clock Time at Reset (R) from the Time Delta (TD) calculated in Step 1 (see Figure 3.5.17-3). Unless R is subtracted from TD, the time tag (TT) of the message would seem to have occurred after the platform synch time (S_P). (Note: Computed TD_R is negative) $\quad\quad\quad$ TD_R = TD - R = (TT - S_P) - R = TT - S_P - R
	b	Compute Data Validity Time with Reset (DVT_R) by adding DT_R calculated in Step 4a to the store clock time when it received the last <u>Synchronize with Data Word</u> [MC17R] (S_S). $\quad\quad\quad$ DVT_R = S_S + TD_R	
		i	When DL > LR then DVT_R = S_S + (TT- S_P + R) = S_S + TT - S_P + R
		ii	When DL < 0 msec then DVT_R = S_S + (TT - S_P - R) = S_S + TT - S_P - R
	c	Compute Data Latency with Reset (DL_R) by subtracting DVT_R calculated in Step 4b from the store clock time when it received the time stamped message (TR). $\quad\quad\quad$ DL_R = TR - DVT_R = TR - (S_S + TD_R) = TR - S_S - TD_R	
		i	When DL > LR then DL_R = TR - S_S - TT + S_P - R = DL - R
		ii	When DL < 0 msec then DL_R = TR - S_S - TT + S_P + R = DL + R

3.5.17.2 Jettison

Jettison is a platform initiated store release where the store is not intended to execute a mission. The platform can elect to jettison the store at any time, based on platform-specific jettison criteria. The platform jettison functions can be independent of store status or the current store state. The store can be in any captive carriage state when jettisoned, with or without Operating Power or Conditioning Power applied. If jettisoned in conjunction with the Abort Release/Launch [11R/06/04 = 1], the store responses are further described in section 3.5.17.3 Abort and 6.11R Store Control [11R].

Platform Requirements

The platform shall **{ps_3136}** not retain any lanyards that arms the mission store when jettisoning a mission store.

The platform annex **{ann_3012}** documents the platform jettison process.

Mission Store Requirements

The mission store shall **{ss_3069}** prohibit activation of guidance and control, engine start, and any further safety critical functions if it senses umbilical disconnect (i.e., the MIL-STD-1553 Address Lines [Discrete] are not present when CTSS [11T/04/02 = 0] (e.g., store is jettisoned).

3.5.17.3 Abort

A notional platform commanded Abort timeline is presented in Figure 3.5.17-4.
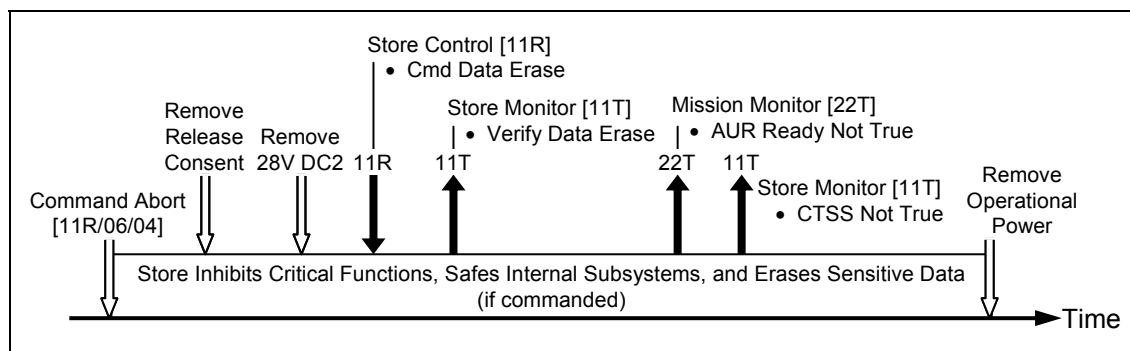
Figure 3.5.17-4 Notional Abort Timeline

Part of Abort State is the platform removing critical discrete and power signals which enable and provide power for critical function performance within the store. The platform has the option to command the store to erase sensitive data and/or remove Conditioning/Operating Power from the store. Section 6.11R Store Control [11R], 6.11T Store Monitor [11T], and 6.22T Mission Monitor [22T] provide further information and requirements.

Platform Requirements

The platform shall **{ps_3061}** remove <u>Release Consent</u> [Discrete] and <u>28V DC2</u> [Power] if applied at the store interface in conjunction with any of the following:

1. Platform is commanding <u>Abort Release/Launch</u> [11R/06/04 = 1], or

2. Store is reporting <u>Abort Release/Launch Status</u> [11T/05/04 = 1]

The platform may **{pm_3023}** command the store to erase sensitive data after setting <u>Abort Release/Launch</u> [11R/06/04 = 1].

The platform may **{pm_3024}** remove <u>Conditioning Power</u> and <u>Operating Power</u> after setting <u>Abort Release/Launch</u> [11R/06/04 = 1].

Mission Store Requirements

The mission store shall **{ss_3070}** place itself in the safest possible configuration and inhibit control surface movement on receipt of <u>Abort Release/Launch</u> [11R/06/04 = 1].

The mission store shall **{ss_3071}** respond with the following status indications of commanded or autonomous entry into the Abort state:

a) <u>CTSS</u> [11T/04/02 = 0]

b) <u>Minimum Mission Capable</u> [22T/02/00 = 0]

c) <u>AUR Ready</u> [22T/02/04 = 0]

d) <u>Abort Release/Launch Status</u> [11T/05/04 = 1]

The mission store shall **{ss_3072}** enter the Abort state autonomously only for safety critical conditions, as documented in the mission store supplement **{sup_3037}**.

The mission store supplement **{sup_3038}** documents the details of the store Abort state and details of its safest possible configuration.

3.5.18 Test Unique Functions

This section describes the interface requirements to initiate and control certain designated and store defined test functions during captive carry and free flight tests. These functions are controlled by the <u>Test Controls</u> [22R/06] and can be monitored in <u>Test Controls Status</u> [22T/11]. The associated control bits in <u>Test Controls</u> are only considered valid when the <u>Test Controls Invalid</u> [22R/02/00 = 0]. Test functions are enabled via the CDS for test missions. Section 6.22R <u>Mission Control</u> [22R] and 6.22T <u>Mission Monitor</u> [22T] provide further information and requirements.

3.5.18.1 Designated Test Control Functions

UAI includes the following designated test controls:

1. <u>TM On</u> [22R/06/00] provides the platform with positive control of the store telemetry (TM) radio frequency (RF) emissions.

2. FTS On [22R/06/01] provides the platform a means for powering the mission store Flight Termination System (FTS).

3. Simulate Release [22R/06/02] provides the platform a means to command the mission store to simulate the complete launch countdown sequence during captive carriage without initiating irreversible actions, followed by free flight simulation without umbilical separation. Note: 28V DC2 [Power] cannot be applied.

4. Immediate Sim Flight [22R/06/03] provides the platform a means to command the mission store to simulate free flight operation during captive carriage without a launch countdown sequence.

5. Timeline Intg (TLI) [22R/06/04] provides the platform a means to command the mission store to execute a store release timeline for ground testing (e.g., drop box testing). The function allows the platform to proceed through a full launch sequence without requiring the store to complete transfer alignment.

6. TM/FTS Batt On [22R/06/05] provides the platform a means to activate the battery used to power the mission store telemetry and/or flight termination system in preparation for a test store release. 28V DC2 [Power] is required to initiate TM/FTS squib-activated batteries on some mission stores.

Platform Requirements

The platform shall **{ps_3062}** implement TM On [22R/06/00], FTS On [22R/06/01], TM/FTS Batt On [22R/06/05], and either Simulate Release [22R/06/02] or Immediate Sim Flight [22R/06/03] as a minimum.

The platform shall **{ps_3063}** apply 28V DC2 [Power] to the store interface a minimum of 20 msec prior to commanding TM/FTS Batt On [22R/06/05 = 1].

The platform annex **{ann_3013}** documents the platform implementation of the designated test controls.

3.5.18.2 Store Defined Test Functions

Test Function A-J [22R/06/06…15] controls store-defined test functions. These test functions are customizable by the store and is likely to change from test mission to test mission.

Platform Requirements

The platform shall **{ps_3064}** implement Test Function A-F [22R/06/06…11] enabled by CDS Test Functions **{cds_3023}** as a minimum.

The platform shall **{ps_3065}** provide operator interface for activation of the implemented Test Function A-J [22R/06/06…15].

The platform annex **{ann_3014}** documents the implementation of optional Test Function G-J [22R/06/12…15] enabled by CDS Optional Test Functions **{cds_3024}**.

Mission Store Requirements

The mission store supplement **{sup_3039}** documents the implementation of Test Function A-J [22R/06/06…15].

3.5.19 Store Programmable Fuze

3.5.19.1 Programmable Fuze Identification and Configuration

The store provides programmable fuze identification information in Mission Monitor [22T] so the platform can determine the presence, identity, and configuration of the programmable fuze. Section 6.22T Mission Monitor [22T] provides further information and requirements.

Platform Requirements

The platform shall **{ps_3066}** use Programmable Fuze ID [22T/08] to configure the platform interface to support the store programmable fuze, if PF Onboard [22T/02/12 = 1].

3.5.19.2 Programmable Fuze Control/Status

The platform provides programmable fuze settings to the store as part of an MDT-Mission [13R-020] MDS or as Non-MDT programmable fuze settings in Store Control [11R]. The platform uses PF Control [17R-1/04/01] to command the store programmable fuze to use panel settings or platform provided data for Non-MDT MDS.

Table 3.5.19-1 summarizes programmable fuze controls and status indications. The store supplement provides specific implementation details for the store programmable fuze settings, functions, and capabilities (as applicable). Sections 6.11R Store Control [11R], 6.11T, Store Monitor [11T], 6.13R-020 MDT-Mission [13R-020], Modify Mission: Target [17R-1], Mission Control [22R], an 6.22T Mission Monitor [22T] provide further information and requirements.

Table 3.5.19-1 Programmable Fuze Control / Status

Name	Word/Bit	Description
PF Control	[17R-1/04/01]	Commands the store programmable fuze to use panel settings or platform provided fuze settings in Store Control [11R].
Target Class	[17R/T-1/04/05…10]	Specifies type of target being attacked and can be used by the store to optimize fuze settings.
Fuze Mode 1 Fuzing/Arming Mode Status 1	[11R/08] [11T/06]	Controls various fuzing mode functions. Provides fuzing mode function status.
Arm Delay From Release Arm Delay From Release	[11R/09] [11T/08]	Controls fuze arming delay used by store. Provides fuze arming delay used by store.
Fuze Function Delay From Release Fuze Function Delay From Release	[11R/10] [11T/09]	Controls fuze function delay after release. Provides fuze function delay used by store.
Fuze Function Delay From Impact Fuze Function Delay From Impact	[11R/11] [11T/10]	Controls fuze function time delay after impact Provided fuze function time delay after impact used by the store

Table 3.5.19-1 Programmable Fuze Control / Status

Name	Word/Bit	Description
Fuze Function Distance	[11R/12]	Depending on Fuze Mode 1 [11R/08] settings is used to set the fuze function altitude, depth, proximity, or height.
Fuze Function Distance	[11T/11]	Provides the fuze function distance value used by the store.
High Drag Arm Time	[11R/15]	Used to set the time delay, from store separation for a high drag store to begin arming of its fuze.
High Drag Arm Time	[11T/14]	Provides high drag arm time used by the store.
Function Time From Event	[11R/16]	Depending on Fuze Mode 1 [11R/08] settings is used to set the time delay from detection of a fuze/store event.
Function Time From Event	[11T/15]	Provides time delay from event used by the store.
Void/Layer Number	[11R/17]	Depending on Fuze Mode 1 [11R/08] settings used to defines the void number or layer number (mutually exclusive) that the fuze is to function.
Void/Layer Number	[11T/16]	Provides the void/layer number value used by the store.
Impact Velocity	[11R/18]	Used to set the minimum velocity the fuzing mechanism is expected to see at target impact.
Impact Velocity	[11T/17]	Provides the impact velocity value used by the store.
Fuze Mode 2	[11R/19]	Controls various fuzing mode functions.
Fuzing/Arming Mode Status 2	[11T/18]	Provides fuzing mode function status.
Fuze Time 1	[11R/25]	Used to set the start time after impact for the fuze to begin target surveillance functions.
Fuze Time 1	[11T/24]	Provides fuze time 1 value used by the store.
Fuze Time 2	[11R/26]	Used to set the stoptime after impact for the fuze to begin target surveillance functions.
Fuze Time 2	[11T/25]	Provides fuze time 2 value used by the store.
Tether Length	[11R/27]	Used to set the fuze tether length that the fuze deploys for post impact fuze status transmissions.
Tether Length	[11T/26]	Provides tether length value used by the store.
Interstage Gap Time	[11R/28]	Used to set the time gap between each stage of a multi stage warhead.
Interstage Gap Time	[11T/27]	Provides interstage gap time value used by the store.

Platform Requirements

The platform shall **{ps_3067}** provide the capability for the aircrew to select or enter Table 3.5.19-1 programmable fuze command(s) supported by Programmable Fuze ID [22T/08].

The platform shall **{ps_3068}** provide the capability for the aircrew to monitor Table 3.5.19-1 programmable fuze setting(s) supported by Programmable Fuze ID [22T/08].

Mission Store Requirements

The mission store supplement **{sup_3081}** documents:

   a) The complete set of fuze functions, including allowable combinations, which are supported by the mission store.

   b) The range of values (minimum/maximum) and discrete settings, if applicable, for each fuze parameter, and any mapping of unsupported fuze values into supported fuze settings.

   c) The values (defaults, adjusted values, panel settings, etc.) to be used by the fuze for all supported fuze functions if valid data is not provided in the MDS.

   d) A description of each supported fuze function (e.g., how is altitude determined for Function At Altitude).

3.5.20 Mission Store Seeker/Sensor

3.5.20.1 Seeker/Sensor Identification and Configuration

The store provides seeker/sensor identification information in Mission Monitor [22T] so the platform can determine the presence, identity, and configuration of the store seeker/sensor. Section 6.22T Mission Monitor [22T] provides further information and requirements.

Platform Requirements

The platform shall **{ps_3069}** use Seeker/Sensor ID [22T/09] to configure the platform interface to support the store seeker/sensor, if Seeker Onboard [22T/05/15 = 1].

3.5.20.2 Seeker/Sensor Control and Status

Seeker/Sensor Control [24R] is used to control an active sensor, passive sensor, laser transmitter, laser receiver, and/or data recorder. Seeker/Sensor Monitor [24T] is used to provide status.

Table 3.5.20-1 summarizes seeker/sensor active sensor, passive sensor, laser transmitter, and laser receiver controls and status indications. The store supplement provides specific implementation details for the store seeker/sensor, laser transmitter, and laser receiver settings, functions, and capabilities (as applicable). Sections 6.24R Seeker/Sensor Control [24R] and 6.24T Seeker/Sensor Monitor [24T] provide further information and requirements.

Table 3.5.20-1 Seeker/Sensor Control and Status

Name	Word/Bit	Description
Seeker/Sensor Control 1	[24R/03]	Controls various seeker/sensor functions.
Seeker/Sensor Status 1	[24T/03]	Provides seeker/sensor mode status.
Seeker/Sensor Control 2	[24R/04]	Controls various seeker/sensor functions.
Seeker/Sensor Status 2	[24T/04]	Provides seeker/sensor mode status.

Table 3.5.20-1 Seeker/Sensor Control and Status

Name	Word/Bit	Description
Slew Azimuth Command Slew Elevation Command	[24R/05] [24R/06]	Used for platform slewing commands, as azimuth and elevation slew rates, to the store seeker/sensor.
Slave Azimuth Command Slave Elevation Command	[24R/07] [24R/08]	Used for platform slaving commands, as azimuth and elevation pointing angles, to the store seeker/sensor.
Seeker/Sensor Azimuth Angle Seeker/Sensor Elevation Angle	[24T/05] [24T/06]	Provides store seeker/sensor position, in the form of azimuth and elevation angles to the platform.
Slave Command X Slave Command Y Slave Command Z	[24R/09] [24R/10] [24R/11]	Used for platform slaving commands, in the form of a unit vector, to the store seeker/sensor.
Seeker/Sensor Position X Seeker/Sensor Position X Seeker/Sensor Position X	[24T/07] [24T/08] [24T/09]	Provides store seeker/sensor position, in the form of a unit vector, to the platform.
Laser Control Laser Control Monitor	[24R/12] [24T/10]	Controls laser transmitter and receiver functions. Provides laser transmitter and receiver status.
Laser Code Laser Code Monitor	[24R/13] [24T/11]	Use to set the laser transmitter/receiver code. Provides laser transmitter/receiver code status.
Active Seeker Frequency Code	[24R/16]	Selects active seeker transmission frequency.
Left/Right Mask Zone Limits	[24R/17]	Sets active seeker and laser transmitter left and right mask zone limits.
Up/Down Mask Zone Limits	[24R/18]	Sets active seeker and laser transmitter up and down mask zone limits.
Target Priority	[24R/19]	Selects seeker/sensor target priority.
Seeker/Sensor Control 3 Seeker/Sensor Status 3	[24R/20] [24T/21]	Controls various seeker/sensor functions. Provides seeker/sensor mode status.
Range	[24T/12-13]	Provides the slant range from the store sensor to the object (e.g., target) in the seeker/sensor field-of-view.
Range Rate	[24T/14]	Provides the rate of change of slant range from the store sensor to the object (e.g., target) in the seeker/sensor field-of-view.
Passive Sensor Azimuth Error Passive Sensor Elevation Error	[24T/15] [24T/16]	Provides passive sensor azimuth/elevation errors of the target being tracked by the store passive sensor.
Active Sensor Azimuth Error Active Sensor Elevation Error	[24T/17] [24T/18]	Provides active sensor azimuth/elevation errors of the target being tracked by the store passive sensor.
Seeker/Sensor Azimuth Rate Seeker/Sensor Elevation Rate	[24T/19] [24T/20]	Provides seeker/sensor azimuth/elevation rates to the platform.

Platform Requirements

The platform shall **{ps_3070}** delay sending Seeker/Sensor Control [24R] commands and requesting Seeker/Sensor Monitor [24T], until Min TXA Received [22T/02/02 = 1].

The platform shall **{ps_3071}** provide the capability for the aircrew to select or enter Table 3.5.20-1 seeker/sensor command(s) supported by Seeker/Sensor ID [22T/09] when Seeker Onboard [22T/05/15 = 1].

The platform shall **{ps_3072}** provide the capability for the aircrew to monitor Table 3.5.20-1 seeker/sensor setting(s) supported by Seeker/Sensor ID [22T/09] when Seeker Onboard [22T/05/15 = 1].

3.5.20.3 Seeker/Sensor Video

Some mission stores with seeker/sensor(s) are capable of providing video to the platform. Some platforms and carriage systems are capable of routing store generated video, via MIL-STD-1760 High Bandwidth 3 (HB3), to platform aircrew display(s).

UAI incorporates provisions for routing store generated video to the platform. Video routing is not a UAI requirement for platforms, carriage systems, or stores.

The HB3 platform video signal capabilities are documented in the electrical interface section of the platform UAI-PSICD annex. Requirements for controlling store HB3 video are contained in section 6.22R Mission Control [22R] and 6.22T Mission Monitor [22T]. Requirements for controlling carriage system routing of store HB3 video are contained in section 6.10R Carriage System Control [10R].

Platform Requirements

The platform shall **{ps_3073}** route HB3 video to platform aircrew displays for the selected store(s), if CDS HB3 Video Available, **{cds_3025}** and the platform has the capability of routing HB3 video to platform aircrew display(s).

The platform shall **{ps_3074}** set HB3 Select [10R/04-11/07 = 1] to command the carriage system to route HB3 signal(s) from the selected store(s) if the CDS HB3 Video Available **{cds_3025}**, and if CDS CS High Band 1-4 Available **{cds_3012}** (carriage system).

The platform annex **{ann_3015}** documents the ability of the aircraft to route store HB3 video to aircrew display(s).

The platform annex **{ann_3016}** defines the HB3 video signal characteristics it supports.

Mission Store Requirements

For mission stores that have the ability to provide a video feed to the platform, the store shall **{ss_3073}** provide HB3 video to the platform/store interface.

The mission store supplement **{sup_3040}** defines the HB3 video signal characteristics it supports.

3.5.21 Weapon Data Link

3.5.21.1 WDL Introduction

3.5.21.1.1 WDL Waveforms, Networks, and Terminals

Mission store data links can support multiple types of WDL waveforms, networks, and terminal types, such as: Link-16, UHF, Mobile Satellite Service (MSS) packet switched (i.e., Network IP Address), MSS circuit switched (MSS-CS), and Internet Protocol-Advanced Tactical Data Link (IP-ATDL). Link-16 data link network is also known as the Tactical Data Link (TDL). UHF data link networks include shared UHF frequencies and separate UHF uplink and downlink frequencies.

Each type of platform, mission store, and/or controller can potentially support one or more types of WDL terminal(s). The mission store identifies the types of WDL network/terminal ID data configurations it supports in Weapon Data Link ID [22T/18]. Section 6.22T.17 Weapon Data Link ID [22T/18] provides additional information and requirements for mission store WDL Terminal types.

3.5.21.1.2 WDL Network/Terminal ID Data

The network ID defines the electronic address of a mission store or controller on a particular network. Each mission store and controller has a unique network ID. A mission store that supports two types of networks can have two different network IDs (e.g., a unique Link-16 network ID and a unique UHF network ID). By the same token, a controller that supports multiple networks can also have multiple network IDs (e.g., a unique network ID for Link-16, UHF, MSS, MSS-CS, IP-ATDL and any other network of which the controller is a member).

The WDL network/terminal ID data includes network IDs that uniquely identify the mission store and controller as well as other network configuration data required to communicate on the WDL network. This allows the mission store to communicate with the authorized controller but ignore data/commands from unspecified/unauthorized controllers and ignore data/commands sent to other WDL capable mission stores.

3.5.21.1.3 WDL Definition of Terms

To facilitate data management of the WDL configuration data, the following definitions apply:

Net Participant - A correspondent that can communicate within a given network(s). Net participants include current, alternate, and Third Party IFTU Source (3PS) controllers.

Controller - Generic term for the Current Controller, the Alternate Controller and/or the Third Party IFTU Source.

Current Controller (CC) - A net participant that controls a mission store in flight.

Alternate Controller (AC) - A net participant that is an alternate controller of a mission store in flight.

Third Party IFTU Source (3PS) - A net participant that provides target updates to a mission store.

WDL Network/Terminal ID Data - A collection of parameters that define how a net participant communicates on a given network. These parameters include the Network ID data as well as additional parameters that, depending on waveform type, define the communication link (waveform, NPG, SNN, etc.).

Network ID - Parameters that uniquely define a mission store or net participant (controller) on a given waveform.

Store Data Link (DL) Settings - A collection of parameters that control the data link operation of the mission store as a whole. These include, but are not limited to,

such things as WDL Power Control, Pre-Release WDL Update Enable, and Third
Party IFTU Source Enable.

IDL DL Settings - A collection of parameters that control the data link operation of
the mission store that are dependent upon the IDL being used. Each IDL can
have different values for these parameters, which include, but are not limited to,
such things as WDL EMCON, WDL EMCON Continuation Time, and Loss of
Communications Timeout Period.

Initialization Data Load (IDL) - Data that defines how the network is designed, and
contains all the parameters and settings shared by all network participants.

3.5.21.1.4 WDL Data Relationships

UAI mission stores that incorporate a weapon data link are required to support five (5)
additional interface message types: The <u>WDL Control</u> [21R], <u>WDL Monitor</u> [21T], <u>MDT-WDL Terminal Initialization</u> [13R-023], <u>MDT-WDL Key 1-3</u> [13R-025-027], and <u>MDT-Net Participants</u> [13R-029].

Figure 3.5.21-1 shows the weapon data link relationships between the mission planning
system, the platform, and the mission store.
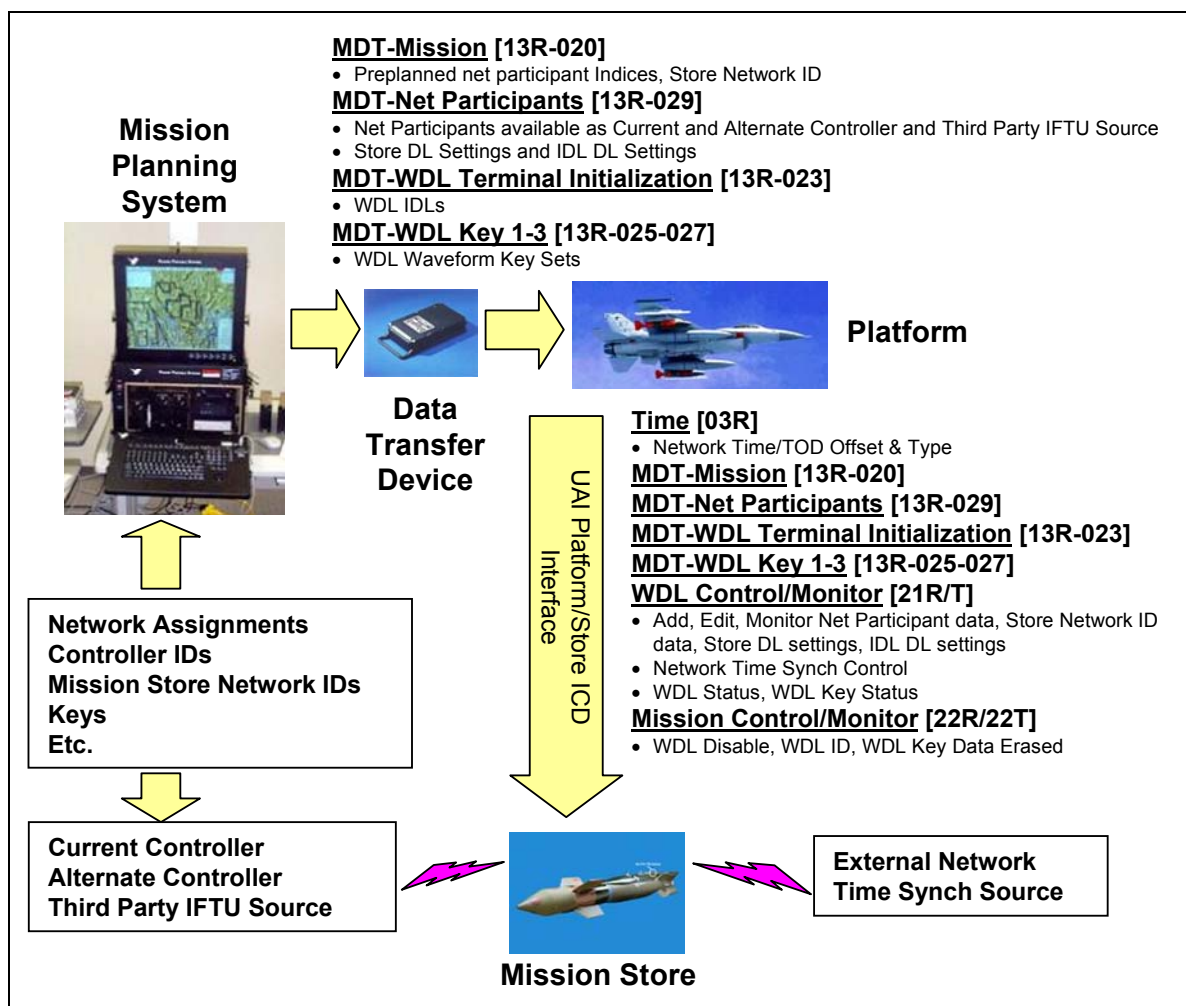
Figure 3.5.21-1 UAI Weapon Data Link Interfaces

Figure 3.5.21-2 depicts the required distribution of WDL configuration data across the MDT file set. The complete set of mission data for a WDL enabled mission store includes the MDS data from the MDT-Mission Data [13R-020] as well as referenced net participant information and store DL and IDL DL settings from MDT-Net Participants [13R-029], IDL information from MDT-WDL Terminal Initialization [13R-023], and key data from MDT-WDL Key 1-3 [13R-025-027].
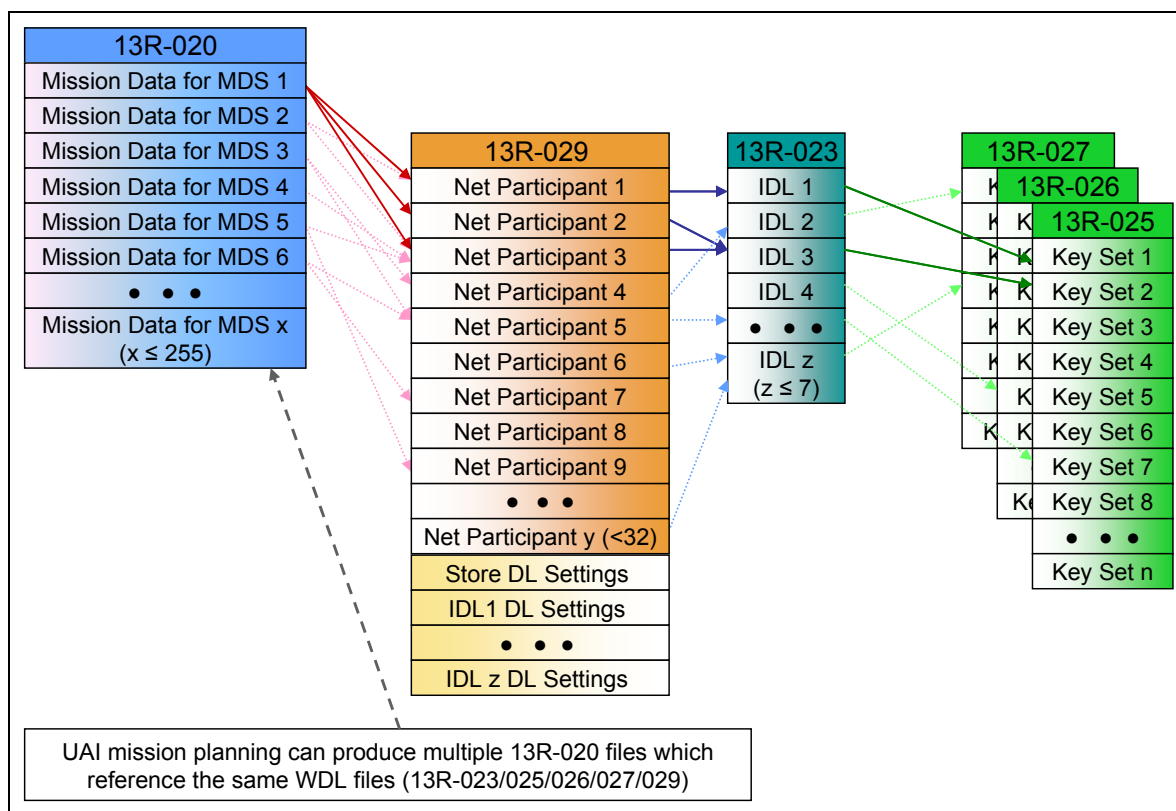
Figure 3.5.21-2 WDL Data Relationships within the MDT File Set

Table 3.5.21-1 summarizes WDL controls and status indications. The store supplement provides specific implementation details for the mission store WDL transmitter and receiver settings, functions, and capabilities (as applicable). Sections 6.03R Time [03R], 6.13R-023 MDT-WDL Terminal Initialization [13R-023], 6.13R-025 MDT-WDL Key 1-3 [13R-025-027], 6.22R Mission Control [22R], 6.22T Mission Monitor [22T], and 6.21R/T WDL Control/Monitor [21R/T] provide additional information and requirements.

Table 3.5.21-1 Weapon Data Link Data Summary

Name	Word/Bit	Description
Time [03R]		
WDL Network Time Reference Type	[03R/07/01…02]	Identifies the WDL Network Time Reference Type.
WDL Network Time/TOD Offset	[03R/11-12]	Contains WDL Time of Day Offset wrt WDL Network Time Reference Type.

Table 3.5.21-1 Weapon Data Link Data Summary

Name	Word/Bit	Description
Store Control [11R]		
Erase Command/Authority	[11R/06/00]	Erase Mission Store WDL Key Data, WDL Terminal Initialization Data, and Net-Participants Data
MDT-Mission [13R-020]		
Rec/Blk ID	[13R-020/01]	Mass Data Transfer Record #/Block #.
MiDEF Data Element Word	[13R-020/02-30]	Mass Data Transfer Data Words 02 -30.
MDT-WDL Terminal Initialization [13R-023]		
Rec/Blk ID	[13R-023/01]	Mass Data Transfer Record #/Block #.
MiDEF Data Element Word	[13R-023/02-30]	Mass Data Transfer Data Words 02 -30.
MDT-WDL Key 1 [13R-025]		
Rec/Blk ID	[13R-025/01]	Mass Data Transfer Record #/Block #.
MiDEF Data Element Word	[13R-025/02-30]	Mass Data Transfer Data Words 02 -30.
MDT-WDL Key 2 [13R-026]		
Rec/Blk ID	[13R-026/01]	Mass Data Transfer Record #/Block #.
MiDEF Data Element Word	[13R-026/02-30]	Mass Data Transfer Data Words 02 -30.
MDT-WDL Key 3 [13R-027]		
Rec/Blk ID	[13R-027/01]	Mass Data Transfer Record #/Block #.
MiDEF Data Element Word	[13R-027/02-30]	Mass Data Transfer Data Words 02 -30.
MDT-Net Participants [13R-029]		
Rec/Blk ID	[13R-029/01]	Mass Data Transfer Record #/Block #.
MiDEF Data Element Word	[13R-029/02-30]	Mass Data Transfer Data Words 02 -30.
WDL Control/Monitor [21R/T]		
WDL Control/Monitor Word	[21R/T/03]	WDL Control/Monitor Word
Store DL Settings	[21R/T/04]	Store DL settings
IDL DL Settings 1 and 2	[21R/T/05-06]	IDL DL unique settings 1 and 2
WDL Waveform Control/Monitor Words 1 and 2	[21R/T/07-08]	WDL Waveform Control/Monitor Words 1 and 2
Network IP Address	[21R/T/09-16]	Network IP Address
Root Terminal ID	[21R/T/17]	Root Terminal ID
Terminal ID	[21R/T/18-19]	Terminal ID
DL Address	[21R/T/20]	DL Address
Frequency/Circuit Number	[21R/T/21-24]	Frequency, AJ Net Number, Circuit Number, or Frequency/Spectrum Control Code
NPG and SNN/OPS No.	[21R/T/25]	Network Participation Group Number and Stacked Net Number or Operational Parameter Set Number

Table 3.5.21-1 Weapon Data Link Data Summary

Name	Word/Bit	Description
WDL Target Reference Number	[21R/T/26-27]	WDL Target Reference Number
WDL Status Words 1 and 2	[21T/28-29]	WDL Status Words 1 and 2
Checksum	[21R/T/30]	Checksum Word
Mission Control [22R]		
WDL Inhibit	[22R/05/08]	Inhibits Mission Store WDL Operations
Set Net Participants	[22R/11]	Defines the Net Participants that are the controllers for the Network Enabled Store for a particular MDS
Mission Monitor [22T]		
Net Participants Received	[22T/03/09]	Indicates the mission store has received MDT-Net Participants [13R-029]
WDL Init Data Received	[22T/03/12]	Indicates sufficient WDL Terminal Initialization data is Loaded in WDL Transceiver
WDL Key 1-3 Received	[22T/04/07…09]	Indicates MDT-WDL Key 1-3 [13R-025-027], respectively, has been received
WDL Key Data Erased	[22T/04/15]	Indicates all WDL key data have been erased
WDL Onboard	[22T/05/11]	Indicates Mission Store Has WDL Transceiver
Weapon Data Link ID	[22T/18]	Provides Mission Store WDL Type Identification, store WDL data invalidity, and mission data change via WDL indication
Net Participant Indices	[22T/20]	Identifies the Net Participants that are the controllers for the Network Enabled Store for a particular MDS

Portions of this data are required for each mission store WDL transceiver and for each Net Participant employed as a controller.

Platform Requirements

The platform shall **{ps_3139}** use Weapon Data Link ID [22T/18] to configure the platform interface to support the mission store weapon data link, if WDL Onboard [22T/05/11 = 1].

The platform shall **{ps_3140}** set WDL Inhibit [22R/05/08 = 1] to command the mission store to inhibit weapon data link transceiver operations and override all other WDL Control [21R] WDL settings, if WDL Onboard [22T/05/11 = 1].

The platform shall **{ps_3141}** only modify the WDL Inhibit [22R/05/08] command prior to commanding CTS [11R/04/02 = 1], if WDL Onboard [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_3090}** support the mission store weapon data link interface (i.e., WDL Control [21R], WDL Monitor [21T], MDT-WDL Terminal

<u>Initialization</u> [13R-023], <u>MDT-WDL Key 1-3</u> [13R-025-027], and <u>MDT-Net Participants</u> [13R-029]), if <u>WDL Onboard</u> [22T/05/11 = 1].

3.5.21.2 WDL Data in <u>MDT-Mission</u> [13R-020]

If store network ID or network participant indices are provided to the mission store in the MDT file set, that information must be provided in <u>MDT-Mission</u> [13R-020]. The store network ID and network participant indices can be mission specific. Sections 4.11.2 and 6.13R-020 contain additional requirements and information.

3.5.21.2.1 Store Network ID

Table 3.5.21-2 identifies the store network ID parameters that can exist in the <u>MDT-Mission</u> [13R-020] file for each mission store supported waveform. This data defines the electronic address of the mission store on a particular network. It can be preplanned to be mission specific or non-mission specific; however, platform edits of Store Network ID data for a particular network type must be applied to the store for all missions.

Table 3.5.21-2 Store Network ID Data in <u>MDT-Mission</u> [13R-020]

Description	Equivalent Entity in [21R/T]
WDL Waveform	[21R/T/07/03…06]
Network IP Address Type	[21R/T/08/00…01]
Terminal ID Type	[21R/T/08/02…04]
Network IP Address	[21R/T/09-16]
Root Terminal ID	[21R/T/17]
Terminal ID	[21R/T/18-19]
DL Address	[21R/T/20]

3.5.21.2.2 Network Participant Indices

Each MDS in the <u>MDT-Mission</u> [13R-020] file can also contain network participant indices that identify which net participants, from within the <u>MDT-Net Participants</u> [13R-029] file, are expected to be the network controllers (Current, Alternate, and Third Party IFTU source) for the mission. This data can be preplanned to be mission specific or non-mission specific; however, platform edits of controller indices must only be applied to the MDS identified by <u>Mod Msn Storage Location</u> [22T/08].

Table 3.5.21-3 identifies the network participant indices for each mission data set in the <u>MDT-Mission</u> [13R-020] file.

Table 3.5.21-3 Network Participant Indices in <u>MDT-Mission</u> [13R-020]

Description	Equivalent Control/Monitor Entities in [22R/T]
Current Controller Index	<u>Set CC Index</u> [22R/11/00…04] <u>CC Index</u> [22T/20/00…04]
Alternate Controller Index	<u>Set AC Index</u> [22R/11/05…09] <u>AC Index</u> [22T/20/05…09]
Third Party IFTU Source Index	<u>Set 3PS Index</u> [22R/11/10…14] <u>3PS Index</u> [22T/20/10…14]

3.5.21.3 MDT-Net Participants [13R-029]

The MDT-Net Participants [13R-029] file contains WDL data for up to 31 network participants with each participant defined on a single network. A net participant can exist on more than one network but will have a separate net participant entry for each different network. MDT-Net Participants [13R-029] file can contain data for less than 31 network participants if the lesser number meets mission requirements. Since UAI mission planning can produce multiple MDT-Mission [13R-020] files which reference the same set of WDL files (13R-023/025/026/027/029), it is possible that the MDT-Net Participants [13R-029] file contains net participants which are not pointed to by any of the network participant indices in a particular MDT-Mission [13R-020] file (as indicated in Figure 3.5.21-2). This situation can also arise if additional net participants are included in the MDT-Net Participants [13R-029] file to support Target Of Opportunity (TOO) missions.

The MDT-Net Participants [13R-029] file is used by the platform and mission store to coordinate the participants to control the network enabled mission store. Each net participant includes references to the IDL data in MDT-WDL Terminal Initialization [13R-023] to be used.

The MDT-Net Participants [13R-029] file can also contain a set of store DL settings, and a set of IDL DL settings for each IDL. The store DL settings are independent of IDL, mission, and controller. The IDL DL settings are IDL dependent and are not mission or controller dependent.

The MDT-Net Participants [13R-029] file is unique to each mission store type.

Sections 4.11.2 and 6.13R-029 contain additional requirements and information.

3.5.21.3.1 Net Participant Data

The data requirements of WDL network/terminal ID data vary between WDL network types, as summarized in Table 3.5.21-4. Due to the continuing development of Network Enabled Weapons data link requirements, changes to these requirements are possible.

Table 3.5.21-4 Notional WDL Network/Terminal ID Data Requirements

WDL Network/Terminal ID Data	WDL Waveform Type				
	Link-16	**UHF**	**MSS**	**MSS-CS**	**IP-ATDL**
Network IP Address [21R/T/09-16]	N/A	Optional	Required	N/A	Required
Root Terminal ID [21R/T/17] (JTIDS Unit ID)	Required	Required	Required	Required	Required
Terminal ID [21R/T/18-19]					
Unit Reference Number	N/A	Optional	N/A	N/A	N/A
MSS Terminal ID	N/A	N/A	Required	N/A	N/A
DL Address [21R/T/20]	N/A	Optional	N/A	N/A	Optional
Frequency/Circuit Number [21R/T/21-24]					
Frequency/Circuit Number Type	N/A	Required	N/A	Required	Required
Uplink/Downlink Protocol	N/A	Optional	N/A	N/A	N/A
Frequency	N/A	Optional [1]	N/A	N/A	N/A

Table 3.5.21-4 Notional WDL Network/Terminal ID Data Requirements

WDL Network/Terminal ID Data	WDL Waveform Type				
	Link-16	UHF	MSS	MSS-CS	IP-ATDL
AJ Net Number	N/A	Optional [1]	N/A	N/A	N/A
Circuit Number	N/A	N/A	N/A	Required	N/A
Frequency/Spectrum Control Code	N/A	N/A	N/A	N/A	Required
NPG and SNN/OPS No. [21R/T/25]					
Stacked Net Number	Required	N/A	N/A	N/A	N/A
Network Participation Group	Required	N/A	N/A	N/A	N/A
Operational Parameter Set Number	N/A	Required	N/A	N/A	N/A

Note 1: Either Frequency or AJ Net Number must be provided

Table 3.5.21-5 identifies those parameters that can exist for each net participant in the MDT-Net Participants [13R-029] file. Net participant information cannot be placed in any other MDT file.

Note: The net participant data include the net participant network ID which defines the electronic address of the net participant on the identified network. The network ID parameters used to define the network address are the same for net participants and for the mission store; however, the values of the parameters will be different because the network IDs of all the net participants and the mission store will be different. If network ID parameters are provided to the mission store in the MDT file set, the network ID parameters for net participants are placed in the MDT-Net Participants [13R-029] file, and network ID parameters for the mission store are placed in the MDT-Mission [13R-020] file.

Table 3.5.21-5 Net Participant Parameters

Description	Equivalent Entity in [21R/T]
Controller or Mission Store Terminal Select	[21R/07/00…02]
WDL Waveform	[21R/T/07/03…06]
Network IP Address Type	[21R/T/08/00…01]
Terminal ID Type	[21R/T/08/02…04]
WDL Terminal IDL Select	[21R/T/08/05…07]
Network IP Address	[21R/T/09-16]
Root Terminal ID	[21R/T/17]
Terminal ID	[21R/T/18-19]
DL Address	[21R/T/20]
Frequency/Circuit Number	[21R/T/21-24]
NPG and SNN/OPS No	[21R/T/25]

3.5.21.3.2 Store DL Settings

Table 3.5.21-6 identifies the store DL settings, which are DL settings that are common for all missions and all IDLs supported by the mission store. Some of these store DL

settings can be preplanned during mission planning and provided to the store in the MDT-Net Participants [13R-029] file as indicated in Table 3.5.21-6. If store DL settings are provided by MDT, the MDT-Net Participants [13R-029] file includes a single set of store DL settings supported by the mission store.

Table 3.5.21-6 Store DL Settings

Description	Equivalent Entity in [21R/T]	Able to be preplanned and provided in MDT-Net Participants [13R-029]
Store DL Settings		
WDL Power Control	21R/T/04/00	No
Xmit Seeker Image	21R/T/04/01	No
Xmit Seeker Video	21R/T/04/02	No
Pre-Release WDL Update Enable	21R/T/04/03	No
Reset WDL Change Flags	21R/T/04/04	No
Third Party IFTU Source Enable	21R/T/04/05…06	Yes
WDL Growth Function A	21R/T/04/07	Yes
WDL Growth Function B	21R/T/04/08	Yes
Reserved	21R/T/04/09…15	No

3.5.21.3.3 IDL DL Settings

Table 3.5.21-7 identifies the IDL DL settings, which can have different values for each IDL provided in the MDT-WDL Terminal Initialization [13R-023] file. Some of these IDL DL settings can be preplanned during mission planning and provided to the store in the MDT-Net Participants [13R-029] file as indicated in Table 3.5.21-7. If IDL DL settings are provided by MDT, the MDT-Net Participants [13R-029] file includes a set of IDL DL settings for each IDL provided in the MDT-WDL Terminal Initialization [13R-023] file.

Table 3.5.21-7 IDL DL Settings

Description	Equivalent Entity in [21R/T]	Able to be preplanned and provided in MDT-Net Participants [13R-029]
IDL DL Settings 1		
IDL DL Selector	21R/T/05/00…02	No
WDL Transmitter Power	21R/T/05/03	No
WDL Transmitter Control	21R/T/05/04…05	No
WDL Receiver Control	21R/T/05/06…07	No
WDL Antenna Pre-Launch Select	21R/T/05/08…09	Yes
WDL Antenna Post-Launch Select	21R/T/05/10…11	Yes
WDL Anti-Jam Enable	21R/T/05/12	Yes
WDL Secure Mode Enable	21R/T/05/13	Yes
PPLI Disable	21R/T/05/14	Yes
Snapshot Enable	21R/T/05/15	Yes
IDL DL Settings 2		
WDL EMCON	21R/T/06/00	Yes
WDL EMCON Continuation Time	21R/T/06/01…04	Yes

Table 3.5.21-7 IDL DL Settings

Description	Equivalent Entity in [21R/T]	Able to be preplanned and provided in <u>MDT-Net Participants</u> [13R-029]
Loss of Communications Timeout Period	21R/T/06/05…07	Yes
WDL Growth Function C	21R/T/06/08	Yes
WDL Growth Function D	21R/T/06/09	Yes
WDL Growth Function E	21R/T/06/10	Yes
Reserved	21R/T/06/11…15	No

3.5.21.4 <u>MDT-WDL Terminal Initialization</u> [13R-023]

<u>MDT-WDL Terminal Initialization</u> [13R-023] provides the mission store with the detailed internal network terminal configuration data (not associated with a specific mission) required to prepare the datalink terminal for operation on compatible networks. This file contains references to allow the mission store to select the appropriate keys from within files [13R-025], [13R-026], or [13R-027] to allow communication on the selected encrypted networks as depicted in Figure 3.5.21-2. <u>MDT-WDL Terminal Initialization</u> [13R-023] file can contain data for less than seven IDLs if the lesser number meets mission requirements. Since UAI mission planning can produce multiple <u>MDT-Mission</u> [13R-020] files which reference the same set of WDL files (13R-023/025/026/027/029), it is possible that the <u>MDT-WDL Terminal Initialization</u> [13R-023] file contains IDLs which are not pointed to by any of the network participants in a <u>MDT-Net Participants</u> [13R-029] file associated with a particular <u>MDT-Mission</u> [13R-020] file (as indicated in Figure 3.5.21-2). This situation can also arise if additional IDLs are included in the <u>MDT-WDL Terminal Initialization</u> [13R-023] file to support TOO missions. Sections 4.11.2 and 6.13R-023 <u>MDT-WDL Terminal Initialization</u> [13R-023] provide information and requirements for providing WDL initialization data to the mission store.

3.5.21.5 <u>MDT-WDL Key 1-3</u> [13R-025-027]

<u>MDT-WDL Key 1-3</u> [13R-025-027] provides the mission store with datalink terminal and network specific keys to allow the store to communicate on the defined networks. Up to three files can be provided to allow for separation of keys for security or future data separation requirements. <u>MDT-WDL Key 1-3</u> [13R-025-027] files are variable length MiDEF files and can contain key sets which are not currently being referenced by any IDL in the associated <u>MDT-WDL Terminal Initialization</u> [13R-023] file. Sections 4.11.2 and 6.13R-025 <u>MDT-WDL Key 1-3</u> [13R-025-027] provide information and requirements for providing WDL key data to the mission store.

3.5.21.6 WDL Configuration Example

Figure 3.5.21-3 depicts an example configuration for a WDL capable mission store. The example assumes the mission store is capable of supporting two different WDL waveforms: Link-16 and UHF. The mission store is to communicate with the Current and Alternate controllers on Link-16, and to communicate with the Designated Third Party IFTU Source using UHF for the selected MDS.
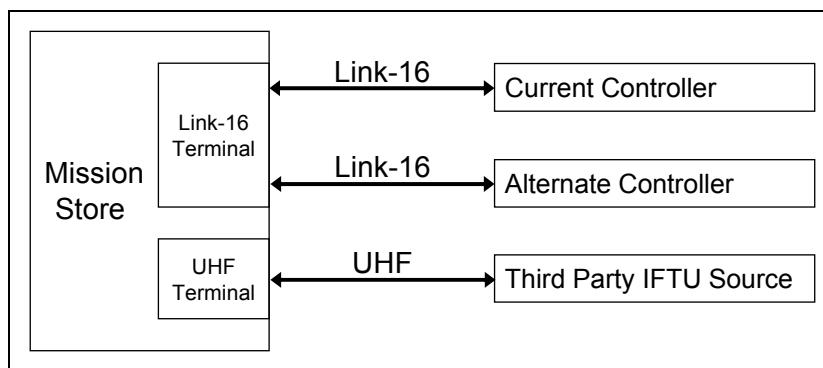
Figure 3.5.21-3 Example WDL Configuration

Table 3.5.21-8 provides the notional steps to configure the mission store for the WDL configuration depicted in Figure 3.5.21-3 using the preplanned WDL, to verify the configuration data preplanned for the mission, and to change the mission store configuration of various data elements.

Table 3.5.21-8 Notional WDL Configuration Verification and Change Functional Sequence

	Platform	Mission Store
Initialize the mission store WDL configuration using preplanned MDT data		
1	Transfer all WDL-related MDT files to the mission store: MDT-Mission [13R-020] MDT-WDL Terminal Initialization [13R-023] MDT-WDL Key 1-3 [13R-025-027] MDT-Net Participants [13R-029]	
2	Select Pri Msn Storage Location [22R/04] (with Set Net Participants Invalid [22R/02/07 = 1] so as to not overwrite preplanned controller selections)	
3		Initialize the WDL configuration based on the selected MDS using: Store Network ID Data for the selected Pri Msn Storage Location [22R/04] from MDT-Mission [13R-020] CC, AC, 3PS for the Pri Msn Storage Location [22R/04] as identified in Network Controller Reference Data in MDT-Mission [13R-020] WDL network/terminal ID data for CC, AC, 3PS as referenced to MDT-Net Participants [13R-029] Store DL settings from MDT-Net Participants [13R-029] IDL DL settings from MDT-Net Participants [13R-029] for the IDL(s) being used
Verify the mission store WDL configuration settings for an MDS		
4	Select Mod Msn Storage Location [22R/08] for the MDS of interest (with Set NetParticipants Invalid [22R/02/07 = 1] so as not to overwrite MDT data)	Populates Net Participant Indices [22T/20] with the assigned CC, AC, and 3PS for Mod Msn Storage Location [22R/08] based on the Network Controller Reference Data in MDT-Mission [13R-

Table 3.5.21-8 Notional WDL Configuration Verification and Change Functional Sequence

	Platform	Mission Store
		020]
5	Request Mission Monitor [22T] and determine the assigned CC, AC, and 3PS from Net Participant Indices [22T/20]	
6	Establish data to be received in WDL Monitor [21T] by sending WDL Control [21R] with WDL Configuration Select [21R/03/00…02 = 001 (B) (Configure WDL Monitor [21T] message)], WDL Monitor Select [21R/03/09…11 = 001 (B) (Store WDL Data #1)] and IDL DL Selector [21R/05/00…02] set to the IDL of interest	Populates WDL Monitor [21T] with WDL target reference number in [21T/26-27] (if the store is WDL Target Reference Number capable), store WDL Data #1 network ID data in [21T/07-20], store DL settings in [21T/04] and IDL DL settings in [21T/05-06] for the selected IDL
7	Request WDL Monitor [21T] to confirm settings	
8	Send WDL Control [21R] with WDL Monitor Select [21R/03/09…11 = 010 (B) (Store WDL Data #2)] and IDL DL Selector [21R/05/00…02] set to a different IDL of interest	Populates WDL Monitor [21T] with WDL target reference number in [21T/26-27] (if the store is WDL Target Reference Number capable), store WDL Data #2 network ID data in [21T/07-20], store DL settings in [21T/04] and IDL DL settings in [21T/05-06] for the selected IDL
9	Request WDL Monitor [21T] to confirm settings	
10	Send WDL Control [21R] with WDL Configuration Select [21R/03/00…02 = 001 (B) (Configure WDL Monitor [21T] message)], WDL Monitor Select [21R/03/09…11 = 100 (B) (Net Participant WDL Data)], and Net Participant Index [21R/03/03…07 = CC index #] and IDL DL Selector [21R/05/00…02] set to a different IDL of interest.	Populates WDL Monitor [21T] with WDL target reference number in [21T/26-27] (if the store is WDL Target Reference Number capable), WDL network/terminal ID data in [21T/07-25] for the assigned CC, and store DL settings in [21T/04] and IDL DL settings in [21T/05-06] for the selected IDL
11	Request WDL Monitor [21T] to confirm settings	
12	Repeat steps 10 and 11 for AC and 3PS	
Change the mission controller(s) assigned to an MDS		
13	Send Mission Control [22R] with Mod Msn Storage Location [22R/08] set to the MDS of interest, Set Net Participants Invalid [22R/02/07 = 0], Set CC Index [22R/11/00…04], Set AC Index [22R/11/05…09], and Set 3PS Index [22R/11/10…14] set to the desired index numbers.	Update the CC, AC, and 3PS index numbers assigned to the MDS in Mod Msn Storage Location [22R/08]
Modify the WDL network/terminal ID data for an individual controller		
14	Send WDL Control [21R] with WDL Configuration Select [21R/03/00…02 = 011 (B) (Modify Network/Terminal ID Data)], Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B) (Net Participant WDL Data)], Net Participant Index	Update the WDL network/terminal ID data assigned to the selected net participant index number

Table 3.5.21-8 Notional WDL Configuration Verification and Change Functional Sequence

	Platform	Mission Store
	[21R/03/03…07] set to the desired controller index #, and set words [21R/07-25] to the desired configuration data for that controller	
Modify the mission store network ID data		
15	Send WDL Control [21R] with WDL Configuration Select [21R/03/00…02 = 011 (B) (Modify Network/Terminal ID Data)], Controller or Mission Store Terminal Select [21R/07/00…02 = 001 (B), 010 (B), or 011 (B)] for Store WDL Data #1, #2 or #3 as desired, and set words [21R/07-20] to the desired mission store network ID.	Update the mission store network ID associated with WDL Waveform [21R/07/03…06] for the store as a whole
Modify the store DL settings		
16	Send WDL Control [21R] with WDL Configuration Select [21R/03/00…02 = 010 (B) (Execute Commands in WDL Control Words [21R/03-06] and [21R/26-27] only)] and word [21R/04] set to the desired store DL settings. Set Word 5/6 Invalidity [21R/02/02…03 = 11 (B)] to avoid changing IDL DL settings and set Words 26-27 Invalidity [21R/02/12 = 1 (B)] to avoid changing WDL target reference number	Update the store DL settings
Modify the IDL DL settings		
17	Send WDL Control [21R] with WDL Configuration Select [21R/03/00…02 = 010 (B) (Execute Commands in WDL Control Words [21R/03-06] and [21R/26-27] only)], IDL DL Selector [21R/05/00…02] set to a desired IDL, and words [21R/05-06] set to the desired IDL DL settings. Set Word 4 Invalidity [21R/02/01 = 1 (B)] to avoid changing store DL settings and set Words 26-27 Invalidity [21R/02/12 = 1 (B)] to avoid changing WDL target reference number	Update the IDL DL settings for the IDL specified in IDL DL Selector [21R/05/00…02]
Modify the WDL Target Reference Number (if the store is WDL Target Reference Number capable)		
18	Select Mod Msn Storage Location [22R/08] for the MDS of interest	
19	Send WDL Control [21R] with WDL Configuration Select [21R/03/00…02 = 010 (B) (Execute Commands in WDL Control Words [21R/03-06] and [21R/26-27] only)] and words [21R/26-27] set to the desired WDL Target Reference Number. Set Word 4/5/6 Invalidity [21R/02/01…03 = 111 (B)] to avoid changing store DL settings and IDL DL settings	Update the WDL Target Reference Number assigned to the MDS in Mod Msn Storage Location [22R/08]

Mission Store Requirements

The mission store supplement **{sup_3084}** documents the networks supported by the store and the specific data elements supported for each type of network.

3.5.22 Geographic Zones (GeoZones)

UAI Geographic Zones (GeoZones) are airspace control and/or geographic fire support coordination measures that can constrain mission store operations. Through the use of GeoZones, mission stores that have autonomous search, acquisition, and target engagement capabilities can be constrained to only attack targets (or impact) inside a specific geographic area (i.e., Engagement GeoZone) or be prevented from flying inside of or impacting within a specific geographic area (Exclusion GeoZone).

3.5.22.1 GeoZone Types

Airspace control measures provide the capability for mission planners, aircrews, and weapon controllers to constrain mission store autonomous operations to minimize collateral damage, avoid fratricide, protect culturally significant monuments/structures, and/or prevent violations of political boundaries. Although there are many other types of airspace control measures that a mission store might be capable of using, UAI only requires mission stores to support Engagement GeoZones and Exclusion GeoZones as defined in Table 3.5.22-1. Note: An enabled GeoZone is a GeoZone that is active (i.e., is not disabled nor overridden).

Table 3.5.22-1 UAI GeoZone Types

Name	Description
Engagement GeoZone	A two or three dimensional GeoZone that the mission store is permitted to enter, autonomously engage targets, and/or impact within (a.k.a. Free Fire or Kill Zone).
Exclusion GeoZone	A two or three dimensional GeoZone that the mission store is not permitted to enter nor impact within (a.k.a. No-Fly, No Fire, or No Impact Zone). The mission store is allowed to overfly the Exclusion GeoZone above Zone Maximum Altitude (because the airspace above is not part of an Exclusion GeoZone).

Notes:

1. The mission store engages the platform provided target coordinates when Seeker Onboard [22T/05/15 = 0], or the priority target specified by Target Priority Control [24R/19/00…01] when Seeker Onboard [22T/05/15 = 1], as long as the target is not inside an Exclusion GeoZone.
2. Exclusion GeoZone restrictions/limits do not apply to target coordinates that are located outside all enabled Exclusion GeoZones. However, the "no-fly thru" restrictions for enabled 3D Exclusion GeoZones still apply.
3. Engagement GeoZone restrictions/limits do not apply to target coordinates that are located outside all enabled Engagement GeoZones.
4. Exclusion GeoZones restrictions/limits always override Engagement GeoZones.
5. Exclusion GeoZone(s) can be located inside Engagement GeoZone(s), however, Engagement GeoZone(s) cannot be located inside Exclusion GeoZones(s).
6. Exclusion GeoZone(s) do not have to be associated with Engagement GeoZones, and vice versa.
7. Engagement and Exclusion GeoZones are not normally to be associated with specific or preplanned targets, targets of opportunity, or MDT-Mission [13R-020] Mission Data Set(s).

3.5.22.2 GeoZone Control/Status

Mission stores that use GeoZone data support three (3) messages: <u>GeoZone Control</u> [16R], <u>GeoZone Monitor</u> [16T], and <u>MDT-GeoZone Data</u> [13R-021]. GeoZone messages support Points, Single Point Areas (e.g., circle, ellipse, square, and rectangle), multi-point lines, multi-point polygon areas, and a UAI Grid Location Identifier derived Grid/Cell/Sector/Quadrant GeoZone identification system.

Preplanned GeoZone information can be created by a mission planning system and/or extracted from an Air Tasking Order (ATO), Airspace Control Plan (ACP), Airspace Control Order (ACO), and/or Special Instructions (SPINS), by a mission planning system. Preplanned GeoZones may be used by the mission planning system for mission route planning and/or transferred to the mission store via <u>MDT-GeoZone Data</u> [13R-021]. Mission store(s) that support GeoZone data, provide the capability for the platform to modify, delete, enable, disable, and/or override preplanned GeoZone information via <u>GeoZone Control</u> [16R], and monitor GeoZone status via <u>GeoZone Monitor</u> [16T]). Additionally, <u>GeoZone Control</u> [16R] can be used to create, modify, and/or delete GeoZones. The platform establishes the final GeoZone(s) enable/disable/override configuration prior to commanding <u>CTS</u> [11R/04/02].

Note: UAI GeoZone message data elements, requirements, and protocols are compatible with the data elements, requirements, and protocols defined in MIL-STD-6016C, Tactical Data Link (Link-16) J3.0 Message.

Table 3.5.22-2 summarizes GeoZone commands, data and status indications. Sections 6.16R <u>GeoZone Control</u> [16R], 6.16T <u>GeoZone Monitor</u> [16T], and 6.13R-021 <u>MDT-GeoZone Data</u> [13R-021] provide further information and requirements.

Table 3.5.22-2 GeoZone Data

Name	Word/Bit	Description
MDT-GeoZone Data [13R-021]		
Rec/Blk ID	[13R-021/01]	Mass Data Transfer Record #/Block #
MiDEF Data Element Word	[13R-021/02-30]	Mass Data Transfer Data Words 02 -30
GeoZone Control/Monitor [16R/T]		
Global Control/Monitor Word 1	[16R/T/03]	Global Control/Monitor Word 1
Global Control/Monitor Word 2	[16R/T/04]	Global Control/Monitor Word 2
GeoZone Reference Number	[16R/T/05-06]	GeoZone Reference Number
Grid Label: Characters 1-4	[16R/T/07-08]	Grid Label: Character 1 through 4
GeoZone Definition, Word 1	[16R/T/09]	GeoZone Definition, Word 1
GeoZone Definition, Word 2	[16R/T/10]	GeoZone Definition, Word 2
GeoZone Time	[16R/T/11]	Time attributes associated with designated zone
Reference Point Latitude	[16R/T/12-13]	Zone Reference Point Latitude
Reference Point Longitude	[16R/T/14-15]	Zone Reference Point Longitude
Reference Point Altitude	[16R/T/16-17]	Zone Reference Point Altitude (MSW)
Zone Maximum Altitude	[16R/T/18-19]	Maximum (i.e., Top) Zone Altitude (MSW)
GeoZone Velocity North	[16R/T/20]	Moving GeoZone Velocity North
GeoZone Velocity East	[16R/T/21]	Moving GeoZone Velocity East

Table 3.5.22-2 GeoZone Data

Name	Word/Bit	Description
Area Axis Orientation	[16R/T/22]	Non-Symmetric GeoZone Orientation Angle
Area Major Axis	[16R/T/23]	Non-Symmetric GeoZone Major Axis Length
Area Minor Axis	[16R/T/24]	Non-Symmetric GeoZone Minor Axis Length
Point 1 Offset North	[16R/T/25]	Point 1 Offset North wrt Reference Point
Point 1 Offset East	[16R/T/26]	Point 1 Offset East wrt Reference Point
Point 1 Offset Down	[16R/T/27]	Point 1 Offset Down wrt Reference Point
Point 2 Offset North	[16R/T/28]	Point 2 Offset North wrt Reference Point
Point 2 Offset East	[16R/T/29]	Point 2 Offset East wrt Reference Point
Point 2 Offset Down	[16R/T/30]	Point 2 Offset Down wrt Reference Point
Mission Monitor [22T]		
GeoZone Violation	[22T/02/15]	Mission Store Has Detected a GeoZone Violation
GeoZone Data Erased	[22T/04/10]	Mission Store has erased all GeoZone Data

3.6 Carriage System States and Modes of Operation

Carriage systems carry mission stores and interface to the platform via a MIL-STD-1760 interface. The carriage system, in turn, interfaces with one or more UAI-compatible mission stores via either a MIL-STD-1760 interface or a Miniature Munition Store Interface (MMSI). (Note: MIL-STD-1760 classifies the MIL-STD-1760 to MIL-STD-1760 devices as Carriage Stores, and imposes some specific requirements for this category of carriage systems.) From a UAI perspective, both of these categories of carriage systems are considered logically equivalent, meaning the message formats, message structure, and BC/RT command/response relationships are identical, and any electro-mechanical differences between MIL-STD-1760 and MMSI do not affect the message data content. Therefore, the distinguishing factor between carriage systems is the method of multiplex bus communications between the platform and mission stores via the carriage system.

A Type 1 carriage system acts as a MIL-STD-1760/1553 bus repeater. Bi-directionally buffered signals are directly transferred between the platform and mission stores with a small latency (due to buffering) through the carriage system. A Type 1 carriage system provides mission store station RT addresses supplied by the platform to its mission stores. With a Type 1 carriage system, the platform communicates directly with the individual mission stores via the assigned RT addresses. The platform controls all communication with the mission stores (i.e., the carriage system cannot communicate directly with the mission store as a bus controller), and controls store release sequence via commands sent to the carriage system. An example of a Type 1 carriage system is the BRU-57.

Type 1 carriage system characteristics:

- Platform has explicit control over application and routing of MIL-STD-1760 power, discretes, and signals to the carried stores.

- Platform has explicit control over carriage functions (arming, in-flight lock, release)

- Mission stores are on an "active extension" of the platform MUX bus.

- Platform prepares stores for release then commands carriage to release them.

A Type 2 carriage system communicates with the platform via the MIL-STD-1760/1553 bus as an RT, and communicates as a bus controller to all loaded mission stores via a separate and independent communications bus. A Type 2 carriage system has the ability to be configured to control communication with the mission stores and, using its internal processor, control the entire mission store release sequence, provided the platform applies the required safety critical signals and sends the correct commands to the carriage system. A Type 2 carriage system also provides the capability for the platform to communicate with the mission store, without significant carriage system interaction, using either a directed communication or embedded protocol. Directed Protocol allows the platform to communicate with individual mission stores at the carriage system RT address, with the carriage system routing the communications. The mission store selected to receive directed messages is set by a platform message and maintained by the carriage system until the platform commands the carriage system to route messages to another store. Embedded Protocol identifies the mission store to receive the message within the message. An example of a Type 2 carriage system is the BRU-61.

Type 2 carriage system characteristics:

- Platform and carriage system share control over application and routing of MIL-STD-1760 power, discretes, and signals to the mission stores and release functions.

- Mission stores are on a bus isolated from the platform MUX bus.

- Specific mission store requirements are provided in the carriage system CDS.

The UAI logical interface supports both Type 1 and Type 2 carriage systems, based on information provided in the platform CDS for the particular carriage system.

The specific modes and functions within the defined set that are applicable to only a Type 1 or Type 2 carriage system are identified herein. If Type 1 or Type 2 carriage system is not identified, the functions and requirements apply to both.

The functional requirements for UAI compliant platform/carriage system interfaces are described in terms of states and modes for control of the carriage system to utilize mission store employment sequence. UAI states and modes are those items that can be controlled or monitored across the platform/carriage system interface using UAI messages included in Section 6 of this document. The components that comprise the UAI states and modes represent a minimal set for the carriage system and are presented with notional entry and exit transitions in the following section.

Platform Requirement

The platform shall **{ps_3075}** support carriage system functionality as enabled by <u>CDS Carriage System Type</u> (i.e., Type 1 or Type 2) **{cds_3026}.**

Carriage System Requirement

The carriage system supplement **{sup_3041}** documents its type, carriage system CDS variables, unique states and modes, transitions, functionality, and timelines.

3.6.1 Off State

This is a captive carriage state in which no power is applied to the carriage system. The carriage system remains in this state until Operating Power is applied. There are no interface functions supported while in the Off State except MIL-STD-1760 Interlock and Return [Discrete].

State Entry

The Off State is entered from Initialization or Ready States by removing power from the carriage system.

State Exit

The Off State is exited upon application of Operating Power.

3.6.2 Initialization State

A captive carriage state in which Operating Power is applied to the carriage system, and the processes required to initialize the carriage system are performed. Note: Carriage System Initialization does not include the processes required to initialize the mission stores loaded on the carriage system.

State Entry

The Initialization State is entered from either the Off or Ready State.

  a. Entry from the Off State occurs when Operating Power is applied to the carriage system and the platform performs the required MIL-STD-1553 communication to achieve and confirm entry into this state.

  b. Entry from the Ready State occurs when any Carriage Ready [10T/02/09] requirement is no longer met.

State Exit

The carriage exits the Initialization State and transitions into one of the other carriage system states:

  a. The normal exit is to the Ready State when Carriage Ready [10T/02/09 = 1].

  b. Exit to the Off state when Operating Power is interrupted or removed.

3.6.3 Ready State

The carriage system has achieved a Ready State when the carriage system initialization requirements are satisfied, and the carriage system is capable of releasing mission stores as indicated by Carriage Ready [10T/02/09 = 1].

State Entry

The Ready State is entered from the Initialization State and is characterized by all conditions required for the carriage system to release stores being met (<u>Carriage Ready</u> [10T/02/09 = 1]).

State Exit

The Ready State is exited into either other carriage system states.

   a. Exit to the Off State occurs when <u>Operating Power</u> is interrupted or removed.

   b. Exit to the Initialization State occurs when <u>Carriage Ready</u> [10T/02/09] criteria is no longer satisfied.

3.6.4 Carriage System State Transitions

The control process for initialization and readiness of UAI carriage systems transitions through a sequence of states starting with the Off State (no power applied), and proceeding through the Initialization and Ready States. A state diagram illustrating the sequence is provided in Figure 3.6.4-1, and the allowable state transitions are illustrated in Table 3.6.4-1. State transitions for specific system applications are defined in the carriage system supplement.
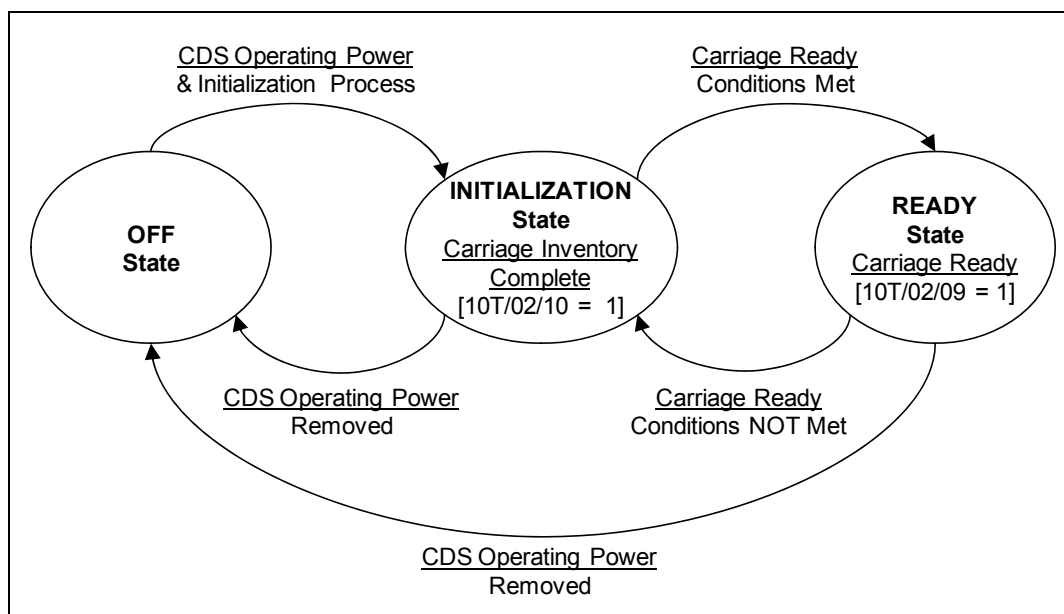
Figure 3.6.4-1 UAI Carriage System State Diagram

Table 3.6.4-1 UAI Carriage System State Transition Table

TO FROM	Off	Initialization	Ready
Off	---	N	X
Initialization	A	---	N
Ready	N	A	---

N - Normal Transition   A - Alternate Transition   X - Transition Not Allowed

3.7 Carriage System Sequence of Events

The carriage system supplement **{sup_3042}** documents carriage system event sequencing and timing information.

3.8 Carriage System Event Description

This section provides detailed requirements for the interface events and timelines for the platform/carriage system. Applicability and usage of specific functions is dependent on requirements of the carriage system as reflected in the associated carriage system supplement **{sup_3043}** and in the platform configuration data set (CDS).

3.8.1 Carriage System Conditioning

Not applicable to a carriage system.

3.8.2 Carriage System Power Up

The carriage system power up sequence is similar to the mission store power up sequence (see sections 3.5.1.1 and 3.5.1.2). See Figures 3.8.2-1, 3.8.2-2, and 3.8.2-3, and Tables 3.8.2-1, 3.8.2-2, and 3.8.2-3, for nominal carriage system power up timeline.
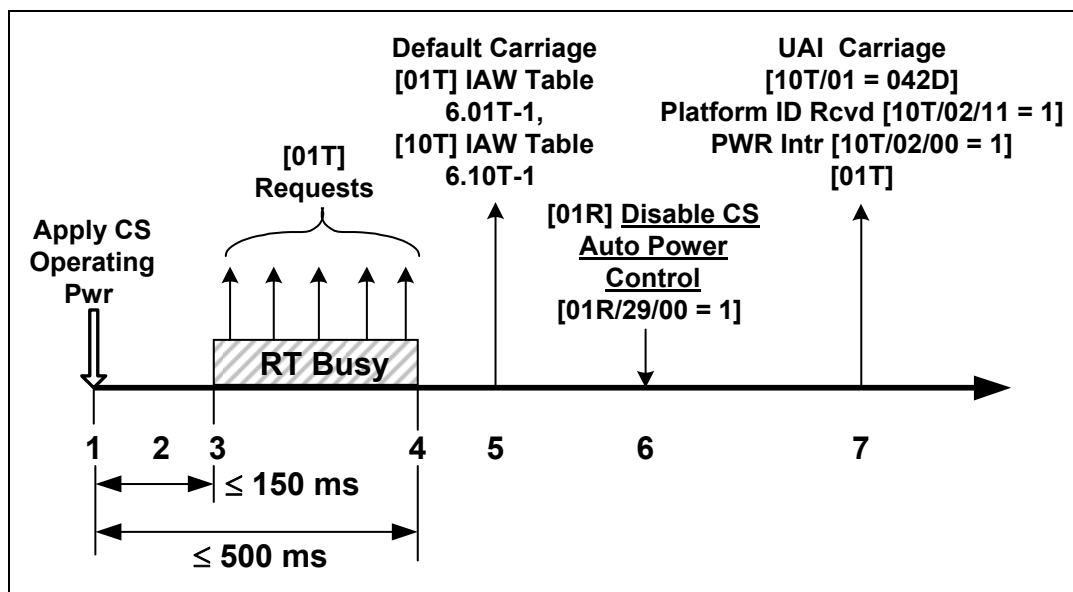
Figure 3.8.2-1 Notional Carriage System Power Up Timeline

Table 3.8.2-1 Notional Carriage System Power Up Timeline Description

	PLATFORM	Carriage System
1	Apply Operating Power.	
2		No response(s) to receipt of valid platform commands.
3		Controls its RT to provide first response as defined by MIL-STD-1760 paragraph 5.2.12.4 within 150 msec of Operating Power being restored.

Table 3.8.2-1 Notional Carriage System Power Up Timeline Description

	PLATFORM	Carriage System
4		Sets MIL-STD-1553 RT status word busy bit to "unbusy" within 500 msec of application of Operating Power.
5		Sets Store Description [01T] with initial values (Reference Table 6.01T-1). If UAI interface configuration, sets Carriage System Monitor Header [10T/01 = 042D (H)] with Platform ID Received [10T/02/11 = 0] (Reference Table 6.10T-1). If non-UAI interface configuration: sets Carriage System Monitor Header [10T/01] = Legacy 10T Header (Reference Table 6.10T-1).
6	Sets Disable CS Auto Pwr Control [01R/29/00 = 1] to control Type 2 carriage system inventory process of mission stores if desired (optional). This message is sent before the carriage system updates the Store Present Status (1-8) with the number of mission stores present. Determines Store ID (ASCII) [01T/04-11] and initiates establishment of the UAI Interface Configuration by sending Platform Description [01R] followed by monitoring for Carriage System Monitor Header [10T/01 = 042D (H)] and Platform ID Received [10T/02/11 = 1].	
7		Acknowledges establishment of UAI Interface Configuration by setting: Carriage System Monitor Header [10T/01 = 042D (H)], Platform ID Received [10T/02/11 = 1], Power Interruption [10T/02/00 = 1], and updating Store Description [01T] with the initial UAI Configuration ID [01T/29/04…15].

3.8.2.1 Carriage System Communications Initialization

The Communications Initialization function initializes the store MIL-STD-1553 multiplex data bus remote terminal for operation and establishes communication between the platform and carriage system. Sections 6.01T Store Description [01T] and 6.10T Carriage System Monitor [10T] provide further information and requirements.

Platform Requirement

The platform shall **{ps_3124}** use Store ID (ASCII) [01T/04-11] to initialize the UAI Interface Configuration with the carriage system.

Carriage System Requirements

The carriage system shall **{css_3049}** initialize <u>Store Description</u> [01T] IAW Table 6.01T-1, <u>Carriage System Monitor</u> [10T] IAW Table 6.10T-1 and set MIL-STD-1553 Status Word Busy Bit to a logical "0" (not busy) or set the MIL-STD-1553 Status Word Busy Bit to a logical "1" (busy) within 150 msec of <u>Operating Power</u> application.

The carriage system shall **{css_3050}** initialize <u>Store Description</u> [01T] IAW Table 6.01T-1, <u>Carriage System Monitor</u> [10T] IAW Table 6.10T-1 and set the MIL-STD-1553 Status Word Busy Bit to a logical "0" (not busy) within 500 msec of <u>Operating Power</u> application.

The carriage system shall **{css_3051}** provide an initial <u>Store Description</u> [01T] in accordance with Table 6.01T-1 consistent with the content of its legacy [01T] as defined in the carriage system supplement **{sup_3078}**, if the carriage system supports a legacy interface in addition to UAI.

The carriage system supplement **{sup_3044}** documents initial values for <u>Store Description</u> [01T] and <u>Carriage System Monitor</u> [10T] messages when setting <u>Platform ID Received</u> [10T/02/11 = 1] and <u>Carriage System Monitor Header</u> [10T/01 = 042D (H)].

3.8.2.2 Carriage System Interface Configuration

The UAI Interface Configuration is established by the exchange of identification messages between the platform and carriage system. This function is especially critical for carriage systems that support a non-UAI (legacy) platform/store interface in addition to UAI. Following initial application of <u>Operating Power,</u> a carriage system that supports multiple interfaces can initialize the <u>Carriage System Monitor</u> [10T] buffer according to non-UAI Interface Configuration.

The establishment of the Interface Configuration becomes more complicated as future versions of UAI are established to add new capabilities. It is then necessary for the platform and carriage system to negotiate which version of the UAI interface is to be used.

To start the interface initialization process, the platform requests the initial <u>Store Description</u> [01T] from the carriage system to determine the carriage system store identity, after busy bit is reset by the carriage system following application of <u>Operating Power</u> to the carriage system.

a. Carriage systems that support only the UAI interface report a UAI <u>Store Description</u> [01T] setting the store initial <u>UAI Configuration ID</u> [01T/29/04…15] to the UAI version the store supports.

b. Carriage systems that support both a "legacy" platform/store interface and the UAI interface report a <u>Store Description</u> [01T] with <u>UAI Configuration ID</u> [01T/29/04…15 = 000 (H)].

The platform then sends <u>Platform Description</u> [01R] to the carriage system. The UAI carriage system recognizes the platform <u>UAI Configuration ID</u> [01R/29/04…15], and

configures its interface to UAI and updates its UAI Configuration ID [01T/29/04…15] to the UAI version compatible with the platform. As an example, if the platform UAI Configuration ID [01R/29/04…15 = A02 (H)] and the carriage system can support UAI Configuration ID [01T/29/04…15 = A03 (H)], then the carriage system reconfigures itself to use the UAI A02 (H) interface and sets its initial UAI Configuration ID [01T/29/04…15 = A02 (H)]. The carriage system also updates its Carriage System Monitor Header [10T/01 = 042D (H)] and sets Platform ID Received [10T/02/11 = 1] to indicate that the carriage system is ready to respond to platform commands, process platform provided data, and provide current carriage system status information.

For a Type 1 carriage system, the platform requests a second Store Description [01T] from the carriage system after Platform ID Received [10T/02/11 = 1] to establish the UAI interface to be used. As an example, if the carriage system UAI Configuration ID [01T/29/04…15 = A02 (H)] and the platform can support UAI Configuration ID [01R/29/04…15 = A03 (H)], then the platform reconfigures itself to use the UAI A02 (H) interface. For a Type 1 carriage system, the carriage system UAI Interface Configuration is established at this point. The platform then applies power to and communicates directly with the mission stores to determine the UAI Interface Configuration to be used with the mission stores as described in section 3.5.1.2.2.3, Communication Ready & Interface Configuration.

Determining the UAI Interface Configuration for a Type 2 carriage system is more complicated than for a Type 1 carriage system because the initial UAI Configuration ID [01T/29/04…15] provided after Platform ID Received [10T/02/11 = 1] might not be the final UAI Configuration ID. The final Type 2 carriage system UAI Configuration ID [01T/29/04…15] must reflect the UAI capability of both the carriage system and the mission stores and cannot be higher than platform UAI Configuration ID [01R/29/04…15]. A Type 2 carriage system begins negotiating UAI Configuration ID [01T/29/04…15] with mission stores right after receipt of Platform Description [01R] if Disable CS Auto Power Control [01R/29/00 = 0] (or before that if Disable CS Auto Power Control is not supported by the carriage system). When the Type 2 carriage system has determined the UAI Configuration of the mission stores it updates its UAI Configuration ID [01T/29/04…15] to the highest common UAI version supported by the carriage system, the mission stores, and the platform and then sets CS UAI Config ID Complete [10T/03/10 = 1].

Note: If a Type 2 carriage system determines that a mission store does not support a UAI interface, a situation is created that is outside the definition of UAI since it is a legacy interface.

For a Type 2 carriage system, the platform requests another Store Description [01T] from the Type 2 carriage system after CS UAI Config ID Complete [10T/03/10 = 1] to determine the final carriage system UAI configuration. The platform reconfigures its interface to adapt to the highest common configuration of UAI for the carriage system/mission store combination if necessary. For example, if the final carriage system UAI Configuration ID [01T/29/04…15 = A02 (H)] and the platform can support UAI Configuration ID [01R/29/04…15 = A03 (H)], then the platform reconfigures itself to use the UAI A02 (H) interface. For a Type 2 carriage system, another Store Description

[01T] is requested by the platform after <u>Carriage Inventory Complete</u> [10T/02/10 = 1 to determine mission store inventory and mission store identification information in <u>Station 1-8 Store ID Code</u> [01T/16-23].

A Type 2 carriage system also uses <u>Platform Description</u> [01R] and data in the carriage system CDS to identify the carriage system mission store release order, to enable the carriage system compressor (for pneumatic ejection systems), set the post-release deconfliction logic used by the mission store(s), and start the mission store identification and carriage system configuration process.

Sections 6.01T <u>Store Description</u> [01T] and 6.01R <u>Platform Description</u> [01R] provide further information and requirements.

Platform Requirements

The platform shall **{ps_3125}** send <u>Platform Description</u> [01R] as the first non-broadcast receive data (platform to carriage system) message, after <u>Operating Power</u> application, to:

    a. Support a determination of when the carriage system is ready to communicate, and

    b. Establish the UAI protocol / <u>UAI Configuration ID</u> [01R/29] for platform / carriage system communication.

The platform shall **{ps_3126}** verify <u>Platform ID Received</u> [10T/02/11 = 1] and <u>Carriage System Monitor Header</u> [10T/01 = 042D (H)] prior to processing any transmit data (carriage system to platform) with exception of <u>Store Description</u> [01T].

The platform shall **{ps_3127}** configure the platform interface to the carriage system UAI version reported in <u>UAI Configuration ID</u> [01T/29/04…15] and initiate the transfer of initialization data to the carriage system after the store reports <u>Platform ID Received</u> [10T/02/11 = 1] and <u>Carriage System Monitor Header</u> [10T/01 = 042D (H)].

The platform may **{pm_3128}** send Receive [##R] messages to the carriage system while the carriage system is reporting <u>Platform ID Received</u> [10T/02/11 = 0], however, the carriage system is not required to process, respond, or provide updated carriage system status data until <u>Platform ID Received</u> [10T/02/11 = 1].

The platform may **{pm_3035}** perform fault processing if <u>Carriage System Monitor Header</u> [10T/01 ≠ 042D (H)] or <u>Platform ID Received</u> [10T/02/11 ≠ 1] in response to a <u>Platform Description</u> [01R] that is transmitted after <u>CDS Ready to Communicate Time</u> **{cds_3003}** following application of <u>Operating Power</u>.

Carriage System Requirements

The Type 1 carriage system shall **{css_3077}** report its ready to communicate status and its initial UAI Interface Configuration following receipt of <u>Platform Description</u> [01R] by reporting the following status:

    a. <u>Carriage System Monitor Header</u> [10T/01 = 042D (H)]

    b. <u>Platform ID Received</u> [10T/02/11 = 1]

    c. Power Interruption [10T/02/00 = 1]

    d. UAI Configuration ID [01T/29/04…15 ≠ 000]

The Type 2 carriage system shall **{css_3052}** report its ready to communicate status and its initial UAI Interface Configuration following receipt of Platform Description [01R] by reporting the following status:

    a. Carriage System Monitor Header [10T/01 = 042D (H)]

    b. Platform ID Received [10T/02/11 = 1]

    c. Power Interruption [10T/02/00 = 1]

    d. Initial UAI Configuration ID [01T/29/04…15 ≠ 000]

The Type 2 carriage system shall **{css_3053}** configure required platform/station dependent functions based on:

    a. Platform Identity [01R/05-12]

    b. Pylon/Bay ID [01R/13/08…15]

    c. Station ID [01R/13/00…07]

    d. UAI Configuration ID [01T/29/04…15]

    e. MDT-CS CDS [13R-024], if applicable

The carriage system supplement **{sup_3064}** documents the carriage system Ready to Communicate Time and, for a Type 2 carriage system, the platform/station dependent functions it performs using:

    a. Platform Identity [01R/05-12]

    b. Pylon/Bay ID [01R/13/08…15]

    c. Station ID [01R/13/00…07]

    d. UAI Configuration ID [01T/29/04…15]

3.8.2.3 Store Power and Mated Status

The platform controls activation of Operating Power to each store using Carriage System Control [10R]. The carriage system provides a store present indication which is updated periodically and dynamically with each store separation.

Carriage System Requirements

The carriage system shall **{css_3006}** verify Store Present Status [10T/04-11/14…15 ≠ 00] before applying any power to the mission store(s).

3.8.2.4 Mission Store Description/Configuration

For Type 1 carriage systems, the platform must command the carriage system to apply power to the mission stores, and then the platform must conduct the message exchange since the platform communicates directly with the individual mission stores. Once the platform can identify the mission store through the initial Store Identification

[01T] message, the platform can command the carriage system to apply the appropriate power per the mission store CDS parameters. The platform can now communicate with the mission store on the Type 1 carriage system as though it were parent carried as identified in sections 3.5.2.3 through 3.5.2.7.

There are two different methods for a Type 2 carriage system to perform a mission store inventory. The inventory methods differ dependent on the Disable CS Auto Power Control [01R/29/00] provided by the platform. In the first method, the platform delegates control of mission store power to the carriage system for performing mission store inventory. In the second method, the platform retains control of mission store power in order to manage platform power resources.

The first mission store inventory method (Disable CS Auto Power Control [01R/29/00 = 0]) is given in Figure 3.8.2-2 and Table 3.8.2-2.
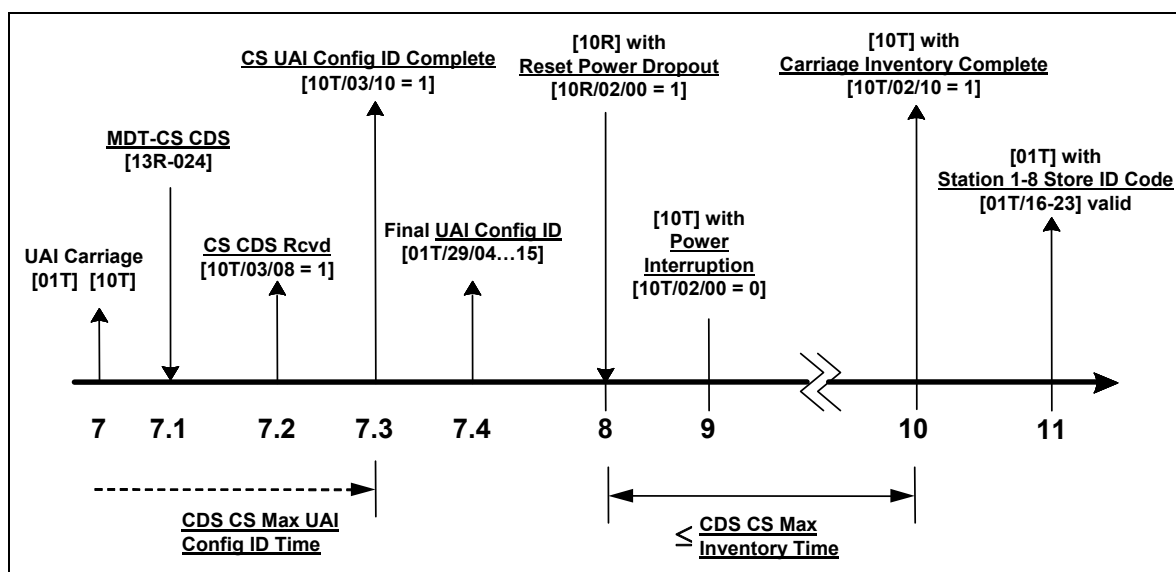
Figure 3.8.2-2 Notional CS Inventory Timeline with CS Auto Power Control Enabled

Table 3.8.2-2 Notional CS Auto Power Control Enabled Timeline Description

	PLATFORM	CARRIAGE SYSTEM
7		Provides initial UAI Interface Configuration.
7.1	Transmits MDT-CS CDS [13R-024].	Sets up mission store support processing.
7.2		Sets CS CDS Rcvd [10T/03/08 = 1].
7.3	Verifies CS UAI Config ID Complete [10T/03/10 = 1] within CDS CS Max UAI Config ID Time.	Sets CS UAI Config ID Complete [10T/03/10 = 1] when the common carriage system/mission store UAI Config ID has been determined.
7.4	Requests Store Description [01T] to determine the final carriage system UAI Configuration ID [01R/29/04…15].	
8	Sets Reset Power Dropout [10R/02/00 = 1] and initiates the carriage inventory process.	Inventories mission stores and updates Station 1-8 Store ID Code [01T/16-23].
9		Sets Power Interruption [10T/02/00 = 0]. Uses CDS, Platform Description [01R], and inventory status to update all Carriage System

Table 3.8.2-2 Notional CS Auto Power Control Enabled Timeline Description

		PLATFORM	CARRIAGE SYSTEM
			Monitor [10T] data.
10		Verifies Carriage Inventory Complete [10T/02/10 = 1] within CDS CS Max Inventory Time.	Sets Carriage Inventory Complete [10T/02/10 = 1] when all Carriage System Monitor [10T] data is valid.
11		Requests Store Description [01T] to determine the carriage system inventory by Station 1-8 Store ID Code [01T/16-23].	

The second mission store inventory method (Disable CS Auto Power Control [01R/29/00 = 1]) is given in Figure 3.8.2-3 and Table 3.8.2-3.
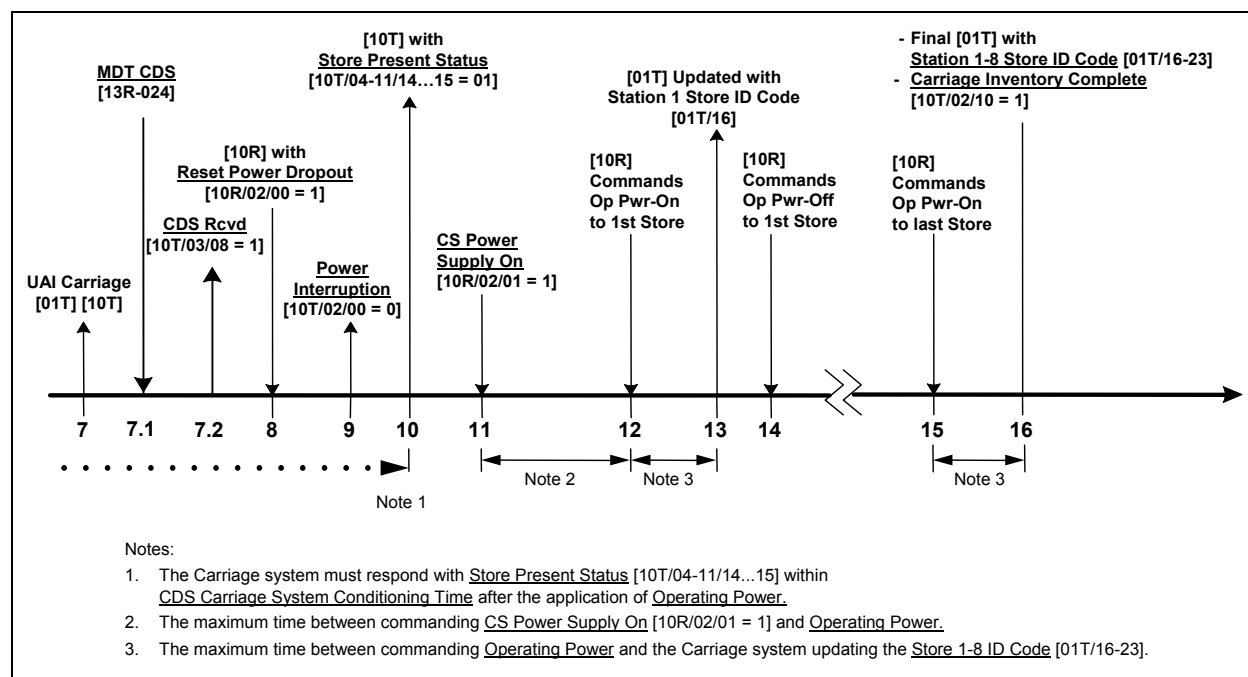
Figure 3.8.2-3 Notional CS Inventory Timeline with CS Auto Power Control Disabled

Table 3.8.2-3 Notional CS Auto Power Control Disabled Timeline Description

	PLATFORM	CARRIAGE SYSTEM
7		Provides initial UAI Interface Configuration.
7.1	Transmits the MDT-CS CDS [13R-024].	Sets up mission store support processing.
7.2		Sets CS CDS Rcvd [10T/03/08 = 1]
8	Sets Reset Power Dropout [10R/02/00 = 1]	
9		Sets Power Interruption [10T/02/00 = 0]
10		Following CDS Store Conditioning Time updates Store (1-8) Present Status [10T/04-11/14…15].
11	Sends CS Power Supply On [10R/02/01 = 1] in preparation for powering first mission store.	
12	Commands Operating Power to the mission	

Table 3.8.2-3 Notional CS Auto Power Control Disabled Timeline Description

	PLATFORM	CARRIAGE SYSTEM
	store via Carriage System Control [10R].	
13		Following power-up of the mission store and receipt of Store Description [01T], updates the [01T] buffer with the corresponding Station 1-8 Store ID Code [01T/16-23].
14	Commands Operating Power removal from the mission store via Carriage System Control [10R].	
15	Steps 12 through 14 repeated for each mission store present.	
16		Following the receipt of Store ID [01T] from all mission stores that are present, determines the common carriage system/mission store UAI Configuration ID and makes a final update of the [01T] buffer with Station 1-8 Store ID Code [01T/16-23] for all stations and final UAI Configuration ID [01R/29/04…15] and updates the [10T] buffer with Carriage Inventory Complete [10T/02/10 = 1], CS UAI Config ID Complete [10T/03/10 = 1], and the Release Order [10T/16-17] for the inventoried mission store load-out.

Platform Requirements

The platform shall **{ps_3146}** send MDT-CS CDS [13R-024] to a Type 2 carriage system after the carriage system reports Platform ID Received [10T/02/11 = 1] and Carriage System Monitor Header [10T/01 = 042D (H)] and prior to sending Reset Power Dropout [10R/02/00 = 1].

The platform shall **{ps_3129}** request Store Description [01T] to determine the Type 2 carriage system UAI compatibility and adjust the platform interface to a UAI version compatible with the carriage system/mission store combination, after the carriage system reports CS UAI Config ID Complete [10T/03/10 = 1].

The platform shall **{ps_3150}** set Reset Power Dropout [10R/02/00 = 1] to a Type 2 carriage system when Power Interruption [10T/02/00 = 1], Disable CS Auto Pwr Control [01R/29/00 = 0], and CS UAI Config ID Complete [10T/03/10 = 1].

The platform shall **{ps_3151}** set Reset Power Dropout [10R/02/00 = 1] to a Type 2 carriage system when Power Interruption [10T/02/00 = 1], Disable CS Auto Pwr Control [01R/29/00 = 1], and CS CDS Rcvd [10T/03/08 = 1].

The platform may **{pm_3037}** perform fault processing on a Type 2 carriage system if CS UAI Config ID Complete [10T/03/10 ≠ 1] after CDS CS Max UAI Config ID Time **{cds_3027}** following application of Operating Power when Disable CS Auto Pwr Control [01R/29/00 = 0].

The platform shall **{ps_3076}** command the carriage system with 28V DC1 Select [10R/04-11/09] and/or 115V AC 3 ph Select [10R/04-11/11] or 270V DC Select [10R/04-11/12] to apply CDS Operating Power **{cds_3002}**.

The platform shall **{ps_3077}** set CS Power Supply On [10R/02/01 = 1] a minimum of CDS CS Power Supply Max Settling Time **{cds_3028}** prior to applying Operating Power to a mission store, if CDS CS Controllable Power Supply Present **{cds_3029}**.

The platform shall **{ps_3078}** request the carriage system Station 1-8 Store ID Code [01T/16-23] subsequent to Carriage Inventory Complete [10T/02/10 = 1].

The platform shall **{ps_3159}** set Operating Power/28V DC1 Select [10R/04-11/09 = 1] and either 115V AC 3 ph Select [10R/04-11/11 = 1] or 270V DC Select [10R/04-11/12 = 1] to the Type 1 carriage system after RT assignments have been made, to initialize the respective mission store interface(s) to power up the store multiplex bus remote terminal and other electronic subsystems required to ready the mission store for identification.

The platform shall **{ps_3160}** command the carriage system to apply CDS Operating Power **{cds_3002}** to power up the mission store.

The platform shall **{ps_3161}** command the carriage system to apply CDS Conditioning Power **{cds_3035}** to the mission store to support conditioning of mission store internal subsystems.

The platform may **{pm_3039}** command the carriage system to apply Conditioning Power to the mission store prior to application of Operating Power for CDS Pre-Operating Pwr Store Conditioning Time **{cds_3005}** to pre-condition mission store subsystems.

The platform shall **{ps_3162}** command the carriage system to apply Conditioning Power to the mission store whenever the platform is commanding the carriage system to apply Operating Power to the mission store.

Carriage System Requirements

A Type 2 carriage system shall **{css_3070}** begin inventory of all loaded carriage system stations upon receipt of Disable CS Auto Pwr Control [01R/29/00 = 0] if Disable Auto Power Control is available as documented in the carriage system supplement **{sup_6005}**.

A Type 2 carriage system shall **{css_3071}** set CS UAI Config ID Complete [10T/03/10 = 1] within CS Max UAI Config ID Time if Disable CS Auto Power Control [01R/29/00 = 0] and Disable Auto Power Control is available.

A Type 2 carriage system shall **{css_3072}** set CS UAI Config ID Complete [10T/03/10 = 1] within CS Max UAI Config ID Time if Disable Auto Power Control is not available.

A carriage system shall **{css_3073}** set CS UAI Config ID Complete [10T/03/10 = 1] prior to setting Carriage Inventory Complete [10T/02/10 = 1].

The carriage system supplement **{sup_3075}** documents the <u>CS Max UAI Config ID Time</u>.

The carriage system supplement **{sup_3045}** documents the maximum time from application of carriage system <u>Operating Power</u> to valid <u>Store Present Status</u> [10T/04-11/14…15] for carriage system stations.

The carriage system supplement **{sup_3046}** documents the maximum time between commanding <u>CS Power Supply On</u> [10R/02/01 = 1] and commanding the carriage system to apply mission store <u>Operating Power</u>, if it has a controllable power supply, and if auto power control can be disabled.

The carriage system supplement **{sup_3047}** documents the maximum time between commanding the carriage system to apply mission store <u>Operating Power</u> and the carriage system providing a valid store identification code in the corresponding <u>Station 1-8 Store ID Code</u> [01T/16-23].

3.8.2.5 Type 1 Carriage System Address Assignment

For Type 1 carriage systems, the platform programs the multiplex bus RT address for each carriage system mission store station via <u>Carriage System Control</u> [10R] prior to commanding the carriage system to apply <u>Operating Power</u> to mission store station(s). Sections 6.10R <u>Carriage System Control</u> [10R] and 6.10T <u>Carriage System Monitor</u> [10T] provide further information and requirements.

3.8.2.6 Carriage System Release Parameter Determination

A Type 2 carriage system uses a mission store release order number (logical location) to carriage system station (physical location) mapping scheme, to maintain a fixed order of mission store releases based upon carriage system CDS values and <u>Platform Description</u> [01R] data to ensure safe separation of the mission stores. The mission store release order is provided to the platform in <u>Release Order Word 1 & 2</u> [10T/16-17].

Release order number is the mission store sequence number in the release order (i.e. release order number 1 released first, release order number 2 released second, etc.). Carriage System Station X (1-8) is the physical location of the mission store on the carriage system.

Section 6.10T <u>Carriage System Monitor</u> [10T] provides further information and requirements for <u>Invalid Loadout</u> [10T/03/05], <u>Invalid Release Order</u> [10T/03/06], and <u>Release Order Word 1 & 2</u> [10T/16-17].

The carriage system uses carriage system CDS values, <u>Platform Description</u> [01R] data and mission store inventory data to configure the mission store release order and to determine non-safety critical release functions. Sections 6.01R <u>Platform Description</u> [01R], 6.10R <u>Carriage System Control</u> [10R], and 6.11R <u>Store Control</u> [11R] provide further information and requirements.

Carriage System Requirements

A Type 2 carriage system shall **{css_3007}** use <u>MDT-CS CDS</u> [13R-024], <u>Platform Identity</u> [01R/05-12], <u>Store Station ID</u> [01R/13/00…07], and <u>Pylon/Bay ID</u>

[01R/13/08…15] to determine the mission store release order, to set Release Order Words 1&2 [10T/16-17] to report the mission store release order, and to determine non-safety critical release functions.

The carriage system supplement **{sup_3048}** documents its utilization of Platform Description [01R] data to configure carriage system functions.

The platform/carriage system/mission store addendum **{add_3004}** documents the non-safety critical release functions and the mission store release order, as a function of platform type, location on the platform, and mission store type/loadout, and the specific values to used for the CDS variables.

3.8.2.7 Type 2 Carriage System Loadout Validation

Invalid Loadout [10T/03/05 = 1] after Carriage Inventory Complete [10T/02/10 = 1] indicates the mission store loadout is invalid.

Carriage System Requirements

The Type 2 carriage system shall **{css_3008}** set Invalid Loadout [10T/03/05 = 1] when Carriage Inventory Complete [10T/02/10 = 1] and an invalid loadout has been detected.

The Type 2 carriage system shall **{css_3009}** inhibit release (but not jettison) of mission store(s) when Invalid Loadout [10T/03/05 = 1].

The Type 2 carriage system shall **{css_3010}** set Invalid Loadout [10T/03/05 = 0] when it does not perform a loadout validity check.

The Type 2 carriage system supplement **{sup_3049}** documents if it performs a loadout validity processing.

The platform/carriage system/mission store addendum **{add_3005}** documents the valid loadouts as a function of platform type, location on the platform, and mission store type.

3.8.2.8 Carriage Inventory Complete [10T/02/10]

Carriage Inventory Complete [10T/02/10 = 1] indicates that selected status from all mission stores loaded on the carriage system are available in the Store Description [01T] and Carriage System Monitor [10T]. In addition, mission stores status is available in the Store Summary Status [20T] for a Type 2 carriage system. Sections 6.10R Carriage System Control [10R], 6.10T Carriage System Monitor [10T], and 6.20T Store Summary Status [20T] provide further information and requirements.

Platform Requirements

The platform may **{pm_3025}** set Disable CS Auto Power Control [01R/29/00 = 1] to disable the Type 2 carriage system autonomous mission store power control, if CDS Disable Auto Power Control Available **{cds_3031}**.

The platform may **{pm_3026}** perform fault processing if <u>Carriage Inventory Complete</u> [10T/02/10 = 1] is not present after <u>CDS CS Mission Store Inventory Max Time</u> **{cds_3030}** for the following configurations:

    a. Type 1 carriage system

    b. Type 2 carriage system with no <u>CDS Disable Auto Power Control Available</u> **{cds_3031}**

    c. Type 2 carriage system with <u>Disable CS Auto Power Control</u> [01R/29/00 = 0].

Carriage System Requirements

The carriage system supplement **{sup_3050}** documents carriage system responses to Receive [R] Message commands prior to <u>Carriage Inventory Complete</u> [10T/02/10 = 1].

A Type 1 carriage system shall **{css_3078}** complete the identification of loaded carriage system stations, update <u>Station 1-8 Store ID Code</u> [01T/16-23] with store presence indications, and then set <u>Carriage Inventory Complete</u> [10T/02/10 = 1], within <u>CS Mission Store Inventory Max Time</u> **{sup_3051}**.

A Type 2 carriage system shall **{css_3012}** complete the inventory of all loaded carriage system stations by requesting <u>Store Description</u> [01T] and then set <u>Carriage Inventory Complete</u> [10T/02/10 = 1], within <u>CS Mission Store Inventory Max Time</u> (defined in the carriage system supplement **{sup_3051}**), when <u>Disable CS Auto Power Control</u> [01R/29/00 = 0].

A Type 2 carriage system shall **{css_3013}** complete the inventory of all loaded carriage system stations and then set <u>Carriage Inventory Complete</u> [10T/02/10 = 1] after the platform has enabled power for all of the loaded carriage system stations and all mission stores have been inventoried, when <u>Disable CS Auto Power Control</u> [01R/29/00 = 1].

The Type 2 carriage system shall **{css_3079}** set the <u>UAI Configuration ID</u> [01T/29/04…15] to the highest common UAI version supported by the CS CDS, the Type 2 carriage system, the mission stores, and the platform prior to setting <u>CS UAI Config ID Complete</u> [10T/03/10 = 1].

The carriage system shall **{css_3014}**, using <u>Platform Description</u> [01R] and prior to reporting <u>Carriage Inventory Complete</u> [10T/02/10 = 1], configure:

    1. <u>Store Description</u> [01T],

    2. <u>Carriage Monitor</u> [10T],

    3. <u>Store Summary Status</u> [20T] (Type 2 carriage system only), and

    4. Any platform/station dependent functions, as documented in the carriage system supplement **{sup_3052}**.

3.8.2.9 <u>Carriage Ready</u> [10T/02/09]

<u>Carriage Ready</u> [10T/02/09] allows the platform to monitor one bit to determine carriage system readiness for mission store release. <u>Carriage Ready</u> does not include the mission ready status of loaded mission stores. Section 6.10T <u>Carriage System Monitor</u> [10T] provides further information and requirements.

3.8.2.10 **Power Interrupt Recovery**

Power interrupt recovery allows the platform to detect when a carriage system experiences an unintentional loss of <u>Operating Power</u> and take appropriate action in reinitializing the carriage system. Following a normal system power up sequence as depicted in Figure 3.8.2-1, power interrupt recovery is enabled by the platform commanding <u>Reset Power Dropout</u> [10R/02/00 = 1] followed by periodically monitoring of <u>Carriage System Monitor Header</u> [10T/01]. The carriage system powers-up IAW Table 6.10T-1 following restoration of <u>Operating Power</u> after an unintentional momentary loss. Sections 6.10R <u>Carriage System Control</u> [10R] and 6.10T <u>Carriage System Monitor</u> [10T] provide further information and requirements.

The power interrupt recovery timeline for an unintentional momentary loss of <u>Operating Power</u> to the carriage system is the same as the normal power up sequence depicted in Figure 3.8.2-1 and described in Table 3.8.2-1.

3.8.2.10.1 **Carriage System Power Interrupt Recovery**

The <u>Power Interruption</u> [10T/02/00 = 1] with <u>Carriage System Monitor Header</u> [10T/01 = 042D (H)] or <u>Carriage System Monitor Header</u> [10T/01] = <u>Legacy 10T Header</u> indicates that the UAI carriage system has detected an interruption of <u>Operating Power</u> and needs to be reinitialized. Sections 6.10R <u>Carriage System Control</u> [10R] and 6.10T <u>Carriage System Monitor</u> [10T] provide further information and requirements.

Platform Requirements

The platform may **{pm_3031}** attempt to re-establish communication with a carriage system that becomes unresponsive due to an unintentional loss of <u>Operating Power</u>.

The platform may **{pm_3032}** attempt to re-establish communication with a carriage system that responds to both "R" messages and "T" message requests with a busy MIL-STD-1553 remote terminal status while powering up from a momentary unintentional loss of <u>Operating Power</u>.

The platform shall **{ps_3079}** provide the <u>Platform Description</u> [01R] or remove and reapply <u>Operating Power</u> IAW section 3.8.2, in response to detecting either of the following conditions after the initial carriage system power sequence has been completed:

    a. <u>Carriage System Monitor Header</u> [10T/01 = 042D (H)] and <u>Power Interruption</u> [10T/02/00 = 1] or

    b. <u>Carriage System Monitor Header</u> [10T/01] = <u>CDS Legacy 10T Header</u> **{cds_3037}**

The platform may **{pm_3033}** continue to send Platform Description [01R] at the rate defined in the platform annex **{ann_3020}** until Carriage System Monitor Header [10T/01 = 042D (H)] and Platform ID Received [10T/02/11 = 1].

The platform shall **{ps_3130}** verify Carriage System Monitor Header [10T/01 = 042D (H)] and Platform ID Received [10T/02/11 = 1] after transmitting a Platform Description [01R], in response to an unexpected power interruption before proceeding with re-initialization of the carriage system.

Carriage System Requirements

Note: The power-up sequence and requirements for a power interrupt recovery are the same as for a normal application of Operating Power. See Section 3.8.2.1 for requirements.

The carriage system shall **{css_3054}** be insensitive to Operating Power dropouts of less than or equal to 200 microseconds duration.

The carriage system supplement **{sup_3065}** documents:

    a. Whether Carriage System Monitor [10T] is initialized according to the UAI or non-UAI configuration specified in Table 6.10T-1 after application of power and Platform ID Received [10T/02/11 = 0].

    b. Legacy 10T Header value, if applicable.

3.8.2.10.2 Mission Store Power Interrupt Recovery

The mission store Power Interruption [20T/W/14] (where W = word 07, 09, 11, 13, 15, 17, 19, 21 for Store 01-08 in the release order respectively) indicates that the mission store needs to be reinitialized. The platform is responsible for managing the power interrupt recovery by sending Reset Power Dropout [22R/05/04] to the mission store via Directed Protocol, by sending Reset Power Dropout [10R/02/00 = 1] to a Type 2 carriage system, or by cycling operating power to the carriage system. Sections 3.5.4 Power Interrupt Recovery, 6.10R Carriage System Control [10R], 6.10T Carriage System Monitor [10T], 6.20T Store Summary Status [20T], 6.22R Mission Control [22R], and 6.22T Mission Monitor [22T] provide further information and requirements.

Platform Requirements

The platform shall **{ps_3080}**, when mission store Power Interruption [20T/W/14 = 1] (where W = word 07, 09, 11, 13, 15, 17, 19, 21 for Store 01-08 in the release order respectively):

    a. Send Reset Power Dropout [22R/05/04 = 1] via Directed Protocol to the applicable mission store, or

    b. Send Reset Power Dropout [10R/02/00 = 1] to a Type 2 carriage system, or

    c. Cycle Operating Power [Power] to the Type 2 carriage system.

The platform shall **{ps_3153}**, after Power Interruption [20T/W/14 = 0] (where W = word 07, 09, 11, 13, 15, 17, 19, 21 for Store 01-08 in the release order respectively):

a. Set Reset Power Dropout [22R/05/04 = 0] in the next Mission Control [22R] sent via Directed Protocol to the applicable mission store, and

b. Set Reset Power Dropout [10R/02/00 = 0] in the next Carriage System Control [10R].

The platform shall **{ps_3154}**, after Power Interruption [20T/W/14 = 0] (where W = word 07, 09, 11, 13, 15, 17, 19, 21 for Store 01-08 in the release order respectively) provide required initialization data.

3.8.3 Carriage System Built in Test (BIT)

The carriage system provides a Built-In-Test (BIT) capability to assist the platform in determining mission readiness. The carriage system provides BIT results in Carriage Operating Faults [10T/20] and BIT Code Words 1-8 [10T/21-28].

Carriage System Requirements

The carriage system supplement **{sup_3053}** defines the Carriage System BIT fault matrix and BIT errors that are reported in Carriage Operating Faults [10T/20] and BIT Code Words 1-8 [10T/21-28].

3.8.3.1 Carriage System Initiated Built In Test (IBIT)

All carriage systems conduct Initiated BIT (IBIT) upon platform command. IBIT consists of a comprehensive series of subcomponent tests to determine carriage system ability to perform its mission. Any faults are indicated in Carriage Operating Faults [10T/20] and BIT Code Words 1-8 [10T/21-28]. IBIT can interrupt previously initiated carriage system processes, such as transfer alignment or data loading. Sections 6.11R Store Control [11R], 6.11T Store Monitor [11T], and 6.10T Carriage System Monitor [10T] provide further information and requirements.

Type 2 carriage systems perform IBIT on mission stores, depending on the value of CS IBIT Control [10R/02/07]. If CS IBIT Control [10R/02/07 = 0], the carriage system conducts IBIT on itself only. If CS IBIT Control [10R/02/07 = 1] the carriage system conducts IBIT on itself and mission store(s). If a mission store reports an IBIT fault condition, the carriage system updates the Store Summary Status [20T] accordingly. Section 6.20T Store Summary Status [20T] provides further information and requirements.

The carriage system IBIT timeline is depicted in Figure 3.8.3-1.
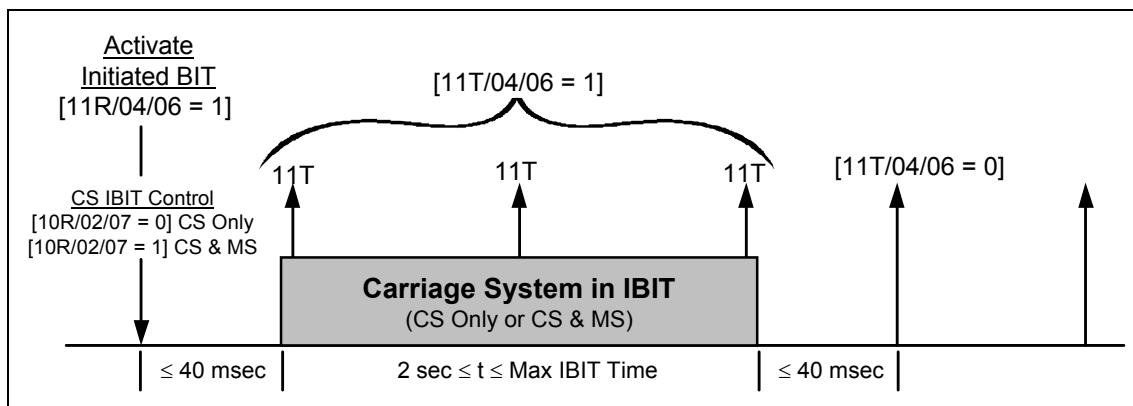
Figure 3.8.3-1 Carriage System IBIT Timeline

The carriage system IBIT functional sequence is described in Table 3.8.3-1.

Table 3.8.3-1 Carriage System IBIT Functional Sequence

	PLATFORM	**CARRIAGE SYSTEM**
1	Check for Carriage Inventory Complete [10T/02/10 = 1]	Carriage Inventory Complete [10T/02/10 = 1]
2	Set CS IBIT Control [10R/02/07] as desired	
3	Set Activate Initiated BIT [11R/04/06 = 1]	
4	Check for Store in Initiated BIT [11T/04/06 = 1] May perform platform-specific fault processing if IBIT not in process	Set Store in Initiated BIT [11T/04/06 = 1] Perform IBIT on carriage system and, per [10R/02/07], mission stores
5	Monitor Store in Initiated BIT [11T/04/06] May perform platform-specific fault handling procedures if time in IBIT exceeds Max IBIT Time [01T/12].	IBIT complete Update Carriage Operating Faults [10T/20] and BIT Code Words 1-8 [10T/21-28] with current IBIT results. Set Store in Initiated BIT [11T/04/06 = 0].
6	When Store in Initiated BIT [11T/04/06 = 0] Request Carriage System Monitor [10T] and, if a Type 2 CS, Store Summary [20T] Evaluate BIT indications. Process any IBIT discrepancies in accordance with platform-specific fault handling procedures.	

Platform Requirements

The platform shall **{ps_3081}** set Activate Initiated BIT [11R/04/06 = 1] and CS IBIT Control [10R/02/07 = 0] to command carriage system IBIT only.

The platform shall **{ps_3082}** set Activate Initiated BIT [11R/04/06 = 1], CS IBIT Control [10R/02/07 = 1] and Disable CS Auto Power Control [01R/29/00 = 0] to command a Type 2 carriage system to perform IBIT on the carriage system and all mission stores.

The platform shall **{ps_3083}** set Activate Initiated BIT [11R/04/06 = 1], CS IBIT Control [10R/02/07 = 1] and Disable CS Auto Power Control [01R/29/00 = 1] to command a Type 2 carriage system to perform IBIT on the carriage system and powered mission stores, if CDS Disable Auto Power Control Available **{cds_3031}**.

The platform shall **{ps_3084}** only command carriage system Initiated BIT when:

   a. Carriage Inventory Complete [10T/02/10 = 1]

   b. CTS [11R/04/02 = 0]

   c. Activate Non-Safety Critical Release Functions [11R/06/05 = 0]

   d. Erase Command/Authority [11R/06/00 = 0]

   e. Jettison [11R/04/01 = 0]

   f. IBIT in Progress [11T/04/06 = 0]

Carriage System Requirements

A Type 1 carriage system shall **{css_3074}** conduct IBIT on itself only, upon receipt of Activate Initiated BIT [11R/04/06 = 1].

A Type 2 carriage system shall **{css_3015}** conduct IBIT on itself only, upon receipt of Activate Initiated BIT [11R/04/06 = 1] when CS IBIT Control [10R/02/07 = 0].

The Type 2 carriage system shall **{css_3016}** conduct IBIT on itself, upon receipt of Activate Initiated BIT [11R/04/06 = 1] when CS IBIT Control [10R/02/07 = 1] and conduct IBIT on the following:

   a. All mission stores when Disable CS Auto Power Control [01R/29/00 = 0].

   b. Powered mission stores when Disable CS Auto Power Control [01R/29/00 = 1], if CDS Disable Auto Power Control Available **{cds_3031}**.

The carriage system supplement **{sup_3054}** documents:

   a. Max IBIT Time.

   b. The carriage system's IBIT process.

The carriage system shall **{css_3017}** report the last Carriage Operating Faults [10T/20], and BIT Code Words 1-8 [10T/21-28] indications prior to entering IBIT, while IBIT is in progress.

The carriage system shall **{css_3018}** complete all IBIT tests and update Carriage Operating Faults [10T/20], and BIT Code Words 1-8 [10T/21-28] to reflect the results of the current IBIT prior to setting Store in Initiated BIT [11T/04/06 = 0].

The carriage system shall **{css_3019}** delay resetting Store in Initiated BIT [11T/04/06 = 0] until a minimum of 2.0 seconds have elapsed following receipt of Activate Initiated BIT [11R/04/06 = 1].

The carriage system shall **{css_3020}** accept receive messages and provide transmit messages in accordance with MIL-STD-1553 protocol, while IBIT is in progress, but is not required to respond to commands with the following exceptions:

   a. <u>Abort Release/Launch</u> [11R/06/04 = 1].

   b. <u>Erase Command/Authority</u> [11R/06/00 = 1].

   c. <u>Jettison</u> [11R/04/01 = 1].

A Type 2 carriage system shall **{css_3021}** retain (i.e., not erase) mission data downloaded from the platform prior to IBIT.

3.8.3.2 Carriage System Periodic Built in Test (PBIT)

PBIT consists of a series of non-interruptive tests that are performed automatically by the carriage system on a periodic basis to continually assess its ability to carry out its mission. Results are made available for monitoring by the platform in returned status messages. Performing PBIT does not affect normal carriage system operations. Section 4 provides message rates and Section 6.10 <u>Carriage System Monitor</u> [10T] provides further information and requirements.

   Carriage System Requirements

   The carriage system supplement **{sup_3055}** documents:

   a. PBIT execution rate.

   b. The carriage system PBIT process.

   c. <u>Carriage System Monitor</u> [10T] status indications updated by PBIT.

   d. Identification of critical hardware.

   The carriage system shall **{css_3022}** perform PBIT on carriage system subsystems and components while <u>Operating Power</u> is applied.

3.8.3.3 Carriage System Processor Failure

The carriage system provides a hardware implemented timer circuit referred to as a watchdog timer. The circuit ensures proper carriage system (CPU) execution by requiring a reset to the timer circuit at a periodic rate. In the event the timer circuit expires, the hardware interface between the timer circuit and the carriage system remote terminal sets the Subsystem Failure flag in the carriage system MIL-STD-1553 RT Status Word (as defined in MIL-STD-1553).

   Platform Requirements

   The platform shall **{ps_3085}** remove all power from the carriage system within the time specified in the platform annex **{ann_3017}** if the platform detects a failure indication in the Subsystem Failure flag of the carriage system MIL-STD-1553 RT Status Word.

   Carriage System Requirements

   The carriage system shall **{css_3023}** identify a program execution failure in the carriage system CPU by setting the Subsystem Failure flag in the 1553 RT Status Word to a logic 1.

3.8.3.4 General Fault Reporting

The Carriage System Monitor [10T] message contains information about critical and non-critical faults of the carriage system subsystems, which can be monitored by the platform during the Initialization and Ready States. Section 6.10T Carriage System Monitor [10T] provides further information and requirements.

3.8.4 Carriage System Communications

There are four types of communications to/from mission store as listed below. The carriage system supplement **{sup_3056}** documents the types of communications that the carriage system supports.

  a. (Required for Type 1 and Type 2 Carriage Systems) Platform communicates directly with a carriage system. The platform is the BC and the carriage system is the RT, and the mission store is not involved.

  b. (Required for Type 1 Carriage Systems) Platform communicates directly with a mission store. The platform is the BC and the mission store is the RT, and the carriage system acts as a two-way repeater for platform/mission store communication.

  c. (Required for Type 2 Carriage Systems) Platform communicates directly with a carriage system, where the platform is the BC and the carriage system is the RT, and the carriage system acts as an extension of the platform stores management system managing all power, communication, initialization, status monitoring, releasing, and jettison of the mission store(s). The Carriage System communicates with the Mission Store(s), where the carriage system is the BC, the Mission Store is the RT, and the platform is not involved. The platform can direct some messages to specific mission stores using the embedded protocol.

  d. (Required for Type 2 Carriage Systems) Platform communicates directly with the mission store using Directed Protocol. The platform is the BC, the carriage system is the RT, and the carriage system functions as a switch in repeating the message data to/from the mission store specified in Store Number [10R/02/08…11].

The allowable communication methods for a Type 2 carriage system are documented below in Table 3.8.4-1 for the UAI message list.

Table 3.8.4-1 Type 2 Carriage System Communication

Message Name	Message Number	Carriage System Only	Carriage System Directed Protocol	Carriage System Retransmit to all Stores	Mission Store Directed Protocol	Embedded Protocol	Notes
Synchronize With Data Word	[MC17R]			X			
Platform Description	[01R]			X			

Table 3.8.4-1 Type 2 Carriage System Communication

Message Name	Message Number	Carriage System Only	Carriage System Directed Protocol	Carriage System Retransmit to all Stores	Mission Store Directed Protocol	Embedded Protocol	Notes
Store Description	[01T]		X		X		1
Periodic Transfer Alignment	[02R]			X			7
Store Internal Parameters 1	[02T]				X		
Time	[03R]			X			7
Store Internal Parameters 2	[03T]				X		
Reset Transfer Alignment	[05R]			X			
IR LAR Data	[05T]		X		X		1, 2
LAR Control	[06R]			X			3
IZ LAR Data	[06T]		X		X		1, 2
Moment Arm	[09R]			X			3
Carriage System Control	[10R]	X					
Carriage System Monitor	[10T]	X					
Store Control	[11R]		X		X	X	
Store Monitor	[11T]		X		X		5
GPS Crypto Data	[12R]			X			
Almanac	[13R-005]			X			
AS Status/SV Configuration	[13R-007]			X			
Ephemeris #1	[13R-010]			X			
Ephemeris #2	[13R-011]			X			
Complementary Navigation	[13R-015]			X			
MDT-Mission	[13R-020]			X			
MDT-GeoZone Data	[13R-021]			X			
MDT-Growth Crypto	[13R-022]			X			
MDT-WDL Terminal Initialization	[13R-023]			X			
MDT-CS CDS	[13R-024]	X					
MDT-WDL Key 1	[13R-025]			X			
MDT-WDL Key 2	[13R-026]			X			
MDT-WDL Key 3	[13R-027]			X			

Table 3.8.4-1 Type 2 Carriage System Communication

Message Name	Message Number	Carriage System Only	Carriage System Directed Protocol	Carriage System Retransmit to all Stores	Mission Store Directed Protocol	Embedded Protocol	Notes
MDT-Other Store Keys	[13R-028]			X			
MDT-Net Participants	[13R-029]			X			
Transfer Control	[14R]			X			6
Transfer Monitor	[14T]			X			6
Environmental Data	[15R]			X			
GeoZone Control	[16R]			X	X	X	
GeoZone Monitor	[16T]		X		X		5
Modify Mission: Target	[17R-1]				X	X	4, 7
Modify Mission: Target	[17T-1]		X		X		5
Modify Mission: Loiter	[17R-2]				X	X	4
Modify Mission: Loiter	[17T-2]		X		X		5
Differential GPS Data	[18R]			X			
Store Summary Status	[20T]	X					
WDL Control	[21R]				X	X	
WDL Monitor	[21T]		X		X		5
Mission Control	[22R]				X		
Mission Monitor	[22T]				X		
Seeker/Sensor Control	[24R]				X	X	7
Seeker/Sensor Monitor	[24T]		X		X		5, 7

Notes:
1. Message can be from carriage system or mission store depending on Store Number [10R/02/08…11]. See Section 6.10R Carriage System Control [10R] for additional information and requirements.
2. IR LAR Data [05T] and IZ LAR Data [06T] are either Carriage provided CLAR or mission store LAR. See section 6.05T and 6.06T, respectively, for details and requirements.
3. See Section 3.8.4.2 for additional information and requirements on carriage system manipulation of data.
4. This message sent to a carriage system with Selected Store [17R/04/12…15 = 0] and Store Number [10R/02/08…11 = 0] is not sent to any mission stores.
5. The Carriage System provides data in this message from next mission store to be released if Store Number [10R/02/08…11 = 0].
6. Section 6.14R Transfer Control [14R] and 6.14T Transfer Monitor [14R] for additional information and requirements. All MDT to the mission stores are done by the carriage system.

7. Time Stamps for these messages can be modified depending upon carriage system implementation. See section 3.5.17.1.2 for additional information and requirements.

The columns in the Table 3.8.4-1 are explained below.

- The Carriage System Only column identifies those messages used only for communication between the platform and Type 2 carriage system.

- The Carriage System Directed Protocol column identifies those messages used for communicating between the platform and a Type 2 carriage system when Directed Protocol to a mission store is not being used (Store Number [10R/02/08…11 = 0]).

  a. GeoZone Monitor [16T], Modify Mission: Target [17T-1], Modify Mission: Loiter [17T-2], WDL Monitor [21T], and Seeker/Sensor Monitor [24T] contains data from the next mission store to be released when Directed Protocol is directed to a Type 2 carriage system.

  b. Store Monitor [11T] contains carriage system status data for words [11T/01-05], [11T/07], and [11T/12-13] that are carriage system specific, while the other words contain specific fuze data for the MDS in Mod Msn Storage Location [22T/12] of the next mission store to be released.

  c. Store Description [01T], IR LAR Data [05T], and IZ LAR Data [06T] contents are dependent upon whether they are transmitted from the carriage system or the mission store.

  d. Store Control [11R] commands different functions dependent on whether the message is directed to the carriage system or the mission store.

- The Carriage System Retransmit to All Stores column identifies messages sent by the platform to the carriage system for the carriage system to retransmit (i.e., broadcasts) to all mission stores.

- The Mission Store Directed Protocol column identifies those messages used for communication between the platform and a mission store on a Type 2 carriage system via Directed Protocol (Store Number [10R/02/08…11 ≠ 0]).

- The Embedded Protocol column identifies the messages that the platform can use to send data directly to a mission store using Embedded Protocol.

3.8.4.1 Directed Protocol

Directed Protocol only applies to a Type 2 carriage system.

3.8.4.1.1 Platform to Mission Store Directed Protocol (Type 2 CS Only)

The platform communicates with a mission store by commanding the carriage system to pass MIL-STD-1553 messages to/from the store identified in Store Number [10R/02/08…11]. If Store Number [10R/02/08…11 = 0] the messages are not directed to/from a mission store but are acted upon by the carriage system itself.

Platform Requirements

The platform shall **{ps_3086}** set Store Number [10R/02/08…11 = X, X = 1-8 (Number of the mission store)] a minimum of 1 msec prior to communicating with the mission store via Directed Protocol.

The platform shall **{ps_3087}** set First Mission [10R/16 = 0] when using Directed Protocol.

The platform shall **{ps_3088}** set Selected Store [11R/19/00…03 = 0], Selected Store [16R/04/12…15 = 0], Selected Store [17R-1/04/12…15 = 0], Selected Store [17R-2/04/12…15 = 0], Selected Store [21R/03/12…15 = 0], and Selected Store [24R/03/12…15 = 0] for the applicable message when using that message in Directed Protocol.

Carriage System Requirements

A Type 2 carriage system shall **{css_3024}** support Directed Protocol within 1 msec of receipt of Store Number [10R/02/08…11 = X, X = 1-8].

A Type 2 carriage system shall **{css_3025}** retransmit the Directed Protocol Receive [R] message within 1 msec of message receipt when Store Number [10R/02/08…11 = X, X = 1-8].

A Type 2 carriage system shall **{css_3026}** obtain, retain, and provide status for Directed Protocol Transmit [T] messages.

3.8.4.1.2 Platform to Carriage System Directed Protocol

Type 2 Carriage System Directed Protocol is a subset of Directed Protocol when Store Number [10R/02/08…11 = 0]. The platform communicates with the carriage system directly for these messages as identified in the Carriage System Directed column of Table 3.8.4-1.

Platform Requirements

The platform shall **{ps_3142}** set Store Number [10R/02/08…11 = 0] and First Mission [10R/16 = 0] to communicate with a Type 2 carriage system using Directed Protocol.

3.8.4.2 Carriage System Data Manipulation (Type 2 CS Only)

For a Type 2 carriage system, the platform transfers Moment Arm [09R] to the carriage system after Carriage Inventory Complete [10T/02/10 = 1]. The carriage system, in turn, applies carriage system station specific offsets to the platform Moment Arm [09R] data, and transfers this updated Moment Arm [09R] data to the applicable mission store.

To support generation of a CLAR, a Type 2 carriage system can modify the total release countdown delay time and/or the predicted release countdown delay time used by the mission store for LAR calculations by updating the platform provided Platform Rel Dly Time [06R/04] and/or Pred Platform Rel Dly Time [06R/20] sent to each mission store to

include the additional delays resulting from the store release order and the fire interval used in the calculations.

If the platform does not provide a Release Point [06R/15-18], a Type 2 carriage system can set the Release Point [06R/15-18] to the appropriate CLAR entry point and send that to the mission stores to support generation of accurate CLAR Dynamic TOF - Min and Dynamic TOF - Max for IR CLAR and IZ CLAR. The Type 2 carriage system then uses the resulting TOF from Release Point from the mission stores to populate the CLAR Dynamic TOF - Min and Dynamic TOF - Max in the LAR Data message provided back to the platform.

When calculating the location of the CLAR entry point to be sent to the mission store in Release Point [06R/15-18], a Type 2 carriage system should compensate for the time delay between when the location is calculated and when it will be received by the mission store to ensure that the location will be within the mission store LAR (IR or IZ as applicable).

If the platform provides a Release Point [06R/15-18], the Type 2 carriage system uses the Dynamic TOF values from the mission stores to populate CLAR Dynamic TOF - Min and Dynamic TOF - Max in the LAR Data message provided back to the platform and uses TOF from Release Point values based on the platform provided release point from the mission stores to populate TOF from Release Point - Min and TOF from Release Point - Max in the LAR Data message provided back to the platform.

Carriage System Requirements

A Type 2 carriage system shall **{css_3027}** update platform provided Moment Arm [09R] data, by applying the appropriate carriage system station specific offsets, and then providing this updated Moment Arm [09R] to the appropriate mission store.

A Type 2 carriage system may **{csm_3001}** update platform provided Platform Rel Dly Time [06R/04] by applying the appropriate carriage system station specific release time delay, and then providing this updated Platform Rel Dly Time [06R/04] to the appropriate mission store.

A Type 2 carriage system may **{csm_3002}** update platform provided Pred Platform Rel Dly Time [06R/20] by applying the appropriate carriage system station specific release time delay, and then providing this updated Pred Platform Rel Dly Time [06R/20] to the appropriate mission store.

A Type 2 carriage system may **{csm_3003}** set Release Point [06R/15-18] to the coordinates of the IR CLAR entry point and set Release Point Invalid [06R/02/08 = 0] and provide this to the mission store to use to compute IR TOF from Release Point [05T/12-13], if Release Point Invalid [06R/02/08 = 1] from the platform.

A Type 2 carriage system may **{csm_3004}** set Release Point [06R/15-18] to the coordinates of the IZ CLAR entry point and set Release Point Invalid [06R/02/08 = 0] and provide this to the mission store to use to compute IZ TOF from Release Point [06T/12-13], if Release Point Invalid [06R/02/08 = 1] from the platform.

A Type 2 carriage system supplement **{sup_3077}** documents the carriage system use of Release Point [06R/15-18] in determining CLAR Dynamic TOF - Min and Dynamic TOF - Max for IR CLAR and IZ CLAR.

3.8.5 Carriage System MDS Transfer and MDS Selection (Type 2 CS Only)

A Type 2 carriage system transfers MDS data to mission stores via any of the following:

    a. MDT-Mission [13R-020] Mass Data Transfer (see section 4.11)

    b. Directed Protocol using Store Number [10R/02/08…11 = 1 to 8], Mod Msn Storage Location [22R/08], Modify Mission [17R], and Store Control [11R] fuzing data (see section 3.8.5.1).

    c. Embedded Protocol using Modify Mission [17R] to the Selected Store [17R/04/12…15], Store Control [11R] fuzing data to the Selected Store [11R/19/00…03] (see section 3.8.5.2).

A Type 2 carriage system supports platform primary MDS designation via any of the following:

    a. Directed Protocol with Store Number [10R/02/08…11 = 1 to 8] and a Pri Msn Storage Location [22R/04 > 0] (see section 3.8.5.1).

    b. Embedded Protocol using Modify Mission [17R] to the Selected Store [17R/04/12…15]. Note: Embedded protocol allows the platform to transfer and designate a target in a single Modify Mission [17R] (see section 3.8.5.2).

    c. Specifying First Mission [10R/16] and Number to Fire [11R/14] (see section 3.8.5.3).

3.8.5.1 MDS Transfer and Selection with Directed Protocol

Table 3.8.5-1 details a notional sequence in which the platform loads an MDS into a mission store and designates the primary MDS for that store using directed protocol. Section 3.8.4.1 provides more information and requirements on Directed Protocol.

Table 3.8.5-1 Notional MDS Transfer/Mission Selection via Directed Protocol

	PLATFORM	CARRIAGE SYSTEM / STORE
MDS Transfer via Directed Protocol	
1	Platform identifies the store for Directed Protocol by setting Store Number [10R/02/08…11 > 0], First Mission [10R/16 = 0] & Selected Store [17R/04/12…15 = 0].	Carriage system prepares to route messages to Store selected in Store Number [10R/02/08…11]. Carriage system sets Store Selected [10T/02/12…15] = Store Number [10R/02/08…11].
2	(Optional) Platform verifies connection to mission store by verifying Store Selected [10T/02/12…15] = Store Number [10R/02/08…11].	

Table 3.8.5-1 Notional MDS Transfer/Mission Selection via Directed Protocol

	PLATFORM	CARRIAGE SYSTEM / STORE
3	Platform identifies the Mod Msn Storage Location [22R/08].	Carriage system routes the Mission Control [22R] to the selected mission store. The mission store prepares to load Modify Mission [17R] data and/or Store Control [11R] fuze data in storage location indicated by Mod Msn Storage Location [22R/08]. Mission store sets Mod Msn Storage Location [22T/12] = Mod Msn Storage Location [22R/08].
4	(Optional) Platform verifies Mod Msn Storage Location [22T/12] = Mod Msn Storage Location [22R/08].	
5	Platform transmits MDS to the mission store via Modify Mission [17R] and/or Store Control [11R].	**Pre CTS** Mission store evaluates the new Modify Mission [17R] or Store Control [11R] fuze settings for Min MDS parameters and reports result in Msn Data Set Valid (1-9) [22T/07/00…08], if applicable, and MDS in Mod Msn Storage Location Valid [22T/07/15]. Updates Modify Mission [17T] or Store Monitor [11T] buffer with new MDS even if invalid, writes new MDS to memory and reports Msn Data Stored [22T/03/00 = 1]. **Post CTS** Mission store validates the new Modify Mission [17R] data prior to overwriting the MDS data in Mod Msn Storage Location [22R/08], updates the Modify Mission [17T] with the new MDS. Sets Msn Data Set Valid (1-9) [22T/07/00…08], if applicable, and MDS in Mod Msn Storage Location Valid [22T/07/15] to valid and reports Msn Data Stored [22T/03/00 = 1].
6.	(Optional) Request Modify Mission [17T], Store Monitor [11T] (fuze settings) and Mission Monitor [22T] to verify MDS.	
Primary Mission Selection via Directed Protocol		
1.	Platform designates target to attack by setting Pri Msn Storage Location [22R/04] = Mod Msn Storage Location [22R/08].	Mission store establishes target to attack by setting Pri Msn Storage Location [22T/06] = Pri Msn Storage Location [22R/04] and Min MDS Received [22T/02/03 = 1]. Mission store loads Store Control [11R] fuze data in fuze.
2	(Optional) Platform verifies that Pri Msn Storage Location [22T/06] = Pri Msn Storage Location [22R/04] and Min MDS Received [22T/02/03 = 1].	

3.8.5.2 MDS Transfer and Selection with Embedded Protocol

Embedded protocol allows the platform to transfer and designate a mission in a single Modify Mission [17R] and/or fuze data Store Control [11R] to a selected mission store. Sections 6.10R Carriage System Control [10R], 6.10T Carriage System Monitor [10T], 6.11R Store Control [11R], 6.16R/T GeoZone Control [16R], 6.17R Modify Mission [17R], 6.21R WDL Control [21R], 6.22R Mission Control [22R], 6.22T Mission Monitor [22T], and 6.24R Seeker/Sensor Control [24R], provide further information and requirements.

Table 3.8.5-2 details a notional sequence in which the platform transfers an MDS to the store and designates the primary MDS for the store using Embedded Protocol.

Table 3.8.5-2 Notional MDS Transfer/Mission Selection via Embedded Protocol

	PLATFORM	CARRIAGE SYSTEM/STORE
1	Platform ensures that Directed Protocol is not selected by setting Store Number [10R/02/08…11 = 0].	Carriage system responds by setting Store Selected [10T/02/12…15] = Store Number [10R/02/08…11].
2	(Optional) Platform can verify that Directed Protocol is not selected by verifying Store Selected [10T/02/12…15 = 0].	
3	Platform sends an MDS via Modify Mission [17R] with Selected Store [17R/04/12…15 > 0].	Carriage System sends Mod Msn Storage Location [22R/08 = 1] to the Selected Store [17R/04/12…15] to specify MDS storage location. Mission store provides feedback to carriage system by setting Mod Msn Storage Location [22T/12] = Mod Msn Storage Location [22R/08].
4		Carriage System sends Modify Mission [17R] to the mission store specified by Selected Store [17R/04/12…15].
5		Carriage System sends Pri Msn Storage Location [22R/04 = 1] to the mission store to designate primary MDS.
6		Mission store reports primary MDS by setting Pri Msn Storage Location [22T/06] = Pri Msn Storage Location [22R/04] and Min MDS Received [22T/02/03 = 1].
7	Platform sends programmable fuze data via a Store Control [11R] with Selected Store [11R/19/00…03 > 0].	Carriage System sends Mod Msn Storage Location [22R/08 = 1] to the Selected Store [11R/19/00…03] to specify MDS storage location. Mission store provides feedback to carriage system by setting Mod Msn Storage Location [22T/12] = Mod Msn Storage Location [22R/08]. Carriage System sends fuze data in [11R/08-21] and/or [11R/24-26] to mission store specified by Selected Store [11R/19/00…03]. Carriage System sends Pri Msn Storage Location [22R/04 = 1] to designate primary MDS. Mission store reports primary MDS by setting Pri Msn Storage Location [22T/06] = Pri Msn Storage Location [22R/04].

Table 3.8.5-2 Notional MDS Transfer/Mission Selection via Embedded Protocol

	PLATFORM	CARRIAGE SYSTEM/STORE
8	(Optional) Platform verifies that the <u>Selected Store</u> [17R/04/12…15] received a valid <u>Min MDS Received</u> [20T/W+1/03 = 1], where W = word 7, 9, 11, 13, 15, 17, 19, and 21 for store 01 through 08 in the release order.	
9	Platform sends seeker/sensor data via a <u>Seeker/Sensor Control</u> [24R] with <u>Selected Store</u> [24R/03/12…15 > 0]	Carriage System sends seeker/sensor data to Store indicated by <u>Selected Store</u> [24R/03/12…15].
10		Mission store updates <u>Seeker/Sensor Monitor</u> [24T].

Platform Requirements

The platform shall **{ps_3089}** provide and designate an MDS for a selected mission store using Embedded Protocol by:

   a. Transmitting a <u>Carriage System Control</u> [10R] to the carriage system with <u>Store Number</u> [10R/02/08…11 = 0] and <u>First Mission</u> [10R/16 = 0], to the carriage system, and

   b. Transmitting an MDS in <u>Modify Mission</u> [17R] with <u>Selected Store</u> [17R/04/12…15 = X], where X is the release order number of the desired mission store, to the carriage system.

The platform shall **{ps_3090}** provide programmable fuze settings for a selected mission store using Embedded Protocol, if <u>PF Onboard</u> [22T/02/12 = 1], by:

   a. Transmitting a <u>Carriage System Control</u> [10R] to the carriage system with <u>Store Number</u> [10R/02/08…11 = 0] and <u>First Mission</u> [10R/16 = 0], to the carriage system, and

   b. Transmitting programmable fuze data in <u>Store Control</u> [11R] to the carriage system, with <u>Selected Store</u> [11R/19/00…03 = X], where X is the release order number of the desired mission store.

The platform shall **{ps_3091}** control selected mission store seeker/sensor using Embedded Protocol, if <u>Seeker Onboard</u> [22T/05/15 = 1] and/or <u>Data Recorder Onboard</u> [22T/05/12 = 1], by:

   a. Transmitting a <u>Carriage System Control</u> [10R] to the carriage system with <u>Store Number</u> [10R/02/08…11 = 0] and <u>First Mission</u> [10R/16 = 0], to the carriage system, and

   b. Transmitting seeker/sensor control commands in <u>Seeker/Sensor Control</u> [24R] to the carriage system, with <u>Selected Store</u> [24R/03/12…15 = X], where X is the release order number of the desired store.

The platform shall **{ps_3143}** modify WDL commands/data for a selected mission store using Embedded Protocol, if <u>WDL Onboard</u> [22T/05/11 = 1], by:

a. Transmitting a Carriage System Control [10R] to the Type 2 carriage system with Store Number [10R/02/08…11 = 0] and First Mission [10R/16 = 0], to the carriage system, and

b. Transmitting WDL commands/data in WDL Control [21R] to the Type 2 carriage system, with Selected Store [21R/03/12…15 = X], where X is the release order number of the desired store.

The platform shall **{ps_3145}** modify GeoZone data for a selected mission store using Embedded Protocol, if CDS GeoZone Enabled **{cds_3038}**, by:

a. Transmitting a Carriage System Control [10R] to the carriage system with Store Number [10R/02/08…11 = 0] and First Mission [10R/16 = 0], to the carriage system, and

b. Transmitting GeoZone data in GeoZone Control [16R] to the carriage system, with Selected Store [16R/04/12…15 = X], where X is the release order number of the desired store.

Carriage System Requirements

A Type 2 carriage system shall **{css_3030}** accept an MDS, via Embedded Protocol, when Store Number [10R/02/08…11 = 0] and First Mission [10R/16 = 0] and transfer and designate an MDS for the Selected Store [17R/04/12…15 = X], where X is the release order number of the specified store, by transmission of the following commands:

a. Command the mission store specified by Selected Store [17R/04/12…15] to prepare to receive an MDS in Mod Msn Storage Location [22R/08 = 1].

b. Transmit the Modify Mission [17R] to the mission store specified by Selected Store [17R/04/12…15].

c. Transmit Pri Msn Storage Location [22R/04 = 1] to designate primary MDS.

Note: Step "c" can occur in the same Mission Control [22R] transmission as step "a".

A Type 2 carriage system shall **{css_3031}** accept programmable fuze settings, via Embedded Protocol, when Store Number [10R/02/08…11 = 0] and First Mission [10R/16 = 0], and transfer and designate the programmable fuze settings for the Selected Store [11R/19/00…03 = X], where X is the release order number of the desired store, if PF Onboard [22T/02/12 = 1], by transmission of the following commands:

a. Command the mission store specified by Selected Store [11R/19/00…03] to prepare to receive programmable fuze settings for the MDS in Mod Msn Storage Location [22R/08 =1].

b. Transmit the Store Control [11R] to the mission store specified by Selected Store [11R/19/00…03].

c. Transmit Pri Msn Storage Location [22R/04 = 1] to designate primary MDS.

Note: Step "c" can occur in the same Mission Control [22R] transmission as step "a".

A Type 2 carriage system shall **{css_3032}** accept sensor/seeker control data from the platform, via Embedded Protocol, when Store Number [10R/02/08…11 = 0] and First Mission [10R/16 = 0] and pass through the seeker/sensor Control data to the Selected Store [24R/03/12…15 = X], where X is the release order number of the desired mission store, by transmitting Seeker/Sensor Control [24R].

A Type 2 carriage system shall **{css_3059}** accept WDL commands/data from the platform, via Embedded Protocol, when Store Number [10R/02/08…11 = 0] and First Mission [10R/16 = 0] and pass through the WDL commands/data to the Selected Store [21R/03/12…15 = X], where X is the release order number of the desired mission store, by transmitting WDL Control [21R].

A Type 2 carriage system shall **{css_3060}** accept GeoZone data from the platform, via Embedded Protocol, when Store Number [10R/02/08…11 = 0] and First Mission [10R/16 = 0] and pass through the GeoZone data to the Selected Store [16R/04/12…15 = X], where X is the release order number of the desired mission store, by transmitting GeoZone Control [16R] to the specified mission store.

3.8.5.3 MDS Selection using First Mission [10R/16]

The platform can use First Mission [10R/16] to command a Type 2 carriage system to select MDSs for Number to Fire [11R/14] mission stores. The Type 2 carriage system designates the MDS indicated by First Mission [10R/16] as the primary mission storage location for the next mission store to be released. Primary mission storage locations for subsequent mission stores up to Number to Fire [11R/14] are designated in sequential mission storage location order.

Table 3.8.5-3 details a notional sequence in which the platform transfers MDSs into mission stores using MDT then selects the primary MDSs for the mission stores using First Mission [10R/16]and Number to Fire [11R/14]).

Table 3.8.5-3 Notional MDS Transfer via MDT / Selection via First Mission

	PLATFORM	CARRIAGE SYSTEM/STORE
MDS Transfer via MDT		
1	Platform ensures that no store is selected for communication by setting Store Number [10R/02/08…11 = 0].	Carriage System responds by setting Store Selected [10T/02/12…15] = Store Number [10R/02/08…11].
2	(Optional) Platform verifies that no store is selected by verifying Store Selected [10T/02/12…15 = 0].	
3	Platform downloads MDT-Mission [13R-020] to carriage system in accordance with section 4.11 Mass Data Transfer.	Carriage system downloads MDT-Mission [13R-020] to all mission stores.
Primary Mission Selection via First Mission and Number to Fire		
4	Platform selects the First Mission [10R/16] to designate the primary mission of the first mission store in the release sequence, and	Carriage system sets Pri Msn Storage Location [22R/04] = First Mission [10R/16] for the first mission store in release order.

Table 3.8.5-3 Notional MDS Transfer via MDT / Selection via First Mission

	PLATFORM	CARRIAGE SYSTEM/STORE
	the Number to Fire [11R/14] to the number of stores to be released.	Carriage system sets Pri Msn Storage Location [22R/04] = First Mission [10R/16] + 1 for the next mission store in release order, etc … up to the number of mission stores specified by Number to Fire [11R/14]
5	(Optional) Platform can verify correct first MDS is selected by First Mission Selected [10T/19] = First Mission [10R/16]. (Optional) Platform can verify that the remaining mission stores have a valid MDS via Min MDS Received [20T/08,10,12,14,16,18,20, 22/03 = 1]	

Platform Requirements

The platform shall **{ps_3092}**, when performing MDS Selection using First Mission [10R/16]:

a. Send to the Type 2 carriage system via directed protocol (i.e., Store Number [10R/02/08…11 = 0]) Number to Fire [11R/14] set equal to the number of mission stores to which MDSs will be assigned, and then

b. Set First Mission [10R/16] equal to the mission storage location to be assigned as the primary MDS for the next mission store to be released.

Carriage System Requirements

A Type 2 carriage system shall **{css_3033}** assign the MDS indicated by First Mission [10R/16] as the primary MDS for the next mission store to be released and assign subsequent MDSs, in mission storage location order, as the primary MDSs for the subsequent mission stores to be released up to Number to Fire [11R/14].

3.8.6 Mission Store Releases (Armed Release)

The platform commands the carriage system to perform the mission store release sequence after the mission stores report minimum mission capable or AUR ready. The requirements for releasing mission stores from a Type 1 and Type 2 carriage system are considerably different and are discussed separately in the following sections.

3.8.6.1 Type 1 Carriage System Mission Store Releases (Armed Release)

For a Type 1 carriage system, Fire/Launch/Release [11R/04/00] is used to activate the S&RE for the carriage system station defined in Carriage Store S&RE Unit(s) Selected [11R/22] to physically release a mission store. A separate release sequence is performed for each individual mission store that is to be released. Table 3.8.6-1 depicts a notional Type 1 carriage system mission store release sequence.

Table 3.8.6-1 Notional Type 1 Carriage System Release Sequence

	PLATFORM	CARRIAGE STORE (Note 1)
1	Aircrew Initiates mission store release.	
2	Verify desired mission store is ready for release when Minimum Mission Capable [22T/02/00 = 1] Note 2.	
3	Apply 28V DC2 [Power] to CS Apply Release Consent [Discrete] to CS	Set CSI 28V DC2 Present [10T/02/06 = 1] when 28V DC2 [Power] is detected. Set CSI Release Consent Present [10T/02/05 = 1] when Release Consent [Discrete] is detected.
4	Send Safety Enable/28V DC2 Select [10R/4-11/10] and Safety Enable/Release Consent Select [10R/4-11/13] to command CS to apply 28V DC2 [power] and Release Consent [Discrete] to desired mission store	Apply 28V DC2 [power] and Release Consent [Discrete] to appropriate mission store.
5	Wait a minimum of 20 msec plus CDS CS Switching Time.	
6	Send CTS [11R/04/02 = 1] to desired mission store. Note 2.	
7	Monitor CTSS [11T/04/02 = 1] from desired mission store. Note 2.	
8	Remove Operating Power, 28V DC2 [Power], and Release Consent [Discrete] from desired mission store.	
9	Wait a minimum of 80 msec plus CDS CS Switching Time. Note 3.	
10	Verify Power Changeover (PCO) for desired mission store (i.e., verify CTSS [11T/04/02 = 1]). Note 2.	
11	Send Fire/Launch/Release [11R/04/00 = 1] to CS with Carriage Store S&RE Unit(s) Select [11R/22] set to desired mission store.	Activate S&RE mission store release mechanism for Carriage Store S&RE Unit(s) Select [11R/22].
12	Monitor Store Present Status for desired mission store in Carriage System Monitor [10T].	Update Store Present Status in Carriage System Monitor [10T].

Notes:
1. Mission store actions to received commands and status reporting are the same as for Platform/Store Release Functional Sequence discussed in section 3.5.12 through 3.5.14.
2. Communication occurs directly between the platform and mission store.
3. The platform waits sufficient time (e.g., 80 msec plus CDS CS Switching Time) after PCO before requesting CTSS to verify mission store is operating on its internal battery.

Type 1 carriage system mission store release (armed release) requirements are listed below. Sections 3.5.12 through 3.5.14, and 6.10R Carriage System Control [10R], 6.10T Carriage System Monitor [10T], 6.11R Store Control [11R], 6.11T Store Monitor [11T], and 6.22T Mission Monitor [22T] provide further information and requirements.

Platform Requirements

The platform shall **{ps_3093}** apply 28V DC2 [Power] to a Type 1 carriage system a minimum of 10 msec prior to setting Safety Enable/28V DC2 Select [10R/4-11/10] to a mission store.

The platform shall **{ps_3094}** apply Release Consent [Discrete] to a Type 1 carriage system a minimum of 10 msec prior to setting Safety Enable/Release Consent Select [10R/4-11/13] to a mission store.

The platform shall **{ps_3107}** set Safety Enable/28V DC2 Select [10R/4-11/10] for the mission store to be released from a Type 1 carriage system a minimum of 20 msec plus CDS CS Switching Time **{cds_3033}** prior to sending CTS [11R/04/02 = 1] to that mission store.

The platform shall **{ps_3108}** set Safety Enable/Release Consent Select [10R/4-11/13] for the mission store to be released from a Type 1 carriage system a minimum of 20 msec plus CDS CS Switching Time **{cds_3033}** prior to sending CTS [11R/04/02 = 1] to that mission store.

The platform shall **{ps_3095}** set CTS [11R/04/02 = 1] to the mission store to be released from a Type 1 carriage system only when:

    a. Minimum Mission Capable [22T/02/00 = 1].

    b. 28V DC2 [Power] is applied to carriage system.

    c. Safety Enable/28V DC2 Select [10R/4-11/10 = 1] for the mission store to be released.

    d. Release Consent [Discrete] is applied to carriage system

    e. Safety Enable/Release Consent Select [10R/4-11/13 = 1] for the mission store to be released.

The platform shall **{ps_3096}** remove all external power from the mission store to be released after receipt of CTSS [11T/04/02 = 1] from the mission store to be released from a Type 1 carriage system by setting:

    a. 28V DC1 Select [10R/4-11/09 = 0]

    b. Safety Enable/28V DC2 Select [10R/4-11/10 = 0]

    c. 115V AC 3ph Select [10R/4-11/11 = 0]

    d. 270V DC Select [10R/4-11/12 = 0]

    e. Safety Enable/Release Consent Select [10R/4-11/13 = 0]

The platform shall **{ps_3097}** confirm the mission store to be released is operating on internal power by verifying CTSS [11T/04/02 = 1] a minimum of 80 msec plus CDS CS Switching Time **{cds_3033}** after commanding a Type 1 carriage system to remove all external power from the mission store to be released.

The platform shall **{ps_3109}** set Fire/Launch/Release [11R/04/00 = 1] and set Carriage Store S&RE Unit(s) Selected [11R/22] to the appropriate Type 1 carriage system station number to release the mission store.

The platform may **{pm_3028}** interrupt the Type 1 carriage system mission store release sequence by removing Release Consent [Discrete] from the carriage system.

Carriage System Requirements

A Type 1 carriage system shall **{css_3075}** route Safety Enable Pwr/28V DC2 [Power] to the respective store(s) after receipt of Safety Enable Pwr/28V DC2 Select [10R/04-11/10 = 1].

A Type 1 carriage system shall **{css_3076}** route/apply Safety Enable/Release Consent [Discrete] to the respective store(s) after receipt of Safety Enable/Release Consent Select [10R/04-11/13 = 1].

A Type 1 carriage system shall **{css_3044}** initiate the fire/launch/release of the Carriage Store S&RE Unit(s) Selected [11R/22] mission store when Fire/Launch/Release [11R/04/00 = 1] and Release Consent [Discrete] is enabled.

A Type 1 carriage system supplement **{sup_3057}** documents the details of its hung mission store processing and maximum CS Switching Time.

3.8.6.2 Type 2 Carriage System Mission Store Releases (Armed Release)

For a Type 2 carriage system, Fire/Launch/Release [11R/04/00] is used to physically release the Number to Fire [11R/14] mission stores. Table 3.8.6-2 depicts a notional Type 2 carriage system mission store release sequence.

Table 3.8.6-2 Notional Type 2 Carriage System Release Sequence

	PLATFORM	CARRIAGE SYSTEM (Note 1)
1	Aircrew Initiates mission store release.	
2	Verify Number to Fire [11R/14] mission stores are ready for release by monitoring Store Summary Status [20T] Minimum Mission Capable status bits or individual mission store Minimum Mission Capable [22T/02/00 = 1] Set Number to Fire [11R/14].	Prepare to route Release Consent to Safety Enable and set Number to Fire [11T/13] to number (up to number commanded) of mission stores available for release.
3	Optional: Apply 28V DC2 [Power] to CS. Wait a minimum of 20 msec. Send Activate Non-Safety Critical Release Functions [11R/06/05 = 1] with Selected Store [11R/19/00…03 = 0] and Store Number [10R/02/08…11 = 0] and Number to Fire [11R/14] mission stores to CS.	Set CSI 28V DC2 Present [10T/02/06 = 1] when 28V DC2 Present is detected. Apply Safety Enable Pwr/28V DC2 [Power] to Number to Fire [11T/13] mission store(s). Sequentially send Activate Non-Safety Critical Release Functions [11R/06/05 = 1] to Number to Fire [11T/13] mission store(s) when Minimum Mission Capable [22T/02/00 = 1] is TRUE for each mission store to be released.

Table 3.8.6-2 Notional Type 2 Carriage System Release Sequence

	PLATFORM	CARRIAGE SYSTEM (Note 1)
4	Optional: Monitor <u>Non-Safety Critical Release Functions Activated</u> status from each mission store to be released via <u>Store Summary Status</u> [20T].	Confirm <u>Non-Safety Critical Release Functions Activated</u> [11T/05/05 = 1] for each mission store to be released and update <u>Non-Safety Critical Release Functions Activated</u> status in <u>Store Summary Status</u> [20T]. Remove <u>Conditioning Power</u> and <u>Operating Power</u> from each mission store to be released, when <u>Non-Safety Critical Release Functions Activated</u> [11T/05/05 = 1], if mission store non-safety critical release functions include activating the mission store internal battery. (Optional) Verify each mission store to be released is operating on internal battery power. (Optional)
5	Apply <u>28V DC2</u> [Power] to CS, if not already applied. Apply <u>Release Consent</u> [Discrete] to CS	Set <u>CSI 28V DC2 Present</u> [10T/02/06 = 1] when <u>28V DC2</u> (Power) is detected. Set <u>CSI Release Consent Present</u> [10T/02/05 = 1] when <u>Release Consent</u> [Discrete] is detected. Apply <u>Safety Enable Pwr/28V DC2</u> [Power], if not already applied, and <u>Safety Enable/Release Consent</u> [Discrete] to <u>Number to Fire</u> [11T/13] mission store(s).
6	Wait a minimum of 20 msec.	
7	Send <u>CTS</u> [11R/04/02 = 1] with <u>Selected Store</u> [11R/19/00…03 = 0] and <u>Store Number</u> [10R/02/08…11 = 0] and <u>Number to Fire</u> [11R/14] mission stores to CS	Sequentially send <u>CTS</u> [11R/04/02 = 1] to <u>Number to Fire</u> [11T/13] mission store(s) when the following conditions are TRUE for each mission store to be released: <u>Minimum Mission Capable</u> [22T/02/00 = 1] <u>Release Consent</u> [22T/02/09 = 1].
8	Monitor <u>CTSS</u> status from each mission store to be released via <u>Store Summary Status</u> [20T] (optional)	Sequentially confirm <u>CTSS</u> [11T/04/02 = 1] for each mission store to be released and update <u>CTSS</u> status in <u>Store Summary Status</u> [20T].
9		Remove <u>Conditioning Power</u> (if not already removed), <u>Operating Power</u> (if not already removed), <u>Safety Enable Pwr/28V DC2</u> [Power] and <u>Safety Enable/Release Consent</u> [Discrete] from each mission store to be released, when <u>CTSS</u> [11T/04/02 = 1].
10		Wait a minimum of 80 msec from when <u>Operating Power</u> and <u>Conditioning Power</u> were removed. Note 2.
11	Optional: Verify <u>CTSS</u> [11T/04/02 = 1] from the carriage system	Verify <u>CTSS</u> [11T/04/02 = 1] for the next mission store in the release order and set carriage system <u>CTSS</u> [11T/04/02 = 1].
12	Send <u>Fire/Launch/Release</u> [11R/04/00 = 1] and <u>Number to Fire</u> [11R/14] mission stores to CS with <u>Selected Store</u> [11R/19/00…03	Sequentially activate carriage system S&RE mission store release mechanism to release <u>Number to Fire</u> [11T/13] mission store(s) with

Table 3.8.6-2 Notional Type 2 Carriage System Release Sequence

	PLATFORM	CARRIAGE SYSTEM (Note 1)
	= 0] and Store Number [10R/02/08…11 = 0]. Note 2	Fire Interval [11T/12] between successive mission store releases.
13	Monitor Store Present Status [10T/4-11/14…15] to verify mission stores have been released.	Update Store Present Status [10T/4-11/14…15] with current status.

Notes

1. Mission store actions to received commands and status reporting are the same as for Platform/Store Release Functional Sequence discussed in section 3.5.12 through 3.5.14.
2. Fire/Launch/Release [11R/04/00 = 1] can be commanded in the same message as CTS [11R/04/02 = 1] to facilitate store release as soon as PCO is achieved.

Type 2 carriage system mission store release (armed release) requirements are listed below. Sections 3.5.12 through 3.5.14, and 6.10R Carriage System Control [10R], 6.10T Carriage System Monitor [10T], 6.11R Store Control [11R], 6.11T Store Monitor [11T], 6.20T Store Summary Status [20T], and 6.22T Mission Monitor [22T] provide further information and requirements.

Platform Requirements

The platform may **{pm_3036}** set Activate Non-Safety Critical Release Functions [11R/06/05 = 1] to command the Type 2 carriage system to activate carriage system non-safety critical release functions, as defined in MDT-CS CDS [13R-24], and mission store non-safety critical release functions if CDS Non-Safety Critical Release Functions **{cds_3017}**.

The platform shall **{ps_3147}** apply 28V DC2 [Power] to a Type 2 carriage system a minimum of 20 msec prior to setting Activate Non-Safety Critical Release Functions [11R/06/05 = 1].

The platform shall **{ps_3148}** send Activate Non-Safety Critical Release Functions [11R/06/05 = 1] to a Type 2 carriage system only when Selected Store [11R/19/00…03 = 0], Store Number [10R/02/08…11 = 0], and CTS [11R/04/02 = 0].

The platform shall **{ps_3149}** set Number to Fire [11R/14] mission stores for a Type 2 carriage system when sending Activate Non-Safety Critical Release Functions [11R/06/05 = 1].

The platform shall **{ps_3098}** apply 28V DC2 [Power] to a Type 2 carriage system a minimum of 20 msec prior to setting CTS [11R/04/02 = 1].

The platform shall **{ps_3099}** apply Release Consent [Discrete] to a Type 2 carriage system a minimum of 20 msec prior to setting CTS [11R/04/02 = 1].

The platform shall **{ps_3110}** send Number to Fire [11R/14] to set the number of stores to be released prior to sending Activate Non-Safety Critical Release Functions [11R/06/05 = 1], CTS [11R/04/02 = 1] and/or Fire/Launch/Release [11R/04/00 = 1] to allow the carriage system to respond with Number to Fire [11T/13] and XX - Store Selected for Release [20T/02-05/01, 09] statuses.

The platform shall **{ps_3111}** send <u>CTS</u> [11R/04/02 = 1] to a Type 2 carriage system only when <u>Selected Store</u> [11R/19/00…03 = 0] and <u>Store Number</u> [10R/02/08…11 = 0].

The platform shall **{ps_3100}** send <u>CTS</u> [11R/04/02 = 1] to a Type 2 carriage system only when:

    a. <u>28V DC2</u> [Power] is applied to carriage system

    b. <u>Release Consent</u> [Discrete] is applied to carriage system

The platform shall **{ps_3112}** set <u>Number to Fire</u> [11R/14] mission stores for a Type 2 carriage system when sending <u>CTS</u> [11R/04/02 = 1].

The platform shall **{ps_3113}** send <u>Fire/Launch/Release</u> [11R/04/00 = 1] to a Type 2 carriage system only when:

    a. <u>Selected Store</u> [11R/19/00…03 = 0]

    b. <u>Store Number</u> [10R/02/08…11 = 0]

    c. <u>28V DC2</u> [Power] is applied to carriage system

    d. <u>Release Consent</u> [Discrete] is applied to carriage system

The platform shall **{ps_3114}** set <u>Number to Fire</u> [11R/14] mission stores for a Type 2 carriage system when sending <u>Fire/Launch/Release</u> [11R/04/00 = 1].

The platform may **{pm_3030}** send <u>Fire/Launch/Release</u> [11R/04/00 = 1] in the same message as <u>Commit to Separate Store</u> [11R/04/02 = 1] to command the Type 2 carriage system to begin releasing mission stores as soon as the mission stores are ready for release.

The platform may **{pm_3029}** interrupt the Type 2 carriage system mission store release sequence by removing <u>Release Consent</u> [Discrete] from the carriage system.

The platform annex **{ann_3022}** documents which carriage system and mission store release functions are considered "safety critical" and if the platform uses <u>Activate Non-Safety Critical Release Functions</u> [11R/06/05].

Carriage System Requirements

A Type 2 carriage system shall **{css_3034}** set/route <u>Safety Enable Pwr/28V DC2</u> [Power] to <u>Number to Fire</u> [11T/13] mission store(s) when the platform applies <u>28V DC2</u> [Power] to the carriage system.

A Type 2 carriage system shall **{css_3067}** send <u>Activate Non-Safety Critical Release Functions</u> [11R/06/05 = 1] sequentially to <u>Number to Fire</u> [11T/13] mission store(s) with the first store to be released receiving its ANSCRF within 20 msec after receipt of <u>Activate Non-Safety Critical Release Functions</u> [11R/06/05 = 1] from the platform with <u>Selected Store</u> [11R/19/00…03 = 0] and <u>Store Number</u> [10R/02/08…11 = 0] and <u>28V DC2</u> [Power] is present.

A Type 2 carriage system shall **{css_3068}** send Activate Non-Safety Critical Release Functions [11R/06/05 = 1] only to mission store(s) that are Minimum Mission Capable [22T/02/00 = 1] and the carriage system is reporting XX - Store Selected for Release [20T/02-05/01, 09 = 1].

A Type 2 carriage system shall **{css_3069}** activate non-safety critical release functions defined in MDT-CS CDS [13R-24] for Number To Fire [11T/13] mission store(s) after receipt of Activate Non-Safety Critical Release Functions [11R/06/05 = 1] from the platform with Selected Store [11R/19/00…03 = 0] and Store Number [10R/02/08…11 = 0] and 28V DC2 [Power] is present.

A Type 2 carriage system shall **{css_3035}** set Safety Enable/Release Consent [Discrete] to Number to Fire [11T/13] mission store(s) when the platform applies Release Consent [Discrete] to the carriage system.

A Type 2 carriage system shall **{css_3036}** send CTS [11R/04/02 = 1] sequentially to Number to Fire [11T/13] mission store(s) with the first store to be released receiving its CTS [11R/04/02 = 1] within 20 msec after receipt of CTS [11R/04/02 = 1] from the platform with Selected Store [11R/19/00…03 = 0] and Store Number [10R/02/08…11 = 0].

A Type 2 carriage system shall **{css_3037}** send CTS [11R/04/02 = 1] only to mission store(s) that are Minimum Mission Capable [22T/02/00 = 1], Release Consent [22T/02/09 = 1], and the carriage system is reporting XX - Store Selected for Release [20T/02-05/01, 09 = 1].

A Type 2 carriage system shall **{css_3038}** remove Conditioning Power (if still applied), Operating Power (if still applied), Safety Enable Pwr/28V DC2 [Power], and Safety Enable/Release Consent [Discrete] from the mission stores to be released after CTSS [11T/04/02 = 1] is received from each mission store to be released.

A Type 2 carriage system shall **{css_3039}** confirm each mission store to be released is operating on internal power by verifying CTSS [11T/04/02 = 1] a minimum of 80 msec after removing Operating Power and Conditioning Power.

A Type 2 carriage system shall **{css_3045}** ignore Activate Non-Safety Critical Release Functions [11R/06/05 = 1], CTS [11R/04/02 = 1] and Fire/Launch/Release [11R/04/00 = 1] when the carriage is reporting XX - Store Selected for Release [20T/02-05/01, 09 = 0] for all mission stores.

A Type 2 carriage system shall **{css_3046}** fire/launch/release the Number to Fire [11T/13] mission store(s) in the release sequence order consisting of those mission stores indicating XX - Store Selected for Release [20T/02-05/01, 09 = 1] at the Fire Interval [11T/12] after receipt of Fire/Launch/Release [11R/04/00 = 1] from the platform with Selected Store [11R/19/00…03 = 0] and Store Number [10R/02/08…11 = 0] when Release Consent [Discrete] is applied to the carriage system. Note: If Fire Interval [11R/13 = 0] then use the default time between releases.

A Type 2 carriage system shall **{css_3040}** send Abort Release/Launch [11R/06/04 = 1] and Erase Command/Authority [11R/06/00 = 1] to a hung mission store.

A Type 2 carriage system supplement **{sup_3063}** documents the details of the mission store release sequence, the default time between releases, mission store release process functions that are accomplished by the carriage system after the mission store reports Non-Safety Critical Release Functions Activated [11T/05/05 = 1], and the time this processing takes. These functions could include verifying that the mission store is operating on internal power, unlocking carriage system ejectors, etc., and will vary by platform and mission store. The exact functions that are accomplished by the Type 2 carriage system are defined using the MDT-CS CDS [13R-024].

A Type 2 carriage system supplement **{sup_3058}** documents the details of its hung mission store processing.

Mission Store Requirements

The mission store may **{sm_3005}** activate non-safety critical release functions upon receipt of Activate Non-Safety Critical Release Functions [11R/06/05 = 1] when Minimum Mission Capable [22T/02/00 = 1] and Safety Enable Pwr/28V DC2 [Power] is present.

The mission store supplement **{sup_3074}** documents if the Activate Non-Safety Critical Release Functions [11R/06/05] command is implemented, the non-safety critical release functions which are part of the mission store launch/release sequence, the time required for completing each function, and if these functions affect the Release Countdown Delay.

3.8.7 Other Carriage Systems Functions

3.8.7.1 Mission Store Resort (Type 2 CS Only)

Resort Stores [10R/02/02 = 1] commands a Type 2 carriage system to renumber the stores(s) in the release order when Resort Allowed [10T/03/04 = 1]. Sections 6.10R Resort Stores [10R/02/02] and 6.10T Resort Allowed [10T/03/04] provides further information and requirement.

3.8.7.2 Carriage System Stepover (Type 2 CS Only)

A Type 2 carriage system releases and jettisons stores in a predefined order. A stepover capability allows a carriage system to bypass failed or hung mission store(s) during a release sequence. Once a store has been stepped over, it cannot be released, however it can be jettisoned.

Section 6.10T Carriage System Monitor [10T] provides further information and requirements for Invalid Loadout [10T/03/05], Invalid Release Order [10T/03/06], and Release Order Word 1 & 2 [10T/16-17].

Carriage System Requirements

The carriage system supplement **{sup_3059}** documents physical locations and stepover details.

The platform/carriage system/mission store addendum **{add_3006}** documents the release order.

3.8.7.3 Mission Store Jettison (Unarmed Release)

Jettison [11R/04/01] is used to command the carriage system to release unarmed mission store(s). The carriage system performs jettison(s) as long as Carriage System Critical BIT Failure [10T/20/00 = 0] and Pressure Good [10T/02/08 = 1], if the carriage system contains a pneumatic ejection system. The requirements for jettisoning mission stores from a Type 1 and Type 2 carriage system are different and are discussed separately in the following sections. Sections 6.10T Carriage System Monitor [10T], 6.11R Store Control [11R], and 6.11T Store Monitor [11T] provide further information and requirements.

3.8.7.3.1 Type 1 Carriage System Mission Store Jettison (Unarmed Release)

For a Type 1 carriage system, Jettison [11R/04/01 = 1] is used to activate the S&RE for the carriage system station defined in Carriage Store S&RE Unit(s) Selected [11R/22] to physically release a mission store in an unarmed condition. A separate jettison command is performed for each individual mission store that is to be jettisoned.

Platform Requirements

The platform shall **{ps_3116}** apply 28V DC2 [Power] to a Type 1 carriage system a minimum of 10 msec prior to setting Jettison [11R/04/01 = 1].

The platform shall **{ps_3117}** apply Release Consent [Discrete] to a Type 1 carriage system a minimum of 10 msec prior to setting Jettison [11R/04/01 = 1].

The platform shall **{ps_3118}** set Jettison [11R/04/01 = 1] and set Carriage Store S&RE Unit(s) Selected [11R/22] to the appropriate carriage system station number to jettison the mission store.

Carriage System Requirements

A Type 1 carriage system shall **{css_3047}** de-energize all arming unit solenoid(s) (Nose, Tail, and/or Center) of the Carriage Store S&RE Unit(s) Selected [11R/22] mission store and then activate the S&RE release mechanism to release that mission store when Jettison [11R/04/01 = 1] and Release Consent [Discrete] enabled.

3.8.7.3.2 Type 2 Carriage System Mission Store Jettison (Unarmed Release)

For a Type 2 carriage system, Jettison [11R/04/01] is used to physically release a single (Number to Fire [11R/14 = 1]) mission store or all remaining (Number to Fire [11R/14 > 1]) mission stores in an unarmed condition.

Platform Requirements

The platform shall **{ps_3119}** apply 28V DC2 [Power] to a Type 2 carriage system a minimum of 10 msec prior to setting Jettison [11R/04/01 = 1].

The platform shall **{ps_3120}** apply Release Consent [Discrete] to a Type 2 carriage system a minimum of 10 msec prior to setting Jettison [11R/04/01 = 1].

The platform shall **{ps_3121}** send Jettison [11R/04/01 = 1] to a Type 2 carriage system only when Selected Store [11R/19/00…03 = 0] and Store Number [10R/02/08…11 = 0] with:

   a. Number to Fire [11R/14 = 1] to command jettison of the next mission store in the release sequence.

   b. Number to Fire [11R/14 > 1] to command jettison of all remaining jettisonable mission stores in the release sequence.

Carriage System Requirements

A Type 2 carriage system shall **{css_3048}** de-energize all of its arming unit solenoid(s) (Nose, Tail, and/or Center) and activate the S&RE release mechanism to perform the mission store jettison process when Jettison [11R/04/01 = 1] is received from the platform with Selected Store [11R/19/00…03 = 0] and Store Number [10R/02/08…11 = 0], and Release Consent [Discrete] is enabled, based on the value of Number to Fire [11R/14] as follows:

   a. Number to Fire [11R/14 = 0] indicates no jettison.

   b. Number to Fire [11R/14 = 1] indicates jettison next mission store in the release sequence.

   c. Number to Fire [11R/14 > 1] indicates jettison of all remaining jettisonable mission stores in the release sequence.

3.8.7.4 Carriage System Sensitive Data Erase (Type 2 CS Only)

The carriage system performs a data erase to remove all sensitive data from carriage system volatile and non-volatile memory when commanded by the platform in accordance with section 3.5.11 Data Erase Processing.

3.8.7.5 Type 2 Carriage System Training Mode

A Type 2 carriage system can provide a training mode to support aircrew training when mission stores are not present. If a training mode is available, all message traffic between the platform and carriage system for this mode is the same as it is for normal operation with the exception of the GPS Crypto Data [12R], which is not transmitted.

Sections 6.10R Carriage System Control [10R] and 6.10T Carriage System Monitor [10T] provide further information and requirements.

Platform Requirements

The platform shall **{ps_3101}** inhibit transmission of GPS Crypto Key [12R] when In Training [10T/03/00 = 1].

3.8.7.6 Carriage System Telemetry

The carriage system can have a TM system installed for test purposes. The platform can command the carriage system to turn TM RF emissions on and off. The carriage system reports the presence of a TM system and TM RF emission status to the platform.

Sections 6.10R Carriage System Control [10R] and 6.10T Carriage System Monitor [10T] provide further information and requirements.

3.8.7.7 Composite Launch Acceptability Region (CLAR) (Type 2 CS Only)

A Composite Launch Acceptability Region (CLAR) is provided by a Type 2 carriage system with Store Number [10R/02/08…11 = 0]. A CLAR represents a single launch region for the quantity of mission store(s) requested by the platform at a specified fire interval. For example, if Number to Fire [11R/14 = 4] is set to four and the carriage system performs a quantity release of four mission stores at the specified fire interval, then each mission store is released within its own individual LAR, if the release sequence is started within the CLAR.

The CLAR Mission Reference Point associated with each CLAR type is determined by the Type 2 carriage system (e.g., the first target location, a centroid of the Mission Reference Point(s) reported by each mission store in the CLAR solution, etc.), unless the platform provides a Pred Plat Fly-to-Point Lat & Long [06R/05-08] to the carriage system. The platform can provide a Pred Plat Fly-to-Point Lat & Long to the carriage system to facilitate the platform combining of CLARs from multiple Type 2 carriage systems. If the platform provides Pred Plat Fly-to-Point Lat & Long, the Type 2 carriage system provides all CLAR data referenced to the Pred Plat Fly-to-Point Lat & Long. The CLAR and the associated CLAR parameters are equivalent to the mission store LAR and the associated LAR parameters as defined in Section 3.5.10, Launch Acceptability Region (LAR), except that the CLAR represents the composite launch region.

Sections 3.5.10, Launch Acceptability Region (LAR), 6.06R LAR Control [06R], 6.05T IR LAR Data [05T], and 6.06T IZ LAR Data [06T], provide further information and requirements.

Platform Requirements

The platform shall **{ps_3102}** obtain CLAR data from a Type 2 carriage system by requesting IR LAR Data [05T] and IZ LAR Data [06T] with Store Number [10R/02/08…11 = 0].

Carriage System Requirements

A Type 2 carriage system shall **{css_3041}** set LAR invalidity bits 00 to 03 to invalid for the respective LAR Type ([05T/02/00…03 = 1111 (B)], [06T/02/00…03 = 1111 (B)]) in response to an IR LAR Data [05T] or IZ LAR Data [06T] request with Store Number [10R/02/08…11 = 0] until all mission store(s) used to compute the CLAR provide a valid LAR Polygon for the respective LAR Type to the carriage system and an intersection of the multiple mission store LARs exist.

A Type 2 carriage system shall **{css_3042}** make first <u>IR LAR Data</u> [05T] and <u>IZ LAR Data</u> [06T] updates available to the platform with the respective CLAR data within the time documented in the carriage system supplement **{sup_3060}** after the respective CLAR is valid.

A Type 2 carriage system shall **{css_3043}** begin periodic updating of the <u>IR LAR Data</u> [05T] and <u>IZ LAR Data</u> [06T] with the respective CLAR data in accordance with the rate documented in the carriage system supplement **{sup_3061}** after the respective CLAR is valid.

3.8.7.7.1 Current CLAR

A Type 2 carriage system provides current CLAR data based on <u>Number to Fire</u> [11T/13], <u>Fire Interval</u> [11T/12], and <u>Platform Rel Dly Time</u> [06R/04] (if provided) using current conditions for all CLAR independent variables.

Platform Requirements

The platform shall **{ps_3103}** transmit <u>Number to Fire</u> [11R/14] with <u>Store Number</u> [10R/02/08…11 = 0] for a Type 2 carriage system to establish the number of mission stores to be used in the computation of the current CLARs that are to be provided in <u>IR LAR Data</u> [05T] and <u>IZ LAR Data</u> [06T].

The platform may **{pm_3038}** transmit <u>Fire Interval</u> [11R/13] with <u>Store Number</u> [10R/02/08…11 = 0] for a Type 2 carriage system to establish the fire interval to be used in the computation of the current CLARs that are to be provided in <u>IR LAR Data</u> [05T] and <u>IZ LAR Data</u> [06T].

3.8.7.7.2 Predictive CLAR

The platform can provide <u>LAR Control</u> [06R] to the carriage system to establish the computational basis of the predictive CLARs that are provided in <u>IR LAR Data</u> [05T] and <u>IZ LAR Data</u> [06T].

3.9 Configuration Data Set

3.9.1 UAI Objective

The UAI objective is to support integration of any UAI-compliant store without platform OFP changes on UAI compliant platforms. There are several approaches which could satisfy this objective:

a. Require the stores to conform to a single interface and platform functionality.

b. Adopt Stores Management Overlays (SMOs).

c. Force data driven platform OFPs.

d. Incorporate scripts that can be loaded from the platform Data Transfer Device (DTD).

The definition of common interfaces at the platform/store MIL-STD-1760 interconnect and platform/store mission planning interface were chosen as the most compatible

approach to UAI across the wide variety of platforms. This ICD is premised on standardizing the platform to store interface with customization afforded by data elements in a platform Configuration Data Set (CDS). This approach does not infer that the platform cannot adopt the other approaches cited previously to accomplish necessary functions. For instance, scripts could be used to configure the platform OFP to develop the data required by UAI. Conversely, a SMO could perform the same function and be developed to interface with the remainder of the platform OFP.

A Type 2 carriage system uses a CDS which is referred to as the CS CDS to distinguish it from the platform CDS. The CS CDS is a single MDT file provided to the platform in the same manner as the other MDT files. The CS CDS contains data needed by the carriage system for control and statusing of mission stores, for instance: ranging (LAR coefficients), release order and timing. The type and number of CS CDS variables needed for a particular Type 2 carriage system are determined by the carriage system integration authority. The values of the CS CDS variables are determined jointly by the platform integration authority, the carriage system integration authority, and the mission store integration authority during the integration process. The carriage system supplement **{sup_3073}** documents the <u>MDT-CS CDS</u> [13R-024] MiDEF file, including CS CDS variables used and the ranges of values for each.

3.9.2 Platform CDS Definition

The CDS provides data external to the interface that is required to configure the platform-store interface to the specific needs of the store. The CDS is loadable from the platform DTD to allow for updates to existing CDSs and the addition of new CDSs to be used. The platform CDS is a set of one or more files that are read by the platform OFP (s). Multiple platform software functions need to be uniquely configured, which could be most appropriately satisfied with separate files. The content and format of these data files will vary platform to platform and with the platform/store combination.

There will be file(s) in the platform CDS that are used on the platform to configure the platform-store interface and the platform displays. The mission planning system will include these file(s) as part of the CDS on the platform DTD.

It is not the intent herein to control the total content or format of the CDS, but only to define the functional capabilities required within this ICD to be controllable with the CDS. This allows the platform authority to use the CDS to minimize cost and impact of incorporating new stores onto the platform. Platform, carriage system, and mission store design authorities (as applicable) will coordinate the carriage system and store specific data items that are required to be in the platform CDS during the integration process.

3.9.3 Platform CDS Requirements

The CDS references in this ICD are not meant to be all inclusive. The platform CDS format is not defined herein. Each platform implementation is only required to deliver the necessary data and make the appropriate interpretations of interface data. CDS references are located in sections 3, 4, and 6, and a list of the required platform CDS variables is provided in Table 3.9.3-1. The platform and store requirements below relate

to general data necessary to support the store integration into the platform/store system without platform OFP modification.

Platform Requirements

The platform shall **{ps_3104}** obtain data from the CDS, as needed by the platform for control and statusing, for instance: ranging (LAR coefficients), release and CG calculations (store mass properties), store drag counts for use in platform fuel calculations, and store related aircrew displays.

The platform shall **{ps_3105}** implement in its CDS, the capabilities identified in this ICD by the nomenclature CDS <variable name> **{cds_xxxx}**, as listed in Table 3.9.3-1.

The platform shall **{ps_3106}** verify the CDS file checksum(s) prior to using a CDS file.

The platform annex **{ann_3018}** documents the types of data included in the CDS derived from store authority provided information (e.g. store supplement, LAR coefficients or truth data).

The platform/store addendum **{add_3007}** documents the platform and store authority concurrence with the various data and integration verification.

Store Requirements

The store supplement **{sup_3062}** documents its mass properties and other data not specified in sections 3, 4, & 6 that bear on its integration into platform store systems.

Table 3.9.3-1 Required Platform CDS Variables

Name[1]	CDS ID	Type[2]	Minimum		Maximum
CDS Max Operating Power Time	cds_3001	Time	1 second[3]	to	720,000 seconds
CDS Operating Power	cds_3002	Boolean Array	3 individual powers (28V DC1, 115V AC, 270V DC) subject to 115V AC & 270V DC exclusivity		
CDS Ready to Communicate Time	cds_3003	Time	0 seconds	to	10 seconds
CDS Post-Operating Pwr Store Conditioning Time	cds_3004	Time	0 seconds	to	600 seconds
CDS Pre-Operating Pwr Store Conditioning Time	cds_3005	Time	0 seconds	to	600 seconds
CDS Cool Down Period	cds_3006	Time	0 Minutes	to	60 minutes
CDS IBIT Capable	cds_3007	Boolean	False	-	True
CDS Max IBIT Time	cds_3008	Time	2 seconds	to	300 seconds
CDS IMU Stabilization Time	cds_3009	Time	0 seconds	to	200 seconds
CDS DGPS Capable	cds_3010	Boolean	False	-	True
CDS HB1 GPS RF Available	cds_3011	Boolean	False	-	True
CDS CS High Band 1-4 Available	cds_3012	Boolean Array	4 individual choices (HB1,2,3,4)		
CDS Sensitive Data Erase Time	cds_3013	Time	0 seconds	to	30 seconds
CDS Programmable Fuze Setting Time	cds_3014	Time	0 msec	to	6000 msec

Table 3.9.3-1 Required Platform CDS Variables

Name[1]	CDS ID	Type[2]	Minimum		Maximum
CDS Dispersion Control Values	cds_3015	Values	0000 (H)	unique value for each platform store station	FFFF (H)
CDS Dispersion Duration	cds_3016	Time(L)	0 µsec	unique value for each platform store station	4.1942E+06 µsec
CDS Non-Safety Critical Release Functions	cds_3017	Boolean	False	-	True
CDS Modify Mission Storage Time	cds_3018	Time	0 sec	to	6 sec
CDS Max Time to CTSS	cds_3019	Time	0 msec	to	5000 msec
CDS Max Release Hold Time	cds_3020	Time	14 seconds	to	60 seconds
CDS Active Arming Lanyards	cds_3021	Boolean Array	3 individual choices (Nose, Center, Tail)		
Not Used	cds_3022				
CDS Test Functions	cds_3023	Boolean	False	-	True
CDS Optional Test Functions	cds_3024	Boolean	False	-	True
CDS HB3 Video Available	cds_3025	Boolean	False	-	True
CDS Carriage System Type	cds_3026	Selection	2 types: Type 1 or Type 2		
CDS CS Max UAI Config ID Time	cds_3027	Time	0 sec	to	120 sec
CDS CS Power Supply Max Settling Time	cds_3028	Time	0 msec	to	2000 msec
CDS CS Controllable Power Supply Present	cds_3029	Boolean	False	-	True
CDS CS Mission Store Inventory Max	cds_3030	Time	0 seconds	to	10 seconds

Table 3.9.3-1 Required Platform CDS Variables

Name[1]	CDS ID	Type[2]	Minimum		Maximum
Time					
CDS Disable Auto Power Control Available	cds_3031	Boolean	False	-	True
Not Used	cds_3032				
CDS CS Switching Time	cds_3033	Time	0 msec	to	100 msec
CDS Crypto Zeroize Time	cds_3034	Time	0 seconds	to	30 seconds
CDS Conditioning Power	cds_3035	Selection	3 powers (28V DC1, 115V AC, or 270V DC)		
CDS Legacy 22T Header	cds_3036	Value	0000 (H)	to	FFFF (H)
CDS Legacy 10T Header	cds_3037	Value	0000 (H)	to	FFFF (H)
CDS GeoZone Enabled	cds_3038	Boolean	False	-	True
CDS MDT Enabled	cds_4001	Boolean	False	-	True
CDS MDT Files	cds_4002	Boolean Array	14 choices (File #1, 4, 5, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29)		
CDS NVM Storage Times	cds_4003	Time(s)	0 seconds	Separate times for each MDT file number or one max time	60 seconds
CDS Max MDT Rate	cds_4004	Rate	32.0 Hz	-	200.0 Hz
CDS Store Internal Parameters Enabled	cds_6001	Boolean	False	-	True
CDS CS Training Mode Available	cds_6002	Boolean	False	-	True

Table 3.9.3-1 Required Platform CDS Variables

Name[1]	CDS ID	Type[2]	Minimum		Maximum
CDS CS Compressor Present	cds_6003	Boolean	False	-	True
CDS CS RIFL Control Available	cds_6004	Boolean	False	-	True
CDS CS Nose Arm Available	cds_6005	Boolean	False	-	True
CDS CS Tail Arm Available	cds_6006	Boolean	False	-	True
CDS CS Center Arm Available	cds_6007	Boolean	False	-	True
CDS CS Low Band Available	cds_6008	Boolean	False	-	True
CDS CS Operating Power/28V DC1 Select	cds_6009	Boolean	False	-	True
CDS INS-Only Capable	cds_6010	Boolean	False		True
CDS CS Operating Power 115V AC/270V DC Select	cds_6011	Boolean	False	-	True
Not Used	cds_6012				
Not Used	cds_6013				
CDS CS Max Training Loadout Options	cds_6014	Selection	0	to	65535
CDS CS BIT Codes Available	cds_6015	Boolean	False	-	True
Not Used	cds_6016				
Not Used	cds_6017				
Not Used	cds_6018				
CDS Function at Impact Available	cds_6019	Boolean	False	-	True

Table 3.9.3-1 Required Platform CDS Variables

Name[1]	CDS ID	Type[2]	Minimum		Maximum
CDS Function on Time After Impact	cds_6020	Boolean	False	-	True
CDS Function at Altitude	cds_6021	Boolean	False	-	True
CDS Function at Depth	cds_6022	Boolean	False	-	True
CDS Function at Proximity	cds_6023	Boolean	False	-	True
CDS Function on Void	cds_6024	Boolean	False	-	True
CDS Function on Layer	cds_6025	Boolean	False	-	True
CDS Function on Low Voltage	cds_6026	Boolean	False	-	True
CDS Function at Height	cds_6027	Boolean	False	-	True
CDS Function on End of Life	cds_6028	Boolean	False	-	True
CDS Arm Delay Enabled	cds_6029	Boolean	False	-	True
CDS Status Transmission Capable	cds_6030	Boolean	False	-	True
CDS Fuze Delay from Impact Minimum	cds_6031	Time(F)	0 µsec	to	86.4E+9 µsec (24 Hours)
CDS Fuze Delay from Impact Maximum	cds_6032	Time(F)	0 µsec	to	86.4E+9 µsec (24 Hours)
CDS Fuze Altitude Minimum	cds_6033	Distance	-450 meters	to	9000 meters
CDS Fuze Altitude Maximum	cds_6034	Distance	-450 meters	to	9000 meters
CDS Fuze Depth Minimum	cds_6035	Distance	0 meters	to	11000 meters
CDS Fuze Depth Maximum	cds_6036	Distance	0 meters	to	11000 meters
CDS Fuze Proximity Minimum	cds_6037	Distance	0 meters	to	3000 meters

Table 3.9.3-1 Required Platform CDS Variables

Name[1]	CDS ID	Type[2]	Minimum		Maximum
CDS Fuze Proximity Maximum	cds_6038	Distance	0 meters	to	3000 meters
CDS Fuze Height Minimum	cds_6039	Distance	0 meters	to	3000 meters
CDS Fuze Height Maximum	cds_6040	Distance	0 meters	to	3000 meters
CDS High Drag Capable	cds_6041	Boolean	False	-	True
CDS Function Time from Event	cds_6042	Boolean	False	-	True
CDS Time From Event Minimum	cds_6043	Time(F)	0 µsec	to	15.552E+12 µsec (180 days)
CDS Time From Event Maximum	cds_6044	Time(F)	0 µsec	to	46.656E+12 µsec (540 days)
CDS Impact Velocity Enabled	cds_6045	Boolean	False	-	True
CDS Impact Velocity Minimum	cds_6046	Velocity(M)	0 m/sec	to	4000 m/sec
CDS Impact Velocity Maximum	cds_6047	Velocity(M)	0 m/sec	to	4000 m/sec
CDS Target Hardness Enabled	cds_6048	Boolean	False	-	True
CDS Programmable Retard Mechanism	cds_6049	Boolean	False	-	True
CDS Retard Delay	cds_6050	Time(F)	0 µsec	to	400E+6 µsec (400 seconds)
CDS Post Release Fuze Control	cds_6051	Boolean	False	-	True
CDS Post Impact Fuze Surveillance	cds_6052	Boolean	False	-	True
CDS Dispersion Control Enabled	cds_6053	Boolean	False	-	True
Not Used	cds_6054				

Table 3.9.3-1 Required Platform CDS Variables

Name[1]	CDS ID	Type[2]	Minimum		Maximum
CDS Separation Duration	cds_6055	Time	0 seconds	-	255 seconds
CDS Separation Distance	cds_6056	Distance	0 meters	-	255 meters
CDS Deployment Delay Control Enabled	cds_6057	Boolean	False	-	True
CDS Control Surface Unlock Delay Control Enabled	cds_6058	Boolean	False	-	True
CDS Fuze Time 1 Minimum	cds_6059	Time(F)	0 µsec	to	15.552E+12 µsec (180 days)
CDS Fuze Time 1 Maximum	cds_6060	Time(F)	0 µsec	to	31.104E+12 µsec (360 days)
CDS Fuze Time 2 Minimum	cds_6061	Time(F)	0 µsec	to	15.552E+12 µsec (180 days)
CDS Fuze Time 2 Maximum	cds_6062	Time(F)	0 µsec	to	31.104E+12 µsec (360 days)
CDS Tether Length Minimum	cds_6063	Distance	0 meters	to	200 meters
CDS Tether Length Maximum	cds_6064	Distance	0 meters	to	200 meters
CDS Multistage Warhead Enabled	cds_6065	Boolean	False	-	True
CDS Interstage Gap Time Minimum	cds_6066	Time(L)	0 µsec	to	4.1942E+06 µsec
CDS Interstage Gap Time Maximum	cds_6067	Time(L)	0 µsec	to	4.1942E+06 µsec
Not Used	cds_6068				
CDS Max MDS Storage Locations[4]	cds_6069	Value	8	to	255
CDS Modify Mission Type	cds_6070	Selection	2 types: Target [17R-1] or Loiter [17R-2]		

Table 3.9.3-1 Required Platform CDS Variables

Name[1]	CDS ID	Type[2]	Minimum		Maximum
CDS Programmable Fuze Onboard	cds_6071	Boolean	False	-	True
CDS Flight Mode Controllable	cds_6072	Boolean	False	-	True
CDS Target Class Enabled	cds_6073	Boolean	False	-	True
CDS Velocity Enabled	cds_6074	Boolean	False	-	True
CDS Attack Heading Enabled	cds_6075	Boolean	False	-	True
CDS Impact Angle Enabled	cds_6076	Boolean	False	-	True
CDS Target Wind Enabled	cds_6077	Boolean	False	-	True
CDS Ingress/Cruise Mach Enabled	cds_6078	Boolean	False	-	True
CDS Ingress/Cruise Altitude Enabled	cds_6079	Boolean	False	-	True
CDS Range Enabled	cds_6080	Boolean	False	-	True
CDS Endgame Entry Altitude Enabled	cds_6081	Boolean	False	-	True
CDS Target Offset Enabled	cds_6082	Boolean	False	-	True
CDS Target Velocity Enabled	cds_6083	Boolean	False	-	True
CDS TLE Enabled	cds_6084	Boolean	False	-	True
CDS Spin Rate Enabled	cds_6085	Boolean	False	-	True
CDS Heading to Endpoint Enabled	cds_6086	Boolean	False	-	True
CDS Ingress True Heading Enabled	cds_6087	Boolean	False	-	True
CDS Ingress Max Commanded Range Enabled	cds_6088	Boolean	False	-	True

Table 3.9.3-1 Required Platform CDS Variables

Name[1]	CDS ID	Type[2]	Minimum		Maximum
CDS Payload Controls Enabled	cds_6089	Boolean	False	-	True
CDS Orbit Controls Enabled	cds_6090	Boolean	False	-	True
CDS Orbit Altitude Enabled	cds_6091	Boolean	False	-	True
CDS Loiter Time Enabled	cds_6092	Boolean	False	-	True
Not Used	cds_6093				
CDS Power Management Available	cds_6094	Boolean	False	-	True
CDS TM/FTS Batt Capable	cds_6095	Boolean	False	-	True
CDS Growth Function A-H Enabled	cds_6096	Boolean Array	8 individual functions (A-H)		
CDS Growth Provision 2 Enabled	cds_6097	Boolean	False	-	True
CDS Growth Provision 2 Minimum Value Boundary	cds_6098	Value	-32678	to	32767
CDS Growth Provision 2 Maximum Value Boundary	cds_6099	Value	-32678	to	32767
CDS Secondary Mission Capable	cds_6100	Boolean	False	-	True
Not Used	cds_6101				
Not Used	cds_6102				
Not Used	cds_6103				
CDS Seeker/Sensor Modes	cds_6104	Boolean Array	8 individual functions (see Table 6.24R-1)		
CDS Polarity Capable	cds_6105	Boolean	False	-	True

Table 3.9.3-1 Required Platform CDS Variables

Name[1]	CDS ID	Type[2]	Minimum		Maximum
CDS Zoom Capable	cds_6106	Boolean	False	-	True
CDS Master Mode Control Enabled	cds_6107	Boolean	False	-	True
CDS Laser Modes	cds_6108	Boolean Array	8 individual functions (see Table 6.24R-10)		
CDS LOBL/LOAL Control Enabled	cds_6109	Boolean	False	-	True
CDS Target Designate Enabled	cds_6110	Boolean	False	-	True
CDS Slew Enabled	cds_6111	Boolean	False	-	True
CDS Mask Zone Enabled	cds_6112	Boolean	False	-	True
CDS Laser Arming Enabled	cds_6113	Boolean	False	-	True
CDS Active Seeker Frequency Selectable	cds_6114	Boolean	False	-	True
CDS Target Priority Control Enabled	cds_6115	Boolean	False	-	True
CDS Boresight Correction Enabled	cds_6116	Boolean	False	-	True
CDS Fuze Initiation Selection Enabled	cds_6117	Boolean	False	-	True
CDS Target Priority Abort Capable	cds_6118	Boolean	False	-	True
CDS WDL Xmit Power Select	cds_6119	Boolean	False	-	True
CDS WDL Secure Mode Select	cds_6120	Boolean	False	-	True
CDS Network Supports PPLI	cds_6121	Boolean Array	5 Network Types (Link-16, UHF, MSS, MSS-CS, IP-ATDL)		
CDS Network Supports Manual Key Rollover	cds_6122	Boolean Array	5 Network Types (Link-16, UHF, MSS, MSS-CS, IP-ATDL)		

Table 3.9.3-1 Required Platform CDS Variables

Name[1]	CDS ID	Type[2]	Minimum		Maximum
CDS Snapshot Enabled	cds_6123	Boolean	False	-	True
CDS Network Uses Network IP Address	cds_6124	Boolean Array	5 Network Types (Link-16, UHF, MSS, MSS-CS, IP-ATDL)		
CDS Network Terminal ID	cds_6125	Selection Array	5 elements (Network Type = Link-16, UHF, MSS, MSS-CS, IP-ATDL) 3 choices per element (1 = N/A, 2 = URN, 3 = MTID)		
CDS Network DL Address	cds_6126	Selection Array	5 elements (Network Type = Link-16, UHF, MSS, MSS-CS, IP-ATDL) 3 choices per element (1 = N/A, 2 = 7-bit, 3 = 16-bit)		
CDS Network Frequency/Circuit Number Type	cds_6127	Selection Array	5 elements (Network Type = Link-16, UHF, MSS, MSS-CS, IP-ATDL) 4 choices per element (1 = N/A, 2 = Frequency or AJ Net Number, 3 = Circuit Number, 4 = Frequency/Spectrum Control Code)		
CDS Loss of Communications Select	cds_6128	Boolean	False	-	True
CDS WDL Growth Functions Enabled	cds_6129	Boolean Array	5 functions (A-E)		
CDS Network Uses TOD Offset	cds_6130	Boolean Array	5 Network Types (Link-16, UHF, MSS, MSS-CS, IP-ATDL)		
CDS WDL Anti-Jam Select	cds_6131	Boolean	False	-	True
CDS WDL Target Reference Number Enabled	cds_6132	Boolean	False	-	True
CDS Network Uses Uplink/Downlink Protocol	cds_6133	Boolean Array	5 Network Types (Link-16, UHF, MSS, MSS-CS, IP-ATDL)		
Not Used	cds_6134				
CDS WDL Antenna Select	cds_6135	Boolean	False	-	True
Not Used	cds_6136				
CDS Transmit Image Capable	cds_6137	Boolean	False	-	True

Table 3.9.3-1 Required Platform CDS Variables

Name[1]	CDS ID	Type[2]	Minimum		Maximum
Not Used	cds_6138				
CDS Surface Deployment Delay	cds_6139	Time	0 seconds	Unique value for each platform store station	5.100 seconds
CDS Control Surface Unlock Delay	cds_6140	Time	0 seconds	Unique value for each platform store station	5.100 seconds
CDS WDL Terminal Initialization Select Enabled	cds_6141	Boolean	False	-	True
CDS Transmit Video Capable	cds_6142	Boolean	False	-	True
Not Used	cds_6143				
CDS Point Type/Amplification Valid Combinations	cds_6144	Boolean Array	All possible combinations of Point Type (0 to 15) and Point Amplification (0 to 15)		
CDS Max Void Number	cds_6145	Number(L)	0	to	50
CDS Max Layer Number	cds_6146	Number(L)	0	to	50

Notes:

1. CDS variables listed as "Not Used" were defined at one point during the PSICD development process and later deleted.
2. Boolean refers to a True-False variable; Boolean Array refers to a number of elements (choices, functions, etc.) each of which can be selected as True-False independently; Selection refers to a number of elements (choices, functions, etc.) where only one can be selected; Selection Array refers to a number of discriminating elements where one selection from a number of choices can be made for each element.
3. For CDS Max Operating Power Time {cds_3001}, a value of "0" indicates there is no maximum continuous operating power applied time limit.
4. CDS Max MDS Storage Locations {cds_6069} is not required if the platform mechanization uses a maximum of 8 or less MDS Storage Locations.

4.0 COMMUNICATION INTERFACE

This section defines the general aspects of the communication interface between the platform and UAI compatible stores. The UAI communication interface is implemented via the MIL-STD-1553 multiplex data bus element of the MIL-STD-1760 platform/store electrical interface.

4.1 Communications Protocol

UAI communication transactions use MIL-STD-1553 messages in accordance with the applicable protocol requirements of MIL-STD-1553 and MIL-STD-1760 Appendix B, as well as the additional requirements of this ICD.

4.1.1 Digital Data Bus

The MIL-STD-1553 dual redundant data buses are employed by the platform/store interface to transfer commands and mission information required to control, monitor, target, and release the store. In this ICD, when MIL-STD-1553 is cited, the dual redundant data buses are those contained in the MIL-STD-1760 interface. For some carriage systems a digital data bus other than MIL-STD-1553 can be used to interface with their mission stores.

Platform Requirements

The platform shall **{ps_4001}** function as a MIL-STD-1553 bus controller on the platform MIL-STD-1553 digital data bus.

Carriage System Requirements

The carriage system shall **{css_4001}** function as a MIL-STD-1553 remote terminal, on the platform MIL-STD-1553 digital data bus.

The carriage system shall **{css_4002}** transfer message traffic as required by the mission stores.

A Type 1 carriage system shall **{css_4006}** transfer mission store message traffic with a 1.0 µsec maximum one-way transmission delay.

A Type 2 carriage system shall **{css_4003}** be compatible with directed protocol (i.e. platform to store and store to platform communication) for a carriage system to mission store digital data bus that is not a MIL-STD-1553 bus.

Mission Store Requirements

The mission store shall **{ss_4001}** only function as a remote terminal.

The mission store shall **{ss_4032}** have a maximum RT status word response time of 10.0 µsec as an exception to MIL-STD-1553.

4.1.2 Mode Commands

UAI specific platform/store requirements for supporting Mode Codes are listed in Table 4.1-1.

Table 4.1-1 UAI Store-Supported Mode Codes

T/R Bit	Mode Code	Function	Data Word	Broadcast Allowed	Store Required
1	00000	Dynamic Bus Control	No	No	No
1	00001	Synchronize	No	Yes	No
1	00010	Transmit Status Word	No	No	Yes
1	00011	Initiate Self Test	No	Yes	No
1	00100	Transmitter Shutdown	No	Yes	Yes
1	00101	Override Transmitter Shutdown	No	Yes	Yes
1	00110	Inhibit Terminal Flag	No	Yes	No
1	00111	Override Inhibit Terminal Flag	No	Yes	No
1	01000	Reset Remote Terminal	No	Yes	Yes
1	01001 - 01111	Reserved	No	N/A	No
1	10000	Transmit Vector Word	Yes	No	Yes
0 or 1	10001	Synchronize with Data Word	Yes	Yes	Yes
1	10010	Transmit Last Command	Yes	No	Yes
1	10011	Transmit BIT Word	Yes	No	No
0	10100	Selected Transmitter Shutdown	Yes	Yes	No
0	10101	Override Selected Transmitter Shutdown	Yes	Yes	No
0 or 1	10110 - 11111	Reserved	No	N/A	No

Notes:
1. T/R = 1 Transmit Command, T/R = 0 Receive Command

Platform Requirements

The platform may **{pm_4001}** use any of the UAI store-supported mode codes as defined in Table 4.1-1.

The platform shall **{ps_4002}** inhibit fault processing for mode code commands sent to the store while the store MIL-STD-1553 status word busy bit is set during the first 500 msec of the store power-up timeline.

Carriage System Requirements

The carriage system shall **{css_4004}** support the store required mode codes as defined in Table 4.1-1.

The carriage system shall **{css_4005}** support subaddress 00000 (B) and subaddress 11111 (B) mode code commands.

Mission Store Requirements

The mission store shall **{ss_4002}** provide support for the store required mode codes identified in Table 4.1-1.

The mission store shall **{ss_4003}** support subaddress 00000 (B) and subaddress 11111 (B) mode code commands.

4.1.3 Broadcast Mode Operation

The MIL-STD-1553 Broadcast mode allows a bus controller (i.e. platform or carriage system) to send the same message(s) to all stores on the same MIL-STD-1553 data bus simultaneously. When a remote terminal receives a broadcasted message, it suppresses status word responses so the bus is not inundated with status words from multiple remote terminals at the same time. As such, if the platform desires to know the receipt status of a broadcasted message, then the platform must request the status (i.e. issue a Mode Code 2 [Transmit Last Status Word]) from each store individually.

Platform Requirements

The platform shall **{ps_4031}** employ the MIL-STD-1553 non-broadcast mode when transmitting the following messages:

a. Platform Description [01R]

b. Moment Arm [09R]

c. Carriage System Control [10R]

d. Store Control [11R]

e. Mission Control [22R]

The platform annex **{ann_4001}** details the use of the MIL-STD-1553 broadcast mode.

Carriage System Requirements

The Type 2 carriage system shall **{css_4009}** employ the MIL-STD-1553 non-broadcast mode when transmitting the following messages:

a. Moment Arm [09R]

b. Store Control [11R]

c. Mission Control [22R]

The carriage system supplement **{sup_4001}** details the use of the MIL-STD-1553 broadcast mode.

Store Requirements

The store shall **{ss_4004}** be capable of accepting and using receive messages in MIL-STD-1553 broadcast mode.

4.1.4 Digital Message Rates

Table 4.1-2 shows the UAI message scheduling for the MIL-STD-1553 data bus.

Table 4.1-2 UAI Message Rates

Message Name	Message Number	Min Rate (Hz)	Max Rate (Hz)	Notes
Synchronize With Data Word	[MC17R]	0.238	16.0	
Platform Description	[01R]	Aperiodic	1.0	3
Store Description	[01T]	Aperiodic	1.0	
Periodic Transfer Alignment	[02R]	0.167	16.0	4
Store Internal Parameters 1	[02T]	1.0	32.0	1
Time	[03R]	0.167	16.0	
Store Internal Parameters 2	[03T]	1.0	32.0	1
Reset Transfer Alignment	[05R]	Aperiodic	16.0	
IR LAR Data	[05T]	Aperiodic	32.0	
LAR Control	[06R]	Aperiodic	4.0	
IZ LAR Data	[06T]	Aperiodic	32.0	
Moment Arm	[09R]	Aperiodic	4.0	
Carriage System Control	[10R]	Aperiodic	16.0	
Carriage System Monitor	[10T]	0.167	32.0	
Store Control	[11R]	Aperiodic	32.0	
Store Monitor	[11T]	Aperiodic	32.0	
GPS Crypto Key	[12R]	Aperiodic	12.5	2
Almanac	[13R-005]	Aperiodic	32.0	5
AS Status/SV Configuration	[13R-007]	Aperiodic	32.0	5
Ephemeris #1	[13R-010]	Aperiodic	32.0	5
Ephemeris #2	[13R-011]	Aperiodic	32.0	5
Complementary Navigation Message	[13R-015]	Aperiodic	32.0	5
MDT-Mission	[13R-020]	Aperiodic	32.0	5
MDT-GeoZone Data	[13R-021]	Aperiodic	32.0	5
MDT-Growth Crypto	[13R-022]	Aperiodic	32.0	5
MDT-WDL Terminal Initialization	[13R-023]	Aperiodic	32.0	5
MDT-CS CDS	[13R-024]	Aperiodic	32.0	
MDT-WDL Key 1-3	[13R-025-027]	Aperiodic	32.0	5
MDT-Other Store Keys	[13R-028]	Aperiodic	32.0	5
MDT-Net Participants	[13R-029]	Aperiodic	32.0	5
Transfer Control	[14R]	Aperiodic	32.0	5
Transfer Monitor	[14T]	Aperiodic	32.0	5
Environmental Data	[15R]	0.167	16.0	4
GeoZone Control/Monitor	[16R/T]	Aperiodic	32.0	
Modify Mission: Target	[17R/T-1]	Aperiodic	32.0	4
Modify Mission: Loiter	[17R/T-2]	Aperiodic	32.0	
Differential GPS Data	[18R]	Aperiodic	16.0	
Store Summary Status	[20T]	0.167	32.0	
WDL Control/Monitor	[21R/T]	Aperiodic	32.0	
Mission Control	[22R]	Aperiodic	32.0	

Table 4.1-2 UAI Message Rates

Message Name	Message Number	Min Rate (Hz)	Max Rate (Hz)	Notes
Mission Monitor	[22T]	0.167	32.0	
Seeker/Sensor Control	[24R]	Aperiodic	32.0	4
Seeker/Sensor Monitor	[24T]	0.167	32.0	

Notes:
1. See section 6.02T Store Internal Parameters 1 [02T] and section 6.03T Store Internal Parameters 2 [03T] for additional information.
2. See section 6.12R GPS Crypto Data [12R] for additional information.
3. Sent until Platform ID Received [22T/05/02 = 1] or Platform ID Received [10T/02/11 = 1].
4. UAI recommends that platforms that have dynamic release envelopes, that use mission stores with a Seeker/Sensor that acquire targets prior to release, send PTAM [02R], Environmental Data [15R], Modify Mission [17R], and Seeker/Sensor Control [24R] data at a minimum rate of 16 Hz.
5. Max rate can be exceeded if the store supports a higher rate per **{sup_4002}**.

Platform Requirements

The platform shall **{ps_4003}** transmit and request UAI messages at rates that are greater than or equal to the minimum rate limits defined in Table 4.1-2 and less than or equal to the maximum rate defined in Table 4.1-2 or, for [13R-xxx] messages only, the CDS Max MDT Rate **{cds_4004}**.

The platform annex **{ann_4003}** documents the intent to utilize rates greater than Table 4.1-2 maximums if supported by the store.

Store Requirements

The store shall **{ss_4005}** be capable of receiving and transmitting UAI messages at any and all rates that are within, or equal to, the minimum and maximum rate limits defined in Table 4.1-2.

The store may **{sm_4001}** support receiving MDT messages [13R-xxx] at a rate greater than the maximum defined in Table 4.1-2 as documented by the store supplement **{sup_4002}**.

4.1.5 MIL-STD-1760 Interlock

The MIL-STD-1760 Interlock [Discrete] indicates the umbilical connector mated status between the platform and store in accordance with the provisions of MIL-STD-1760. Interlock [Discrete] is used by the platform to verify store electrical mated status as a logical check for performance of subsequent interface functions.

Platform Requirements

The platform shall **{ps_4004}** detect the presence of an electrically mated store by monitoring the status of Interlock [Discrete].

The platform shall **{ps_4005}** use Interlock [Discrete] status as a condition for power application.

Store Requirements

The store shall **{ss_4006}** provide an Interlock [Discrete] circuit as defined in MIL-STD-1760.

4.1.6 MIL-STD-1553 Address and Data Lines

The MIL-STD-1553 dual redundant multiplex data bus connections in the MIL-STD-1760 interface are used to transfer commands and mission information required to control and monitor the store. The platform provides the associated bus controller functionality, while the store provides remote terminal functionality. The five binary-coded address discrete lines (Address Bit 0 {A0} through Address Bit 4 {A4}) establish the store remote terminal address. The address assignment is determined by:

ADDRESS = (A4) x 2^4 + (A3) x 2^3 + (A2) x 2^2 + (A1) x 2^1 + (A0) x 2^0

where A4 through A0 are either logic 1 or logic 0.

One additional discrete, Address Parity, is set to the proper logic state to produce an odd number (logic 1) when the five address and the parity lines are logically summed. A connection to the Address Return line is used to establish the logic 0 state. An open circuit to the Address Return Line is used to establish the logic 1 state.

Note: MIL-STD-1553 contains a limitation on the use of the address discrete lines. A remote terminal must contain a unique address so as not to interfere with other remote terminals during communications. The available address range for a remote terminal is decimal 0 through decimal 30. Therefore, up to 31 unique addresses can be assigned on the data bus. The remote terminal address of decimal 31 is used as a common address for broadcast mode communications (if used) and should never be assigned as the address for a specific store remote terminal. Section 6.10R Carriage System Control [10R] provides additional information and requirements relative to carriage system dynamic addressing of mission store remote terminal addresses.

Platform Requirements

The platform shall **{ps_4006}** provide a unique MIL-STD-1553 remote terminal address assignment (0 to 30 decimal) for each store a minimum of 10 msec prior to applying power to the store.

The platform shall **{ps_4027}** maintain a unique MIL-STD-1553 remote terminal address assignment (0 to 30 decimal) for each store a minimum of 200 msec (safety margin) after Interlock [Discrete] status indicates separation of the 1760 umbilical for the respective store.

Store Requirements

The store shall **{ss_4007}** detect its MIL-STD-1553 remote terminal address assignment (0 to 30 decimal).

The store shall **{ss_4008}** use detection of its MIL-STD-1553 remote terminal address to determine the electrically mated status of its MIL-STD-1760 connector.

4.1.7 Message Protocol Checks and Error Reporting

UAI uses MIL-STD-1760 paragraph B.4.1.5.1 protocol checks for receive messages and reports protocol check errors associated with the receive messages in Protocol Status [11T/07].

Store Requirements

The store shall **{ss_4033}** set Commanded Word Count Not Implemented [11T/07/00 = 1], set Subaddress [11T/07/11…15] to the subaddress of the received message and not use the data in the received message when the commanded word count in the MIL-STD-1553 Command Word Data Word Count/Mode Code field does not equal the word count defined in Table 3.2.1-1.

The store shall **{ss_4034}** set Illegal Header for Commanded Subaddress [11T/07/01 = 1], set Subaddress [11T/07/11…15] to the subaddress of the received message and not use the data in the received message when:

   a. The Header word for the received message is not in accordance with Table 4.6-1 (e.g. Header [01R/01 ≠ 0421 (H)]),

   b. The invalidity bit for the Header word is marked invalid (e.g. Invalidity [01R/02/00 = 1]), or

   c. The invalidity bit for the word that contains the invalidity bit for the Header word is marked invalid (e.g. Invalidity [01R/02/01 = 1]).

The store shall **{ss_4035}** set Message Checksum Failure [11T/07/02 = 1], set Subaddress [11T/07/11…15] to the subaddress of the received message and not use the data in the received message when:

   a. The checksum (e.g. Checksum [01R/30]) does not pass the checksum test,

   b. The invalidity bit for the Checksum word is marked invalid (e.g. Invalidity [01R/03/13 = 1]), or

   c. The invalidity bit for the word that contains the invalidity bit for the Checksum word is marked invalid (e.g. Invalidity [01R/02/02 = 1]).

The store shall **{ss_4036}** set Critical Control/Authority 1 Failure [11T/07/03 = 1], set Subaddress [11T/07/11…15 = 1011 (B)] and not use the Store Control [11R] data when:

   a. Word 2 Invalidity [11R/02/01 = 1],

   b. Word 4 Invalidity [11R/02/03] not equal to Word 5 Invalidity [11R/02/04], or

   c. Word 4 Invalidity [11R/02/03 = 0] and any of the following conditions exist:

      i. Identifier 1 [11R/04/08…10 ≠ 001 (B) for mission store or ≠ 010 (B) for carriage store].

      ii. Address Confirm 1 [11R/04/11…15] does not equal the store's 1553 RT Address.

iii. Critical Authority 1 [11R/05] is not set IAW the Coded Check 1 defined in description sheet for this word.

The store shall **{ss_4037}** set Critical Control/Authority 2 Failure [11T/07/04 = 1], set Subaddress [11T/07/11…15 = 1011 (B)] and not use the Store Control [11R] data when:

a. Word 2 Invalidity [11R/02/01 = 1],

b. Word 6 Invalidity [11R/02/05] not equal to Word 7 Invalidity [11R/02/06], or

c. Word 6 Invalidity [11R/02/05 = 0] and any of the following conditions exist:

i. Identifier 2 [11R/06/08…10 ≠ 001 (B) for mission store or ≠ 010 (B) for carriage store].

ii. Address Confirm 2 [11R/06/11…15] does not equal the store's 1553 RT Address.

iii. Critical Authority 2 [11R/07] is not set IAW the Coded Check 2 defined in description sheet for this word.

The store shall **{ss_4038}** set Protocol Status [11T/07 = 0000 (H)] upon receipt of an error-free message to the subaddress that was designated in Subaddress [11T/07/11…15].

4.2 General Message Formats

UAI messages comply with the message format requirements of MIL-STD-1553 and MIL-STD-1760 Appendix B. Each message is comprised of 1 to 30 16-bit digital data words formatted and scaled to meet platform/store requirements. Each message is defined by a message page, that provides a description of the entire message, and a series of word pages that define each word contained within the message.

4.2.1 Message Page Description

The message page is listed first in each message subsection and provides an overall description of the message. An example of the message page of the Store Description [01T] message is shown in Figure 4.2-1. Note: This message page example is for illustration purposes only and is not necessarily current.

The message descriptor fields provide the message data word names, applicable UAI versions, word numbers in the message, and a description of the word. Definitions for the terms shown in the Message Descriptor fields are given in Table 4.2-1.

Table 4.2-1 Message Descriptor Field Descriptions

Message Descriptor Field	Description
COMMAND WORD	Command word is required by MIL-STD-1553 to be the first word transmitted in a message.
DATA WORD	Message sheet words that are not Command Words or Status Words are Data Words. MIL-STD-1760 allows up to 30 16-bit data words (including the header word).

Table 4.2-1 Message Descriptor Field Descriptions

Message Descriptor Field	Description
DESCRIPTION	Brief description of the Data Word. References to notes, etc.
DESTINATION	Destination of message transmission. Platform = Destination of message transmission is the Platform. Store = Destination of message transmission is the Carriage System or Store. Carriage System = Destination of message transmission is the Carriage System.
HEADER WORD	Header word is defined by MIL-STD-1760 as the first data word in the message used to identify message content. For MIL-STD-1760 required messages like [01R], [01T], [11R] or [11T], the value of the header word is predefined. For user defined messages the header word is optional, and can be assigned an arbitrary but unique four digit hex value.
MESSAGE ID	Code identifying the message, e.g., for message ID01T: "T" = Message is transmitted by the store to the platform, "R" = Message is received by the store, "01" = Subaddress in store memory where the message is stored.
MESSAGE NAME	Formal name selected to identify the message.
REMARKS/NOTES	Additional information.
STATUS WORD	Status word is required by MIL-STD-1553 to inform the bus controller of the status of the remote terminal. It is required to be the last word transmitted in a receive message, and the first word transmitted after the command word in a transmit message.
SOURCE(s)	Source of message transmission. Platform = Source of message transmission is the Platform. Store = Source of message transmission is the Carriage System or Store. Carriage System = Source of message transmission is the Carriage System.
TRANSFER TYPE	Direction of data transmission. BC-RT = Message is transferred from the bus controller (or Platform) to the remote terminal (Carriage System or Store). RT-BC = Message data is transferred from the remote terminal (Carriage System or Store) to the bus controller (platform) upon request of the bus controller. RT-RT = Message data is transferred from one remote terminal (Carriage System or Store) to another (Carriage System or Store) upon request of the bus controller.
WORD COUNT	Number of data words contained in the message, not including the MIL-STD-1553 Command and Status words. (maximum of 30) For Mass Data Transfer (MDT), some blocks contain more than 30 words. These blocks are sent in 30 word [13R] messages.
WORD NAME	Formal name selected for the data word. UAI version information is included for Word Names that are only defined in some UAI versions.
WORD NO.	Word number within the message. Command Word = MIL-STD-1553 Command Word. Status Word = MIL-STD-1553 Status Word.
XMIT RATE	Transmission rate of the message in Hz (cycles per second). The transmission rate is also at times specified as aperiodic.

MESSAGE NAME:	Store Description		
MESSAGE ID:	01T	TRANSFER TYPE:	RT-BC
SOURCE:	Store	WORD COUNT:	30
DESTINATION:	Platform	XMIT RATE:	Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 00001 (B)
Status Word	SW	MIL-STD-1553 Status Word
Header	01	Message Descriptor
Country Code	02	Country Identifier Characters 1 & 2
Store ID Code	03	Store Identification Code (Binary)
Store ID (ASCII)		Store Identification in an ASCII string
ID Char 1/2	04	Store ID Characters 1 & 2
ID Char 3/4	05	Store ID Characters 3 & 4
ID Char 5/6	06	Store ID Characters 5 & 6
ID Char 7/8	07	Store ID Characters 7 & 8
ID Char 9/10	08	Store ID Characters 9 & 10
ID Char 11/12	09	Store ID Characters 11 & 12
ID Char 13/14	10	Store ID Characters 13 & 14
ID Char 15/16	11	Store ID Characters 15 & 16
Max IBIT Time	12	Maximum time for Store to complete IBIT
SC ID		Store Configuration ID in an ASCII string
SC ID Char 1/2	13	Store Configuration Identifier Characters 1 & 2
SC ID Char 3/4	14	Store Configuration Identifier Characters 3 & 4
SC ID Char 5/6	15	Store Configuration Identifier Characters 5 & 6
Station 1 Store ID Code	16	Carriage System Station 1 - Store ID Code
Station 2 Store ID Code	17	Carriage System Station 2 - Store ID Code
Station 3 Store ID Code	18	Carriage System Station 3 - Store ID Code
Station 4 Store ID Code	19	Carriage System Station 4 - Store ID Code
Station 5 Store ID Code	20	Carriage System Station 5 - Store ID Code
Station 6 Store ID Code	21	Carriage System Station 6 - Store ID Code
Station 7 Store ID Code	22	Carriage System Station 7 - Store ID Code
Station 8 Store ID Code	23	Carriage System Station 8 - Store ID Code
[A01, A01] Reserved	24	Reserved for MIL-STD-1760
[A02] Power-Up Time	24	Store Ready to Communicate Time
Reserved	25	Reserved for MIL-STD-1760
Reserved	26	Reserved for MIL-STD-1760
Reserved	27	Reserved for MIL-STD-1760
Reserved	28	Reserved for MIL-STD-1760
UAI Configuration ID	29	Store UAI Configuration ID Code
Checksum Word	30	Checksum of Message Data

REMARKS/NOTES:

1. The store description message is used to transfer store identity from the store to the platform.

2. Refer to MIL-STD-1760 Table B-XIII for additional description of this message.

Figure 4.2-1 Example of a Message Page

4.3 Word Page Description

Each word in a message has a corresponding word page describing the details of the data word. These details consist of the word name, word ID, source, destination, computation rate, transmission rate, signal type, units, category, maximum and minimum values, resolution, accuracy, most significant and least significant bit values (MSB, LSB), data word full scale value and any applicable remarks and notes pertaining to the data word. Definitions for the terms shown on each word page are given in Table 4.3-1. An example of the word description page for word 01, the Header word, of Store Description [01T] message, is shown in Figure 4.3-1. The word page example is for illustration purposes only, and is not necessarily current.

Table 4.3-1 Word Page Field Descriptions

Word Page Field	Word Page Field Description
ACCURACY	Accuracy of the signal as supplied by the subsystem. Unless otherwise specified, the accuracy is defined as Root Mean Square Error (RMS). Where: $$RMS = \sqrt{\tfrac{1}{N}\sum_{i=1}^{N}\delta x_k^2} \quad , N \;= Number\ of\ samples$$ $$\delta x_k = Error\ in\ the\ k^{th}\ sample$$ Note 1: RMS ~ sample standard deviation. Note 2: Accuracy requirements for time stamp parameters are "not to exceed".
BIT NO.	Identifies the position of a bit in a word and/or field. Bit No. Field Coding: Code Description S Sign bit N Numeric D Discrete C Coded A ASCII Alphanumeric code V Validity 0 Logic 0 1 Logic 1 B Binary Coded Decimal E Exponent M Mantissa X Not Used (can be logic 0 or 1)
CATEGORY	MIL-STD-1760 data entity category. Some data entities are a combination MIL-STD-1760 data types. The CATEGORY field for these data entities indicates the data types used to describe the parameter. Example: CATEGORY: Velocity (M) & (L) This double word parameter is made up of both the MIL-STD-1760 data type of Velocity (M) and Velocity (L).
COMP RATE	Computation rate of data word in Hz. The computation rate can be specified as aperiodic.
DESCRIPTION	A functional description of the signal.

Table 4.3-1 Word Page Field Descriptions

Word Page Field	Word Page Field Description	
DESTINATION	Destination of message transmission. Platform = Destination of message transmission is the Platform. Store = Destination of message transmission is the Carriage System or Store. Carriage System = Destination of message transmission is the Carriage System.	
FIELD NAME	The formal name signal describing a bit, field, single or double precision word.	
FULL SCALE	The maximum value the data field can attain.	
LSB	The value of the least significant bit.	
LSP	The least significant part of a signal that is greater than 16 bits.	
LSW	The least significant word of a double precision word signal.	
MAX VALUE	Maximum value that the signal, as supplied by the subsystem, can attain. The MAX value must be less than or equal to the FULL SCALE value.	
MIN VALUE	Minimum value that the signal, as supplied by the subsystem, can attain.	
MSB	The value of the most significant bit.	
MSP	The most significant part of a signal that is greater than 16 bits.	
MSW	The most significant word of a double precision word signal.	
REMARKS /NOTES	Additional Information.	
RESOLUTION	The minimum detectable change in value of the signal as supplied by the subsystem	
SIGNAL TYPE	Valid Signal Types:	
	2's Complement	Reference MIL-HDBK-1553A, Table 80-IV, and paragraph 60.2.3.1.
	Unsigned	Reference MIL-STD-1760, Table B-XXIX.
	Hexadecimal	Hexadecimal value.
	Scientific	Reference MIL-STD-1760, Table B-XXX.
	Discrete	Single binary bit whose state of 1 or 0 has a specified meaning.
	ASCII	Reference MIL-STD-1760, Table B-XL.
	Invalidity	Reference MIL-STD-1760, Table B-XXXI.
	Binary Coded Decimal	A grouping of bits in which the pattern of 1's and 0's has a specified meaning.
	Floating Point	Reference paragraph 4.10.2.
SOURCE(s)	Source of message transmission. Platform = Source of message transmission is the Platform. Store = Source of message transmission is the Carriage System or Store. Carriage System = Source of message transmission is the Carriage System.	
UNITS	Engineering units of the data word. Some data can be unitless or N/A.	
WORD NAME	Formal name selected to identify the data word.	

Table 4.3-1 Word Page Field Descriptions

Word Page Field	Word Page Field Description

WORD ID	Code identifying the message of which data word is a subset.
	WORD ID Codes:
	    XX(R/T)/ZZ
	        XX = Message subaddress
	        R = Receive
	        T = Transmit
	        ZZ = Word number within message
	    XX(R/T)-YYY/ZZ
	        XX = Message subaddress
	        R = Receive
	        T = Transmit
	        YYY = Multiple word configurations transmitted to the same subaddress
	            (one to three digits)
	        ZZ = Word number within message.

XMIT RATE	Transmission rate of data word in Hz. The transmission rate can be specified as aperiodic.

```
WORD NAME:      Header
                                    CATEGORY:       Header
WORD ID:        01T/01              MAX VALUE:      0421 (H)
SOURCE(s):      Store               MIN VALUE:      0421 (H)
DEST(s):        Platform            RESOLUTION:     1
COMP RATE:      Aperiodic           ACCURACY:       N/A
XMIT RATE:      Aperiodic           MSB:            2^15
SIGNAL TYPE:    Hexadecimal         LSB:            2^0
UNITS:          N/A                 FULL SCALE:     FFFF (H)
```

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB ---
	-01-B	Hex digit #1 value = 0 (H)
	-02-B	
	-03-B	LSB ---
Hex Digit #2	-04-B	MSB ---
	-05-B	Hex digit #2 value = 4 (H)
	-06-B	
	-07-B	LSB ---
Hex Digit #3	-08-B	MSB ---
	-09-B	Hex digit #3 value = 2 (H)
	-10-B	
	-11-B	LSB ---
Hex Digit #4	-12-B	MSB ---
	-13-B	Hex digit #4 value = 1 (H)
	-14-B	
	-15-B	LSB ---

REMARKS/NOTES:

Figure 4.3-1 Example of a Word Page

4.4 Signal Type Notation

Valid signal types include: 2's complement, unsigned numeric, discrete bit, coded bits, binary coded decimal, ASCII alphanumeric codes, invalidity bit, unused bit, spare bit, reserved, scientific, floating point, and hexadecimal. Definitions for Signal Type Notations are defined in Table 4.4-1.

Table 4.4-1 Signal Type Notation

Signal Type	Data Type Description	Presentation
2's Complement	A representation of a signed value where the negative codes are generated by adding one to the complement of the number. Reference MIL-HDBK-1553A, Table 80-IV, and paragraph 60.2.3.1.	S (Sign), MSB, LSB and N (data bits)
ASCII	A character code set defined in ANSI X3.4 American Standard for Information Interchange (ASCII) where only upper case alphabetic characters are used. In standard 7-bit ASCII the first bit of each 8-bit character field (MSB) is set to logic zero (0), and the 7-bit ASCII code occupies the remaining seven bits of the field. Reference MIL-STD-1760, Table B-XL.	MSB, LSB and A (data bits)
Binary Coded Decimal	A binary representation of an unsigned value. The value can be an integer or have a fractional component.	MSB, LSB, and B (data bits)
Coded	A grouping of bits in which the pattern of 1's and 0's has a specified meaning.	MSB, LSB, and C (data bits)
Discrete	A single binary bit whose mode of 1 or 0 has a specified meaning.	D
Floating Point	Floating Point Notation. A floating point number is a grouping of bits that have three components: a sign, exponent, and mantissa. Reference Paragraph 4.10.2.	MSB, LSB, S (Sign), and E (Exponent) (data bits) MSB, LSB, S (Sign), and M (Mantissa) (data bits)
Hexadecimal	A four-bit field that represents a base 16 numeric value (0-9 and A-F).	MSB, LSB, and H (data bits)
Invalidity	A single binary bit used to indicate invalidity of other data entries. Reference MIL-STD-1760, Table B-XXXI.	V
Logic 0	A single binary bit set to a value of 0.	0
Logic 1	A single binary bit set to a value of 1.	1
Reserved	Data is reserved for UAI future use.	0 (data bit) 0000 (H) (data word)
Reserved for 1760	Data is reserved for MIL-STD-1760.	0 (data bit) 0000 (H) (data word)
Reserved for GPS	Data is reserved for GPS data. The platform sends GPS messages from the platform GPS system to the store with format changes only. The platform and store should treat this information as pass-through data.	D (data bit) or N (data word)
Scientific	Binary Scientific Notation Format as defined in MIL-STD-176D, Table B-XXX.	MSB, LSB, M (Mantissa), and E (Exponent) (data bits)

Table 4.4-1 Signal Type Notation

Signal Type	Data Type Description	Presentation
Spare	Data that is not used in the UAI interface and is available for future use without impacting the UAI interface.	0
Unused	Denotes a bit which is not used by the message receiver for any purpose except message checksum calculations and which can be required to be set to a logic one or zero by the message originator. If not specified, the bit can be either state. Not used bits can have already been designated for use by other systems which interface with platform electronics and are not available for future use by UAI.	X (logic 0 or 1)
Unsigned	A binary representation of an unsigned value. The value can be an integer or have a fractional component. Reference MIL-STD-1760, Table B-XXIX.	MSB, LSB, and N (data bits)

4.5 Command Word and Status Word

The Command Word (CW) and Status Word (SW) formats are in accordance with MIL-STD-1553.

4.6 Header Word(s)

The first word of each UAI non-MDT message is a Header Word used for message identification. The message Header Word is a hexadecimal code that complies with MIL-STD-1760 Table B-X and MIL-STD-1760 Table B-XLII. For UAI, the platform and stores are required to set the values of message Header Word(s) to the header values defined in Table 4.6-1 once the platform/store UAI configuration has been established. Section 4.1.7 provides further information and requirements.

Table 4.6-1 UAI Message Header Word Assignments

Message Name	Message Number	Header Value (Hexadecimal)
Synchronize With Data Word	[MC17R]	N/A
Platform Description	[01R]	0421 (H)
Store Description	[01T]	0421 (H)
Periodic Transfer Alignment	[02R]	2100 (H)
Store Internal Parameters 1	[02T]	2120 (H)
Time	[03R]	4000 (H)
Store Internal Parameters 2	[03T]	2121 (H)
Reset Transfer Alignment	[05R]	2101 (H)
IR LAR Data	[05T]	0605 (H)
LAR Control	[06R]	0620 (H)
IZ LAR Data	[06T]	0600 (H)
Moment Arm	[09R]	2001 (H)
Carriage System Control	[10R]	0424 (H)
Carriage System Monitor	[10T]	042D (H)
Store Control	[11R]	0400 (H)
Store Monitor	[11T]	0420 (H)
GPS Crypto Key	[12R]	0004 (H)
Mass Data Transfer	[13R-xxx]	N/A
Transfer Control	[14R]	0422 (H)
Transfer Monitor	[14T]	0423 (H)
Environmental Data	[15R]	3301 (H)
GeoZone Control/Monitor	[16R/T]	16E0 (H)
Modify Mission: Target	[17R/T-1]	1701 (H)
Modify Mission: Loiter	[17R/T-2]	1702 (H)
Differential GPS Data	[18R]	DABE (H)
Store Summary Status	[20T]	2020 (H)
WDL Control/Monitor	[21R/T]	D100 (H)
Mission Control	[22R]	1000 (H)
Mission Monitor	[22T]	1025 (H)
Seeker/Sensor Control	[24R]	2802 (H)
Seeker/Sensor Monitor	[24T]	2801 (H)

Platform Requirements

The platform shall **{ps_4007}** set each Receive Message [##R] Header Word to the header value defined in Table 4.6-1.

The platform shall **{ps_4008}** discard the message data received from a store, in a Transmit Message [##T], when the Header Word is not equal to the header value defined in Table 4.6-1 after Platform ID Received [22T/05/02 = 1] or Platform ID Received [10T/02/11 = 1] as appropriate.

Store Requirements

The store shall **{ss_4009}** set each Transmit Message [##T] Header Word to the header value defined in Table 4.6-1 after <u>Platform ID Received</u> [22T/05/02 = 1] or <u>Platform ID Received</u> [10T/02/11 = 1], as appropriate.

4.7 Invalidity Word(s)

The platform or store, as the sender of a message, sets message Invalidity bit(s) to identify the message data element(s) as valid or invalid. The Invalidity bit(s) are set to logic 0 (valid) when the corresponding data element(s) are valid. Conversely, the Invalidity bit(s) are set to logic 1 (invalid) when the corresponding data element(s) are invalid. Messages with Invalidity words and bit(s) are identified in Table 4.7-1.

The platform or store, as the receiver of a message, when detecting Invalidity bit(s) equal to logic 1 (invalid), considers the corresponding message data element(s) as invalid or not used.

For UAI, invalidity status bits that are not used are designated as Reserved bit(s) and are set to logic 0 (valid). The invalidity bits associated with the reserved words and those associated with words that are defined as not used, are also set to logic 0 (valid). IAW MIL-STD-1760, bits 14 and 15 in Invalidity 2 words [01R/03], [11R/03], and [11T/03] are only used during the routing of messages to/from a mission store carried on a carriage system and are set to logic 0 at all other times.

Table 4.7-1 UAI Message Invalidity Words

Message Name	Message ID	Invalidity Words	Word ID
Platform Description	[01R]	Invalidity 1 Invalidity 2	[01R/02] [01R/03]
Periodic Transfer Alignment	[02R]	Invalidity	[02R/02]
Reset Transfer Alignment	[05R]	Invalidity	[05R/02]
IR LAR Data	[05T]	Invalidity	[05T/02]
LAR Control	[06R]	Invalidity	[06R/02]
IZ LAR Data	[06T]	Invalidity	[06T/02]
Moment Arm	[09R]	Invalidity	[09R/02]
Store Control	[11R]	Invalidity 1 Invalidity 2	[11R/02] [11R/03]
Store Monitor	[11T]	Invalidity 1 Invalidity 2	[11T/02] [11T/03]
Environmental Data	[15R]	Invalidity	[15R/02]
GeoZone Control	[16R]	Invalidity	[16R/02]
GeoZone Monitor	[16T]	Invalidity	[16T/02]
Modify Mission: Target	[17R/T-1]	Invalidity	[17R/T-1/02]
Modify Mission: Loiter	[17R/T-2]	Invalidity	[17R/T-1/02]
WDL Control	[21R]	Invalidity	[21R/02]
WDL Monitor	[21T]	Invalidity	[21T/02]
Mission Control	[22R]	Invalidity 1 Invalidity 2	[22R/02] [22R/03]
Seeker/Sensor Control	[24R]	Invalidity	[24R/02]
Seeker/Sensor Monitor	[24T]	Invalidity	[24T/02]

Platform Requirements

The platform shall **{ps_4009}** set the Receive Message [##R] Invalidity bit(s) to logic 0 (valid) when the corresponding data element(s) contains valid data.

The platform shall **{ps_4011}** consider Transmit Message [##T] data values as invalid when the corresponding Invalidity bit(s) are set to logic 1 (invalid).

The platform shall **{ps_4012}** consider Transmit Message [##T] data values as valid when the corresponding Invalidity bit(s) are set to logic 0 (valid).

The platform shall **{ps_4013}** consider all Transmit Message [##T] data values as invalid when the Invalidity bit(s) corresponding to Invalidity word(s) are set to logic 1 (invalid).

The platform shall **{ps_4014}** set Time Stamp Invalidity bit(s) to logic 1 (invalid), when the uncertainty of the corresponding platform time exceeds ±10.0 msec. The Time Stamp Invalidity bit(s) can be reset to logic 0 (valid) if platform time accuracy is reestablished.

The platform shall **{ps_4015}** set reserved and unused Invalidity bit(s) to logic 0 (valid) in all Receive Messages [##R].

Store Requirements

The store shall **{ss_4011}** set the <u>Transmit Message</u> [##T] Invalidity bit(s) to logic 0 (valid) when the corresponding data element(s) are valid or reserved.

The store shall **{ss_4012}** set the <u>Transmit Message</u> [##T] Invalidity bit(s) to logic 1 (invalid) when the corresponding data element(s) are invalid.

The store shall **{ss_4014}** consider <u>Receive Message</u> [##R] data values as invalid when the corresponding Invalidity bit(s) are set to logic 1 (invalid).

The store shall **{ss_4015}** consider all <u>Receive Message</u> [##R] data values as invalid when the Invalidity bit(s) corresponding to Invalidity word(s) are set to logic 1 (invalid).

The store shall **{ss_4016}** consider <u>Receive Message</u> [##R] data values as valid when the corresponding Invalidity bit(s) are set to logic 0 (valid).

The store shall **{ss_4017}** set reserved and unused Invalidity bit(s) to logic 0 (valid) in all <u>Transmit Messages</u> [##T].

4.8 Reserved Words

Data words marked as "Reserved" can contain data. Reserved data fields that indicate that nonzero values are accepted can contain data, but the platform and/or store does not support the indicated data item. See Table 4.4-1 for additional information on reserved words.

Platform Requirements

The platform shall **{ps_4016}** set "Reserved" and "Reserved for 1760", words per the message data sheet(s).

Store Requirements

The store shall **{ss_4018}** set "Reserved" and "Reserved for 1760" words per the message data sheet(s).

4.9 Checksums and Checksum Words

Several receive and transmit messages are protected by a checksum in addition to automatic protections included within the MIL-STD-1553 protocol. The checksum allows the message receiver to validate the integrity of the message content. For UAI all message checksums and MDT checksums are calculated in accordance with MIL-STD-1760.

Platform Requirements

The platform shall **{ps_4017}** compute non-MDT message checksums in accordance with the algorithm described by MIL-STD-1760 paragraph B.4.1.5.2.

The platform shall **{ps_4018}** compute the MDT file checksum in accordance with the algorithm described by MIL-STD-1760 paragraph B.4.2.3.3.

The platform shall **{ps_4030}** perform checksum validation, using the checksum algorithm defined in MIL-STD-1760 paragraph B.4.1.5.2, on "T" messages with checksums and ignore data from any of these messages that fail the checksum validation test.

Store Requirements

The mission store shall **{ss_4019}** update MDT and non-MDT mission data only after replacement mission data passes its data validity check(s).

The store shall **{ss_4020}** compute the non-MDT checksum in accordance with the algorithm described by MIL-STD-1760 paragraph B.4.1.5.2.

The store shall **{ss_4021}** compute the MDT file checksum in accordance with the algorithm described by MIL-STD-1760 paragraph B.4.2.3.3.

The store shall **{ss_4024}** ignore data from an MDT file that fails a MDT file checksum verification test.

4.10 Data Structures

4.10.1 Definition of 2's Complement

For the platform/store interface described in this document, the definition of the MSB for 2's Complement entities is compliant with MIL-STD-1760, Table B-XXVIII as supplemented by notes 1 and 2. The issue is whether the first bit is a "sign bit" or is a MSB with a value of minus twice the value of the next to highest order bit. It is not mathematically correct to call the first bit a sign bit, since it is not the same as the sign bit on a "signed" format. The sign bit on a signed number format indicates that there is a minus sign and the rest of the bits represent a magnitude, i.e., the sign bit indicates only a negative sign. In a 2's complement, the first bit has a value of minus twice the magnitude of the next highest order bit, and if the first bit is a one, it indicates that the 2's complement of the entire word must be taken to determine the magnitude of the negative number.

4.10.2 Floating Point Standard

This section describes the standard format for binary floating-point data outputs for MIL-STD-1553 data blocks. This format defines both single and double precision data as well as overflow and under flow. This floating point standard is compliant with ICD-GPS-204A, section 10.1.3.

4.10.2.1 Definition of a Floating Point Number

A floating point number is defined as having the $\text{form} \pm(2^k)*f$, where k is an integer and f is a fraction. For a non-vanishing number, k and f are uniquely determined by imposing the condition $1/2 \leq f < 1$. When f conforms to this condition, it is normalized. All representations of numbers are in sign magnitude notation.

4.10.2.2 Non-Vanishing Floating Point Numbers

Once f is assumed normalized, its Most Significant Bit (MSB) is defined to be 1. For purposes of representation in binary floating-point format, then, this 1 bit becomes a hidden bit, which has the value of 1/2, and is not a part of the data word. The hardware, on either side of the interface, must restore this 1 bit before carrying out arithmetic operations. The single and double precision modes reserve 23 and 55 bits respectively for *f*, which, with the hidden bit, translates into effective word lengths of 24 and 56 bits for arithmetic operations.

Eight bits are used to represent the exponent k in excess 128 (decimal) notation, which permits expressing exponent values from -128 to +127. This is demonstrated in Table 4.10-1, which shows the correspondence between actual and coded (biased) exponent values. If the actual value of the number (including the fraction) is less than or equal to 2-128, the floating-point number are defined to be a clean zero (all 32 or 64 bits equal to zero).

Table 4.10-1 Floating Point Representation

Actual Exponent Value	8-Bit Exponent Field Representation		
Decimal	Octal	Binary	
+127	377	11	111	111
+1	201	10	000	001
0	200	10	000	000
-1	177	01	111	111
-128	000	00	000	000

4.10.2.3 Floating Point Zero

Since the first bit of the fraction *f* is hidden, it is not possible to distinguish between zero and a non-vanishing number whose fractional part is exactly 1/2. It is necessary, therefore, to define the floating point zero as a word whose bits are all zeroes. Therefore any number with a biased exponent of zero is a zero.

4.10.2.4 Undefined Variable

The undefined variable is any bit pattern with a sign bit of one and a biased exponent of zero. This bit pattern is not defined under the floating-point protocol and indicates a fault condition.

4.10.2.5 Single Precision Floating Point Format

The UAI single precision floating point format consists of two 16-bit words divided as follows:

Word 1

15	14	7	6	0
S	EXP		Fraction (MSBs)	

Word 2

15	0

Fraction (LSBs)

where: S = Sign of the numbers: 0 for positive, 1 for negative.

EXP = 8 bits of exponent in excess 128.

Fraction = 23 bits + 1 hidden bit (all numbers are assumed to be normalized).

4.10.2.6 Double Precision Floating Point Format

The UAI double precision floating-point format consists of four 16-bit words:

Word 1

15	14	7	6	0
S	EXP		Fraction (MSBs)	

Word 2

15			0
Fraction			

Word 3

15			0
Fraction			

Word 4

15			0
Fraction (LSBs)			

where: S = Sign of the numbers: 0 for positive, 1 for negative.

EXP = 8 bits of exponent in excess 128.

Fraction = 55 bits + 1 hidden bit (all numbers are assumed to be normalized).

The binary radix point is defined to be before the hidden bit.

4.11 Mass Data Transfer

Mass Data Transfer (MDT) is a MIL-STD-1760 protocol to permit the transfer of large amounts of data between a platform and store via the MIL-STD-1553 serial data bus. MIL-STD-1760 has a detailed description of MDT protocol. MDT can be invoked by the platform at any time during the Initialization or Ready States to transfer mission data to the store.

4.11.1 MDT File, Record, and Block Structure

All mass data transferred via the MDT from the platform to the store has the MIL-STD-1760 data structure defined in Figure 4.11-1.

Mass Data	File 'n'	Record 'n'	Block 'n'	Word 'n'
file 1	record 1	block 1	rec/blk #	16 bits
file 2	record 2	block 2	data wd 1	
file 3	record 3	block 3	data wd 2	
(files)	(records)	(blocks)	(words)	
# files*	# records*	# blocks*	data wd 29	

* All records must have the same number of blocks

* Each block is a 30 word Transfer Data Msg (13R). The record and block #'s appear in the first word with up to 29 words following (unused data words must be set to logic 0).

* The maximum number of files/MDT, records/file, and blocks/record is 255.

Figure 4.11-1 UAI Mass Data Transfer Structure

4.11.2 UAI File/Record/Block Assignments for MDT

The UAI file/record/block assignments for MDT are defined in Table 4.11-1.

Table 4.11-1 UAI File/Record/Block Assignments for Mass Data Transfer

File Name	File #	Record #	Block #	Message
SV Configuration	1	1	1	AS Status/SV Configuration [13R-007]
Not Used by UAI	2	---	---	Not Used by UAI
Not Used by UAI	3	---	---	Not Used by UAI
Almanac Data (order of SV IDs not important)	4	1	1	Almanac for SV "j" [13R-005]
		⇩	⇩	⇩
		32 (max)	1	Almanac for SV "k" [13R-005]
Ephemeris Data (order of SV IDs not important) Note 1	5	1	1	Ephemeris #1 for SV "l" [13R-010]
		1	2	Ephemeris #2 for SV "l" [13R-011]
		⇩	⇩	⇩
		32 (max)	1	Ephemeris #1 for SV "m" [13R-010]
		32 (max)	2	Ephemeris #2 for SV "m" [13R-011]
Not Used by UAI	6	---	---	Not Used by UAI
⇩	⇩	⇩	⇩	⇩
Not Used by UAI	18	---	---	Not Used by UAI
Complementary Navigation Message	19	1	1	SV Nav for first Page ID [13R-015]
		⇩	⇩	⇩
		18 (max)	1	SV Nav for last Page ID [13R-015]
Mission Data File(s) (MDT Mission) Note 2, 3	20	1	1	MDT-Mission: Record 1/Block 1 [13R-020]
		⇩	⇩	⇩
		1	255	MDT-Mission: Record 1/Block 255 [13R-020]
		⇩	⇩	⇩
		255 (max)	1	MDT-Mission: Record 255/Block 1 [13R-020]
		⇩	⇩	⇩
		255 (max)	255	MDT-Mission: Record 255/Block 255 [13R-020]
GeoZone Information (MDT GeoZone Data) Note 2, 3	21	1	1	MDT-GeoZone Data: Record 1/Block 1 [13R-021]
		⇩	⇩	⇩
		1	255	MDT-GeoZone Data: Record 1/Block 255 [13R-021]
		⇩	⇩	⇩
		255 (max)	1	MDT-GeoZone Data: Record 255/Block 1 [13R-021]
		⇩	⇩	⇩
		255 (max)	255	MDT-GeoZone Data: Record 255/Block 255 [13R-021]
Crypto Data (MDT-Growth Crypto) Note 2	22	1	1	MDT-Crypto Data: Record 1/Block 1 [13R-022]
		⇩	⇩	⇩
		1	255	MDT-Crypto Data: Record 1/Block 255 [13R-022]
		⇩	⇩	⇩
		255 (max)	1	MDT-Crypto Data: Record 255/Block 1 [13R-022]
		⇩	⇩	⇩
		255 (max)	255	MDT-Crypto Data: Record 255/Block 255 [13R-022]
WDL Terminal Initialization Data (MDT-WDL	23	1	1	MDT-WDL Terminal Initialization: Record 1/Block 1 [13R-023]
		⇩	⇩	⇩

Table 4.11-1 UAI File/Record/Block Assignments for Mass Data Transfer

File Name	File #	Record #	Block #	Message
Initialization) Note 2		1	255	MDT-WDL Terminal Initialization: Record 1/Block 255 [13R-023]
		⇩	⇩	⇩
		255 (max)	1	MDT-WDL Terminal Initialization: Record 255/Block 1 [13R-023]
		⇩	⇩	⇩
		255 (max)	255	MDT-WDL Terminal Initialization: Record 255/Block 255 [13R-023]
Configuration Data Set Note 2,3	24	1	1	MDT-CS CDS: Record 1/Block 1 [13R-024]
		⇩	⇩	⇩
		1	255	MDT-CS CDS: Record 1/Block 255 [13R-024]
		⇩	⇩	⇩
		255 (max)	1	MDT-CS CDS: Record 255/Block 1 [13R-024]
		⇩	⇩	⇩
		255 (max)	255	MDT-CS CDS: Record 255/Block 255 [13R-024]
WDL Key Data (MDT-WDL Key 1/2/3) Note 2,3	25 26 27	1	1	MDT-Key Data: Record 1/Block 1 [13R-025, 026, 027]
		⇩	⇩	⇩
		1	255	MDT-Key Data: Record 1/Block 255 [13R-025, 026, 027]
		⇩	⇩	⇩
		255 (max)	1	MDT-Key Data: Record 255/Block 1 [13R-025, 026, 027]
		⇩	⇩	⇩
		255 (max)	255	MDT-Key Data: Record 255/Block 255 [13R-025, 026, 027]
Other Key Data (MDT-Other Store Keys) Note 2,3	28	1	1	MDT-Key Data: Record 1/Block 1 [13R-028]
		⇩	⇩	⇩
		1	255	MDT-Key Data: Record 1/Block 255 [13R-028]
		⇩	⇩	⇩
		255 (max)	1	MDT-Key Data: Record 255/Block 1 [13R-028]
		⇩	⇩	⇩
		255 (max)	255	MDT-Key Data: Record 255/Block 255 [13R-028]
Net Participants Data (MDT-Net Participants) Note 2,3	29	1	1	MDT-Net Participants: Record 1/Block 1 [13R-029]
		⇩	⇩	⇩
		1	255	MDT-Net Participants: Record 1/Block 255 [13R-029]
		⇩	⇩	⇩
		255 (max)	1	MDT-Net Participants: Record 255/Block 1 [13R-029]
		⇩	⇩	⇩
		255 (max)	255	MDT-Net Participants: Record 255/Block 255 [13R-029]

Notes:
1. Records for SVs that are not available cannot be zero filled.
2. MiDEF records and blocks are determined by the size of the MDT file.
3. Maximum number of records is mission store dependent.

If preplanned, the appropriate store network ID data and the network participant indices identified in Table 3.5.21-2 and Table 3.5.21-3 are only to be provided in MDT-Mission [13R-020]. The network participant indices are a value from 0 to 31. Values 1 to 31 identify an ordinal position within MDT-Net Participants [13R-029]. A network participant index of 0 identifies that there is no network participant identified for that role. All network participants identified by all missions exist within MDT-Net Participants [13R-029].

If preplanned, the appropriate net participant data, the store DL settings, and the IDL DL settings identified in Table 3.5.21-5, Table 3.5.21-6, and Table 3.5.21-7 are only to be provided in MDT-Net Participants [13R-029]. The network participant data includes an IDL select reference, from 1 to 7, which identifies an ordinal position within MDT-WDL Terminal Initialization [13R-023]. All IDL selections exist within MDT-WDL Terminal Initialization [13R-023]. Store DL settings are common for all missions and all IDLs supported by the mission store. IDL DL settings are IDL-specific DL settings which are referenced directly to the IDL number to which they pertain, that is, IDL 1 DL Settings in MDT-Net Participants [13R-029] are used with IDL 1 in MDT-WDL Terminal Initialization [13R-023].

The network initialization data loads (IDLs) are provided in MDT-WDL Terminal Initialization [13R-023]. Each network IDL includes a reference to the key data for that network. The key reference identifies the key file, MDT-WDL Key 1-3 [13R-025-027] and the ordinal position within the key file. All referenced keys exist within MDT-WDL Key 1-3 [13R-025-027].

Platform Requirements

The platform shall **{ps_4019}** provide the capability to transfer the file/record/block MDT data defined in Table 4.11-1 to the store.

Store Requirements

The store shall **{ss_4025}** have the capability to accept the file/record/block MDT defined data in Table 4.11-1 if the store accepts any data via MDT.

Mission Store Requirements

The mission store shall **{ss_4039}** require preplanned missions to place the store network ID data as defined in Table 3.5.21-2, if required by the mission store, only in the MDT-Mission [13R-020] file(s).

The mission store shall **{ss_4040}** require preplanned missions to place the network participant indices as defined in Table 3.5.21-3 (to identify network participants), if required by the mission store, only in the MDT-Mission [13R-020] file(s) and define them as indices from 0 to 31 where:

- 0 indicates no network participant is defined, and
- 1 to 31 defines the ordinal location/position of the network participant data in the MDT-Net Participants [13R-029] file.

The mission store shall **{ss_4041}** require preplanned missions to place the net participant data as defined in Table 3.5.21-5, if required by the mission store, only in the MDT-Net Participants [13R-029] file and use the WDL Terminal IDL Select for each net participant, if required by the mission store, as an index from 1 to 7 to define the ordinal location/position of the WDL terminal initialization data in the MDT-WDL Terminal Initialization [13R-023] file.

The mission store shall **{ss_4042}** require preplanned missions to place the store DL settings, as defined in Table 3.5.21-6, if required by the mission store, only in the MDT-Net Participants [13R-029] file.

The mission store shall **{ss_4045}** require preplanned missions to place the IDL DL settings, as defined in Table 3.5.21-7, if required by the mission store, only in the MDT-Net Participants [13R-029] file and reference them directly to the IDL number to which they pertain.

The mission store shall **{ss_4043}** require preplanned missions to place a maximum of 7 IDLs, if required by the mission store, only in the MDT-WDL Terminal Initialization [13R-023] file and include WDL key file indices, if required by the mission store, as part of the IDL(s) to define the ordinal location/position of the WDL key data for that IDL in the MDT-WDL Key 1-3 [13R-025-027] file set (as appropriate).

The mission store shall **{ss_4044}** require preplanned missions to place WDL key data, if required by the mission store, only in the MDT-WDL Key 1-3 [13R-025-027] file set (as appropriate).

4.11.3 MDT Modes and Commands

The UAI required MDT modes/command are defined in Table 4.11-2. The detailed requirements for these modes of MDT can be found in MIL-STD-1760 and a detailed description of MDT can be found in MIL-HDBK-1760. MDT protocol is controlled by the platform through three messages.

1. Transfer Control [14R] (TC).
2. Transfer Monitor [14T] (TM).
3. Transfer Data [13R-###].

To ensure the integrity of pre-planned mission data sent to the store via MDT, UAI requires the platform and the store to perform an MDT file checksum validation test for all MDT data files that contain MDS data (e.g., MDT-Mission [13R-020]). Checksum validation tests are allowed, but are not required, for MDT data files that do not contain valid MDS data, (e.g., Almanac [13R-005], AS Status/SV Configuration [13R-007], Ephemeris 1 [13R-010], Ephemeris 2 [13R-011], and Complementary Navigation Message [13R-015]). Sections 4.11.5 MDT Functional Sequence, 6.14R Transfer Control [14R], and 6.14T Transfer Monitor [14R] provide further information and requirements.

Table 4.11-2 UAI Required MDT Modes/Commands

Title	Description
No Operation	Commands the Store to update its Transfer Monitor [14T] message with the current MDT transaction status for the last transaction.
Select Download Mode	Commands the Store to enter or remain in the download mode.
Start New File/Record	Commands the Store to prepare to receive data messages into/out of the designated subaddress.
Erase All Files	Commands the Store to erase all memory whose addresses are allocated to MDT. Note 2.
Erase Designated File	Commands the Store to erase the designated File memory addresses. Note 2.
Calculate File Checksum	Commands the Store to run the File checksum test on the designated File.
Exit Transfer Mode	Commands the Store to exit the current MDT mode.

Notes:

1. UAI does not support MDT file upload.
2. Platforms support either Erase All Files and/or Erase Designated File.

Platform Requirements

The platform shall **{ps_4020}** support the MIL-STD-1760 MDT instructions defined in Table 4.11-2.

The platform shall **{ps_4026}**, after sending an MDT data file to the store that contains MDS data, set Calculate File Checksum [14R/02/08 = 1] and set File Checksum [14R/07] to the checksum for the MDT data file sent, to command the store to validate the integrity of the MDT data.

The platform shall **{ps_4029}**, after sending an MDT-CS CDS [13R-024] data file to a Type 2 carriage system, set Calculate File Checksum [14R/02/08 = 1] and set File Checksum [14R/07] to the checksum for the MDT data file sent, to command the Type 2 carriage system to validate the integrity of the MDT data.

The platform may **{pm_4006}**, after sending an MDT data file to the store that does not contain MDS data, set Calculate File Checksum [14R/02/08 = 1] and set File Checksum [14R/07] to the checksum for the MDT data file sent, to command the store to validate the integrity of the MDT data.

Carriage System Requirements

A Type 2 carriage system shall **{css_4008}** verify the MDT-CS CDS [13R-024] file checksum prior to using a carriage system CDS file.

Store Requirements

The store shall **{ss_4026}** support the MIL-STD-1760 MDT instructions defined in Table 4.11-2.

4.11.4 MDT Timeline

Figure 4.11-2 shows a notional message event sequence for a MDT Download operation since the timing varies from store to store and platform to platform.
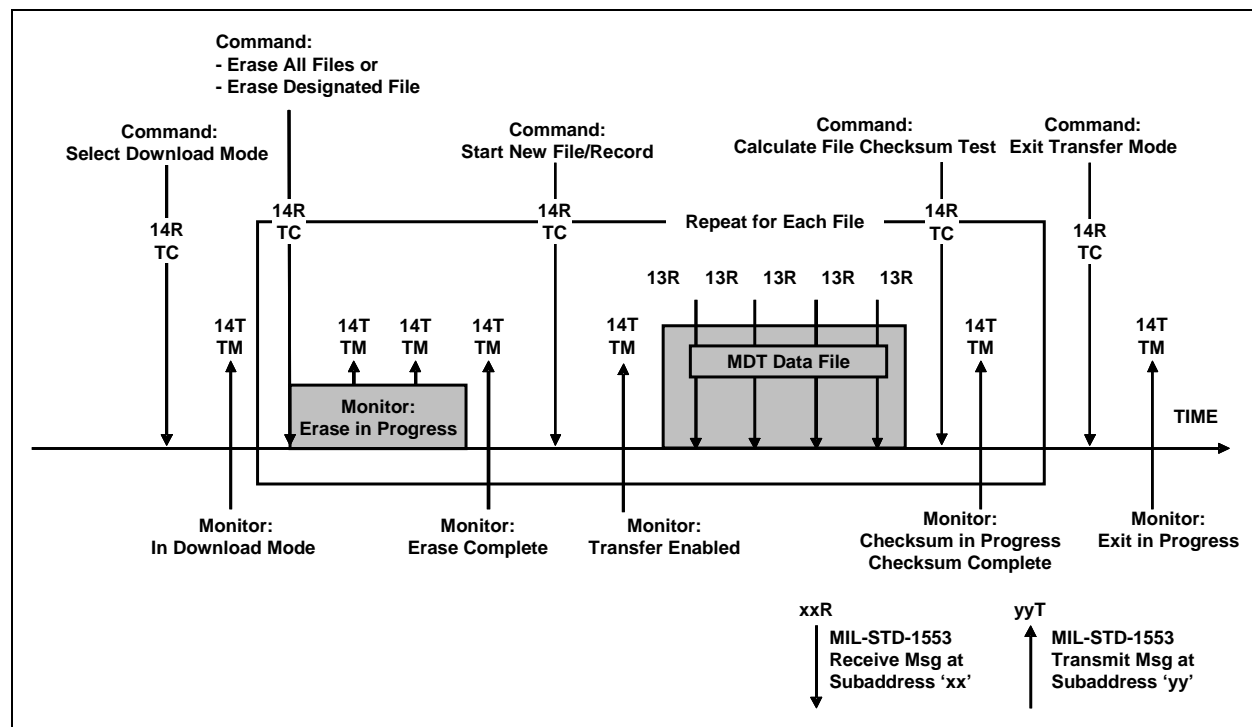
Figure 4.11-2 Notional MDT Download Timeline

Platform Requirements

The platform may **{pm_4004}** intersperse non-MDT message traffic during MDT transactions.

Store Requirements

The store shall **{ss_4027}** be capable of responding to non-MDT interspersed message traffic during MDT transactions.

4.11.5 MDT Functional Sequence

The notional functional sequence for UAI MDT Download is described in Table 4.11-3.

Table 4.11-3 Notional MDT Download Functional Sequence

	PLATFORM	STORE

1	Read CDS to determine if transfer of data by MDT is enabled.
	If enabled, read the CDS to determine:
	a) Required MDT Files
	b) Store MDT command response times
	c) Store maximum erase time(s):
	  i. Erase all files
	  ii. Erase one file	

2	MDT is not to be conducted subsequent to CTS [11R/04/02 = 1].	

Table 4.11-3 Notional MDT Download Functional Sequence

		PLATFORM	STORE
3		Monitor the status of <u>Platform ID Received</u> [22T/05/02=1] and <u>Power Interruption</u> [22T/02/14 = 0] to determine if the store is ready to receive MDT data. Command the store into <u>Download Mode</u> [14R/02/01 = 1]	Set <u>Platform ID Received</u> [22T/05/02=1] and <u>Power Interruption</u> [22T/02/14 = 0] when the store is ready to receive MDT data.
4		Monitor <u>In Download Mode</u> [14T/03/00 = 1] to determine when the store is ready for MDT.	Prepare for operations in Download Mode. Set <u>In Download Mode</u> [14T/03/00 = 1] when ready for download operations.
5		When <u>In Download Mode</u> [14T/03/00 = 1] is detected, either command an <u>Erase All Files</u> [14R/02/04 = 1] or an <u>Erase Designated File</u> [14R/02/05 = 1]. Set <u>File Number</u> [14R/04] to indicate the file number to be erased with the remainder of <u>Transfer Control</u> [14R] set in accordance with MIL-STD-1760.	Initiate erase of the designated file space. Set <u>Erase in Progress</u> [14T/03/03 = 1].
6		Monitor <u>Erase In Progress</u> [14T/03/03 = 1] to verify the requested erase is in progress.	Continue to erase the designated file space.
7		Monitor for <u>Erase Completed</u> [14T/03/04 = 1]	Set <u>Erase Completed</u> [14T/03/04 = 1] when file space erasure is completed.
8		After <u>Erase Completed</u> [14T/03/04 = 1] has been detected, command the store to <u>Start New File/Record</u> [14R/02/03 = 1], <u>File Number</u> [14R/04] set to indicate the file number to be transferred with the remainder of <u>Transfer Control</u> [14R] set in accordance with MIL-STD-1760.	Prepare to receive designated file data.
9		Monitor for <u>Transfer Enabled</u> [14T/03/02 = 1].	Set <u>Transfer Enabled</u> [14T/03/02 = 1].
10		After <u>Transfer Enabled</u> [14T/03/02 = 1] has been detected, begin transmission [13R] messages of the specified data file, starting with first block through the last block in sequential order.	Receive and store file data from message [13R]. Update <u>Transfer Monitor</u> [14T] accordingly.
11		May monitor <u>Transfer Monitor</u> [14T] to verify store receipt of all data after the last block of data of the selected file has been sent. If the file transmitted is mission data, then set <u>Calculate File Checksum</u> [14R/02/08 = 1] and set <u>File Checksum</u> [14R/07] to the checksum for the file sent.	Update <u>Transfer Monitor</u> [14T] accordingly.
12		Monitor for Checksum Calculation In Progress [14T/03/06 = 1].	Set <u>Checksum Calculation In Progress</u> [14T/03/06 = 1] and performs the checksum calculation and any validation processing of the file specified in the transfer control message.

Table 4.11-3 Notional MDT Download Functional Sequence

	PLATFORM	STORE
13	Monitor for <u>Checksum Calculation Completed</u> [14T/03/07 = 1].	Set <u>Checksum Calculation Completed</u> [14T/03/07 = 1] when the checksum calculation and any validation processing is complete. Set <u>Checksum Failed</u> [14T/03/08 = 1] if the calculated checksum does not match the value provided in <u>File Checksum</u> [14R/07]. Set <u>File/Record Checksum</u> [14T/08] to the calculated MDT file checksum.
14	When <u>Checksum Calculation Completed</u> [14T/03/07 = 1] is detected, then verify <u>Checksum Failed</u> [14T/03/08 = 0].	
15	May command a <u>Start New File/Record</u> [14R/02/03 = 1] and repeat steps above.	
16	Command the store to <u>Exit Transfer Mode</u> [14R/02/11 = 1].	Exit MDT mode and set <u>Exit In Progress</u> [14T/03/10 = 1].

Platform Requirements

The platform shall **{ps_4021}** read the <u>CDS MDT Enabled</u> **{cds_4001}** to determine if MDT is enabled for the store.

The platform shall **{ps_4022}** read the <u>CDS MDT Files</u> **{cds_4002}** to determine the MDT file numbers that are enabled for the store.

The platform shall **{ps_4023}** read the <u>CDS NVM Storage Times</u> **{cds_4003}** to determine the store response times for saving platform provided data into store non-volatile memory.

The platform shall **{ps_4024}** transfer all applicable MDT data files to a store via Message [13R] (MIL-STD-1553 Subaddress13).

The platform shall **{ps_4025}** verify <u>Conditioning Complete</u> [22T/02/08 = 1], <u>Power Interruption</u> [22T/02/14 = 0] and <u>Commit to Separate Store</u> [11R/04/02 = 0] prior to initiating a platform to mission store MDT.

Store Requirements

The store supplement **{sup_4003}** documents the following:

a. Required MDT data file numbers and contents.

b. Maximum time required to respond to an MDT Download command.

c. Maximum time required to complete an MDT <u>Erase All Files</u> [14R/02/04=1] command.

d. Maximum time required to complete an MDT <u>Erase Designated File</u> [14R/02/05=1] command.

e. Maximum time required to store each of the following MDT files into the store non-volatile memory, starting at receipt of the first <u>Transfer Control</u> [14R]

received after the last MDT file data block, where <u>Calculate File Checksum</u> [14R/02/08 = 0], until completion of storage as reflected in the corresponding <u>Mission Monitor</u> [22T] or <u>Carriage System Monitor</u> [10T], as applicable, status bit:

1. File 1: SV Configuration

2. File 4: Almanac Data

3. File 5: Ephemeris

4. File 19: Complementary Navigation Message

5. File 21: GeoZone Information

6. File 22: Growth Crypto Data, if stored in non-volatile memory

7. File 23: WDL Terminal Initialization Data

8. File 24: Configuration Data Set, if stored in non-volatile memory

9. File 25, File 26, and File 27: WDL Key Data

10. File 28: Other Key Data

11. File 29: Net Participants Data

f. Maximum time required to complete an MDT file checksum calculation and validation from starting at receipt of the <u>Calculate File Checksum</u> [14R/02/08 = 1] command to completion of MDT file checksum validation.

g. Maximum time required to store a downloaded MDT file into the store non-volatile memory from completion of the MDT file checksum validation for those MDT files that are store in non-volatile memory.

h. The store action taken when MDT file <u>Checksum Failed</u> [14T/03/08 = 1].

The store shall **{ss_4028}** accept MDT data files received in Message 13R (MIL-STD-1553 Subaddress 13).

The mission store shall **{ss_4029}** accept MDT data when <u>Conditioning Complete</u> [22T/02/08 = 1], <u>Power Interruption</u> [22T/02/14 = 0], and <u>CTS</u> [11R/04/02 = 0].

The carriage system shall **{css_4007}** accept MDT data for transmission to the mission stores when <u>Platform ID Received</u> [10T/02/11 = 1], <u>Carriage System Monitor Header</u> [10T/01 = 042D (H)], <u>Power Interruption</u> [10T/02/00 = 0], <u>CTS</u> [11R/04/02 = 0], and operating power is applied to one or more mission stores.

The store shall **{ss_4030}** exit the current MDT operation and set <u>Transfer Mode Status</u> [14T/03 = 0000 (H)] within 40 msec of receipt of a valid <u>Erase Command/Authority</u> [11R/06/00 = 1], a valid <u>Commit to Separate Store</u> [11R/04/02 = 1], or a valid <u>Activate IBIT</u> [11R/04/06 = 1].

4.12 Mission Data Exchange Format (MiDEF) Data File

Mission Data Exchange Format (MiDEF), as defined by MIL-STD-3014, is a format for digital data files used for mission level programming of store systems. MiDEF defines

the data format for the digital data contained in a file, not the protocol used to transfer data between the platform and the store. MiDEF files are transferred between a platform and store via the MDT protocol described in this ICD. Section 6.13R-020 MDT-Mission [13R-020] provides further information and requirements.

All MiDEF data files are variable length files. The architecture of a MiDEF file is hierarchical or "nested". This allows for a broad and open-ended variety of data types to be combined and used for a variety of purposes.

The following is a MiDEF file example:

The structure of MiDEF submodules is defined in an ICD between a store OFP and the store mission planning module.

In this example, the MiDEF file structure in Figures 4.12-1, 4.12-2, and 4.12-3, includes one level of submodules for illustration purposes.

Value (hex)	Field/Data Element Name	Size	Description	Byte/sect
* = example proposed data type				
8008	MISSION PLAN	2	Class Code - mission plan module	5154
00001428	MODULE SIZE	4	Header - Module Size	
00000000	HEADER CONTENTS	4	Header - Contents (SINGLE; no optional header fields)	
0002	USER	2	Header- User Code - JSOW-C	
0007	ELEMENT COUNT	2	Header - Module Element Count	
8007	CLASS CODE	2	Target data module	
800F *	CLASS CODE	2	Launch data module	
8005	CLASS CODE	2	Navigation/route module	
8004	CLASS CODE	2	Aimpoint/Terminal guidance/profile module	
8011 *	CLASS CODE	2	Seeker data module	
8002	CLASS CODE	2	Warhead/fuzing module	
8012 *	CLASS CODE	2	Seeker reference module	
8007	TARGET DATA	2	Class Code - Target data module	50
00000038	MODULE SIZE	4	Header - Module Size	
00000000	HEADER CONTENTS	4	Header - Contents (SINGLE; no optional header fields)	
0002	USER	2	Header- User Code - JSOW-C	
0004	ELEMENT COUNT	2	Header - Module Element Count	
0136	CLASS CODE	2	Target Type and Coordinate Frame	
022F	CLASS CODE	2	Mission Number	
0218	CLASS CODE	2	Target 3D Coordinate	
0203	CLASS CODE	2	Aimpoint Offset from reference, NED coordinates	
(data)	PACKED BYTES	2	Target Type and Coordinate Frame	
(data)	IDENT MISSION NUMBER	2	Mission Number	
(data)	TARGET 3D CORD	12	Target 3D Coordinate	
(data)	AIMPOINT REL NED	12	Aimpoint Offset from reference, NED coordinates	
800F *	LAUNCH	2	Class Code - Launch data module	78
0000004E	MODULE SIZE	4	Header - Module Size	
0000	HEADER CONTENTS	4	Header - Contents (SINGLE; no optional header fields)	
0002	USER	2	Header- User Code - JSOW-C	
0007	ELEMENT COUNT	2	Header - Module Element Count	
0231 *	CLASS CODE	2	Nominal Launch Point/Vector	
003C	CLASS CODE	2	Platform Pitch at Launch	
003D	CLASS CODE	2	Platform Roll at Launch	
0233 *	CLASS CODE	2	LAR Wedge	
0140 *	CLASS CODE	2	Preplanned Time to Video	
0140 *	CLASS CODE	2	Preplanned Target View Time	
0140 *	CLASS CODE	2	Time of Flight	
(data)	NAV POSN-HVEL *	18	Nominal Launch Point/Vector	
(data)	XFER ALIGN PLTFM PITCH	2	Platform Pitch at Launch	
(data)	XFER ALIGN PLTFM ROLL	2	Platform Roll at Launch	
(data)	NAV LAR WEDGE	16	LAR RefCoord, R1, start/stop azimuth, R2	
(data)	TIME DURATION *	4	Preplanned Time to Video	
(data)	TIME DURATION *	4	Preplanned Target View Time	
(data)	TIME DURATION *	4	Time of Flight	

Figure 4.12-1 Example MiDEF File - Page 1

The MiDEF standard requires that when the "multiple" format for element lists is selected for a module it must be applied to all elements in that module. Since this example also includes many data elements that have a quantity of one, the breakout of the template and waypoint data into separate submodules (which implement the "multiple" format for their element lists) avoids having to apply the "multiple" format to the one-time scalar data in the mission file.

8005	NAVIGATION ROUTE	2	Class Code - Route plan module	54
00000036	MODULE SIZE	4	Header - Module Size	
80000000	HEADER CONTENTS	4	Header - Contents (MULTIPLE; no optional header fields)	
0002	USER	2	Header- User Code - JSOW-C	
0001	ELEMENT COUNT	2	Header - Module Element Count	
0552	CLASS CODE	2	2D Navigation Point	
0003	QUANTITY	2	Number of Waypoints	
(data)	NAV 2D CORD	12	2D Navigation Point	
(data)	NAV 2D CORD	12	2D Navigation Point	
(data)	NAV 2D CORD	12	2D Navigation Point	

8004	AIMPOINT DATA	2	Class Code - Terminal autopilot data module	46
0000002E	MODULE SIZE	4	Header - Module Size	
00000000	HEADER CONTENTS	4	Header - Contents (SINGLE; no optional header fields)	
0002	USER	2	Header- User Code - JSOW-C	
0006	ELEMENT COUNT	2	Header - Module Element Count	
006E	CLASS CODE	2	Target approach true heading	
013F *	CLASS CODE	2	Range of terminal leg	
013A	CLASS CODE	2	Endgame Entrance Altitude	
013A	CLASS CODE	2	Search Altitude	
013F	CLASS CODE	2	Search Altitude Range	
006F	CLASS CODE	2	Impact Angle	
(data)	AIMPOINT IMP AZ ANG	2	Target approach true heading	
(data)	GENERAL DIST HORIZ *	4	Range of terminal leg	
(data)	NAVIGATION HEIGHT ABO\	4	Endgame Entrance Altitude	
(data)	NAVIGATION HEIGHT ABO\	4	Search Altitude	
(data)	GENERAL DIST HORIZ	4	Search Altitude Range	
(data)	AIMPOINT IMP DIVE ANG	2	Impact Angle	

Figure 4.12-2 Example MiDEF File - Page 2

In the case of this example, some general-purpose data types are used for specific purposes. Additionally, some modules use the same general-purpose data type for different applications in the same module. This sequence of the data types is controlled by the store OFP and store mission planning module.

As an alternative the program can request the addition of specific-purpose data types to the MiDEF standard, thus rendering irrelevant the sequencing of the data types.

This example also includes some data types that were created to provide translation into the MiDEF domain of store-specific data types that were included in the 13R transfers, but were not supported by MIL-STD-1760 data types. These examples would be submitted on registry addition request forms that are found alongside each registry on the MiDEF website.

8011 *	SEEKER DATA	2	Class Code - Seeker data module	40
00000028	MODULE SIZE	4	Header - Module Size	
00000000	HEADER CONTENTS	4	Header - Contents (SINGLE; no optional header fields)	
0002	USER	2	Header- User Code - JSOW-C	
0004	ELEMENT COUNT	2	Header - Module Element Count	
0136	CLASS CODE	2	Tracker/WDT Functions	
0141 *	CLASS CODE	2	Target Horizontal Location Uncertainty	
0142 *	CLASS CODE	2	Target Vertical Location Uncertainty	
00A3	CLASS CODE	2	Target Length	
00AE	CLASS CODE	2	Target Width	
0143 *	CLASS CODE	2	Target Height	
(data)	GENERAL PACKED BYTES	2	Tracker/WDT Functions	
(data)	TARGET 1SIGMA HORIZ *	2	Target Horizontal Location Uncertainty	
(data)	TARGET 1SIGMA VERT *	2	Target Vertical Location Uncertainty	
(data)	TARGET DOWNRANGE LENGTH	2	Target Length	
(data)	TARGET CRSRNG WIDTH	2	Target Width	
(data)	TARGET HEIGHT *	4	Target Height	

8003	WARHEAD DATA	2	Class Code - Warhead data module	18
00000012	MODULE SIZE	4	Header - Module Size	
00000000	HEADER CONTENTS	4	Header - Contents (SINGLE; no optional header fields)	
0002	USER	2	Header- User Code - JSOW-C	
0006	ELEMENT COUNT	2	Header - Module Element Count	
000E	CLASS CODE	2	Impact detonation delay	
(data)	WARHEAD FZ IMPCT DLY	2	Target Type and Coordinate Frame	

8012 *	SEEKER REFERENCE	2	Class Code - Seeker Reference File module	4840
000012E8	MODULE SIZE	4	Header - Module Size	
80000000	HEADER CONTENTS	4	Header - Contents (MULTIPLE; no optional header fields)	
0002	USER	2	Header- User Code - JSOW-C	
0001	ELEMENT COUNT	2	Header - Module Element Count	
0552	CLASS CODE	2	File Reference Coordinate	
0001	QUANTITY	2	Count	
0126	CLASS CODE	2	Reference Azimuth Orientation	
0001	QUANTITY	2	Count	
?	CLASS CODE	2	Template Segment	
0258	QUANTITY	2	Count	
(data)	TARGET 3D CORD	12	3D Target Coordinate	
(data)	GENERAL AZIMANGLE	2	Azimuth orientation of reference file	
(data)	JSOW TMPLT SGMT *	8	Segment of a JSOW seeker Template	
(data)	(repeat)	4784	(repeat - assumes total of 301 segments in template)	
(data)	JSOW TMPLT SGMT *	8	Segment of a JSOW seeker Template	

Figure 4.12-3 Example MiDEF File - Page 3

For a complete list of MiDEF definitions, detailed requirements, and usage refer to MIL-STD-3014.

Platform Requirements

The platform may **{pm_4005}** accept, parse, modify, and rebuild MiDEF data file(s) with formats conforming to MIL-STD-3014 and the CDS.

The platform annex **{ann_4002}** documents the level of MiDEF data file(s) editing that is performed.

Store Requirements

The store shall **{ss_4031}** accept, parse, and use MiDEF data file(s) received that have a file format conforming to MIL-STD-3014 and the store supplement **{sup_4004}**.

The store supplement **{sup_4005}** documents MiDEF data format(s) and usage.

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5.0 POST-RELEASE COMMUNICATION INTERFACE

The UAI PSICD addresses platform/mission store requirements prior to mission store release. If the platform and/or mission store have a requirement to communicate post mission store release, then the platform and/or mission store need to implement the requirements documented in the WDLN ICD.

5.1 Post-Release Communication Interface

Refer to WDLN ICD, listed in the PSICD Section 2.0.

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6.0 SIGNAL SHEETS

6.01R Platform Description [01R]

Platform Description [01R] transfers platform identity and store location information to the store. The thirty (30) word Platform Description is derived from the Aircraft Description [01R] defined in MIL-STD-1760, Paragraph B.4.2.2.6 and Table B-XLVII. The only exception is that UAI defines word twenty-nine (29) as UAI Configuration ID [01R/29].

The platform sends Platform Description [01R] to the UAI capable store after receiving the initial Store Description [01T] and as the first "R" message sent to the store. The store updates Platform ID Received [10T/02/11 = 1] or Platform ID Received [22T/05/02] when a valid Platform Description [01R] is received. Section 3.5.2 System Power-Up and section 3.8.2.4 Mission Store Identification/Configuration provide additional information about the Platform Description message relationship to the mission store and carriage system power-up timeline(s).

Note: The Country Code [01R/04] and Platform Identity 1-8 [01R/05-12] remain invariant through the life of the platform or until a platform modification justifies a new platform identity.

6.01R.1 Country Code [01R/04]

Country Code [01R/04] (see MIL-STD-1760, Table B-XIV) identifies the country of ownership for a particular platform, and is a character code set defined in ANSI X3.4 American Standard Code for Information Interchange (ASCII) where only upper case alphabetic characters are used. In standard 7-bit ASCII the first bit of each 8-bit character field (MSB) is set to logic zero (0), and the 7-bit ASCII code occupies the remaining seven bits of the field and this convention is used for all ASCII characters.

Platform Requirements

The platform shall **{ps_6001}** set the Country Code [01R/04] to the appropriate country code as specified in ISO 3166.

Store Requirements

The store may **{sm_6001}** use Country Code [01R/04] to determine the country of origin of the platform using the codes specified in ISO 3166.

The store supplement **{sup_6001}** documents the minimum data elements needed in Platform Description [01R].

6.01R.2 Platform Identity 1-8 [01R/05-12]

Platform Identity 1-8 [01R/05-12] is a set of sixteen (16) characters defined in ANSI X3.4 American Standard Code for Information Interchange (ASCII) where only upper case alphabetic characters are used. In standard 7-bit ASCII the first bit of each 8-bit character field (MSB) is set to logic zero (0), and the 7-bit ASCII code occupies the remaining seven bits of the field and this convention is used for all ASCII characters.

Platform Identity 1-8 is left justified, with the unused right-most characters filled in with ASCII spaces (20 (H)). The store can use Platform Identity 1-8 [01R/05-12] to configure itself for platform specific store operations. Table 6.01R-1 provides examples of Platform Identity 1-8.

Table 6.01R-1 Platform Identity 1-8 [01R/05-12] Examples

ID Char Word.	1		2		3		4		5		6		7		8	
Character No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A-10C	A	-	1	0	C											
AH-1Z	A	H	-	1	Z											
AH-64D	A	H	-	6	4	D										
ARH	A	R	H													
AV-8B	A	V	-	8	B											
B-1B	B	-	1	B												
B-2A	B	-	2	A												
B-52H	B	-	5	2	H											
F-15C/D	F	-	1	5	C	/	D									
F-15E	F	-	1	5	E											
F-15I	F	-	1	5	I											
F-15K	F	-	1	5	K											
F-15S	F	-	1	5	S											
F-16A/B	F	-	1	6	A	/	B									
F-16C/D	F	-	1	6	C	/	D									
F-16E/F	F	-	1	6	E	/	F									
F-117A	F	-	1	1	7	A										
F/A-18A/B	F	/	A	-	1	8	A	/	B							
F/A-18C/D	F	/	A	-	1	8	C	/	D							
F/A-18E/F	F	/	A	-	1	8	E	/	F							
F/A-22A	F	/	A	-	2	2	A									
F/A-35A	F	/	A	-	3	5	A									
F/A-35B	F	/	A	-	3	5	B									
F/A-35C	F	/	A	-	3	5	C									
HH-60H	H	H	-	6	0	H										
MH-60R	M	H	-	6	0	R										
MH-60S	M	H	-	6	0	S										
P-8	P	-	8													
SH-60B	S	H	-	6	0	B										

Notes:

1. Empty cells in this table represent an ASCII space ('20' Hex).

Platform Requirements

The platform shall **{ps_6002}** set the Platform Identity 1-8 [01R/05-12] to the value documented in the platform annex **{ann_6017}**.

Store Requirements

The store may **{sm_6002}** use the Platform Identity 1-8 [01R/05-12] to determine platform identity.

The store supplement **{sup_6002}** documents store use of Platform Identity 1-8 [01R/05-12].

6.01R.3 Station ID and Pylon/Bay ID [01R/13]

Station ID and Pylon/Bay ID [01R/13] specifies the platform location where the store is loaded, and is compliant with MIL-STD-1760, Paragraph B.4.2.2.6, Table B-XXVI Lines 172 and 173, and Table B-XLVIII.

6.01R.3.1 Station ID [01R/13/00…07]

Station ID [01R/13/00…07] is the store station number to which the store is attached. Example platform station numbering schemes are presented in Figure 6.01R-1.
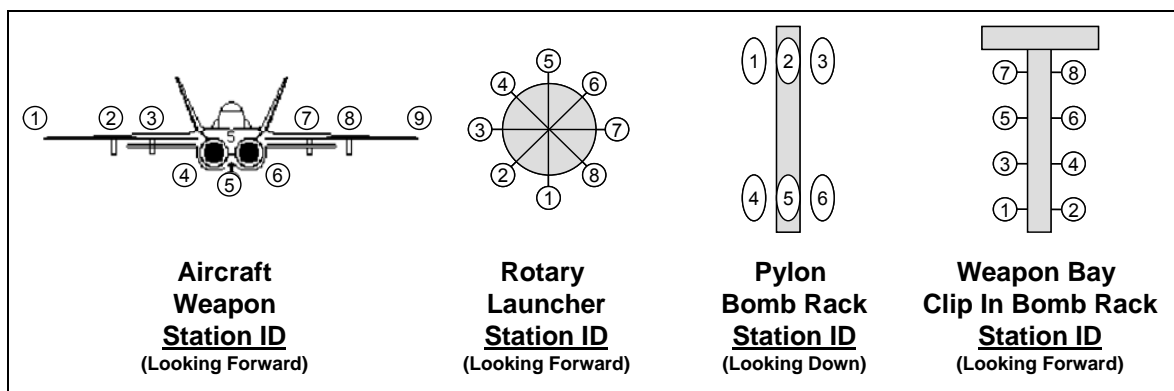
Figure 6.01R-1 Examples of Station ID [01R/13/00…07]

Platform Requirements

The platform shall **{ps_6003}** set Station ID [01R/13/00…07] to the store station number for the station the store is loaded on per the platform store/station numbering definition, as approved by the UAI SJICWG.

The platform annex **{ann_6001}** defines store station numbering definitions for Station ID [01R/13/00…07].

Store Requirements

The store may **{sm_6003}** determine the platform location to which the store is attached from Station ID [01R/13/00…07].

The store supplement **{sup_6003}** documents store utilization of Station ID [01R/13/00…07].

6.01R.3.2 Pylon/Bay ID [01R/13/08…15]

Pylon/Bay ID [01R/13/08…15] is used to identify the platform pylon or bay where the store is loaded. Pylon/Bay ID is a single character defined in ANSI X3.4 American

Standard for Information Interchange (ASCII) where only upper case alphabetic characters are used. In standard 7-bit ASCII the first bit of each 8-bit character field (MSB) is set to logic zero (0), and the 7-bit ASCII code occupies the remaining seven bits of the field. Table 6.01R-2 provides an example of how Pylon/Bays can be identified.

Table 6.01R-2 Examples of Pylon/Bay ID [01R/13/08…15]

Platform Pylon/Bay Diagram	Pylon/Bay Description	Pylon/Bay ID [01R/13/08…15]
	Forward Weapons Bay	'F' = 46 (H)
	Center (Middle) Weapons Bay	'M' = 4D (H)
	Aft (Tail) Weapons Bay	'T' = 54 (H)
	Left (Port) Weapons Bay	'P' = 50 (H)
	Right (Starboard) Weapons Bay	'S' = 53 (H)
	Left External Pylon	'L' = 4C (H)
	Centerline (Keel) External Pylon	'K' = 4B (H)
	Right External Pylon	'R' = 52 (H)
	External Pylon Left Sub-Station	'A' = 41 (H)
	External Pylon Right Sub-Station	'B' = 42 (H)
	External Pylon Center Sub-Station	'C' = 43 (H)
Looking Down From the Top	Not Applicable (Note 1)	'Space' = 20 (H)

Notes:
1. Pylon/Bay ID is set to ASCII space (20 (H)) when it is not applicable to the platform.
2. All definitions for Pylon/Bay ID are defined in the platform annex.

Platform Requirements

The platform shall **{ps_6004}** set Pylon/Bay ID [01R/13/08…15] to the code in Table 6.01R-2 associated with the platform station on which the store is loaded per the platform pylon/bay numbering definition, as approved by the UAI SJICWG.

The platform annex **{ann_6002}** documents the platform pylon/bay identification codes for Pylon/Bay ID [01R/13/08…15].

Store Requirements

The store may **{sm_6004}** determine the platform location to which the store is attached from Pylon/Bay ID [01R/13/08…15].

The store supplement **{sup_6004}** documents store utilization of Pylon/Bay ID [01R/13/08…15].

6.01R.4   UAI Configuration ID [01R/29]

6.01R.4.1 Disable CS Auto Power Control [01R/29/00]

Disable CS Auto Power Control [01R/29/00] is a platform command to a Type 2 carriage system to disable the carriage system autonomous control of mission store power. If Disable CS Auto Power Control is set, the platform explicitly controls the Operating

<u>Power</u> and <u>Conditioning Power</u> provided to the mission stores loaded on the carriage system. Section 3.8.2 Mission Store Identification/Configuration provides further information and requirements.

Carriage System Requirements

The Type 2 carriage system shall **{css_6001}** disable autonomous control of mission store power when <u>Disable CS Auto Power Control</u> [01R/29/00 = 1].

The supplement **{sup_6005}** defines if <u>Disable Auto Power Control </u> is available.

6.01R.4.2 <u>UAI Configuration ID</u> [01R/29/04…15]

<u>UAI Configuration ID</u> [01R/29/04…15] is a hexadecimal code that identifies the UAI compatibility version of the platform. <u>UAI Configuration ID</u> is set to 000 (H), if the platform is not UAI compatible.

Table 6.01R-3 UAI Configuration ID [01R/29/04…15]

Word Name	Word	UAI Compatibility	Value
UAI Configuration ID	01R/29/04…15	Not UAI	000 (H)
		UAI Baseline	A01 (H)
		UAI Reserved	All Other Codes

Platform Requirements

The platform shall **{ps_6006}** set <u>UAI Configuration ID</u> [01R/29/04…15] as defined in Table 6.01R-3.

Store Requirements

The store shall **{ss_6001}** determine the platform UAI version configuration from <u>UAI Configuration ID</u> [01R/29/04…15], IAW Table 6.01R-3.

The store shall **{ss_6002}** configure its interface for the UAI protocol to the lower of its internal UAI configuration or the <u>UAI Configuration ID</u> [01R/29/04…15].

MESSAGE NAME: Platform Description
MESSAGE ID: 01R   TRANSFER TYPE: BC-RT
SOURCE: Platform   WORD COUNT: 30
DESTINATION: Store   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 00001 (B)
Header	01	Message Descriptor
Invalidity 1	02	Validity of Message Data Words 1-16
Invalidity 2	03	Validity of Message Data Words 17-30
Country Code	04	Country Identifier Characters 1 and 2
Platform Identity (ASCII) 1	05	Platform ID Characters 1 and 2
Platform Identity (ASCII) 2	06	Platform ID Characters 3 and 4
Platform Identity (ASCII) 3	07	Platform ID Characters 5 and 6
Platform Identity (ASCII) 4	08	Platform ID Characters 7 and 8
Platform Identity (ASCII) 5	09	Platform ID Characters 9 and 10
Platform Identity (ASCII) 6	10	Platform ID Characters 11 and 12
Platform Identity (ASCII) 7	11	Platform ID Characters 13 and 14
Platform Identity (ASCII) 8	12	Platform ID Characters 15 and 16
Station No. and Pylon/Bay ID	13	Store Station ID and Pylon/Bay ID
Reserved	14	Reserved for MIL-STD-1760
Reserved	15	Reserved for MIL-STD-1760
Reserved	16	Reserved for MIL-STD-1760
Reserved	17	Reserved for MIL-STD-1760
Reserved	18	Reserved for MIL-STD-1760
Reserved	19	Reserved for MIL-STD-1760
Reserved	20	Reserved for MIL-STD-1760
Reserved	21	Reserved for MIL-STD-1760
Reserved	22	Reserved for MIL-STD-1760
Reserved	23	Reserved for MIL-STD-1760
Reserved	24	Reserved for MIL-STD-1760
Reserved	25	Reserved for MIL-STD-1760
Reserved	26	Reserved for MIL-STD-1760
Reserved	27	Reserved for MIL-STD-1760
Reserved	28	Reserved for MIL-STD-1760
UAI Configuration ID	29	Platform UAI Configuration ID Code
Checksum Word	30	Checksum of Message Data
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

1. The Platform Description message is used to transfer platform identity to the store.

2. Refer to MIL-STD-1760 Table B-XIII for additional description of this message.

WORD NAME: Header

	CATEGORY:	Header
WORD ID: 01R/01	MAX VALUE:	0421 (H)
SOURCE(s): Platform	MIN VALUE:	0421 (H)
DEST(s): Store	RESOLUTION:	1
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^15
SIGNAL TYPE: Hexadecimal	LSB:	2^0
UNITS: N/A	FULL SCALE:	FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB ---
	-01-B	Hex digit #1 value = 0 (H)
	-02-B	
	-03-B	LSB ---
Hex Digit #2	-04-B	MSB ---
	-05-B	Hex digit #2 value = 4 (H)
	-06-B	
	-07-B	LSB ---
Hex Digit #3	-08-B	MSB ---
	-09-B	Hex digit #3 value = 2 (H)
	-10-B	
	-11-B	LSB ---
Hex Digit #4	-12-B	MSB ---
	-13-B	Hex digit #4 value = 1 (H)
	-14-B	
	-15-B	LSB ---

REMARKS/NOTES:

WORD NAME: Invalidity for Words 01-16

		CATEGORY:	Validity
WORD ID:	01R/02	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Invalidity	-00-V	Set to logic 1 when Word 1 is invalid
	-01-V	Set to logic 1 when Word 2 is invalid
	-02-V	Set to logic 1 when Word 3 is invalid
	-03-V	Set to logic 1 when Word 4 is invalid
	-04-V	Set to logic 1 when Word 5 is invalid
	-05-V	Set to logic 1 when Word 6 is invalid
	-06-V	Set to logic 1 when Word 7 is invalid
	-07-V	Set to logic 1 when Word 8 is invalid
	-08-V	Set to logic 1 when Word 9 is invalid
	-09-V	Set to logic 1 when Word 10 is invalid
	-10-V	Set to logic 1 when Word 11 is invalid
	-11-V	Set to logic 1 when Word 12 is invalid
	-12-V	Set to logic 1 when Word 13 is invalid
	-13-V	Set to logic 1 when Word 14 is invalid
	-14-V	Set to logic 1 when Word 15 is invalid
	-15-V	Set to logic 1 when Word 16 is invalid

REMARKS/NOTES:

1. Invalidity bits for MIL-STD-1760 reserved words are set to the valid state (logic 0).

WORD NAME: Invalidity for Words 17-30

	CATEGORY: Validity
WORD ID: 01R/03	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Invalidity	-00-V	Set to logic 1 when Word 17 is invalid
	-01-V	Set to logic 1 when Word 18 is invalid
	-02-V	Set to logic 1 when Word 19 is invalid
	-03-V	Set to logic 1 when Word 20 is invalid
	-04-V	Set to logic 1 when Word 21 is invalid
	-05-V	Set to logic 1 when Word 22 is invalid
	-06-V	Set to logic 1 when Word 23 is invalid
	-07-V	Set to logic 1 when Word 24 is invalid
	-08-V	Set to logic 1 when Word 25 is invalid
	-09-V	Set to logic 1 when Word 26 is invalid
	-10-V	Set to logic 1 when Word 27 is invalid
	-11-V	Set to logic 1 when Word 28 is invalid
	-12-V	Set to logic 1 when Word 29 is invalid
	-13-V	Set to logic 1 when Word 30 is invalid
Reserved	-14-0	Set to logic 0. See note 1
Reserved	-15-0	Set to logic 0. See note 1

REMARKS/NOTES:

1. Bits 14 and 15 are reserved by MIL-STD-1760 for routing of messages to/from a mission store carried on a carriage store. For UAI, bits 14 and 15 are not used and are set to logic 0.

2. Invalidity bits for MIL-STD-1760 reserved words are set to the valid state (logic 0).

WORD NAME: Country Code

		CATEGORY:	Special
WORD ID:	01R/04	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	ASCII	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 1	-00-0	MSB --
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #1
	-05-A	
	-06-A	
	-07-A	LSB --
Character 2	-08-0	MSB --
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #2
	-13-A	
	-14-A	
	-15-A	LSB --

REMARKS/NOTES:

WORD NAME: Platform Identity (ASCII) 1

		CATEGORY:	Special
WORD ID:	01R/05	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	ASCII	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 1	-00-0	MSB --
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #1
	-05-A	
	-06-A	
	-07-A	LSB --
Character 2	-08-0	MSB --
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #2
	-13-A	
	-14-A	
	-15-A	LSB --

REMARKS/NOTES:

WORD NAME: Platform Identity (ASCII) 2

WORD ID:	01R/06	CATEGORY: Special
SOURCE(s):	Platform	MAX VALUE: N/A
DEST(s):	Store	MIN VALUE: N/A
COMP RATE:	Aperiodic	RESOLUTION: N/A
XMIT RATE:	Aperiodic	ACCURACY: N/A
SIGNAL TYPE:	ASCII	MSB: N/A
UNITS:	N/A	LSB: N/A
		FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 3	-00-0	MSB ---
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #3
	-05-A	
	-06-A	
	-07-A	LSB --
Character 4	-08-0	MSB ---
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #4
	-13-A	
	-14-A	
	-15-A	LSB ---

REMARKS/NOTES:

WORD NAME: Platform Identity (ASCII) 3

		CATEGORY:	Special
WORD ID:	01R/07	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	ASCII	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 5	-00-0	MSB --
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #5
	-05-A	
	-06-A	
	-07-A	LSB --
Character 6	-08-0	MSB --
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #6
	-13-A	
	-14-A	
	-15-A	LSB --

REMARKS/NOTES:

WORD NAME: Platform Identity (ASCII) 4

WORD ID:	01R/08	CATEGORY: Special
SOURCE(s):	Platform	MAX VALUE: N/A
DEST(s):	Store	MIN VALUE: N/A
COMP RATE:	Aperiodic	RESOLUTION: N/A
XMIT RATE:	Aperiodic	ACCURACY: N/A
SIGNAL TYPE:	ASCII	MSB: N/A
UNITS:	N/A	LSB: N/A
		FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 7	-00-0	MSB ---
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #7
	-05-A	
	-06-A	
	-07-A	LSB ---
Character 8	-08-0	MSB ---
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #8
	-13-A	
	-14-A	
	-15-A	LSB ---

REMARKS/NOTES:

WORD NAME: Platform Identity (ASCII) 5

		CATEGORY:	Special
WORD ID:	01R/09	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	ASCII	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 9	-00-0	MSB --
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #9
	-05-A	
	-06-A	
	-07-A	LSB --
Character 10	-08-0	MSB --
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #10
	-13-A	
	-14-A	
	-15-A	LSB --

REMARKS/NOTES:

WORD NAME: Platform Identity (ASCII) 6

	CATEGORY:	Special
WORD ID: 01R/10	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: ASCII	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 11	-00-0	MSB --
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #11
	-05-A	
	-06-A	
	-07-A	LSB --
Character 12	-08-0	MSB --
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #12
	-13-A	
	-14-A	
	-15-A	LSB --

REMARKS/NOTES:

WORD NAME: Platform Identity (ASCII) 7

	CATEGORY: Special
WORD ID: 01R/11	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: ASCII	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 13	-00-0	MSB --
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #13
	-05-A	
	-06-A	
	-07-A	LSB --
Character 14	-08-0	MSB --
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #14
	-13-A	
	-14-A	
	-15-A	LSB --

REMARKS/NOTES:

WORD NAME: Platform Identity (ASCII) 8

	CATEGORY: Special
WORD ID: 01R/12	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: ASCII	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 15	-00-0	MSB --
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #15
	-05-A	
	-06-A	
	-07-A	LSB --
Character 16	-08-0	MSB --
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #16
	-13-A	
	-14-A	
	-15-A	LSB --

REMARKS/NOTES:

WORD NAME: Station ID and Pylon/Bay ID

		CATEGORY:	Special
WORD ID:	01R/13	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Station ID	-00-N	MSB : 2^7--
	-01-N	SIGNAL TYPE: Unsigned
		UNITS: N/A
	-02-N	MAX VALUE: 255
		MIN VALUE: 0
	-03-N	RESOLUTION: 1
		ACCURACY: N/A
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0--
Pylon/Bay ID	-08-0	MSB ---
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character
	-13-A	
	-14-A	
	-15-A	LSB ---

REMARKS/NOTES:

WORD NAME: Reserved

	CATEGORY: N/A
WORD ID: 01R/14-28	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Reserved for MIL-STD-1760. Set to logic 0.
	-01-0	
	-02-0	
	-03-0	
	-04-0	
	-05-0	
	-06-0	
	-07-0	
	-08-0	
	-09-0	
	-10-0	
	-11-0	
	-12-0	
	-13-0	
	-14-0	
	-15-0	

REMARKS/NOTES:

WORD NAME: UAI Configuration ID

WORD ID:	01R/29
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	ASCII
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION	
Disable CS Auto Power Control	-00-D		1 = Disable carriage system autonomous control of mission store power.
	-01-0		Set to Logic 0.
	-02-0		Set to Logic 0.
	-03-0		Set to Logic 0.
UAI Configuration ID	-04-B	MSB	---
Hex Digit #1	-05-B		Hex digit #1 value
	-06-B		
	-07-B	LSB	---
Hex Digit #2	-08-B	MSB	---
	-09-B		Hex digit #2 value
	-10-B		
	-11-B	LSB	---
Hex Digit #3	-12-B	MSB	---
	-13-B		Hex digit #3 value
	-14-B		
	-15-B	LSB	---

REMARKS/NOTES:

WORD NAME: Checksum Word

	CATEGORY:	Number(L)
WORD ID: 01R/30	MAX VALUE:	65535
SOURCE(s): Platform	MIN VALUE:	0
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^{15}
SIGNAL TYPE: Unsigned	LSB:	2^0
UNITS: N/A	FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Checksum	-00-N	MSB : 2^{15} ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^0--

REMARKS/NOTES:

6.01T **STORE DESCRIPTION [01T]**

Store Description [01T] is used to transfer the store identity from the store to the platform. The first fifteen (15) words of Store Description [01T] are derived from the message format defined in MIL-STD-1760 Table B-XIII. Additionally, UAI utilizes nine (9) additional Store Description [01T] Reserved Words adding Station 1-8 Store ID Code [01T/16-23] and store UAI Configuration ID [01T/29]. Section 3.5.2 System Power-Up and section 3.8.2 Mission Store Identification/Configuration provide additional information about Store Description [01T] relationship to the mission store and carriage system power-up timeline(s).

Store Requirements

The store shall **{ss_6003}** initialize Store Description [01T] data words to the values specified in Table 6.01T-1.

Table 6.01T-1 Store Description [01T] Initial Values

01T	Description	Value (Hex)	01T	Description	Value (Hex)
01	Header	0421	16	Station 1 Store ID Code	Note 5
02	Country Code	5553	17	Station 2 Store ID Code	Note 5
03	Store ID Code	Note 1	18	Station 3 Store ID Code	Note 5
	Store ID (ASCII)	Note 2	19	Station 4 Store ID Code	Note 5
04	Store ID Char 1&2	Note 2	20	Station 5 Store ID Code	Note 5
05	Store ID Char 3&4	Note 2	21	Station 6 Store ID Code	Note 5
06	Store ID Char 5&6	Note 2	22	Station 7 Store ID Code	Note 5
07	Store ID Char 7&8	Note 2	23	Station 8 Store ID Code	Note 5
08	Store ID Char 9&10	Note 2	24	Reserved	0000
09	Store ID Char 11&12	Note 2	25	Reserved	0000
10	Store ID Char 13&14	Note 2	26	Reserved	0000
11	Store ID Char 15&16	Note 2	27	Reserved	0000
12	Max IBIT Time	Note 3	28	Reserved	0000
	SC ID	Note 4	29	UAI Configuration ID	Note 6
13	SC ID Char 1&2	Note 4	30	Checksum	Note 7
14	SC ID Char 3&4	Note 4			
15	SC ID Char 5&6	Note 4			

Notes:
1. Store ID Code set to the store Identification Code.
2. Store ID (ASCII) set to the store identification characters as approved by the UAI SJICWG.
3. Max IBIT Time set to the store Maximum IBIT Time.
4. SC ID set to the store Configuration Identification characters.
5. A carriage system initializes Station 1-8 Store ID Code = FFFF (H), a mission store initializes Station 1-8 Store ID Code = 0000 (H).
6a. Stores that do not support UAI initialize UAI Configuration ID = 000 (H).
6b. Stores that support only a UAI interface initialize UAI Configuration ID to a UAI version implemented by the store.
6c. Stores supporting legacy and UAI interfaces initialize UAI Configuration ID = 000

(H).

7. Checksum computed IAW MIL-STD-1760.

6.01T.1 Country Code [01T/02]

The Country Code [01T/02] (see MIL-STD-1760, Table B-XIV) identifies the country of ownership for a particular store, and is a character code set defined in ANSI X3.4 American Standard for Information Interchange (ASCII) where only upper case alphabetic characters are used. In standard 7-bit ASCII the first bit of each 8-bit character field (MSB) is set to logic zero (0), and the 7-bit ASCII code occupies the remaining seven bits of the field and this convention is used for all ASCII characters.

The store country code remains invariant through the life of the store. The store sets the Country Code to the appropriate country code specified in ISO 3166.

Platform Requirements

The platform shall **{ps_6628}** use Country Code [01T/02] to distinguish between stores with the same Store ID Code [01T/03] and Store ID (ASCII) [01T/04-11].

Store Requirements

The store shall **{ss_6004}** set the Country Code [01T/02] to the appropriate country code as specified in ISO 3166.

6.01T.2 Store ID Code [01T/03]

Store identification is the process by which the platform determines the identity and configuration of the store. According to MIL-STD-1760 Table B-XV and Table B-XXVI, Line 27, Store ID Code [01T/03] contains two MIL-STD-1760 store identification elements: Store Type [01T/03/00…10] and Store Variant [01T/03/11…15].

6.01T.2.1 Store Type [01T/03/00…10]

Store Type [01T/03/00…10] is a binary code assigned by the UAI SJICWG. When this entity is not used, Store Type [01T/03/00…10] is set to 0.

Platform Requirements

The platform may **{pm_6002}** use Store Type [01T/03/00…10] to determine store type.

Store Requirements

The store shall **{ss_6005}** set Store Type [01T/03/00…10] to the binary code value assigned by the UAI SJICWG, or 0 if a binary code value has not been assigned to the store.

The store supplement **{sup_6006}** documents Store Type [01T/03/00…10] values.

6.01T.2.2 <u>Store Variant</u> [01T/03/11…15]

<u>Store Variant</u> [01T/03/11…15] is a binary code assigned by the UAI SJICWG. When this entity is not used, <u>Store Variant</u> [01T/03/11…15] is set to 0.

Platform Requirements

The platform may **{pm_6003}** use <u>Store Variant</u> [01T/03/11…15] to determine the store variant.

Store Requirements

The store shall **{ss_6006}** set <u>Store Variant</u> [01T/03/11…15] to the binary code value assigned by the UAI SJICWG, or 0 if a binary code value has not been assigned to the store.

The store supplement **{sup_6007}** documents <u>Store Variant</u> [01T/03/11…15] values.

6.01T.3 <u>Store ID (ASCII)</u> [01T/04-11]

Store identification is the process by which the platform determines the identity and configuration of the store, IAW MIL-STD-1760 Table B-XIII. The store Identification Characters, <u>Store ID (ASCII)</u> [01T/04-11], are a character code set of sixteen (16) characters defined in ANSI X3.4 American Standard for Information Interchange (ASCII) where only upper case alphabetic characters are used. In standard 7-bit ASCII the first bit of each 8-bit character field (MSB) is set to logic zero (0), and the 7-bit ASCII code occupies the remaining seven bits of the field and this convention is used for all ASCII characters. The <u>Store ID (ASCII)</u> characters are left justified, with the unused right-most characters filled in with spaces (20 Hexadecimal). The sixteen (16) <u>Store ID (ASCII)</u> characters can be used to define the store configuration for a carriage system, all up round, training variant, and/or flight test variant of the store. Examples of <u>Store ID (ASCII)</u> are provided in Table 6.01T-2.

Table 6.01T-2 <u>Store ID (ASCII)</u> [01T/04-11] Examples

ID Char Word.	1		2		3		4		5		6		7		8	
Character No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
AIM-120D (AMRAAM AUR)	A	I	M	-	1	2	0	D								
AIM-9X (Captive Air Training Missile)	C	A	T	M	-	9	X									
AGM-65C (AUR Missile)	A	G	M	-	6	5	C									
TGM-65C (Training Missile)	T	G	M	-	6	5	C									
BRU-57/A (Smart Bomb Rack)	B	R	U	-	5	7	/	A								
BRU-61/A (Smart Bomb Rack)	B	R	U	-	6	1	/	A								
GBU-31(V)3B (JDAM)	G	B	U	-	3	1	(	V	)	3	B					

Table 6.01T-2 Store ID (ASCII) [01T/04-11] Examples

ID Char Word.	1		2		3		4		5		6		7		8	
Character No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
GBU-38/B (JDAM)	G	B	U	-	3	8	/	B								
AN/ALQ-137A(V)10 (Captive Carriage Pod)	A	N	/	A	L	Q	-	1	3	7	A	(	V	)	1	0

Notes:

1. Empty cells in this table represent an ASCII space (20 (H).

Platform Requirements

The platform shall **{ps_6007}** use the Store ID (ASCII) [01T/04-11] to determine the store identity and configuration.

Store Requirements

The store shall **{ss_6007}** set the Store ID (ASCII) [01T/04-11] to identify the store and configuration, as approved by the UAI SJICWG.

The store supplement **{sup_6008}** documents Store ID (ASCII) [01T/04-11] values.

6.01T.4 Max IBIT Time [01T/12]

MIL-STD-1760, paragraph B.4.2.2.3 and Table B-XIII, requires the store to report in Max IBIT Time [01T/12] the maximum time duration the store could be non-operational while conducting an externally Initiated Built-In-Test (IBIT). Activate Initiated BIT [11R/04/06 = 1] is used to command IBIT. If the store does not utilize an externally initiated BIT, then Max IBIT Time is set to 0000 (H). See MIL-STD-1760 Table B-XXVI, Line 30 for additional information. If CDS Max IBIT Time **{cds_3008}** is not defined (or is defined as a longer time interval), the platform is required to allow a minimum of the time reported in Max IBIT Time [01T/12] for the store to complete an IBIT.

Platform Requirements

The platform may **{pm_6004}** use the time reported in Max IBIT Time [01T/12] as the maximum time the store requires to complete an externally initiated BIT, if the store CDS Max IBIT Time **{cds_3008}** is not defined (or is defined as a longer time interval).

Store Requirements

The store shall **{ss_6008}** report the maximum duration of the externally initiated BIT in Max IBIT Time [01T/12], or set Max IBIT Time [01T/12 = 0000 (H)] if the store does not perform an IBIT.

The store supplement **{sup_6009}** documents Max IBIT Time [01T/12] values.

6.01T.5 SC ID [01T/13-15]

Specific configuration information about a store, such as the store software version, is reported to the platform via the Store Configuration Identification SC ID [01T/13-15]. According to MIL-STD-1760 Table B-XIII and Table B-XL, Line 29, SC ID a character code set of six (6) characters defined in ANSI X3.4 American Standard for Information Interchange (ASCII) where only upper case alphabetic characters are used. The SC ID characters are left justified, with the unused right-most characters filled in with spaces (20 (H)). If not used by the store, SC ID words are set to 0000 (H).

Platform Requirements

The platform may **{pm_6005}** determine the store specific configuration information, such as the software version installed, from the SC ID [01T/13-15].

Store Requirements

The store shall **{ss_6009}** provide the store configuration ID in SC ID [01T/13-15].

The store supplement **{sup_6010}** documents the SC ID [01T/13-15] definition.

The store supplement **{sup_6011}** documents SC ID [01T/13-15] values.

6.01T.6 Station 1-8 Store ID Code [01T/16-23]

Station 1-8 Store ID Code [01T/16-23] provides the capability for a carriage system to identify the store type(s) for up to eight (8) loaded stores to the platform. Station 1-8 Store ID Code [01T/16-23] contains two MIL-STD-1760 store identification elements: Store Type [01T/16-23/00…10] and Store Variant [01T/16-23/11…15]. On a carriage system, each station number maps to a specific carriage system station location. A Type 1 carriage system indicates that the station is empty or a mission store is present. A Type 2 carriage system transfers the store reported Store ID Code [01T/03] into the applicable Station 1-8 Store ID Code [01T/16-23], IAW Table 6.01T-3. When the carriage system supports less than eight (8) store stations, then the unused Station 1-8 Store ID Code [01T/16-23 = FFFF (H)].

Table 6.01T-3 Station 1-8 Store ID Code [01T/16-23] Values

Carriage Store Station Status	Store Reported Store ID Code [01T/03]	Carriage System Reported Station 1-8 Store ID Code [01T/16-23]
Station Does Not Exist/Inventory Not Complete	N/A	FFFF (H)
Station is Empty	N/A	FFE0 (H)
Store Present - No Store ID Code	N/A	001F (H)
Store reporting a Store ID Code = 0000 (H)	0000 (H)	0000 (H)
Store reporting a Store ID Code ≠ 0000 (H)	#### (H)	#### (H)

Notes:
1. Store Present - No Store ID Code means either: a carriage system has not performed a store inventory, a "dumb store" is present, a "smart store is present that is not providing a Store ID Code [01T/03], or a store is present on a Type 1 carriage system.
2. A store that is not a carriage system sets Station 1-8 Store ID Code [01T/16-23 = 0000 (H)]
3. A Carriage System Store ID Code [01T/03] is always is set to the carriage system binary code.

Platform Requirements

The platform may **{pm_6006}** determine the identity of the stores loaded on the carriage system from Station 1-8 Store ID Code [01T/16-23], IAW Table 6.01T-3.

Carriage System Requirements

A Type 1 carriage system shall **{css_6002}** set Station 1-8 Store ID Code [01T/16-23] for each carriage system station, using the codes listed in the first three rows of Table 6.01T-3, as approved by the UAI SJICWG.

A Type 2 carriage system shall **{css_6003}** set Station 1-8 Store ID Code [01T/16-23] for each carriage system station, IAW Table 6.01T-3, as approved by the UAI SJICWG.

The supplement **{sup_6012}** documents station number mapping to specific carriage system station locations.

Mission Store Requirements

The mission store shall **{ss_6010}** set Station 1-8 Store ID Code [01T/16-23 = 0000 (H)].

6.01T.7 UAI Configuration ID [01T/29/04…15]

UAI Configuration ID [01T/29/04…15] is a hexadecimal code that identifies the UAI version implemented in the store or a lower version if necessary for compatibility with the platform. UAI Configuration ID is set to 000 (H), if the platform is not UAI compatible.

Table 6.01T-4 UAI Configuration ID [01T/29/04…15]

Word Name	Word	UAI Compatibility	Value
UAI Configuration ID	01T/29/04…15	Not UAI	000 (H)
		UAI Baseline	A01 (H)
		UAI Reserved	All Other Codes

Platform Requirements

The platform shall **{ps_6008}** determine the final store UAI configuration from the store UAI Configuration ID [01T/29/04…15], IAW Table 6.01T-4, following Platform ID Received [22T/05/02 = 1] if communicating with a mission store, or Platform ID Received [10T/02/11 = 1] if communicating with a Type 1 carriage system or CS UAI Config ID Complete [10T/03/10 = 1] if communicating with a Type 2 carriage system.

Store Requirements

The store shall **{ss_6011}** set UAI Configuration ID [01T/29/04…15] IAW Table 6.01T-4 if it is a UAI capable store, as approved by the UAI SJICWG after receipt and processing of Platform Description[01R] as follows:

    a. Equal to the platform UAI Configuration ID [01R/29/04…15] if the UAI configuration implemented in the store is greater than the platform UAI Configuration ID [01R/29/04…15], or

b. Equal to the UAI configuration implemented in the store if the UAI configuration implemented in the store is less than or equal to the platform <u>UAI Configuration ID</u> [01R/29/04…15].

The store supplement **{sup_6013}** documents the store UAI Configuration.

MESSAGE NAME: Store Description
MESSAGE ID: 01T   TRANSFER TYPE: RT-BC
SOURCE: Store   WORD COUNT: 30
DESTINATION: Platform   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 00001 (B)
Status Word	SW	MIL-STD-1553 Status Word
Header	01	Message Descriptor
Country Code	02	Country Identifier Characters 1 & 2
Store ID Code	03	Store Identification Code (Binary)
Store ID (ASCII)		Store Identification in an ASCII string
ID Char 1/2	04	Store ID Characters 1 & 2
ID Char 3/4	05	Store ID Characters 3 & 4
ID Char 5/6	06	Store ID Characters 5 & 6
ID Char 7/8	07	Store ID Characters 7 & 8
ID Char 9/10	08	Store ID Characters 9 & 10
ID Char 11/12	09	Store ID Characters 11 & 12
ID Char 13/14	10	Store ID Characters 13 & 14
ID Char 15/16	11	Store ID Characters 15 & 16
Max IBIT Time	12	Maximum time for Store to complete IBIT
SC ID		Store Configuration ID in an ASCII string
SC ID Char 1/2	13	Store Configuration Identifier Characters 1 & 2
SC ID Char 3/4	14	Store Configuration Identifier Characters 3 & 4
SC ID Char 5/6	15	Store Configuration Identifier Characters 5 & 6
Station 1 Store ID Code	16	Carriage System Station 1 - Store ID Code
Station 2 Store ID Code	17	Carriage System Station 2 - Store ID Code
Station 3 Store ID Code	18	Carriage System Station 3 - Store ID Code
Station 4 Store ID Code	19	Carriage System Station 4 - Store ID Code
Station 5 Store ID Code	20	Carriage System Station 5 - Store ID Code
Station 6 Store ID Code	21	Carriage System Station 6 - Store ID Code
Station 7 Store ID Code	22	Carriage System Station 7 - Store ID Code
Station 8 Store ID Code	23	Carriage System Station 8 - Store ID Code
Reserved	24	Reserved for MIL-STD-1760
Reserved	25	Reserved for MIL-STD-1760
Reserved	26	Reserved for MIL-STD-1760
Reserved	27	Reserved for MIL-STD-1760
Reserved	28	Reserved for MIL-STD-1760
UAI Configuration ID	29	Store UAI Configuration ID Code
Checksum Word	30	Checksum of Message Data

REMARKS/NOTES:

1. The store description message is used to transfer store identity from the store to the platform.

2. Refer to MIL-STD-1760 Table B-XIII for additional description of this message.

WORD NAME: Header

		CATEGORY:	Header
WORD ID:	01T/01	MAX VALUE:	0421 (H)
SOURCE(s):	Store	MIN VALUE:	0421 (H)
DEST(s):	Platform	RESOLUTION:	1
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^15
SIGNAL TYPE:	Hexadecimal	LSB:	2^0
UNITS:	N/A	FULL SCALE:	FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB ---
	-01-B	Hex digit #1 value = 0 (H)
	-02-B	
	-03-B	LSB ---
Hex Digit #2	-04-B	MSB ---
	-05-B	Hex digit #2 value = 4 (H)
	-06-B	
	-07-B	LSB ---
Hex Digit #3	-08-B	MSB ---
	-09-B	Hex digit #3 value = 2 (H)
	-10-B	
	-11-B	LSB ---
Hex Digit #4	-12-B	MSB ---
	-13-B	Hex digit #4 value = 1 (H)
	-14-B	
	-15-B	LSB ---

REMARKS/NOTES:

WORD NAME: Country Code

		CATEGORY:	Special
WORD ID:	01T/02	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	ASCII	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 1	-00-0	MSB --
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #1
	-05-A	
	-06-A	
	-07-A	LSB --
Character 2	-08-0	MSB --
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #2
	-13-A	
	-14-A	
	-15-A	LSB --

REMARKS/NOTES:

WORD NAME: Store ID Code

	CATEGORY: Special
WORD ID: 01T/03	MAX VALUE: N/A
SOURCE(s): Store	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Store Type	-00-N	MSB : 2^{10} ---
	-01-N	
	-02-N	
	-03-N	SIGNAL TYPE: Unsigned UNITS: N/A MAX VALUE: 2047
	-04-N	MIN VALUE: 0 RESOLUTION: 1
	-05-N	ACCURACY: N/A
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	LSB : 2^0 ---
Store Variant	-11-N	MSB : 2^4 ---
	-12-N	SIGNAL TYPE: Unsigned, UNITS: N/A
	-13-N	MAX VALUE: 31, MIN VALUE:0
	-14-N	RESOLUTION: 1, ACCURACY: N/A
	-15-N	LSB : 2^0 ---

REMARKS/NOTES:

WORD NAME: ID Char 1/2

CATEGORY:	Special

WORD ID:	01T/04		MAX VALUE:	N/A
SOURCE(s):	Store		MIN VALUE:	N/A
DEST(s):	Platform		RESOLUTION:	N/A
COMP RATE:	Aperiodic		ACCURACY:	N/A
XMIT RATE:	Aperiodic		MSB:	N/A
SIGNAL TYPE:	ASCII		LSB:	N/A
UNITS:	N/A		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 1	-00-0	MSB --
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #1
	-05-A	
	-06-A	
	-07-A	LSB --
Character 2	-08-0	MSB --
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #2
	-13-A	
	-14-A	
	-15-A	LSB --

REMARKS/NOTES:

WORD NAME: ID Char 3/4

	CATEGORY:	Special
WORD ID: 01T/05	MAX VALUE:	N/A
SOURCE(s): Store	MIN VALUE:	N/A
DEST(s): Platform	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: ASCII	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 3	-00-0	MSB --
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #3
	-05-A	
	-06-A	
	-07-A	LSB --
Character 4	-08-0	MSB --
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #4
	-13-A	
	-14-A	
	-15-A	LSB --

REMARKS/NOTES:

WORD NAME: ID Char 5/6

		CATEGORY:	Special
WORD ID:	01T/06	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	ASCII	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 5	-00-0	MSB --
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #5
	-05-A	
	-06-A	
	-07-A	LSB --
Character 6	-08-0	MSB --
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #6
	-13-A	
	-14-A	
	-15-A	LSB --

REMARKS/NOTES:

WORD NAME: ID Char 7/8

CATEGORY:	Special

WORD ID: 01T/07
SOURCE(s):   Store
DEST(s):   Platform
COMP RATE: Aperiodic
XMIT RATE: Aperiodic
SIGNAL TYPE: ASCII
UNITS: N/A

MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 7	-00-0	MSB --
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #7
	-05-A	
	-06-A	
	-07-A	LSB --
Character 8	-08-0	MSB --
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #8
	-13-A	
	-14-A	
	-15-A	LSB --

REMARKS/NOTES:

WORD NAME: ID Char 9/10

	CATEGORY:	Special
WORD ID: 01T/08	MAX VALUE:	N/A
SOURCE(s): Store	MIN VALUE:	N/A
DEST(s): Platform	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: ASCII	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 9	-00-0	MSB ---
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #9
	-05-A	
	-06-A	
	-07-A	LSB ---
Character 10	-08-0	MSB ---
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #10
	-13-A	
	-14-A	
	-15-A	LSB ---

REMARKS/NOTES:

WORD NAME: ID Char 11/12

		CATEGORY:	Special
WORD ID:	01T/09	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	ASCII	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 11	-00-0	MSB --
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #11
	-05-A	
	-06-A	
	-07-A	LSB --
Character 12	-08-0	MSB --
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #12
	-13-A	
	-14-A	
	-15-A	LSB --

REMARKS/NOTES:

WORD NAME: ID Char 13/14

	CATEGORY: Special
WORD ID: 01T/10	MAX VALUE: N/A
SOURCE(s): Store	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: ASCII	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 13	-00-0	MSB --
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #13
	-05-A	
	-06-A	
	-07-A	LSB --
Character 14	-08-0	MSB --
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #14
	-13-A	
	-14-A	
	-15-A	LSB --

REMARKS/NOTES:

WORD NAME: ID Char 15/16

WORD ID:	01T/11
SOURCE(s):	Store
DEST(s):	Platform
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	ASCII
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 15	-00-0	MSB --
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #15
	-05-A	
	-06-A	
	-07-A	LSB --
Character 16	-08-0	MSB --
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #16
	-13-A	
	-14-A	
	-15-A	LSB --

REMARKS/NOTES:

WORD NAME: Max IBIT Time

		CATEGORY:	Time (F)
WORD ID:	01T/12	MAX VALUE:	2.3589E^21.
SOURCE(s):	Store	MIN VALUE:	0.0000E+00
DEST(s):	Platform	RESOLUTION:	1.0000E+00
COMP RATE:	Aperiodic	ACCURACY:	1.0000E+00
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	Scientific	LSB:	N/A
UNITS:	Microseconds	FULL SCALE:	2.3589E^21

FIELD NAME	BIT NO.	DESCRIPTION
Unit	-00-S	Sign
	-01-N	MSB : 2^{10} ---
	-02-N	
	-03-N	
	-04-N	SIGNAL TYPE: 2's Complement UNITS: N/A MAX VALUE: 2047
	-05-N	MIN VALUE: 0 RESOLUTION: 1
	-06-N	ACCURACY: 1 FULL SCALE: 2047
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	LSB : 2^0---
Exponent	-12-E	MSB : 2^3---
	-13-E	
	-14-E	Binary Integer
	-15-E	LSB : 2^0---

REMARKS/NOTES:

1. The value represented by this format is given by: (Unit) x $16^{(exponent)}$.

WORD NAME: SC ID Char 1/2

	CATEGORY: Special
WORD ID: 01T/13	MAX VALUE: N/A
SOURCE(s): Store	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: ASCII	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 1	-00-0	MSB --
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #1
	-05-A	
	-06-A	
	-07-A	LSB --
Character 2	-08-0	MSB --
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #2
	-13-A	
	-14-A	
	-15-A	LSB --

REMARKS/NOTES:

WORD NAME: SC ID Char 3/4

		CATEGORY:	Special
WORD ID:	01T/14	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	ASCII	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 3	-00-0	MSB --
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #3
	-05-A	
	-06-A	
	-07-A	LSB --
Character 4	-08-0	MSB --
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #4
	-13-A	
	-14-A	
	-15-A	LSB --

REMARKS/NOTES:

WORD NAME: SC ID Char 5/6

	CATEGORY: Special
WORD ID: 01T/15	MAX VALUE: N/A
SOURCE(s): Store	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: ASCII	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Character 5	-00-0	MSB ---
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #5
	-05-A	
	-06-A	
	-07-A	LSB --
Character 6	-08-0	MSB ---
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #6
	-13-A	
	-14-A	
	-15-A	LSB --

REMARKS/NOTES:

FOR OFFICIAL USE ONLY

WORD NAME: Station 1 Store ID Code

		CATEGORY:	Special
WORD ID:	01T/16	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Store Type	-00-N	MSB : 2^{10} ---
	-01-N	
	-02-N	
	-03-N	SIGNAL TYPE: Unsigned UNITS: N/A MAX VALUE: 2047
	-04-N	MIN VALUE: 0 RESOLUTION: 1
	-05-N	ACCURACY: N/A
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	LSB : 2^0 ---
Store Variant	-11-N	MSB : 2^4 ---
	-12-N	SIGNAL TYPE: Unsigned, UNITS: N/A
	-13-N	MAX VALUE: 31, MIN VALUE:0
	-14-N	RESOLUTION: 1, ACCURACY: N/A
	-15-N	LSB : 2^0 ---

REMARKS/NOTES:

WORD NAME: Station 2 Store ID Code

WORD ID:	01T/17	CATEGORY: Special
SOURCE(s):	Store	MAX VALUE: N/A
DEST(s):	Platform	MIN VALUE: N/A
COMP RATE:	Aperiodic	RESOLUTION: N/A
XMIT RATE:	Aperiodic	ACCURACY: N/A
SIGNAL TYPE:	N/A	MSB: N/A
UNITS:	N/A	LSB: N/A
		FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Store Type	-00-N	MSB : 2^{10} ---
	-01-N	
	-02-N	
	-03-N	SIGNAL TYPE: Unsigned UNITS: N/A MAX VALUE: 2047
	-04-N	MIN VALUE: 0 RESOLUTION: 1
	-05-N	ACCURACY: N/A
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	LSB : 2^0 ---
Store Variant	-11-N	MSB : 2^4 ---
	-12-N	SIGNAL TYPE: Unsigned, UNITS: N/A
	-13-N	MAX VALUE: 31, MIN VALUE:0
	-14-N	RESOLUTION: 1, ACCURACY: N/A
	-15-N	LSB : 2^0 ---

REMARKS/NOTES:

WORD NAME: Station 3 Store ID Code

		CATEGORY:	Special
WORD ID:	01T/18	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Store Type	-00-N	MSB : 2^{10} ---
	-01-N	
	-02-N	
	-03-N	SIGNAL TYPE: Unsigned UNITS: N/A MAX VALUE: 2047
	-04-N	MIN VALUE: 0 RESOLUTION: 1
	-05-N	ACCURACY: N/A
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	LSB : 2^0 --
Store Variant	-11-N	MSB : 2^4 --
	-12-N	SIGNAL TYPE: Unsigned, UNITS: N/A
	-13-N	MAX VALUE: 31, MIN VALUE:0
	-14-N	RESOLUTION: 1, ACCURACY: N/A
	-15-N	LSB : 2^0 --

REMARKS/NOTES:

WORD NAME: Station 4 Store ID Code

	CATEGORY:	Special
WORD ID: 01T/19	MAX VALUE:	N/A
SOURCE(s): Store	MIN VALUE:	N/A
DEST(s): Platform	RESOLUTION	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Store Type	-00-N	MSB : 2^{10} ---
	-01-N	
	-02-N	
	-03-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-04-N	MAX VALUE: 2047 MIN VALUE: 0
	-05-N	RESOLUTION: 1 ACCURACY: N/A
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	LSB : 2^0 ---
Store Variant	-11-N	MSB : 2^4 ---
	-12-N	SIGNAL TYPE: Unsigned, UNITS: N/A
	-13-N	MAX VALUE: 31, MIN VALUE:0
	-14-N	RESOLUTION: 1, ACCURACY: N/A
	-15-N	LSB : 2^0 ---

REMARKS/NOTES:

WORD NAME: Station 5 Store ID Code

	CATEGORY: Special
WORD ID: 01T/20	MAX VALUE: N/A
SOURCE(s): Store	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Store Type	-00-N	MSB : 2^{10} ---
	-01-N	
	-02-N	
	-03-N	SIGNAL TYPE: Unsigned
		UNITS: N/A
		MAX VALUE: 2047
	-04-N	MIN VALUE: 0
		RESOLUTION: 1
	-05-N	ACCURACY: N/A
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	LSB : 2^0 --
Store Variant	-11-N	MSB : 2^4 --
	-12-N	SIGNAL TYPE: Unsigned, UNITS: N/A
	-13-N	MAX VALUE: 31, MIN VALUE:0
	-14-N	RESOLUTION: 1, ACCURACY: N/A
	-15-N	LSB : 2^0 --

REMARKS/NOTES:

WORD NAME: Station 6 Store ID Code

WORD ID: 01T/21	CATEGORY: Special
SOURCE(s): Store	MAX VALUE: N/A
DEST(s): Platform	MIN VALUE: N/A
COMP RATE: Aperiodic	RESOLUTION: N/A
XMIT RATE: Aperiodic	ACCURACY: N/A
SIGNAL TYPE: N/A	MSB: N/A
UNITS: N/A	LSB: N/A
	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Store Type	-00-N	MSB : 2^{10} ---
	-01-N	
	-02-N	
	-03-N	SIGNAL TYPE: Unsigned UNITS: N/A MAX VALUE: 2047
	-04-N	MIN VALUE: 0 RESOLUTION: 1
	-05-N	ACCURACY: N/A
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	LSB : 2^0 ---
Store Variant	-11-N	MSB : 2^4 ---
	-12-N	SIGNAL TYPE: Unsigned, UNITS: N/A
	-13-N	MAX VALUE: 31, MIN VALUE:0
	-14-N	RESOLUTION: 1, ACCURACY: N/A
	-15-N	LSB : 2^0 ---

REMARKS/NOTES:

WORD NAME: Station 7 Store ID Code

	CATEGORY: Special
WORD ID: 01T/22	MAX VALUE: N/A
SOURCE(s): Store	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Store Type	-00-N	MSB : 2^{10} ---
	-01-N	
	-02-N	
	-03-N	SIGNAL TYPE: Unsigned UNITS: N/A MAX VALUE: 2047
	-04-N	MIN VALUE: 0 RESOLUTION: 1
	-05-N	ACCURACY: N/A
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	LSB : 2^0 ---
Store Variant	-11-N	MSB : 2^4 ---
	-12-N	SIGNAL TYPE: Unsigned, UNITS: N/A
	-13-N	MAX VALUE: 31, MIN VALUE:0
	-14-N	RESOLUTION: 1, ACCURACY: N/A
	-15-N	LSB : 2^0 ---

REMARKS/NOTES:

WORD NAME: Station 8 Store ID Code

		CATEGORY:	Special
WORD ID:	01T/23	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Store Type	-00-N	MSB : 2^{10} ---
	-01-N	
	-02-N	
	-03-N	SIGNAL TYPE: Unsigned UNITS: N/A MAX VALUE: 2047
	-04-N	MIN VALUE: 0 RESOLUTION: 1
	-05-N	ACCURACY: N/A
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	LSB : 2^0 ---
Store Variant	-11-N	MSB : 2^4 ---
	-12-N	SIGNAL TYPE: Unsigned, UNITS: N/A
	-13-N	MAX VALUE: 31, MIN VALUE:0
	-14-N	RESOLUTION: 1, ACCURACY: N/A
	-15-N	LSB : 2^0 ---

REMARKS/NOTES:

WORD NAME: Reserved

CATEGORY:	N/A

WORD ID:	01T/24-28	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Reserved for MIL-STD-1760. Set to logic 0.
	-01-0	
	-02-0	
	-03-0	
	-04-0	
	-05-0	
	-06-0	
	-07-0	
	-08-0	
	-09-0	
	-10-0	
	-11-0	
	-12-0	
	-13-0	
	-14-0	
	-15-0	

REMARKS/NOTES:

WORD NAME: UAI Configuration ID

	CATEGORY:	Special
WORD ID: 01T/29	MAX VALUE:	N/A
SOURCE(s): Store	MIN VALUE:	N/A
DEST(s): Platform	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: ASCII	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION	
Reserved	-00-0		Set to Logic 0.
Reserved	-01-0		Set to Logic 0.
Reserved	-02-0		Set to Logic 0.
Reserved	-03-0		Set to Logic 0.
Hex Digit #1	-04-B	MSB	---
	-05-B		Hex digit #1 value
	-06-B		
	-07-B	LSB	---
Hex Digit #2	-08-B	MSB	---
	-09-B		Hex digit #2 value
	-10-B		
	-11-B	LSB	---
Hex Digit #3	-12-B	MSB	---
	-13-B		Hex digit #3 value
	-14-B		
	-15-B	LSB	---

REMARKS/NOTES:

WORD NAME: Checksum Word

	CATEGORY: Number(L)
WORD ID: 01T/30	MAX VALUE: 65535
SOURCE(s): Store	MIN VALUE: 0
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^15
SIGNAL TYPE: Unsigned	LSB: 2^0
UNITS: N/A	FULL SCALE: 65535

FIELD NAME	BIT NO.	DESCRIPTION
Checksum	-00-N	MSB : 2^15 ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^0---

REMARKS/NOTES:

6.02R PERIODIC TRANSFER ALIGNMENT MESSAGE (PTAM) [02R]

The Periodic Transfer Alignment Message (PTAM) [02R] is used to send transfer alignment data from the platform to the mission store. The store uses this data to align its internal INS. The platform provides the mission store with the most accurate transfer alignment data possible. Section 3.2.2 defines the reference frames and their interrelationships.

Table 6.02R-1 PTAM Parameter Reference Frame Definitions

PTAM Data Element	Msg [02R] Word #	Reference
Velocity X	6, 7	Wander Azimuth
Velocity Y	8, 9	Wander Azimuth
Velocity Z	10, 11	Wander Azimuth
Integral Velocity X	12, 13	Wander Azimuth
Integral Velocity Y	14, 15	Wander Azimuth
Integral Velocity Z	16, 17	Wander Azimuth
Latitude	18, 19	ECEF (WGS-84)
Longitude	20, 21	ECEF (WGS-84)
Altitude	22, 23	ECEF (WGS-84)
Wander Angle	24, 25	Wander Azimuth
True Heading	26	Body w.r.t. NED[1]
Pitch	27	Body w.r.t. NED[1]
Roll	28	Body w.r.t. NED[1]

Notes:
1. w.r.t. = "with respect to."

Platform Requirements

The platform shall **{ps_6009}** use the reference frames as defined in Table 6.02R-1 for the data elements in the PTAM [02R].

The platform shall **{ps_6010}** provide periodic PTAM [02R] data to the store.

The platform annex **{ann_6003}** documents the following with respect to PTAM [02R] accuracies:

   a. Expected PTAM [02R] accuracies as a function of the platform navigation operating modes and platform flight conditions.

   b. Methods used to identify to the aircrew that PTAM [02R] accuracy is degraded and store performance may be degraded, including operator advisory cues, Tech Order requirements, etc.

Mission Store Requirements

The mission store shall **{ss_6013}** process PTAM [02R] data to align the store inertial navigation system after the conditions for PTAM processing have been met.

The mission store supplement **{sup_6014}** documents the following:

Conditions that must be met before PTAM [02R] data is processed.

The minimum PTAM [02R] accuracy that must be satisfied for the store to provide full specification performance.

The impact on the store performance if PTAM [02R] data provided by the platform is less than the accuracy required for the store to provide full specification performance.

Table 6.02R-2 Transfer Alignment Data Accuracies

Data Type	Threshold Accuracy	Objective Accuracy
Horizontal Position (Lat./Long.)	10 Meters CEP	6.7 Meters CEP
Vertical Position (Altitude)	15.3 Meters LEP	13.4 Meters LEP
Horizontal Velocity (Vel. X, Vel. Y)	0.2 Meters/second Note 1	0.1 Meters/second[1]
Vertical Velocity (Vel. Z)	0.7 Meters/second Note 1	0.1 Meters/second[1]
Integral Velocity X, Y, Z	Note 2	Note [2]
True Heading	0.5 Degrees	0.5 Degrees
Pitch and Roll	0.5 Degrees	0.5 Degrees

Notes
1. RMS accuracy from Min TXA Received to release.
2. Integral Velocity (X, Y, or Z) accuracy (in meters) = TA period (in seconds) times Velocity (X, Y, or Z) accuracy.

6.02R.1 INS Mode [02R/03]

6.02R.1.1 INS Reset [02R/03/00]

INS Reset [02R/03/00] is set to logic 1 in the PTAM [02R] transmission subsequent to transmission of an RTAM [05R] to indicate that the navigation solution contained in the PTAM has all the RTAM corrections incorporated. INS Reset [02R/03/00 = 0] indicates that no RTAM corrections have been incorporated into the navigation solution contained in the PTAM, that is, there is no RTAM associated with the PTAM.

Platform Requirements

The platform shall **{ps_6011}** set INS Reset [02R/03/00 = 1] to indicate that corrections have been incorporated in the platform navigation system during the current TA Period [22R/09].

Mission Store Requirements

The mission store may **{sm_6005}** monitor INS Reset [02R/03/00 = 1] to detect that corrections have been incorporated in the platform navigation system during the current TA Period [22R/09].

6.02R.1.2 MA in Transition [02R/03/02]

MA in Transition [02R/03/02] is used to advise the store that the data in Moment Arm [09R] is changing beyond specified accuracy limits due to platform actions such as launcher rotation or trapeze movement. Note: An INS switch does not cause MA in Transition [02R/03/02] to be set. Following a platform INS switch, a new Moment Arm [09R] is sent, prior to the next valid PTAM [02R].

Note: Use of PTAM [02R] data by the store during translations and rotations must be performed carefully and selectively to avoid introducing errors into the store transfer alignment process.

Platform Requirements

The platform shall **{ps_6012}** set MA in Transition [02R/03/02 = 1] if moment arm data changes beyond accuracy limits due to platform actions such as launcher rotation or trapeze movement.

The platform shall **{ps_6013}** set MA in Transition [02R/03/02 = 0] once the platform determines that the transition event is complete.

Mission Store Requirements

The mission store shall **{ss_6014}** monitor MA in Transition [02R/03/02 = 1] to detect a dynamic moment arm condition.

6.02R.1.3 PTAM Altitude Reference [02R/03/04]

PTAM Altitude Reference [02R/03/04] specifies the altitude reference used for Altitude [02R/22-23]. Use of MSL is provided to accommodate legacy platform navigation systems. The preferred altitude reference for legacy platforms is HAE to reduce transfer of alignment errors. Future platforms are expected to provide PTAM data referenced to HAE to improve mission store performance. See 3.2.2.5 for a discussion of different altitude references.

Platform Requirements

The platform shall **{ps_6512}** set PTAM Altitude Reference [02R/03/04 = 1] to indicate the altitude reference is WGS-84 HAE.

The platform shall **{ps_6513}** set PTAM Altitude Reference [02R/03/04 = 0] to indicate the altitude reference is WGS-84 MSL.

Mission Store Requirements

The mission store shall **{ss_6598}** use PTAM Altitude Reference [02R/03/04] to determine the altitude reference for Altitude [02R/22-23].

6.02R.1.4 Integrals Restart [02R/03/12]

Integrals Restart [02R/03/12] indicates the platform is restarting the velocity integration process. This is accompanied by setting the integral velocity invalidity bits [02R/02/05,

06, 07] and reinitializing Vel Int X [02R/12-13], Vel Int Y [02R/14-15], and Vel Int Z [02R/16-17].

Platform Requirements

The platform shall **{ps_6014}** set the Integrals Restart [02R/03/12 = 1] when the velocity integration process is being restarted.

The platform shall **{ps_6015}** set Int Vel X, Y, Z Invalid [02R/02/05…07 = 1] in conjunction with setting the Integrals Restart [02R/03/12 = 1].

The platform shall **{ps_6016}** set Integrals Restart [02R/03/12 = 0] and Int Vel X, Y, Z Invalid [02R/02/05…07 = 0] when the platform velocity integrals are within the specified accuracy.

Mission Store Requirements

The mission store may **{sm_6006}** monitor Integrals Restart [02R/03/12].

6.02R.2 Time at Reset [02R/04]

This word is set to the maximum value attained by the platform clock (prior to being reset) that is used to generate Synchronize with Data Word [MC17R] mode commands and time tag time stamp words (see section 3.5.17.1). This word is set to full scale if the platform clock is not reset but instead rolls over. The total error budget associated with establishing time of data validity through time stamping is +/- 10.0 msec. Time at Reset [02R/04] platform and store requirements are defined in section 3.5.17.1.

6.02R.3 TA Time Stamp [02R/05]

This word contains the time tag of the velocity and position data contained in [02R/06-23] (see section 3.5.17.1). The total error budget associated with establishing time of data validity through time stamping is +/- 10.0 msec. TA Time Stamp [02R/05] platform and store requirements are defined in section 3.5.17.1.

6.02R.4 Platform Velocity [02R/06-11]

Velocity X [02R/06-07], Velocity Y [02R/08-09] and Velocity Z [02R/10-11] contain the X, Y, and Z components of the platform velocity in the Wander Azimuth Frame.

6.02R.5 Platform Integral Velocity [02R/12-17]

Integral Velocity X [02R/12-13], Integral Velocity Y [02R/14-15] and Integral Velocity Z [02R/16-17] contain the X, Y, and Z components of the integral of velocity of the platform in the Wander Azimuth Frame. The velocity integrals run continuously throughout the alignment process unless they need to be restarted. See discussion under Integrals Restart [02R/03/12 = 1].

Velocity integral data are normally computed using a trapezoidal integration method as follows:

$$i\vec{v}_i = i\vec{v}_{i-1} + \tfrac{1}{2}\left[\vec{v}_i + i\vec{v}_{i-1}\right] * \Delta t$$

Where: $i\vec{v}_i$ = *Current integral velocity*
$i\vec{v}_{i-1}$ = *Last integral velocity*
$\vec{v}_i$ = *Current aircraft navigation solution velocity sample*
$\vec{v}_{i-1}$ = *Last aircraft navigation solution velocity sample*
Δt = *Aircraft integration time step*
$i\vec{v}_0$ = *0*

It is acceptable to use an alternate velocity integration technique as long as the alternate method is as accurate as the trapezoidal method.

Note: If any one of the integral velocity X, Y, or Z components becomes invalid (due to invalid velocity or overrunning full scale) and needs to be restarted, all three integral velocity X, Y, and Z components are reinitialized to zero and restarted at the same time.

Platform Requirements

The platform shall **{ps_6017}** compute velocity integral data using a trapezoidal integration method or an alternate velocity integration technique.

6.02R.6 Platform Position [02R/18-23]

Latitude [02R/18-19], Longitude [02R/20-21] and Altitude [02R/22-23] contain the current position of the platform in latitude, longitude and altitude. Altitude [02R/22-23] reference is specified in PTAM Altitude Reference [02R/03/04]. See section 3.2.2.5 for a discussion of altitude references.

6.02R.7 Wander Angle [02R/24-25]

These words contain the platform wander angle defined as the angle between True North and the local level wander azimuth Y axis (see section 3.2.2.3).

6.02R.8 Euler Angles [02R/26-28]

True Heading [02R/26], Pitch [02R/27] and Roll [02R/28] contain the current true heading, pitch, and roll of the platform (see section 3.2.2.4.1). The range of the true heading angle is +/-180 degrees. The range of the pitch angle is +/-90 degrees. The range of the roll angle is +/-180 degrees.

6.02R.9 Attitude Time Stamp [02R/29]

This word contains the time tag of the heading and attitude data in words [02R/24-28]. See section 3.5.17.1 for a detailed description of message data time stamping. The total error budget associated with establishing time of data validity through time stamping is +/- 10.0 msec. Attitude Time Stamp [02R/29] platform and store requirements are defined in section 3.5.17.1.

MESSAGE NAME: Periodic Transfer Alignment Message (PTAM)
MESSAGE ID: 02R   TRANSFER TYPE: BC-RT
SOURCE: Platform   WORD COUNT: 29
DESTINATION: Store   XMIT RATE: 0.167 Hz to 16.0 Hz

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 00010 (B)
Header	01	Message Descriptor
Invalidity	02	Validity of Message Data
INS Mode	03	INS Mode
Time at Reset	04	Platform Time at Reset
TA Time Stamp	05	Platform Time (Time Tag)
Velocity X	06	Platform Velocity X (MSW)
	07	Platform Velocity X (LSW)
Velocity Y	08	Platform Velocity Y (MSW)
	09	Platform Velocity Y (LSW)
Velocity Z	10	Platform Velocity Z (MSW)
	11	Platform Velocity Z (LSW)
Integral Velocity X	12	Integral Platform Velocity X (MSW)
	13	Integral Platform Velocity X (LSW)
Integral Velocity Y	14	Integral Platform Velocity Y (MSW)
	15	Integral Platform Velocity Y (LSW)
Integral Velocity Z	16	Integral Platform Velocity Z (MSW)
	17	Integral Platform Velocity Z (LSW)
Latitude	18	Platform Latitude (MSW)
	19	Platform Latitude (LSW)
Longitude	20	Platform Longitude (MSW)
	21	Platform Longitude (LSW)
Altitude	22	Platform Altitude (MSW)
	23	Platform Altitude (LSW)
Wander Angle	24	Platform Wander Angle (MSW)
	25	Platform Wander Angle (LSW)
True Heading	26	Platform True Heading
Pitch	27	Platform Pitch
Roll	28	Platform Roll
Attitude Time Stamp	29	Platform Attitude Time (Time Tag)
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Header

	CATEGORY: Header
WORD ID: 02R/01	MAX VALUE: 2100 (H)
SOURCE(s): Platform	MIN VALUE: 2100 (H)
DEST(s): Store	RESOLUTION: 1
COMP RATE: As Required	ACCURACY: N/A
XMIT RATE: 0.167 Hz to 16.0 Hz	MSB: 2^15
SIGNAL TYPE: Hexadecimal	LSB: 2^0
UNITS: N/A	FULL SCALE: FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB --
	-01-B	
	-02-B	Hex digit #1 value = 2 (H)
	-03-B	LSB --
Hex Digit #2	-04-B	MSB --
	-05-B	
	-06-B	Hex digit #2 value = 1 (H)
	-07-B	LSB --
Hex Digit #3	-08-B	MSB --
	-09-B	
	-10-B	Hex digit #3 value = 0 (H)
	-11-B	LSB --
Hex Digit #4	-12-B	MSB --
	-13-B	
	-14-B	Hex digit #4 value = 0 (H)
	-15-B	LSB --

REMARKS/NOTES:

WORD NAME: Invalidity

		CATEGORY:	Validity
WORD ID:	02R/02	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 16.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0
Time Invalid	-01-V	Set to logic 1 when Word 4 or 5 are invalid
Velocity X Invalid	-02-V	Set to logic 1 when Words 6 & 7 are invalid
Velocity Y Invalid	-03-V	Set to logic 1 when Words 8 & 9 are invalid
Velocity Z Invalid	-04-V	Set to logic 1 when Words 10 & 11 are invalid
Integral Velocity X Invalid	-05-V	Set to logic 1 when Words 12 & 13 are invalid
Integral Velocity Y Invalid	-06-V	Set to logic 1 when Words 14 & 15 are invalid
Integral Velocity Z Invalid	-07-V	Set to logic 1 when Words 16 & 17 are invalid
Latitude/Longitude Invalid	-08-V	Set to logic 1 when Words 18&19 or 20&21 are invalid
Altitude Invalid	-09-V	Set to logic 1 when Words 22 & 23 are invalid
Wander Angle Invalid	-10-V	Set to logic 1 when Words 24 & 25 are invalid
Heading Invalid	-11-V	Set to logic 1 when Word 26 is invalid
Roll/Pitch Invalid	-12-V	Set to logic 1 when Word 27 or 28 are invalid
Attitude Time Stamp Invalid	-13-V	Set to logic 1 when Word 29 is invalid
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: INS Mode

		CATEGORY:	Special
WORD ID:	02R/03	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 16.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
INS Reset	-00-D	1 = INS Reset
Reserved	-01-0	Set to logic 0
MA in Transition	-02-D	1 = Moment Arm Data [09R] is dynamic
Reserved	-03-0	Set to logic 0
PTAM Altitude Reference	-04-D	1 = WGS-84 HAE, 0 = WGS-84 MSL
Reserved	-05-0	Set to logic 0
Reserved	-06-0	Set to logic 0
Reserved	-07-0	Set to logic 0
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Integrals Restart	-12-D	0 = No Change, 1 = Velocity integrals restarted
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Time at Reset

WORD ID:	02R/04
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	As Required
XMIT RATE:	0.167 Hz to 16.0 Hz
SIGNAL TYPE:	Unsigned
UNITS:	Microseconds

CATEGORY:	Time(L)
MAX VALUE:	4.1942E+06
MIN VALUE:	0.0000E+00
RESOLUTION:	6.4000E+01
ACCURACY:	See Note 1
MSB:	2^{21}
LSB:	2^6
FULL SCALE:	4.1942E+06

FIELD NAME	BIT NO.	DESCRIPTION
Platform Time at Reset	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. The total platform error budget associated with establishing time of data validity is +/- 10.0 msec.

WORD NAME: TA Time Stamp

	CATEGORY:	Time(L)
WORD ID: 02R/05	MAX VALUE:	4.1942E+06
SOURCE(s): Platform	MIN VALUE:	0.0000E+00
DEST(s): Store	RESOLUTION:	6.4000E+01
COMP RATE: As Required	ACCURACY:	See Note 1
XMIT RATE: 0.167 Hz to 16.0 Hz	MSB:	2^21
SIGNAL TYPE: Unsigned	LSB:	2^6
UNITS: Microseconds	FULL SCALE:	4.1942E+06

FIELD NAME	BIT NO.	DESCRIPTION
Platform Time (Time Tag)	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. The total platform error budget associated with establishing time of data validity is +/- 10.0 msec.

WORD NAME:	Velocity X	

			CATEGORY:	Velocity(M)+(L)
WORD ID:	02R/06-07		MAX VALUE:	1.0240E+03
SOURCE(s):	Platform		MIN VALUE:	-1.024E+03
DEST(s):	Store		RESOLUTION:	3.8147E-06
COMP RATE:	As Required		ACCURACY:	See Preceding Text
XMIT RATE:	0.167 Hz to 16.0 Hz		MSB:	2^{12}
SIGNAL TYPE:	2's Complement		LSB:	2^{-18}
UNITS:	Meters/Second		FULL SCALE:	8.1920E+03

FIELD NAME	BIT NO.	DESCRIPTION
Velocity X	MSW -00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Velocity Y

	CATEGORY: Velocity(M)+(L)
WORD ID: 02R/08-09	MAX VALUE: 1.024E+03
SOURCE(s): Platform	MIN VALUE: -1.024E+03
DEST(s): Store	RESOLUTION: 3.8147E-06
COMP RATE: As Required	ACCURACY: See Preceding Text
XMIT RATE: 0.167 Hz to 16.0 Hz	MSB: 2^{12}
SIGNAL TYPE: 2's Complement	LSB: 2^{-18}
UNITS: Meters/Second	FULL SCALE: 8.1920E+03

FIELD NAME	BIT NO.	DESCRIPTION
Velocity Y	MSW -00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Velocity Z

WORD ID:	02R/10-11
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	As Required
XMIT RATE:	0.167 Hz to 16.0 Hz
SIGNAL TYPE:	2's Complement
UNITS:	Meters/Second

CATEGORY:	Velocity(M)+(L)
MAX VALUE:	1.024E+03
MIN VALUE:	-1.024E+03
RESOLUTION:	3.8147E-6
ACCURACY:	See Preceding Text
MSB:	2^12
LSB:	2^-18
FULL SCALE:	8.1920E+03

FIELD NAME	BIT NO.	DESCRIPTION
Velocity Z	MSW -00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME:	Integral Velocity X		
		CATEGORY:	Distance(M)+(L)
WORD ID:	02R/12-13	MAX VALUE:	1.6777E+07
SOURCE(s):	Platform	MIN VALUE:	-1.6777E+07
DEST(s):	Store	RESOLUTION:	7.8125E-03
COMP RATE:	As Required	ACCURACY:	See Preceding Text
XMIT RATE:	0.167 Hz to 16.0 Hz	MSB:	2^23
SIGNAL TYPE:	2's Complement	LSB:	2^-7
UNITS:	Meters	FULL SCALE:	1.6777E+07

FIELD NAME		BIT NO.	DESCRIPTION
Integral Velocity X	MSW	-00-S	Sign
		-01-N	MSB ---
		-02-N	
		-03-N	
		-04-N	
		-05-N	
		-06-N	
		-07-N	
		-08-N	
		-09-N	
		-10-N	
		-11-N	
		-12-N	
		-13-N	
		-14-N	
		-15-N	
	LSW	-00-N	
		-01-N	
		-02-N	
		-03-N	
		-04-N	
		-05-N	
		-06-N	
		-07-N	
		-08-N	
		-09-N	
		-10-N	
		-11-N	
		-12-N	
		-13-N	
		-14-N	
		-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Integral Velocity Y

WORD ID: 02R/14-15	CATEGORY: Distance(M)+(L)
SOURCE(s): Platform	MAX VALUE: 1.6777E+07
DEST(s): Store	MIN VALUE: -1.6777E+07
COMP RATE: As Required	RESOLUTION: 7.8125E-03
XMIT RATE: 0.167 Hz to 16.0 Hz	ACCURACY: See Preceding Text
SIGNAL TYPE: 2's Complement	MSB: 2^23
UNITS: Meters	LSB: 2^-7
	FULL SCALE: 1.6777E+07

FIELD NAME	BIT NO.	DESCRIPTION
Integral Velocity Y MSW	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
LSW	-00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Integral Velocity Z

WORD ID:	02R/16-17
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	As Required
XMIT RATE:	0.167 Hz to 16.0 Hz
SIGNAL TYPE:	2's Complement
UNITS:	Meters

CATEGORY:	Distance(M)+(L)
MAX VALUE:	1.6777E+07
MIN VALUE:	-1.6777E+07
RESOLUTION:	7.8125E-03
ACCURACY:	See Preceding Text
MSB:	2^23
LSB:	2^-7
FULL SCALE:	1.6777E+07

FIELD NAME	BIT NO.	DESCRIPTION
Integral Velocity Z MSW	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
LSW	-00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Latitude

		CATEGORY: Angle(M)+(L)
WORD ID:	02R/18-19	MAX VALUE: 5.0000E-01
SOURCE(s):	Platform	MIN VALUE: -5.0000E-01
DEST(s):	Store	RESOLUTION: 2^-31
COMP RATE:	As Required	ACCURACY: See Preceding Text
XMIT RATE:	0.167 Hz to 16.0 Hz	MSB: 2^-1
SIGNAL TYPE:	2's Complement	LSB: 2^-31
UNITS:	Semicircles	FULL SCALE: 1.0000E+00

FIELD NAME		BIT NO.	DESCRIPTION
Latitude	MSW	-00-S	Sign
		-01-N	MSB --
		-02-N	
		-03-N	
		-04-N	
		-05-N	
		-06-N	
		-07-N	
		-08-N	
		-09-N	
		-10-N	
		-11-N	
		-12-N	
		-13-N	
		-14-N	
		-15-N	
	LSW	-00-N	
		-01-N	
		-02-N	
		-03-N	
		-04-N	
		-05-N	
		-06-N	
		-07-N	
		-08-N	
		-09-N	
		-10-N	
		-11-N	
		-12-N	
		-13-N	
		-14-N	
		-15-N	LSB --

REMARKS/NOTES:

1. North latitudes are positive and south latitudes are negative.

WORD NAME:	Longitude			
		CATEGORY:	Angle(M)+(L)	
WORD ID:	02R/20-21	MAX VALUE:	1.0000E+00	
SOURCE(s):	Platform	MIN VALUE:	-1.0000E+00	
DEST(s):	Store	RESOLUTION:	2^-31	
COMP RATE:	As Required	ACCURACY:	See Preceding Text	
XMIT RATE:	0.167 Hz to 16.0 Hz	MSB:	2^-1	
SIGNAL TYPE:	2's Complement	LSB:	2^-31	
UNITS:	Semicircles	FULL SCALE:	1.0000E+00	

FIELD NAME	BIT NO.	DESCRIPTION
Longitude	MSW -00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Longitude is defined as zero at the prime meridian with positive to the East.

WORD NAME:	Altitude			
			CATEGORY:	Distance(M)+(L)
WORD ID:	02R/22-23		MAX VALUE:	1.6777E+07
SOURCE(s):	Platform		MIN VALUE:	-1.6777E+07
DEST(s):	Store		RESOLUTION:	7.8125E-03
COMP RATE:	As Required		ACCURACY:	See Preceding Text
XMIT RATE:	0.167 Hz to 16.0 Hz		MSB:	2^{23}
SIGNAL TYPE:	2's Complement		LSB:	2^{-7}
UNITS:	Meters		FULL SCALE:	1.6777E+07

FIELD NAME	BIT NO.	DESCRIPTION
Altitude	MSW -00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. The altitude reference is specified in PTAM Altitude Reference [02R/03/04].

WORD NAME: Wander Angle

WORD ID:	02R/24-25	
SOURCE(s):	Platform	
DEST(s):	Store	
COMP RATE:	As Required	
XMIT RATE:	0.167 Hz to 16.0 Hz	
SIGNAL TYPE:	2's Complement	
UNITS:	Semicircles	

CATEGORY:	Angle(M)+(L)
MAX VALUE:	1.0000E+00
MIN VALUE:	-1.0000E+00
RESOLUTION:	2^-31
ACCURACY:	N/A
MSB:	2^-1
LSB:	2^-31
FULL SCALE:	1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Wander Angle	MSW -00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: True Heading

	CATEGORY:	Angle(M)
WORD ID: 02R/26	MAX VALUE:	9.9997E-1
SOURCE(s): Platform	MIN VALUE:	-1.0000E+00
DEST(s): Store	RESOLUTION:	3.0518E-05
COMP RATE: As Required	ACCURACY:	See Preceding Text
XMIT RATE: 0.167 Hz to 16.0 Hz	MSB:	2^-1
SIGNAL TYPE: 2's Complement	LSB:	2^-15
UNITS: Semicircles	FULL SCALE:	9.9997E-01

FIELD NAME	BIT NO.	DESCRIPTION
True Heading	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Pitch

		CATEGORY:	Angle(M)
WORD ID:	02R/27	MAX VALUE:	5.0000E-01
SOURCE(s):	Platform	MIN VALUE:	-5.0000E-01
DEST(s):	Store	RESOLUTION:	3.0518E-05
COMP RATE:	As Required	ACCURACY:	See Preceding Text
XMIT RATE:	0.167 Hz to 16.0 Hz	MSB:	2^-1
SIGNAL TYPE:	2's Complement	LSB:	2^-15
UNITS:	Semicircles	FULL SCALE:	9.9997E-01

FIELD NAME	BIT NO.	DESCRIPTION
Pitch	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Roll

	CATEGORY:	Angle(M)
WORD ID: 02R/28	MAX VALUE:	9.9997E-01
SOURCE(s): Platform	MIN VALUE:	-1.0000E-01
DEST(s): Store	RESOLUTION:	3.0518E-05
COMP RATE: As Required	ACCURACY:	See Preceding Text
XMIT RATE: 0.167 Hz to 16.0 Hz	MSB:	2^-1
SIGNAL TYPE: 2's Complement	LSB:	2^-15
UNITS: Semicircles	FULL SCALE:	9.9997E-01

FIELD NAME	BIT NO.	DESCRIPTION
Roll	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Attitude Time Stamp

WORD ID: 02R/29	CATEGORY: Time(L)
SOURCE(s): Platform	MAX VALUE: 4.1942E+06
DEST(s): Store	MIN VALUE: 0.0000E+00
COMP RATE: As Required	RESOLUTION: 6.4000E+01
XMIT RATE: 0.167 Hz to 16.0 Hz	ACCURACY: See Note 1
SIGNAL TYPE: Unsigned	MSB: 2^21
UNITS: Microseconds	LSB: 2^6
	FULL SCALE: 4.1942E+06

FIELD NAME	BIT NO.	DESCRIPTION
Attitude Time Stamp	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. The total platform error budget associated with establishing time of data validity is +/- 10.0 msec.

6.02T STORE INTERNAL PARAMETERS 1 [02T]

6.02T.1 Message Description

Store Internal Parameters 1 [02T] allows the platform to request store internal data for on-platform data recording that is not part of the functional interface. Historically, this message was made available for some stores to transmit INS data to the host platform during store development testing for on-platform data recording as a back up to store telemetry or when otherwise requested. This message also allows multiple stores to provide data for on-platform data recording to the platform that might not be supportable by simultaneous RF telemetry from multiple stores or from inside bomb bays where telemetry is shielded.

This is a store customizable message. The store program office/contractor defines Store Internal Parameters 1 [02T] contents as requested by the platform program office/contractor.

Platform Requirements

The platform shall **{ps_6018}** request Store Internal Parameters 1 [02T] if CDS Store Internal Parameters Enabled **{cds_6001}**.

Store Requirements

The store supplement **{sup_6015}** documents if the store implements Store Internal Parameters 1 [02T].

MESSAGE NAME: Store Internal Parameters 1
MESSAGE ID: 02T TRANSFER TYPE: RT-BC
SOURCE: Store WORD COUNT: 30
DESTINATION: Platform XMIT RATE: 1.0 Hz to 32.0 Hz

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 00010 (B)
Status Word	SW	MIL-STD-1553 Status Word
Header	01	Message Descriptor
Data Word 1	02	Note 1
Data Word 2	03	Note 1
Data Word 3	04	Note 1
Data Word 4	05	Note 1
Data Word 5	06	Note 1
Data Word 6	07	Note 1
Data Word 7	08	Note 1
Data Word 8	09	Note 1
Data Word 9	10	Note 1
Data Word 10	11	Note 1
Data Word 11	12	Note 1
Data Word 12	13	Note 1
Data Word 13	14	Note 1
Data Word 14	15	Note 1
Data Word 15	16	Note 1
Data Word 16	17	Note 1
Data Word 17	18	Note 1
Data Word 18	19	Note 1
Data Word 19	20	Note 1
Data Word 20	21	Note 1
Data Word 21	22	Note 1
Data Word 22	23	Note 1
Data Word 23	24	Note 1
Data Word 24	25	Note 1
Data Word 25	26	Note 1
Data Word 26	27	Note 1
Data Word 27	28	Note 1
Data Word 28	29	Note 1
Data Word 29	30	Note 1

REMARKS/NOTES:

1. This data word is store defined.

WORD NAME: Header

		CATEGORY:	Header
WORD ID:	02T/01	MAX VALUE:	2120 (H)
SOURCE(s):	Store	MIN VALUE:	2120 (H)
DEST(s):	Platform	RESOLUTION:	1
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	1.0 Hz to 32.0 Hz	MSB:	2^15
SIGNAL TYPE:	Hexadecimal	LSB:	2^0
UNITS:	N/A	FULL SCALE:	FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB --
	-01-B	
	-02-B	Hex digit #1 value = 2 (H)
	-03-B	LSB --
Hex Digit #2	-04-B	MSB --
	-05-B	
	-06-B	Hex digit #2 value = 1 (H)
	-07-B	LSB --
Hex Digit #3	-08-B	MSB --
	-09-B	
	-10-B	Hex digit #3 value = 2 (H)
	-11-B	LSB --
Hex Digit #4	-12-B	MSB --
	-13-B	
	-14-B	Hex digit #4 value = 0 (H)
	-15-B	LSB --

REMARKS/NOTES:

WORD NAME: Data Word 1-29

		CATEGORY:	Note 1
WORD ID:	02T/02-30	MAX VALUE:	Note 1
SOURCE(s):	Store	MIN VALUE:	Note 1
DEST(s):	Platform	RESOLUTION:	Note 1
COMP RATE:	As Required	ACCURACY:	Note 1
XMIT RATE:	1.0 Hz to 32.0 Hz	MSB:	Note 1
SIGNAL TYPE:	Note 1	LSB:	Note 1
UNITS:	Note 1	FULL SCALE:	Note 1

FIELD NAME	BIT NO.	DESCRIPTION
Data Word	-00-X	Note 1
	-01-X	
	-02-X	
	-03-X	
	-04-X	
	-05-X	
	-06-X	
	-07-X	
	-08-X	
	-09-X	
	-10-X	
	-11-X	
	-12-X	
	-13-X	
	-14-X	
	-15-X	

REMARKS/NOTES:

1. This data word is store defined.

6.03R TIME [03R]

Time [03R] provides the date and Universal Time Coordinate (UTC) reference to a GPS capable mission store(s). It also includes the GPS Leap Seconds so that the store can convert UTC time to GPS time. Additionally, the Time [03R] message also includes WDL Network Time/TOD Offset [03R/11-12] reference, if the mission store is reporting WDL Onboard [22T/05/11].

6.03R.1 Time of Day [03R/02-03]

This is a double word containing the time of day referenced to 0000 hours UTC.

Platform Requirements

The platform shall **{ps_6019}** set Time of Day [03R/02-03] to:

   a. The current UTC time of day with an accuracy of $\pm$ 10.0 msec if GPS time is available to the platform, including the error budget associated with establishing time of data validity through time stamping.

   b. The current estimate of UTC time of day if GPS time is not available.

The platform annex **{ann_6013}** documents the expected Time of Day [03R/02-03] accuracy as a function of platform operating modes and subsystem equipment availability.

6.03R.2 Date [03R/04-06]

These words contain the current day of month, month of year, and four-digit year.

Platform Requirements

The platform shall **{ps_6020}** set Day of Month [03R/04] to the current Greenwich Mean Time (GMT) day of the current GMT month.

The platform shall **{ps_6021}** set Month [03R/05] to the current GMT month of the current GMT year.

The platform shall **{ps_6022}** set Year [03R/06] to the current four-digit GMT year.

6.03R.3 Time Mode [03R/07]

6.03R.3.1 Reserved [03R/07/00]

6.03R.3.2 WDL Network Time Reference Type [03R/07/01…02]

WDL Network Time Reference Type [03R/07/01…02] identifies WDL Network Time/TOD Offset [03R/11-12] reference and validity. Sections 6.03R.7 WDL Network Time/TOD Offset [03R/11-12] and 6.21R/T.5.3 Network Time Sync [21R/T/07/07] provide additional information and requirements.

Table 6.03R-1 WDL Network Time Reference Type [03R/07/01…02] Definitions

Value	Definition
00 (B)	Time Reference is Invalid
01 (B)	UTC
10 (B)	GPS
11 (B)	Reserved

Platform Requirements

The platform shall **{ps_6415}** set <u>WDL Network Time Reference Type</u> [03R/07/01…02] IAW Table 6.03R-1, if <u>CDS Network Uses TOD Offset</u> **{cds_6130}** and <u>WDL Onboard</u> [22T/05/11 = 1].

The platform shall **{ps_6416}** provide the capability to select or enter <u>WDL Network Time Reference Type</u> [03R/07/01…02], if <u>CDS Network Uses TOD Offset</u> **{cds_6130}** and <u>WDL Onboard</u> [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6485}** respond to <u>WDL Network Time Reference Type</u> [03R/07/01…02] commands IAW Table 6.03R-1, if <u>WDL Onboard</u> [22T/05/11 = 1] and using a WDL network that uses TOD offset, as documented in the mission store supplement **{sup_6205}**.

6.03R.3.3 <u>Time Accuracy</u> [03R/07/08…15]

<u>Time Accuracy</u> [03R/07/08…15] provides the platform estimate of the accuracy of the current UTC <u>Time of Day</u> [03R/02-03]. <u>Time Accuracy</u> is provided in integer multiples of + 0.625 msec (rounded up). A setting of <u>Time Accuracy</u> [03R/07/08…15 = FF (H)] indicates an accuracy of ±159.375 msec or greater.

Platform Requirements

The platform shall **{ps_6348}** set <u>Time Accuracy</u> [03R/07/08…15] to indicate the estimated accuracy of <u>Time of Day</u> [03R/02-03].

Store Requirements

The store supplement **{sup_6191}** documents the store response to various ranges of <u>Time Accuracy</u> [03R/07/08…15].

6.03R.4 <u>Time at Reset</u> [03R/08]

This word is set to the maximum value attained by the platform clock (prior to being reset) that is used to generate <u>Synchronize with Data Word</u> [MC17R] mode commands and time tag time stamp words (see section 3.5.17.1). This word is set to full scale if the platform clock is not reset but instead rolls over. The total error budget associated with establishing time of data validity of UTC <u>Time of Day</u> [03R/02-03] through time stamping is included in <u>Time Accuracy</u> [03R/07/08…15]. <u>Time at Reset</u> [03R/08] platform and store requirements are defined in section 3.5.17.1.

6.03R.5 Time Stamp [03R/09]

This word contains the time tag of the UTC Time of Day [03R/02-03]. The total error budget associated with establishing time of data validity of UTC Time of Day [03R/02-03] through time stamping is included in Time Accuracy [03R/07/08…15]. Time Stamp [03R/09] platform and store requirements are defined in section 3.5.17.1.

6.03R.6 GPS Leap Seconds [03R/10]

This word contains the leap seconds correction needed to derive GPS time from UTC time. GPS time and UTC time are related by the formula: GPS time = UTC Time of Day [03R/02-03] + GPS Leap Seconds [03R/10] + ΔT. Due to the slowing of the earth's rotation, UTC time, which is an atomic time, is occasionally adjusted by one second increments (referred to as leap seconds) to ensure that the difference between a uniform time scale defined by atomic clocks does not differ from the Earth's rotational time by more than 0.9 seconds. GPS time was synchronized to UTC time at midnight on January 6, 1980. GPS time is not adjusted with leap seconds and therefore is offset from UTC by an integer number of seconds (referred to as GPS leap seconds) which is equal to the number of leap seconds added to UTC time since January 6, 1980. ΔT represents the fractional time (in nanoseconds) that GPS time minus GPS leap seconds differs from UTC time. The GPS Control Segment steers GPS time to keep ΔT within ±1000 nanoseconds. Since it is always insignificant when compared to the 64 microsecond resolution of Time of Day [03R/02-03], ΔT is not passed to the store.

Platform Requirements

The platform shall **{ps_6023}** set GPS Leap Seconds [03R/10] to the current leap seconds difference between UTC time and GPS time.

6.03R.7 WDL Network Time/TOD Offset [03R/11-12]

WDL Network Time/TOD Offset [03R/11-12] is a double word containing the weapon data link time of day offset referenced to WDL Network Time Reference Type [03R/07/01…02]. Network Time Sync [21R/07/07] commands the mission store to use the WDL Network Time/TOD Offset [03R/11-12] for synchronization of the mission store WDL terminal with the WDL network identified in Controller or Mission Store Terminal Select [21R/07/00…02] when the mission store WDL transceiver joins that network. Note that this may be immediately if the mission store WDL terminal is powered on and transmitting, or it may be after release for some mission stores which do not power on until after release.

Sections 6.03R.3.2 WDL Network Time Reference Type [03R/07/01…02] and 6.21R/T.5.3 Network Time Sync [21R/T/07/07] provide additional information and requirements.

WDL Network Time/TOD Offset is applied against the UTC or GPS reference in certain operational theaters. Mission stores that incorporate a Link 16 compatible terminal require an estimate of network time within 36 seconds of true network time under normal circumstances. Since expendable mission stores do not maintain a chronometer from previous missions, this TOD offset initialization information is required in any case

where UTC or GPS time reference is not the WDL time reference. For more information on Link-16 network time synchronization refer to MIL-STD-6016C.

Platform Requirements

The platform shall **{ps_6417}** set <u>WDL Network Time/TOD Offset</u> [03R/11-12] to the weapon data link time of day offset with respect to <u>WDL Network Time Reference Type</u> [03R/07/01…02], if <u>CDS Network Uses TOD Offset</u> **{cds_6130}** and <u>WDL Onboard</u> [22T/05/11 = 1].

The platform shall **{ps_6418}** provide the capability to select or enter <u>WDL Network Time/TOD Offset</u> [03R/11-12], if <u>CDS Network Uses TOD Offset</u> **{cds_6130}** and <u>WDL Onboard</u> [22T/05/11 = 1].

Mission Store Requirements

The mission store supplement **{sup_6206}** documents <u>WDL Network Time/TOD Offset</u> [03R/11-12] and <u>WDL Network Time Reference Type</u> [03R/07/01…02] usage and required network time initialization/synchronization accuracies for each supported network type, if <u>WDL Onboard</u> [22T/05/11 = 1].

MESSAGE NAME: Time
MESSAGE ID: 03R   TRANSFER TYPE: BC-RT
SOURCE: Platform   WORD COUNT: 12
DESTINATION: Store   XMIT RATE: 0.167 Hz to 16.0 Hz

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 00011 (B)
Header	01	Message Descriptor
Time of Day	02	UTC Time of day (MSW)
	03	UTC Time of day (LSW)
Day of Month	04	Day of Month
Month	05	Month of year
Year	06	Initialization Year
Time Mode	07	WDL Network Time Ref. and Time Accuracy
Time at Reset	08	Platform Time at Reset
Time Stamp	09	Platform Time (Time Tag)
GPS Leap Seconds	10	The difference, in seconds, between UTC time and GPS time
WDL Network Time/TOD Offset	11	WDL Network Time of Day Offset (MSW)
	12	WDL Network Time of Day Offset (LSW)
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Header

WORD ID: 03R/01
SOURCE(s): Platform
DEST(s): Store
COMP RATE: As Required
XMIT RATE: 0.167 Hz to 16.0 Hz
SIGNAL TYPE: Hexadecimal
UNITS: N/A

CATEGORY: Header
MAX VALUE: 4000 (H)
MIN VALUE: 4000 (H)
RESOLUTION: 1
ACCURACY: N/A
MSB: 2^15
LSB: 2^0
FULL SCALE: FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB ---
	-01-B	
	-02-B	Hex digit #1 value = 4 (H)
	-03-B	LSB ---
Hex Digit #2	-04-B	MSB ---
	-05-B	
	-06-B	Hex digit #2 value = 0 (H)
	-07-B	LSB ---
Hex Digit #3	-08-B	MSB ---
	-09-B	
	-10-B	Hex digit #3 value = 0 (H)
	-11-B	LSB ---
Hex Digit #4	-12-B	MSB ---
	-13-B	
	-14-B	Hex digit #4 value = 0 (H)
	-15-B	LSB ---

REMARKS/NOTES:

WORD NAME: Time of Day

WORD ID:	03R/02-03	CATEGORY:	Time(M)+(L)
SOURCE(s):	Platform	MAX VALUE:	2.7488E+11
DEST(s):	Store	MIN VALUE:	0.0000E+00
COMP RATE:	As Required	RESOLUTION:	6.4000E+01
XMIT RATE:	0.167 Hz to 16.0 Hz	ACCURACY:	See Preceding Text
SIGNAL TYPE:	Unsigned	MSB:	2^37
UNITS:	Microseconds	LSB:	2^6
		FULL SCALE:	2.7488E+11

FIELD NAME	BIT NO.	DESCRIPTION
Time of Day	MSW -00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME:	Day of Month		

		CATEGORY:	Number(L)
WORD ID:	03R/04	MAX VALUE:	31
SOURCE(s):	Platform	MIN VALUE:	1
DEST(s):	Store	RESOLUTION:	1
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 16.0 Hz	MSB:	2^{15}
SIGNAL TYPE:	Unsigned	LSB:	2^0
UNITS:	Days	FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Day of Month	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Month

CATEGORY:	Number(L)
WORD ID:	03R/05	MAX VALUE:	12

WORD ID: 03R/05
SOURCE(s): Platform
DEST(s): Store
COMP RATE: As Required
XMIT RATE: 0.167 Hz to 16.0 Hz
SIGNAL TYPE: Unsigned
UNITS: Months

CATEGORY: Number(L)
MAX VALUE: 12
MIN VALUE: 1
RESOLUTION: 1
ACCURACY: N/A
MSB: 2^15
LSB: 2^0
FULL SCALE: 65535

FIELD NAME	BIT NO.	DESCRIPTION
Month of the Year	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Year

	CATEGORY: Number(L)
WORD ID: 03R/06	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: 1
COMP RATE: As Required	ACCURACY: N/A
XMIT RATE: 0.167 Hz to 16.0 Hz	MSB: 2^15
SIGNAL TYPE: Unsigned	LSB: 2^0
UNITS: Year	FULL SCALE: 65535

FIELD NAME	BIT NO.	DESCRIPTION
Year	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Time Mode

WORD ID:	03R/07	
SOURCE(s):	Platform	
DEST(s):	Store	
COMP RATE:	As Required	
XMIT RATE:	0.167 Hz to 16.0 Hz	
SIGNAL TYPE:	Binary	
UNITS:	N/A	

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0
WDL Network Time Reference Type See Note 1.	-01-N	MSB : 2^1--
	-02-N	LSB : 2^0---
	-03-0	Set to logic 0
	-04-0	Set to logic 0
	-05-0	Set to logic 0
	-06-0	Set to logic 0
	-07-0	Set to logic 0
Time Accuracy	-08-N	MSB : 2^7--
	-09-N	SIGNAL TYPE: Unsigned
	-10-N	UNITS: milliseconds
	-11-N	MAX VALUE: 159.375
	-12-N	MIN VALUE: 0
	-13-N	RESOLUTION: 0.625
	-14-N	ACCURACY: N/A
	-15-N	LSB : 2^0---

REMARKS/NOTES:

1. See Table 6.03R-1 WDL Network Time Reference Type [03R/07/01…02] definitions.

WORD NAME:	Time at Reset			
		CATEGORY:	Time(L)	
WORD ID:	03R/08	MAX VALUE:	4.1942E+06	
SOURCE(s):	Platform	MIN VALUE:	0.0000E+00	
DEST(s):	Store	RESOLUTION:	6.4000E+01	
COMP RATE:	As Required	ACCURACY:	See note 1	
XMIT RATE:	0.167 Hz to 16.0 Hz	MSB:	2^21	
SIGNAL TYPE:	Unsigned	LSB:	2^6	
UNITS:	Microseconds	FULL SCALE:	4.1942E+06	

FIELD NAME	BIT NO.	DESCRIPTION
Platform Time at Reset	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. The total error budget associated with establishing time of data validity of UTC Time of Day [03R/02-03] through time stamping is included in Time Accuracy [03R/07/08…15].

WORD NAME: Time Stamp

	CATEGORY: Time(L)
WORD ID: 03R/09	MAX VALUE: 4.1942E+06
SOURCE(s): Platform	MIN VALUE: 0.0000E+00
DEST(s): Store	RESOLUTION: 6.4000E+01
COMP RATE: As Required	ACCURACY: See note 1
XMIT RATE: 0.167 Hz to 16.0 Hz	MSB: 2^21
SIGNAL TYPE: Unsigned	LSB: 2^6
UNITS: Microseconds	FULL SCALE: 4.1942E+06

FIELD NAME	BIT NO.	DESCRIPTION
Platform Time	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. The total error budget associated with establishing time of data of UTC <u>Time of Day</u> [03R/02-03] through time stamping is included in <u>Time Accuracy</u> [03R/07/08…15].

WORD NAME: GPS Leap Seconds

		CATEGORY:	Number(L)
WORD ID:	03R/10	MAX VALUE:	65535
SOURCE(s):	Platform	MIN VALUE:	0
DEST(s):	Store	RESOLUTION:	1
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 16.0 Hz	MSB:	2^{15}
SIGNAL TYPE:	Unsigned	LSB:	2^0
UNITS:	Seconds	FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
GPS Leap Seconds	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. This word contains the leap seconds needed to derive GPS time from UTC time using the formula:
    GPS time = UTC Time of Day [03R/02-03] + GPS Leap Seconds [03R/10].

WORD NAME:	WDL Network Time/TOD Offset		
		CATEGORY:	Time
WORD ID:	03R/11-12	MAX VALUE:	1.3744E+11 less 1 LSB
SOURCE(s):	Platform	MIN VALUE:	-1.3744E+11
DEST(s):	Store	RESOLUTION:	6.4000E+01
COMP RATE:	As Required	ACCURACY:	See Preceding Text
XMIT RATE:	0.167 Hz to 16.0 Hz	MSB:	2^36
SIGNAL TYPE:	2's Complement	LSB:	2^6
UNITS:	Microseconds	FULL SCALE:	1.3744E+11 less 1 LSB

FIELD NAME	BIT NO.	DESCRIPTION
TOD Offset	MSW -00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

6.03T STORE INTERNAL PARAMETERS 2 [03T]

6.03T.1 Message Description

Store Internal Parameters 2 [03T] allows the platform to request store internal data for on-platform data recording that is not part of the functional interface. Historically, this message was made available for some stores to transmit INS data to the host platform during store development testing for on-platform data recording as a back up to store telemetery, or when otherwise requested. This message also allows multiple stores to provide data to the platform for on-platform data recording that might not be supportable by simultaneous RF telemetry from multiple stores or from inside bomb bays where telemetry is shielded.

This is a store customizable message. The store program office/contractor provides a definition of the Store Internal Parameters 2 [03T] message contents as requested by the platform program office/contractor.

Platform Requirements

The platform shall **{ps_6024}** request Store Internal Parameters 2 [03T] if CDS Store Internal Parameters Enabled **{cds_6001}**.

Store Requirements

The store supplement **{sup_6016}** documents if the store implements Store Internal Parameters 2 [03T].

MESSAGE NAME: Store Internal Parameters 2
MESSAGE ID: 03T TRANSFER TYPE: RT-BC
SOURCE: Store WORD COUNT: 30
DESTINATION: Platform XMIT RATE: 1.0 Hz to 32.0 Hz

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 00011 (B)
Status Word	SW	MIL STD 1553 Status Word
Header	01	Message Descriptor
Data Word 1	02	Note 1
Data Word 2	03	Note 1
Data Word 3	04	Note 1
Data Word 4	05	Note 1
Data Word 5	06	Note 1
Data Word 6	07	Note 1
Data Word 7	08	Note 1
Data Word 8	09	Note 1
Data Word 9	10	Note 1
Data Word 10	11	Note 1
Data Word 11	12	Note 1
Data Word 12	13	Note 1
Data Word 13	14	Note 1
Data Word 14	15	Note 1
Data Word 15	16	Note 1
Data Word 16	17	Note 1
Data Word 17	18	Note 1
Data Word 18	19	Note 1
Data Word 19	20	Note 1
Data Word 20	21	Note 1
Data Word 21	22	Note 1
Data Word 22	23	Note 1
Data Word 23	24	Note 1
Data Word 24	25	Note 1
Data Word 25	26	Note 1
Data Word 26	27	Note 1
Data Word 27	28	Note 1
Data Word 28	29	Note 1
Data Word 29	30	Note 1

REMARKS/NOTES:

1. This data word is store defined.

WORD NAME: Header

		CATEGORY:	Header
WORD ID:	03T/01	MAX VALUE:	2121 (H)
SOURCE(s):	Store	MIN VALUE:	2121 (H)
DEST(s):	Platform	RESOLUTION:	1
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	1.0 Hz to 32.0 Hz	MSB:	2^{15}
SIGNAL TYPE:	Hexadecimal	LSB:	2^0
UNITS:	N/A	FULL SCALE:	FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB ---
	-01-B	
	-02-B	Hex digit #1 value = 2 (H)
	-03-B	LSB ---
Hex Digit #2	-04-B	MSB ---
	-05-B	
	-06-B	Hex digit #2 value = 1 (H)
	-07-B	LSB ---
Hex Digit #3	-08-B	MSB ---
	-09-B	
	-10-B	Hex digit #3 value = 2 (H)
	-11-B	LSB ---
Hex Digit #4	-12-B	MSB ---
	-13-B	
	-14-B	Hex digit #4 value = 1 (H)
	-15-B	LSB ---

REMARKS/NOTES:

WORD NAME: Data Word 1-29

WORD ID:	03T/02-30
SOURCE(s):	Store
DEST(s):	Platform
COMP RATE:	As Required
XMIT RATE:	1.0 Hz to 32.0 Hz
SIGNAL TYPE:	Note 1
UNITS:	Note 1

CATEGORY:	Note 1
MAX VALUE:	Note 1
MIN VALUE:	Note 1
RESOLUTION:	Note 1
ACCURACY:	Note 1
MSB:	Note 1
LSB:	Note 1
FULL SCALE:	Note 1

FIELD NAME	BIT NO.	DESCRIPTION
Data Word	-00-X	Note 1
	-01-X	
	-02-X	
	-03-X	
	-04-X	
	-05-X	
	-06-X	
	-07-X	
	-08-X	
	-09-X	
	-10-X	
	-11-X	
	-12-X	
	-13-X	
	-14-X	
	-15-X	

REMARKS/NOTES:

1. This data word is store defined.

6.05R <u>RESET TRANSFER ALIGNMENT MESSAGE (RTAM)</u> [05R]

<u>Reset Transfer Alignment Message</u> (<u>RTAM</u>) [05R] provides the mission store with all corrections made to the platform navigation solution (e.g., INS/GPS filter, radar fix, TACAN, etc.) in the current <u>TA Period</u> [22R/09]. <u>RTAM</u> [05R] is sent at the end of the <u>TA Period</u> but prior to the next scheduled <u>PTAM</u> [02R]. An <u>RTAM</u> is capable of representing one or multiple platform navigation solution corrections that can occur within a single <u>TA Period</u>. The navigation solution correction parameters in the <u>RTAM</u> are polarized such that the mission store adds the correction parameters to its navigation parameters to match the platform navigation parameters. The time of validity of the data in the <u>RTAM</u> is the time contained in the time stamp words of the first <u>PTAM</u> that follows <u>RTAM</u>.

<u>INS Reset</u> [02R/03/00 = 1] indicates that the navigation solution contained in the <u>PTAM</u> [02R] has incorporated all correction parameters sent in the preceding <u>RTAM</u>. <u>INS Reset</u> [02R/03/00 = 0] indicates that no <u>RTAM</u> corrections have been incorporated into the navigation solution contained in the <u>PTAM</u>, that is, there is no <u>RTAM</u> associated with the <u>PTAM</u> (see section 6.02R).

The timing relationship between <u>PTAM</u>s and <u>RTAM</u>s is illustrated in Figure 6.05R-1.

If the platform has switched to a different INS and <u>Moment Arm</u> [09R] cannot be sent to the mission store prior to the <u>RTAM</u>, then the <u>RTAM</u> can be delayed and the <u>PTAM</u> sent out with the velocities, velocity integrals, and Latitude/Longitude set invalid [02R/02/02…08 = 1]. Once a new <u>Moment Arm</u> has been sent to the mission store, the next <u>RTAM</u> has the velocity integral correction terms [05R/12-17] propagated ahead to the next valid <u>PTAM</u> to account for the delay.

If an INS switch occurs during suspension and release equipment (S&RE) motion, the <u>RTAM</u> is delayed until a new <u>Moment Arm</u> has been sent to the mission store and the motion has stopped. The <u>RTAM</u> sent to the mission store after the S&RE has stopped rotating has the velocity integral terms [05R/12-17] appropriate for the next valid <u>PTAM</u>. INS corrections are summed with the INS switch terms to compute the <u>RTAM</u>.

Platform Requirements

The platform shall **{ps_6025}** provide <u>RTAM</u> [05R] data for all corrections made to the platform navigation solution (e.g., INS/GPS filter, radar fix, TACAN, etc.) in the current <u>TA Period</u> [22R/09].

The platform shall **{ps_6026}** send the <u>RTAM</u> [05R] at the end of the <u>TA Period</u> [22R/09], but prior to the next scheduled <u>PTAM</u> [02R].

The platform shall **{ps_6027}** use the reference frames as defined in Table 6.05R-1 for the data elements in the <u>RTAM</u> [05R]. Section 3.2.2 defines the reference frames and their interrelationships.

The platform shall **{ps_6028}** provide navigation solution correction parameters in the <u>RTAM</u> [05R] which are polarized such that the mission store adds the correction parameters to its navigation parameters to match platform navigation parameters.

The platform shall **{ps_6029}** ensure the effective time of validity of RTAM [05R] to be the time contained in the time stamp word of the PTAM [02R] that follows RTAM.

The platform shall **{ps_6030}** compute integral velocity corrections which take into account the time that the platform correction was applied to its navigation solution and the time of the PTAM [02R] that contains the corrected data (see Figure 6.05R-1).

Mission Store Requirements

The mission store may **{sm_6007}** use the RTAM [05R] data elements to adjust estimates of alignment filter parameters to mitigate the effect of the platform navigation solution corrections on the store transfer alignment process.

The mission store shall **{ss_6015}** use the time contained in the time stamp words of the first PTAM [02R] that follows the RTAM [05R] as the time of validity of the RTAM data.

Table 6.05R-1 RTAM Parameter Reference Frame Definitions

RTAM Data Element	Msg [05R] Word #	Reference Frame	Comments
Vel X Correction	6, 7	Wander Azimuth	Update to [02R/06-07]
Vel Y Correction	8, 9	Wander Azimuth	Update to [02R/08-09]
Vel Z Correction	10, 11	Wander Azimuth	Update to [02R/10-11]
Int Vel X Correction	12, 13	Wander Azimuth	Update to [02R/12-13]
Int Vel Y Correction	14, 15	Wander Azimuth	Update to [02R/14-15]
Int Vel Z Correction	16, 17	Wander Azimuth	Update to [02R/16-17]
Lat Correction	18, 19	ECEF (WGS-84)	Update to [02R/18-19]
Long Correction	20, 21	ECEF (WGS-84)	Update to [02R/20-21]
Altitude Correction	22, 23	ECEF (WGS-84)	Update to [02R/21-22]
X Platform Tilt Corr	24, 25	Wander Azimuth	Platform frame to true local level frame X misalignment angle.
Y Platform Tilt Corr	26, 27	Wander Azimuth	Platform Frame to true local level frame Y misalignment angle.
Z Platform Tilt Corr	28, 29	Wander Azimuth	Platform Frame to true local level frame Z misalignment angle.

6.05R.1 Platform Velocity Corrections [05R/06-11]

Vel X Correction [05R/06-07], Vel Y Correction [05R/08-09], and Vel Z Correction [05R/10-11] contain the corrections to the X, Y, and Z components of the platform velocity in the Wander Azimuth Frame.

6.05R.2 Platform Integral Velocity Corrections [05R/12-17]

Int Vel X Correction [05R/12-13], Int Vel Y Correction [05R/14-15], and Int Vel Z Correction [05R/16-17] contain the corrections to the X, Y, and Z components of the integral of velocity of the platform in the Wander Azimuth Frame. The integral velocity corrections take into account the time that the platform correction was applied to its

navigation solution and the time of the <u>PTAM</u> [02R] that contains the corrected data, as described in Figure 6.05R-1.

RTAM [05R]

- Correction to the Velocity Integral in the RTAM, $\int V_{corr}$:

$$\int V_{corr} = \sum_{i=1}^{N}(t_{PTAM} - t_{corr_i}) * \Delta V_{s_i}$$

Where N = number of updates to the platform solution in the TA Period and ΔV_{s_i} is the magnitude of the platform system solution velocity update at the ith reset. t_{corr_i} is the time of the ith reset in the current TA Period.
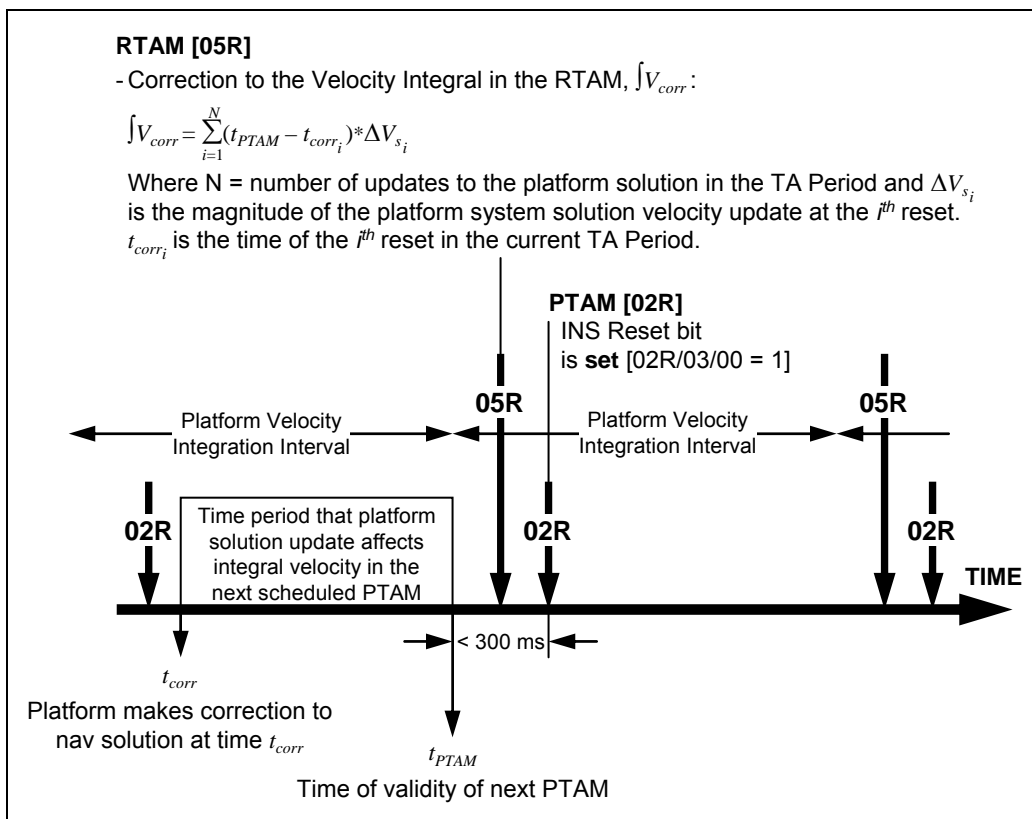
Figure 6.05R-1 <u>RTAM</u> Integral Velocity Correction Description

6.05R.3 <u>Platform Position Corrections</u> [05R/18-23]

<u>Lat Correction</u> [05R/18-19], <u>Long Correction</u> [05R/20-21], and <u>Altitude Correction</u> [05R/22-23] contain the corrections to the current position of the platform in latitude, longitude and altitude.

6.05R.4 <u>Platform Tilt Corrections</u> [05R/24-29]

<u>X Platform Tilt Corr</u> [05R/24-25], <u>Y Platform Tilt Corr</u> [05R/26-27], and <u>Z Platform Tilt Corr</u> [05R/28-29] contain the corrections to the X, Y, and Z components of the platform tilt in the Wander Azimuth frame. See section 3.2.2.3.1 for a complete description of the platform tilt angles.

MESSAGE NAME: Reset Transfer Alignment Message (RTAM)
MESSAGE ID: 05R   TRANSFER TYPE: BC-RT
SOURCE: Platform   WORD COUNT: 29
DESTINATION: Store   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 00101 (B)
Header	01	Message Descriptor
Invalidity	02	Validity of Message Data
Reserved	03	Reserved
Reserved	04	Reserved
Reserved	05	Reserved
Vel X Correction	06	Platform Velocity X Correction (MSW)
	07	Platform Velocity X Correction (LSW)
Vel Y Correction	08	Platform Velocity Y Correction (MSW)
	09	Platform Velocity Y Correction (LSW)
Vel Z Correction	10	Platform Velocity Z Correction (MSW)
	11	Platform Velocity Z Correction (LSW)
Int Vel X Correction	12	Platform Integral Velocity X Correction (MSW)
	13	Platform Integral Velocity X Correction (LSW)
Int Vel Y Correction	14	Platform Integral Velocity Y Correction (MSW)
	15	Platform Integral Velocity Y Correction (LSW)
Int Vel Z Correction	16	Platform Integral Velocity Z Correction (MSW)
	17	Platform Integral Velocity Z Correction (LSW)
Lat Correction	18	Platform Latitude Correction (MSW)
	19	Platform Latitude Correction (LSW)
Long Correction	20	Platform Longitude Correction (MSW)
	21	Platform Longitude Correction (LSW)
Altitude Correction	22	Platform Altitude Correction (MSW)
	23	Platform Altitude Correction (LSW)
X Platform Tilt Corr	24	X Platform Tilt Correction (MSW)
	25	X Platform Tilt Correction (LSW)
Y Platform Tilt Corr	26	Y Platform Tilt Correction (MSW)
	27	Y Platform Tilt Correction (LSW)
Z Platform Tilt Corr	28	Z Platform Tilt Correction (MSW)
	29	Z Platform Tilt Correction (LSW)
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Header

		CATEGORY:	Header
WORD ID:	05R/01	MAX VALUE:	2101 (H)
SOURCE(s):	Platform	MIN VALUE:	2101 (H)
DEST(s):	Store	RESOLUTION:	1
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^15
SIGNAL TYPE:	Hexadecimal	LSB:	2^0
UNITS:	N/A	FULL SCALE:	FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB --
	-01-B	
	-02-B	Hex digit #1 value = 2 (H)
	-03-B	LSB --
Hex Digit #2	-04-B	MSB --
	-05-B	
	-06-B	Hex digit #2 value = 1 (H)
	-07-B	LSB --
Hex Digit #3	-08-B	MSB --
	-09-B	
	-10-B	Hex digit #3 value = 0 (H)
	-11-B	LSB --
Hex Digit #4	-12-B	MSB --
	-13-B	
	-14-B	Hex digit #4 value = 1 (H)
	-15-B	LSB --

REMARKS/NOTES:

WORD NAME: Invalidity

		CATEGORY:	Validity
WORD ID:	05R/02	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0
Reserved	-01-0	Set to logic 0
Vel X Corr Invalid	-02-V	Set to logic 1 when words 6 & 7 are invalid
Vel Y Corr Invalid	-03-V	Set to logic 1 when words 8 & 9 are invalid
Vel Z Corr Invalid	-04-V	Set to logic 1 when words 10 & 11 are invalid
Int Vel X Corr Invalid	-05-V	Set to logic 1 when words 12 & 13 are invalid
Int Vel Y Corr Invalid	-06-V	Set to logic 1 when words 14 & 15 are invalid
Int Vel Z Corr Invalid	-07-V	Set to logic 1 when words 16 & 17 are invalid
Lat/Long Corr Invalid	-08-V	Set to logic 1 when words 18 & 19 or 20 & 21 are invalid
Altitude Corr Invalid	-09-V	Set to logic 1 when words 22 & 23 are invalid
Att Corr Invalid	-10-V	Set to logic 1 when word 24, 25 or 26, 27 or 28, 29 are invalid
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Reserved

	CATEGORY: N/A
WORD ID: 05R/03-05	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: As Required	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	
	-01-0	
	-02-0	
	-03-0	
	-04-0	
	-05-0	
	-06-0	
	-07-0	
	-08-0	
	-09-0	
	-10-0	
	-11-0	
	-12-0	
	-13-0	
	-14-0	
	-15-0	

REMARKS/NOTES:

WORD NAME: Vel X Correction

	CATEGORY: Velocity(M)+(L)
WORD ID: 05R/06-07	MAX VALUE: 8.1920E+03
SOURCE(s): Platform	MIN VALUE: -8.1920E+03
DEST(s): Store	RESOLUTION: 3.8147E-06
COMP RATE: As Required	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^12
SIGNAL TYPE: 2's Complement	LSB: 2^-18
UNITS: Meters/Second	FULL SCALE: 8.1920E+03

FIELD NAME	BIT NO.	DESCRIPTION
Vel X Correction	MSW -00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Vel Y Correction

CATEGORY:	Velocity(M)+(L)
WORD ID: 05R/08-09	MAX VALUE: 8.1920E+03
SOURCE(s): Platform	MIN VALUE: -8.1920E+03
DEST(s): Store	RESOLUTION: 3.8147E-06
COMP RATE: As Required	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^12
SIGNAL TYPE: 2's Complement	LSB: 2^-18
UNITS: Meters/Second	FULL SCALE: 8.1920E+03

FIELD NAME	BIT NO.	DESCRIPTION
Vel Y Correction	MSW -00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Vel Z Correction

	CATEGORY:	Velocity(M)+(L)
WORD ID: 05R/10-11	MAX VALUE:	8.1920E+03
SOURCE(s): Platform	MIN VALUE:	-8.1920E+03
DEST(s): Store	RESOLUTION:	3.8147E-06
COMP RATE: As Required	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^12
SIGNAL TYPE: 2's Complement	LSB:	2^-18
UNITS: Meters/Second	FULL SCALE:	8.1920E+03

FIELD NAME	BIT NO.	DESCRIPTION
Vel Z Correction	MSW -00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Int Vel X Correction

	CATEGORY:	Distance(M)+(L)
WORD ID: 05R/12-13	MAX VALUE:	1.6777E+07
SOURCE(s): Platform	MIN VALUE:	-1.6777E+07
DEST(s): Store	RESOLUTION:	7.8125E-03
COMP RATE: As Required	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^{23}
SIGNAL TYPE: 2's Complement	LSB:	2^{-7}
UNITS: Meters	FULL SCALE:	1.6777E+07

FIELD NAME	BIT NO.	DESCRIPTION
Int Vel X Correction MSW	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
LSW	-00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME:	Int Vel Y Correction		
		CATEGORY:	Distance(M)+(L)
WORD ID:	05R/14-15	MAX VALUE:	1.6777E+07
SOURCE(s):	Platform	MIN VALUE:	-1.6777E+07
DEST(s):	Store	RESOLUTION:	7.8125E-03
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^23
SIGNAL TYPE:	2's Complement	LSB:	2^-7
UNITS:	Meters	FULL SCALE:	1.6777E+07

FIELD NAME	BIT NO.	DESCRIPTION
Int Vel Y Correction MSW	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
LSW	-00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME:	Int Vel Z Correction		
		CATEGORY:	Distance(M)+(L)
WORD ID:	05R/16-17	MAX VALUE:	1.6777E+07
SOURCE(s):	Platform	MIN VALUE:	-1.6777E+07
DEST(s):	Store	RESOLUTION:	7.8125E-03
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^23
SIGNAL TYPE:	2's Complement	LSB:	2^-7
UNITS:	Meters	FULL SCALE:	1.6777E+07

FIELD NAME		BIT NO.	DESCRIPTION
Int Vel Z Correction	MSW	-00-S	Sign
		-01-N	MSB ---
		-02-N	
		-03-N	
		-04-N	
		-05-N	
		-06-N	
		-07-N	
		-08-N	
		-09-N	
		-10-N	
		-11-N	
		-12-N	
		-13-N	
		-14-N	
		-15-N	
	LSW	-00-N	
		-01-N	
		-02-N	
		-03-N	
		-04-N	
		-05-N	
		-06-N	
		-07-N	
		-08-N	
		-09-N	
		-10-N	
		-11-N	
		-12-N	
		-13-N	
		-14-N	
		-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Lat Correction

	CATEGORY: Angle(M)+(L)
WORD ID: 05R/18-19	MAX VALUE: 5.0000E-01
SOURCE(s): Platform	MIN VALUE: -5.0000E-01
DEST(s): Store	RESOLUTION: 2^-31
COMP RATE: As Required	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^-1
SIGNAL TYPE: 2's Complement	LSB: 2^-31
UNITS: Semicircles	FULL SCALE: 1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Lat Correction	MSW -00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Long Correction

	CATEGORY:	Angle(M)+(L)
WORD ID: 05R/20-21	MAX VALUE:	1.0000E+00
SOURCE(s): Platform	MIN VALUE:	-1.0000E+00
DEST(s): Store	RESOLUTION:	2^-31
COMP RATE: As Required	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^-1
SIGNAL TYPE: 2's Complement	LSB:	2^-31
UNITS: Semicircles	FULL SCALE:	1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Long Correction	MSW -00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Altitude Correction

WORD ID:	05R/22-23	
SOURCE(s):	Platform	
DEST(s):	Store	
COMP RATE:	As Required	
XMIT RATE:	Aperiodic	
SIGNAL TYPE:	2's Complement	
UNITS:	Meters	

CATEGORY:	Distance(M)+(L)
MAX VALUE:	1.6777E+07
MIN VALUE:	-1.6777E+07
RESOLUTION:	7.8125E-03
ACCURACY:	N/A
MSB:	2^23
LSB:	2^-7
FULL SCALE:	1.6777E+07

FIELD NAME	BIT NO.	DESCRIPTION
Altitude Correction	MSW -00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

FOR OFFICIAL USE ONLY

WORD NAME:	X Platform Tilt Corr		
		CATEGORY:	Angle(M)+(L)
WORD ID:	05R/24-25	MAX VALUE:	1.0000E+00
SOURCE(s):	Platform	MIN VALUE:	-1.0000E+00
DEST(s):	Store	RESOLUTION:	2^-31
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^-1
SIGNAL TYPE:	2's Complement	LSB:	2^-31
UNITS:	Semicircles	FULL SCALE:	1.0000E+00

FIELD NAME		BIT NO.	DESCRIPTION
X Platform Tilt Corr	MSW	-00-S	Sign
		-01-N	MSB ---
		-02-N	
		-03-N	
		-04-N	
		-05-N	
		-06-N	
		-07-N	
		-08-N	
		-09-N	
		-10-N	
		-11-N	
		-12-N	
		-13-N	
		-14-N	
		-15-N	
	LSW	-00-N	
		-01-N	
		-02-N	
		-03-N	
		-04-N	
		-05-N	
		-06-N	
		-07-N	
		-08-N	
		-09-N	
		-10-N	
		-11-N	
		-12-N	
		-13-N	
		-14-N	
		-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Y Platform Tilt Corr

	CATEGORY: Angle(M)+(L)
WORD ID: 05R/26-27	MAX VALUE: 1.0000E+00
SOURCE(s): Platform	MIN VALUE: -1.0000E+00
DEST(s): Store	RESOLUTION: 2^-31
COMP RATE: As Required	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^-1
SIGNAL TYPE: 2's Complement	LSB: 2^-31
UNITS: Semicircles	FULL SCALE: 1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Y Platform Tilt Corr MSW	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
LSW	-00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Z Platform Tilt Corr

	CATEGORY:	Angle(M)+(L)
WORD ID: 05R/28-29	MAX VALUE:	1.0000E+00
SOURCE(s): Platform	MIN VALUE:	-1.0000E+00
DEST(s): Store	RESOLUTION:	2^-31
COMP RATE: As Required	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^-1
SIGNAL TYPE: 2's Complement	LSB:	2^-31
UNITS: Semicircles	FULL SCALE:	1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Z Platform Tilt Corr MSW	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
LSW	-00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

6.05T IR LAR DATA [05T]

IR LAR Data [05T] contains LAR data for either the Current IR LAR or the Predictive IR LAR or an auto toggle between the two. The platform provides LAR Control [06R] to select the IR LAR the store provides in IR LAR Data [05T]. LAR Control is also used to provide conditional data to the store for its computation of LAR Data. Sections 3.5.10, Launch Acceptability Region (LAR), and 3.8.7.7, Composite Launch Acceptability Region (CLAR), provide additional information and requirements.

When a "Current" IR LAR is selected and in the case of the default In-Range LAR, the store provides IR LAR Data [05T] using current conditions for all LAR independent variables.

When a "Predictive" IR LAR is selected, the store provides IR LAR Data [05T] using the predictive conditions provided by the platform in LAR Control [06R] and IAW Tables 6.06R-3 through 6.06R-8. The store uses current conditions for any invalid predictive conditions that are provided by the platform.

A mission store provides IR LAR Data [05T] for the primary MDS. A Type 2 carriage system provides a composite/intersection IR LAR in IR LAR Data for multiple mission stores.

Section 3.5.10 and subordinate sections provide additional information.

Figure 6.05T-1 illustrates the Current IR LAR parameters provided in IR LAR Data [05T]. Figures 6.05T-2 and 6.05T-3 illustrate the Predictive IR LAR parameters provided in IR LAR Data [05T] for two different scenarios. These figures are often referred to within the IR LAR Data message requirements specified herein.

Store Requirements

The store shall **{ss_6681}** provide IR LAR Data [05T] using current conditions for all LAR independent variables until IR LAR Computation Control [06R/03/00…01] has been received.

The store shall **{ss_6705}** provide IR LAR Data [05T] for the Current In-Range LAR or the Predictive In-Range LAR or an auto toggle between the two IAW IR LAR Computation Control [06R/03/00…01] and Table 6.06R-1.

The store may **{sm_6013}** provide IR LAR Data [05T] computed with adjusted values when current or predictive LAR conditions exceed the IR LAR envelope.

The store shall **{ss_6706}** update IR LAR Data [05T] buffer at a rate between 12.5 Hz and 20 Hz and alternate between current IR LAR data and predictive IR LAR data with each buffer update when IR LAR Computation Control [06R/03/00…01 = 10 (B)].

Carriage System Requirements

A Type 2 carriage system shall **{css_6178}** set IR LAR Ref Pt DR Offset [05T/14], IR LAR Ref Pt CR Offset [05T/15], and IR LAR Offset 0º, 40º, 80º, … 320º [05T/16-24] (that define a composite 9-sided region as shown in Figures 6.05T-1 through

6.05T-3) such that if the number of mission store(s) indicated in Number to Fire [11T/13] (for Current CLAR) or Pred CLAR Store Quantity [06R/03/04…07] (for Predictive CLAR) are released within that region with the release interval specified in Fire Inerval [11T/12] (for Current CLAR) or Pred CLAR Fire Interval [06R/19] (for Predictive CLAR), the mission store(s) can achieve their mission objectives IAW the criteria specified in the mission store supplement **{sup_6260}**.

Mission Store Requirements

The mission store shall **{ss_6682}** set IR LAR Ref Pt DR Offset [05T/14], IR LAR Ref Pt CR Offset [05T/15], and IR LAR Offset 0º, 40º, 80º, … 320º [05T/16-24] to the ranges that define the 9-sided IR LAR relative to the IR Mission Reference Point [06T/04-07] and aligned with the platform ground track if conditions for computing a valid IR LAR Polygon have been met.

IR Mission Ref Point
[05T/04-07]

(+)

Current Platform
Ground Track

(-)   (+) IR LAR
                                                         CR - Axis

160°
[05T/20]

200°
[05T/21]

IR LAR Exit [05T/09]

120°
[05T/19]

IR LAR Ref Pt
DR Offset
[05T/14]

240°
[05T/22]

IR LAR
Polygon

IR LAR Ref. Pt.

IR LAR Ref Pt
CR Offset
[05T/15]

80°
[05T/18]

280°
[05T/23]

IR LAR Entry
[05T/08]

40°
[05T/17]

320°
[05T/24]

0°
[05T/16]

(-)

IR LAR DR - Axis

Current Platform
Position

Notes:
1. Current IR LAR is computed using current platform and environmental conditions
   including current platform ground track.
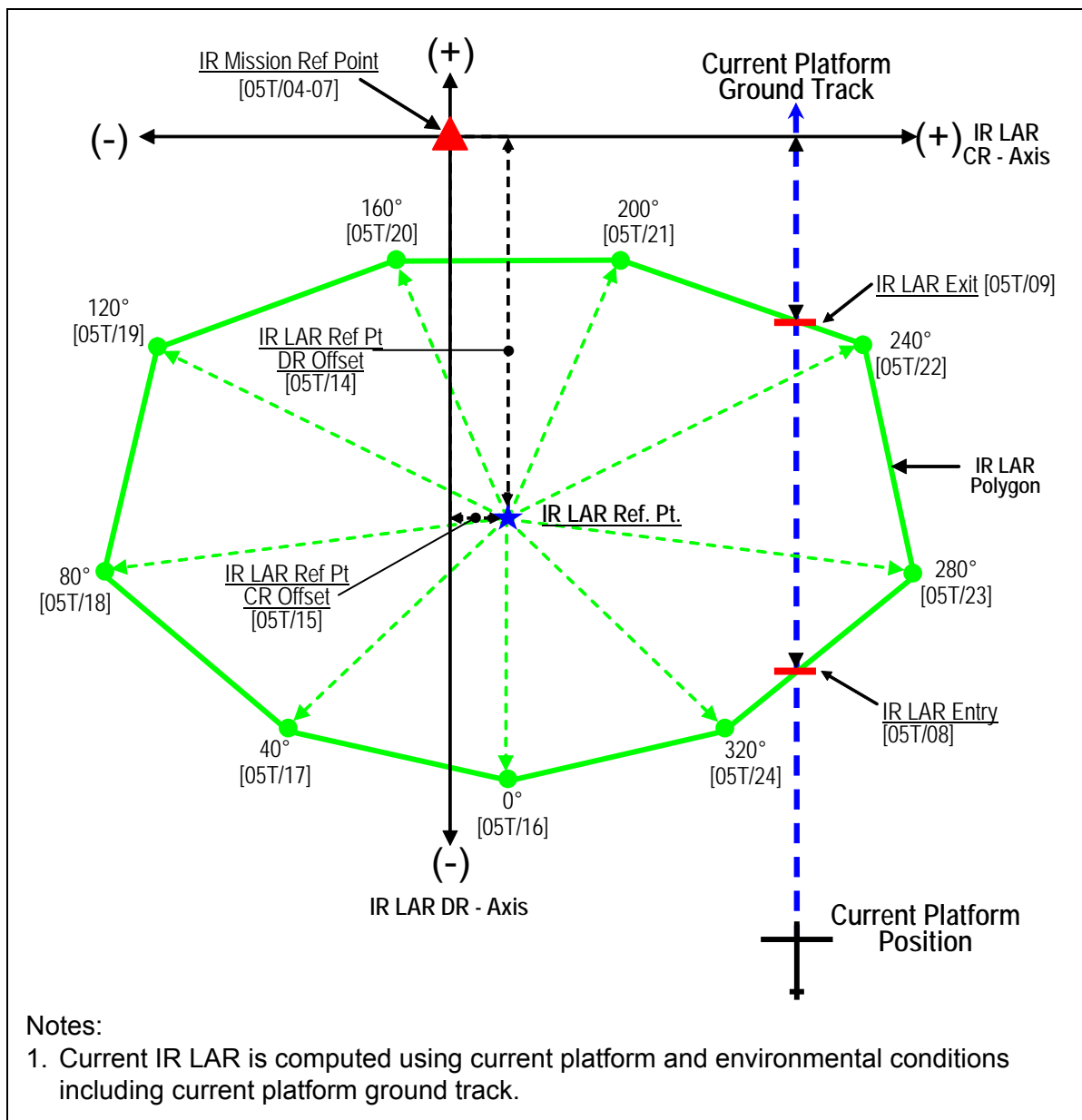
Figure 6.05T-1 Current In-Range Launch Acceptability Region
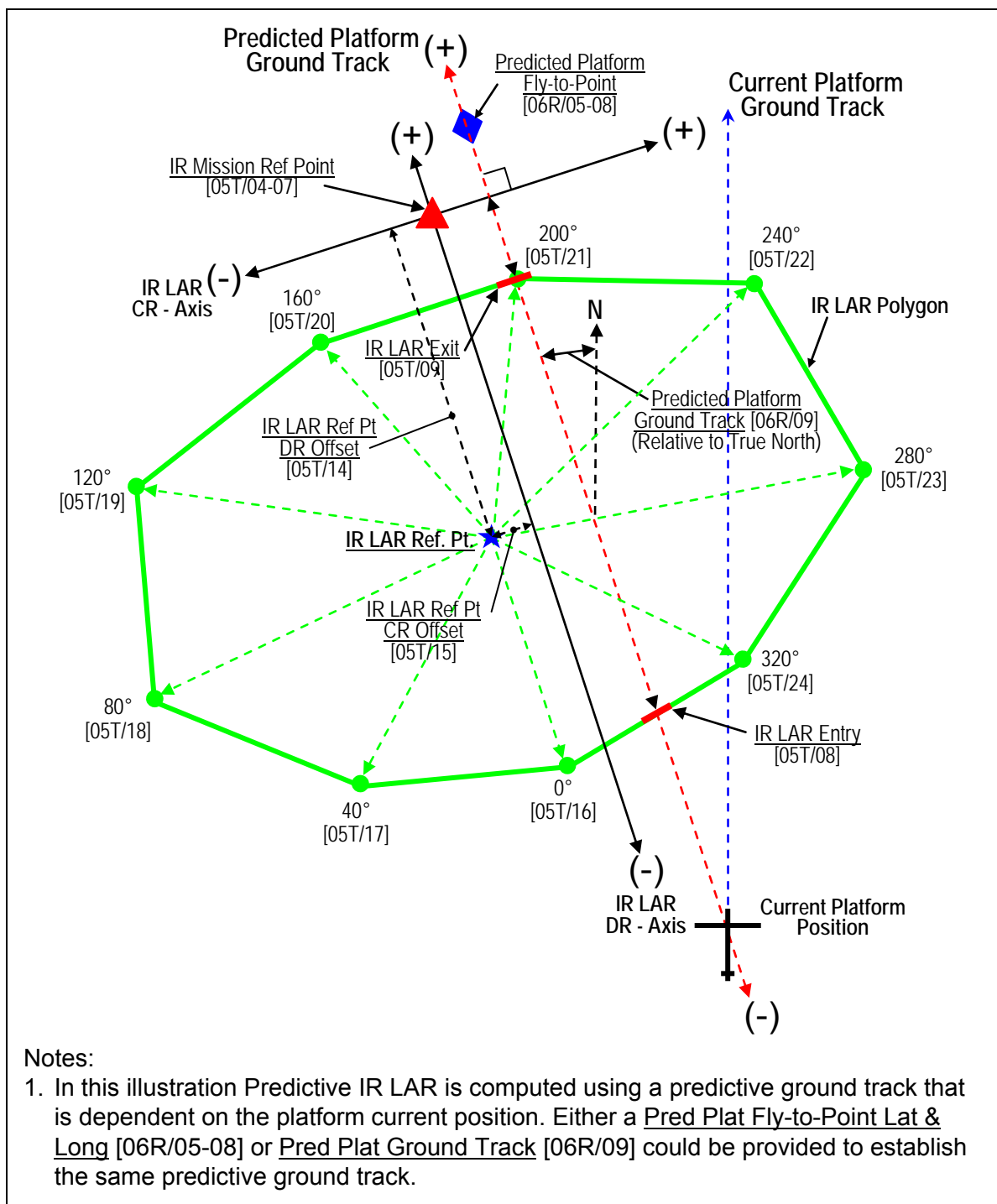
Figure 6.05T-2 Predictive In-Range Launch Acceptability Region - Scenario #1
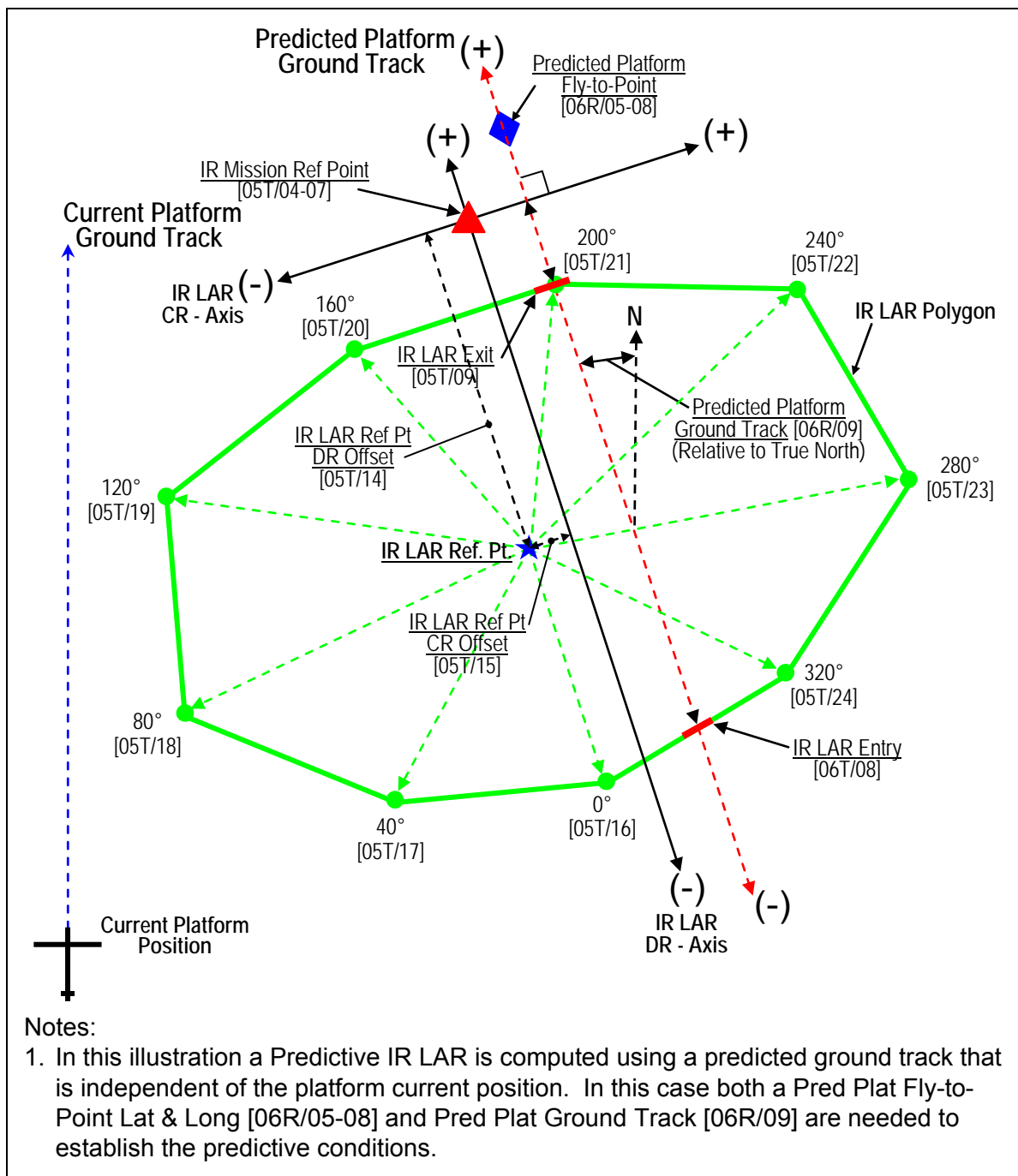
Figure 6.05T-3 Predictive In-Range Launch Acceptability Region - Scenario #2

Notes:

1. In this illustration a Predictive IR LAR is computed using a predicted ground track that is independent of the platform current position. In this case both a Pred Plat Fly-to-Point Lat & Long [06R/05-08] and Pred Plat Ground Track [06R/09] are needed to establish the predictive conditions.

6.05T.1 <u>Invalidity</u> [05T/02]

6.05T.1.1 <u>IR LAR Entry/Exit Invalid</u> [05T/02/00]

The store reports the validity status of the <u>IR LAR Entry/Exit</u> [05T/08-09] data in <u>IR LAR Entry/Exit Invalid</u> [05T/02/00].

Store Requirements

The store shall **{ss_6683}** set <u>IR LAR Entry/Exit Invalid</u> [05T/02/00 = 1] if any of the following conditions are true:

    a. IR LAR Polygon Invalid [05T/02/03 = 1]

    b. The platform ground track used to compute the IR LAR Data [05T] does not intersect the IR LAR Polygon.

    c. Other conditions as defined in the store supplement **{sup_6261}**.

6.05T.1.2 <u>IR Dynamic TOF Invalid</u> [05T/02/01]

The store reports the validity status of <u>IR Dynamic TOF - Min</u> [05T/10] and <u>IR Dynamic TOF - Max</u> [05T/11] in <u>IR Dynamic TOF Invalid</u> [05T/02/01].

Store Requirements

The store shall **{ss_6684}** set <u>IR Dynamic TOF Invalid</u> [05T/02/01 = 1] if any of the following conditions are true:

    a. IR LAR Polygon Invalid [05T/02/03 = 1]

    b. The platform is not within the IR LAR and the platform ground track used to compute LAR does not intersect the IR LAR.

6.05T.1.3 <u>IR TOF from Release Point Invalid</u> [05T/02/02]

The store reports the validity status of <u>IR TOF from Release Point - Min</u> [05T/12] and <u>IR TOF from Release Point - Max</u> [05T/13] in <u>IR TOF from Release Point Invalid</u> [05T/02/02].

Store Requirements

The store shall **{ss_6685}** set <u>IR TOF from Release Point Invalid</u> [05T/02/02 = 1] if any of the following conditions are true:

    a. <u>IR LAR Polygon Invalid</u> [05T/02/03 = 1]

    b. <u>Release Point</u> [06R/15-18] not received

    c. <u>Release Point</u> [06R/15-18] not within the IR LAR

6.05T.1.4 <u>IR LAR Polygon Invalid</u> [05T/02/03]

The store reports the validity of the IR LAR Polygon Data as defined by <u>IR LAR Ref Pt DR Offset</u> [05T/14], <u>IR LAR Ref Pt CR Offset</u> [05T/15] and <u>IR LAR Offset 0°, 40°, 80°, … 320°</u> [05T/16-24] in <u>IR LAR Polygon Invalid</u> [05T/02/03].

Carriage System Requirements

A Type 2 carriage system shall **{css_6179}** set <u>IR LAR Polygon Invalid</u> [05T/02/03 = 1] if there is no intersection of the multiple mission store IR LARs being used to compute a composite IR LAR.

Mission Store Requirements

The mission store shall **{ss_6686}** set <u>IR LAR Polygon Invalid</u> [05T/02/03 = 1] if any of the following conditions are true:

    a. The platform flight conditions, environmental conditions or mission parameters exceed the LAR envelope that is modeled by the store as defined in the store supplement **{sup_6262}**, except when the mission store implements **{sm_6013}**.

    b. No IR LAR can be computed for the combination of platform flight conditions, environmental conditions and mission parameters (or adjusted values if the mission store implements **{sm_6013}**) being used.

    c. Other conditions as defined in the store supplement **{sup_6263}**.

6.05T.1.5 <u>IR CLAR Status Invalid</u> [05T/02/04]

The carriage system reports the validity status of the <u>IR CLAR Store Quantity</u> [05T/25/00…03] and <u>CLAR Fire Interval</u> [05T/26] in <u>IR CLAR Status Invalid</u> [05T/02/04].

Carriage System Requirements

A Type 2 carriage system shall **{css_6245}** set <u>IR CLAR Status Invalid</u> [05T/02/04 = 1] as documented in the store supplement **{sup_6328}**.

6.05T.1.6 <u>IR Limit Indicators Invalid</u> [05T/02/05]

The store reports the validity status of <u>IR Limit Indicators</u> [05T/27] in <u>IR Limit Indicators Invalid</u> [05T/02/05]. Section 4.7 Invalidity Word(s) provides additional information and requirements.

6.05T.2 <u>IR LAR Status</u> [05T/03]

6.05T.2.1 <u>IR/IZ Status</u> [05T/03/00…01]

<u>IR Status</u> [05T/03/00] and <u>IZ Status</u> [05T/03/01] indicate whether the store is inside or outside the Current In-Range LAR and Current In-Zone LAR respectively. <u>IR Status</u> and <u>IZ Status</u> are always based on unadjusted current platform flight, release countdown delay time derived from <u>LAR Control</u> [06R], and environmental conditions

and provided in both LAR data messages (IR LAR Data [05T], IZ LAR Data [06T]), and in Mission Monitor [22T].

Carriage System Requirements

A Type 2 carriage system shall **{css_6180}** set IR Status [05T/03/00 = 1] if all individual mission stores used in the Current In-Range CLAR calculation are reporting that they are In-Range (i.e., IR Status [05T/03/00 = 1] or IR Status [06T/03/00 = 1]).

A Type 2 carriage system shall **{css_6181}** set IZ Status [05T/03/01 = 1] if all individual mission stores used in the Current In-Zone CLAR calculation are reporting that they are In-Zone (i.e., IZ Status [05T/03/01 = 1] or IZ Status [06T/03/01 = 1]).

Mission Store Requirements

The mission store shall **{ss_6687}** set IR Status [05T/03/00 = 1] if the platform is inside the Current In-Range LAR polygon and the current conditions are within the IR LAR envelope.

The mission store shall **{ss_6688}** set IZ Status [05T/03/01 = 1] if the platform is inside the Current In-Zone LAR polygon and the current conditions are within the IZ LAR envelope.

6.05T.2.2 IR LAR Conditions [05T/03/03]

Store Requirements

The store shall **{ss_6707}** set IR LAR Conditions [05T/03/03 = 0] when IR LAR Data [05T] is computed using current platform flight and environmental conditions.

The store shall **{ss_6708}** set IR LAR Conditions [05T/03/03 = 1] when IR LAR Data [05T] is computed using predicted platform flight or environmental conditions.

6.05T.2.3 IR Msn Ref Pt Description [05T/03/04…06]

IR Msn Ref Pt Description [05T/03/04…06] provides IR Mission Ref Point Lat & Long [05T/04-07] definition IAW Table 6.05T-1.

Table 6.05T-1 Mission Reference Point Definitions

Msn Ref Pt Description Identifier	Name	Definition
000 (B)	Target	The target coordinates provided by the platform via MDT-Mission [13R-020] or Modify Mission: Target [17R-1]
001 (B)	1st Waypoint	1st Waypoint provided by platform via MDT-Mission [13R-020]
010 (B)	Pseudo - Waypoint	Waypoint computed by the store
011 (B)	Composite LAR Fly-to-Point	The Pred Plat Fly-to-Point Lat & Long [06R/05-08] provided by the platform to the Type 2 carriage system.

Table 6.05T-1 Mission Reference Point Definitions

Msn Ref Pt Description Identifier	Name	Definition
100 (B)	Pseudo-Composite LAR Fly-to-Point	Reference point computed by the Type 2 carriage system and used in the Composite LAR as a Pred Plat Fly-to-Point Lat & Long [06R/05-08].
101 (B)	Other	A Mission Ref Point Lat & Long that is defined differently than any of the definition specified above.
110 (B)and 111 (B)	Unused	N/A

Store Requirements

The store shall **{ss_6689}** set the IR Msn Ref Pt Description [05T/03/04…06] IAW Table 6.05T-1.

The store supplement **{sup_6264}** documents all possible settings of IR Msn Ref Pt Description [05T/03/04…06] and the conditions under which each would be set.

6.05T.2.4 IR LAR Scaling [05T/03/07…08]

IR LAR Scaling [05T/03/07…08] indicates the scaling factor applied to IR LAR Entry [05T/08], IR LAR Exit [05T/09] and IR LAR Offset 0°, 40°, 80°, … 320° [05T/16-24] IAW Table 6.05T-2. IR LAR Scaling adjusts IR LAR entry, exit, and offset ranges to accommodate different store maximum range capabilities.

Table 6.05T-2 LAR Scaling Options

Scale Identifier	LSB	MSB	Resolution	Min Value	Max Value	Full Scale
00 (B)	2^4	2^{18}	1.6000E+01	-5.2429E+05	5.2427E+05	5.2427E+05
01 (B)	2^5	2^{19}	3.2000E+01	-1.0486E+06	1.0485E+06	1.0485E+06
10 (B)	2^6	2^{20}	6.4000E+01	-2.0972E+06	2.0971E+06	2.0971E+06
11 (B)	2^7	2^{21}	1.2800E+02	-4.1943E+06	4.1942E+06	4.1942E+06

Store Requirements

The store shall **{ss_6690}** set IR LAR Scaling [05T/03/07…08] IAW Table 6.05T-2 to indicate the common scaling that applies to IR LAR Entry [05T/08], IR LAR Exit [05T/09] and IR LAR Offset 0°, 40°, 80°, … 320° [05T/16-24].

6.05T.2.5 IR Out-of-Bound Indicators [05T/03/09…14]

IR Out-of Bound Indicators [05T/03/09…14] include: IR Altitude High [05T/03/09], IR Altitude Low [05T/03/10], IR Speed High [05T/03/11], IR Speed Low [05T/03/12], IR Flight Path Angle [05T/03/13] and IR Ground Track [05T/03/14]. These indicate that the current or predictive platform flight conditions exceed the altitude, speed, flight path angle, or ground track limits of the IR LAR envelope and the provided IR LAR Data [05T] is not useable for store release.

Platform Requirements

The platform shall **{ps_6578}** provide an indication to the aircrew as defined in the platform annex **{ann_6018}** when IR Out-of-Bound Indicators [05T/03/09…14 ≠ 000000 (B)].

Carriage System Requirements

A Type 2 carriage system shall **{css_6235}** set the IR Out-of-Bound Indicators [05T/03/09…14] as a logical OR of all individual mission stores IR Out-of-Bound Indicators [05T/03/09…14] used in the CLAR IR LAR Data [05T] calculation.

Mission Store Requirements

The mission store shall **{ss_6691}** set the applicable IR out-of-bound indicators listed below to logic 1 to indicate that the respective IR LAR input data is outside the IR LAR envelope:

    a.   IR Altitude High [05T/03/09]

    b.   IR Altitude Low [05T/03/10]

    c.   IR Speed High [05T/03/11]

    d.   IR Speed Low [05T/03/12]

    e.   IR Flight Path Angle [05T/03/13]

    f.   IR Ground Track [05T/03/14]

The mission store supplement **{sup_6265}** documents the limits on the IR LAR out-of-bound conditions beyond which the store will set IR LAR Polygon Invalid [05T/02/03 = 1].

6.05T.3   IR Mission Ref Point Lat & Long [05T/04-07]

IR Mission Ref Point Lat & Long [05T/04-07] is the origin of the coordinate system for the IR LAR Entry/Exit Data [05T/08-09] and IR LAR Polygon Data [05T/14-24] as shown in Figures 6.05T-1 through 6.05T-3. IR Mission Ref Point Lat & Long coordinates correspond to IR Msn Ref Pt Description [05T/03/04…06] IAW in Table 6.05T-1 and are based on the type of mission the store performs and whether IR LAR Data [05T] is for a single mission store LAR or a carriage system composite LAR.

Carriage System Requirements

A Type 2 carriage system shall **{css_6182}** use the Pred Plat Fly-to-Point Lat & Long [06R/05-08], if provided, as the IR Mission Ref Point Lat & Long [05T/04-07].

A Type 2 carriage system shall **{css_6183}** determine the IR Mission Ref Point Lat & Long [05T/04-07], if Pred Plat Fly to Point Invalid [06R/02/02 = 1], as documented in the carriage system supplement **{sup_6266}**.

Mission Store Requirements

The mission store shall **{ss_6692}** provide IR Mission Ref Point Lat & Long [05T/04-07] as the origin of the coordinate system for IR LAR Entry/Exit Data [05T/08-09] and IR LAR Polygon Data [05T/14-24].

6.05T.4 IR LAR Entry/Exit Data [05T/08-09]

IR LAR Entry/Exit Data consists of IR LAR Entry [05T/08] and IR LAR Exit [05T/09]. The IR LAR Entry/Exit Data parameters are defined as ranges along the platform ground track and from the IR LAR CR-Axis line that the platform will enter and exit the IR LAR as shown in Figures 6.05T-1 through 6.05T-3.

The IR LAR CR-Axis line intersects the IR Mission Reference Point Lat & Long [05T/04-07] and is perpendicular to platform ground track used to compute the IR LAR Data [05T] as shown in Figures 6.05T-1 through 6.05T-3. A negative value is the distance from the IR LAR CR-Axis line in the opposite direction of the platform ground track and a positive value is the distance from the IR LAR CR-Axis line in the same direction as the platform ground track.

Store Requirements

The store shall **{ss_6693}** set IR LAR Entry [05T/08] equal to the range along the platform ground track and from the IR LAR CR-Axis where the platform enters the IR LAR if the platform ground track intersects the IR LAR.

The store shall **{ss_6694}** set IR LAR Exit [05T/09] equal to the range along the platform ground track and from the IR LAR CR-Axis line where the platform exits the IR LAR if the platform ground track intersects the IR LAR.

6.05T.5 IR Dynamic TOF Min & Max [05T/10-11]

IR Dynamic TOF consisting of IR Dynamic TOF - Min [05T/10] and IR Dynamic TOF - Max [05T/11] reports the store TOF to aid the platform in carrying out "Time-On-Target" critical missions or simply to support a determination of the estimated time of impact. For a mission store IR Dynamic TOF - Min [05T/10] and IR Dynamic TOF - Max [05T/11] will always be set equal to the same value. For a Type 2 carriage system that is providing a composite IR LAR from multiple mission store IR LARs, IR Dynamic TOF - Min [05T/10] and IR Dynamic TOF - Max [05T/11] can be set in either of two ways. In the simpler method, IR Dynamic TOF - Min [05T/10] is set equal to the shortest IR Dynamic TOF reported by a mission store and IR Dynamic TOF - Max [05T/11] is set equal to the longest IR Dynamic TOF reported by a mission store. The TOF values provided in this method are based on the point at which the platform ground track intersects the mission store IR LAR or the current location of the mission store if the store is within the mission store IR LAR. Since these TOF values are not based on the IR CLAR, they are not always accurate TOFs for the CLAR, depending on the particular CLAR situation (size differences between the IR LARs of the individual mission stores, spacing between the mission store targets, arrangement of the mission store targets, etc.). Another method which is used to provide CLAR TOFs is available to a Type 2 carriage system if the platform does not provide a Release Point [06R/15-18]. This

method allows the Type 2 carriage system to set the Release Point [06R/15-18] to the IR CLAR entry point and use the resulting IR TOF from Release Point values from the mission stores to determine the IR Dynamic TOF - Min and IR Dynamic TOF - Max for the IR CLAR. Section 3.8.4.2 Carriage System Data Manipulation (Type 2 CS Only) provides additional information and requirements on the use of this method.

The mission store will provide IR Dynamic TOF if IR LAR Polygon Invalid [05T/03/03 = 0] and the platform is either within the IR LAR or on a ground track that intersects the IR LAR. In the former case IR Dynamic TOF is periodically updated assuming an instantaneous receipt of CTS [11R/04/02 = 1] and release from the platform following the total release countdown delay time determined per Table 6.06R-2. In the latter case IR Dynamic TOF is set equal to the TOF at the IR LAR entry point.

Carriage System Requirements

A Type 2 carriage system shall **{css_6229}** set IR Dynamic TOF - Min [05T/10] equal to the shortest IR TOF from Release Point [05T/12-13] reported by any mission store(s) in the release sequence when all of the following are true:

    a. the platform is outside the IR CLAR,

    b. the platform did not provide a Release Point [06R/15-18] to the carriage system, and

    c. the Type 2 carriage system has provided the coordinates of the IR CLAR entry point as the Release Point [06R/15-18] to the mission store(s).

A Type 2 carriage system shall **{css_6230}** set IR Dynamic TOF - Max [05T/11] equal to the longest IR TOF from Release Point [05T/12-13] reported by any mission store(s) in the release sequence when all of the following are true:

    a. the platform is outside the IR CLAR,

    b. the platform did not provide a Release Point [06R/15-18] to the carriage system, and

    c. the Type 2 carriage system has provided the coordinates of the IR CLAR entry point as the Release Point [06R/15-18] to the mission store(s).

A Type 2 carriage system shall **{css_6184}** set IR Dynamic TOF - Min [05T/10] equal to the shortest IR Dynamic TOF reported by any mission store(s) in the release sequence when **{css_6229}** is not invoked.

A Type 2 carriage system shall **{css_6185}** set IR Dynamic TOF - Max [05T/11] equal to the longest IR Dynamic TOF reported by any mission store(s) in the release sequence when **{css_6230}** is not invoked.

Mission Store Requirements

The mission store shall **{ss_6695}** set IR Dynamic TOF - Min [05T/10] and IR Dynamic TOF - Max [05T/11] equal to the current time of flight assuming CTS [11R/04/02] is commanded instantaneously if the platform is inside the IR LAR.

The mission store shall **{ss_6696}** set IR Dynamic TOF - Min [05T/10] and IR Dynamic TOF - Max [05T/11] equal to the time of flight from the IR LAR entry point to the target, if platform is outside the IR LAR and the platform ground track intersects the IR LAR.

The mission store shall **{ss_6697}** compute IR Dynamic TOF as the summation of the following two times:

a. Total Release Countdown Time Delay as computed IAW Table 6.06R-2 (delay between CTS [11R/04/02] and store release).

b. TOF from a Release Point that is projected ahead of the platform by the Total Release Countdown Time Delay computed IAW Table 6.06R-2 and assuming the platform maintains current flight conditions or predictive flight conditions, as applicable, during the delay between CTS [11R/04/02] and store release.

6.05T.6 IR TOF from Release Point Min & Max [05T/12-13]

IR TOF from Release Point consisting of IR TOF from Release Point - Min [05T/12] and IR TOF from Release Point - Max [05T/13] reports the store TOF at a Release Point [06R/15-18] that is provided by the platform. For a mission store IR TOF from Release Point - Min [05T/12] and IR TOF from Release Point - Max [05T/13] will always be set equal to the same value. For a carriage system that is providing a composite LAR from multiple mission store LARs, IR TOF from Release Point - Min [05T/12] will set to the shortest IR TOF from Release Point reported by a mission store and IR TOF from Release Point - Max [05T/13] will be set equal the longest IR TOF from Release Point reported by a mission store.

The store provides IR TOF from Release Point if IR LAR Polygon Invalid [05T/03/03 = 0] and Release Point [06R/15-18] is within the IR LAR.

Carriage System Requirements

A Type 2 carriage system shall **{css_6186}** set IR TOF from Release Point - Min [05T/12] equal to the shortest IR TOF from Release Point reported by any mission store(s) in the release sequence when a Release Point [06R/15-18] is provided by the platform.

A Type 2 carriage system shall **{css_6187}** set IR TOF from Release Point - Max [05T/13] equal to the longest IR TOF from Release Point reported by any mission store(s) in the release sequence when a Release Point [06R/15-18] is provided by the platform.

Mission Store Requirements

The mission store shall **{ss_6698}** set IR TOF from Release Point - Min [05T/12] and IR TOF from Release Point - Max [05T/13] equal to the time of flight from the Release Point [06R/15-18] to the target, if the Release Point is within the IR LAR and assuming CTS [11R/04/02] is commanded at the Release Point.

The mission store shall **{ss_6699}** compute IR TOF from Release Point by applying the same conditions at Release Point [06R/15-18] as used to compute the IR LAR.

The mission store shall **{ss_6700}** compute IR TOF from Release Point as the summation of the following two times:

    a. Total Release Countdown Time Delay as computed IAW Table 6.06R-2 (delay between CTS [11R/04/02] and store release).

    b. TOF from an actual Release Point that is projected ahead of the Release Point [06R/15-18] provided by the platform by the Total Release Countdown Time Delay computed IAW Table 6.06R-2 and assuming the platform maintains current flight conditions during the delay between CTS [11R/04/02] and store release.

6.05T.7 IR LAR Polygon Data

IR LAR Polygon Data consists of (1) IR LAR Ref Pt DR Offset [05T/14], (2) IR LAR Ref Pt CR Offset [05T/15], and (3) IR LAR Offset 0º, 40º, 80º, … 320º [05T/16-24]. The IR LAR Polygon Data parameters are defined by a IR LAR Reference Point and nine offset ranges as illustrated in Figures 6.05T-1 through 6.05T-3.

6.05T.7.1 IR LAR Reference Point

The store computes an IR LAR Reference Point that is defined by the IR LAR Ref Pt DR Offset [05T/14] and IR LAR Ref Pt CR Offset [05T/15] from the IR Mission Ref Point Lat & Long [05T/04-07] within a coordinate system that is illustrated in Figures 6.05T-1 through 6.05T-3 and defined as follows:

- Origin is the IR Mission Ref Point Lat & Long [05T/04-07].

- The IR LAR DR-Axis intersects the IR Mission Ref Point Lat & Long and is parallel with the current or predicted platform ground track, as applicable. Negative is in the opposite direction of the platform ground track and positive is in the same direction as the platform ground track.

- The IR LAR CR-Axis intersects the IR Mission Ref Point Lat & Long and is perpendicular to the IR LAR DR-Axis. From the platform perspective negative is to the left and positive is to the right of the IR Mission Ref Point Lat & Long.

Store Requirements

The store shall **{ss_6701}** provide a IR LAR Reference Point as a down range offset IR LAR Ref Pt DR Offset [05T/14] and a cross range offset IR LAR Ref Pt CR Offset [05T/15] from the IR Mission Ref Point Lat & Long [05T/04-07].

6.05T.7.2 IR LAR Offsets

The nine offset ranges, IR LAR Offset 0º, IR LAR Offset 40º…IR LAR Offset 320º, extending from the IR LAR Reference Point are spaced in 40º increments about the IR LAR Reference Point and aligned with the platform ground track as shown in Figures 6.05T-1 through 6.05T-3. IR LAR Offset 0º extends from the IR LAR Reference Point on a line that is parallel with, and in the opposite direction of, the platform ground track.

Store Requirements

The store shall **{ss_6702}** set IR LAR Offset 0º, 40º, 80º, … 320º [05T/16-24] to the ranges that define the 9-sided IR LAR relative to the IR LAR Reference Point and aligned with the platform ground track if conditions for computing a valid IR LAR Polygon have been met.

6.05T.8 IR CLAR Store Quantity [05T/25/00…03]

A Type 2 carriage system provides IR CLAR Store Quantity [05T/25/00…03] to inform the platform of the number of stores actually being used in computing the IR CLAR, which is equal to Number to Fire [11T/13] for Current CLAR or Pred CLAR Store Quantity [06R/03/04…07] for Predictive CLAR.

Carriage System Requirements

A Type 2 carriage system shall **{css_6188}** set IR CLAR Store Quantity [05T/25/00…03] to the number of mission stores being used in computing IR CLAR.

Mission Store Requirements

The mission store shall **{ss_6703}** set IR CLAR Store Quantity [05T/25/00…03 = 0].

6.05T.9 CLAR Fire Interval [05T/26]

A Type 2 carriage system provides CLAR Fire Interval [05T/26] to inform the platform of the fire interval being used in computing the CLAR, which is equal to Fire Interval [11T/12] for Current CLAR or Pred CLAR Fire Interval [06R/19] for Predictive CLAR.

Carriage System Requirements

A Type 2 carriage system shall **{css_6189}** set CLAR Fire Interval [05T/26] to the time interval between individual mission store releases being used in computing CLAR.

Mission Store Requirements

The mission store shall **{ss_6704}** set CLAR Fire Interval [05T/26 = 0].

6.05T.10 IR Limit Indicators [05T/27]

IR Limit Condition A-H [05T/27/00…07] allow each store to define up to eight additional conditions that are included in the IR LAR envelope. These indicators could be defined to consider roll, yaw, terminal conditions, wind effects, or any other parameters as specified in the store supplement. These indicate that the current or predictive platform flight conditions exceed limits of the IR LAR envelope and the provided IR LAR Data [05T] is not useable for store release.

Platform Requirements

The platform shall **{ps_6579}** provide an indication to the aircrew as defined in the platform annex **{ann_6021}** when <u>IR Limit Condition A-H</u> [05T/27/00…07 ≠ 00000000 (B)].

Carriage System Requirements

A Type 2 carriage system shall **{css_6236}** set the <u>IR Limit Condition A-H</u> [05T/27/00…07] as a logical OR of all individual mission stores <u>IR Limit Condition A-H</u> [05T/27/00…07] used in the CLAR <u>IR LAR Data</u> [05T] calculation.

Mission Store Requirements

The mission store shall **{ss_6770}** set the applicable IR limit indicators listed below to logic 1 to indicate that the respective IR LAR input data is outside the IR LAR envelope:

     a. <u>IR Limit Condition A</u> [05T/27/00]

     b. <u>IR Limit Condition B</u> [05T/27/01]

     c. <u>IR Limit Condition C</u> [05T/27/02]

     d. <u>IR Limit Condition D</u> [05T/27/03]

     e. <u>IR Limit Condition E</u> [05T/27/04]

     f. <u>IR Limit Condition F</u> [05T/27/05]

     g. <u>IR Limit Condition G</u> [05T/27/06]

     h. <u>IR Limit Condition H</u> [05T/27/07]

The mission store shall **{ss_6833}** set either <u>IR Limit Condition A-H</u> [05T/27/00…07 ≠ 00000000 (B)] or <u>IR Out-of-Bound Indicators</u> [05T/03/09…14 ≠ 000000 (B)] to indicate the exceeded IR parameter(s), when reporting current <u>IR LAR Data</u> [05T] if the current platform position (Latitude and Longitude) is inside the reported current IR LAR polygon and <u>IR Status</u> [05T/03/00 = 0].

MESSAGE NAME: IR LAR Data
MESSAGE ID: 05T TRANSFER TYPE: RT-BC
SOURCE: Store WORD COUNT: 30
DESTINATION: Platform XMIT RATE: 32.0 Hz (Max)

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 00101 (B)
Status Word	SW	MIL-STD-1553 Status Word
Header	01	Message Descriptor
IR LAR Invalidity	02	Validity of Message Data
IR LAR Status	03	IR LAR Status
IR Mission Ref Point Lat	04	IR Mission Reference Point Latitude (MSW)
	05	IR Mission Reference Point Latitude (LSW)
IR Mission Ref Point Long	06	IR Mission Reference Point Longitude (MSW)
	07	IR Mission Reference Point Longitude (LSW)
IR LAR Entry	08	Range to leading edge of IR LAR boundary
IR LAR Exit	09	Range to trailing edge of IR LAR boundary
IR Dynamic TOF - Min	10	IR Dynamic Time of Flight - Min
IR Dynamic TOF - Max	11	IR Dynamic Time of Flight - Max
IR TOF from Release Point - Min	12	IR Time of Flight at Release Point - Min
IR TOF from Release Point - Max	13	IR Time of Flight at Release Point - Max
IR LAR Ref Pt DR Offset	14	IR LAR Reference Point Down Range Offset
IR LAR Ref Pt CR Offset	15	IR LAR Reference Point Cross Range Offset
IR LAR Offset 0°	16	IR LAR Offset 0º relative to platform grd trk
IR LAR Offset 40°	17	IR LAR Offset 40º relative to platform grd trk
IR LAR Offset 80°	18	IR LAR Offset 80º relative to platform grd trk
IR LAR Offset 120°	19	IR LAR Offset 120º relative to platform grd trk
IR LAR Offset 160°	20	IR LAR Offset 160º relative to platform grd trk
IR LAR Offset 200°	21	IR LAR Offset 200º relative to platform grd trk
IR LAR Offset 240°	22	IR LAR Offset 240º relative to platform grd trk
IR LAR Offset 280°	23	IR LAR Offset 280º relative to platform grd trk
IR LAR Offset 320°	24	IR LAR Offset 320º relative to platform grd trk
IR CLAR Store Quantity	25	Quantity of mission stores included in IR CLAR
CLAR Fire Interval	26	Interval between stores releases for CLAR computation
IR Limit Indicators	27	IR LAR Limit Condition Indicators
Reserved	28	Reserved
Reserved	29	Reserved
Reserved	30	Reserved

REMARKS/NOTES:

WORD NAME: Header

	CATEGORY: Header
WORD ID: 05T/01	MAX VALUE: 0605 (H)
SOURCE(s): Store	MIN VALUE: 0605 (H)
DEST(s): Platform	RESOLUTION: 1
COMP RATE: Note 1	ACCURACY: N/A
XMIT RATE: Note 2	MSB: 2^15
SIGNAL TYPE: Hexadecimal	LSB: 2^0
UNITS: N/A	FULL SCALE: FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB ---
	-01-B	
	-02-B	Hex digit #1 value =0 (H)
	-03-B	LSB ---
Hex Digit #2	-04-B	MSB ---
	-05-B	
	-06-B	Hex digit #2 value = 6 (H)
	-07-B	LSB ---
Hex Digit #3	-08-B	MSB ---
	-09-B	
	-10-B	Hex digit #3 value = 0 (H)
	-11-B	LSB ---
Hex Digit #4	-12-B	MSB ---
	-13-B	
	-14-B	Hex digit #4 value = 5 (H)
	-15-B	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: IR LAR Invalidity

		CATEGORY:	Validity
WORD ID:	05T/02	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	Note 1	ACCURACY:	N/A
XMIT RATE:	Note 2	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
IR LAR Entry/Exit Invalid	-00-V	Set to logic 1 when Words 8-9 are invalid
IR Dynamic TOF Invalid	-01-V	Set to logic 1 when Words 10-11 are invalid
IR TOF from Release Point Invalid	-02-V	Set to logic 1 when Words 12-13 are invalid
IR LAR Polygon Invalid	-03-V	Set to logic 1 when Words 4-7 and 14-24 are invalid
IR CLAR Status Invalid	-04-V	Set to logic 1 when Words 25 and 26 are invalid
IR Limit Indicators Invalid	-05-V	Set to logic 1 when Word 27 is invalid
Reserved	-06-0	Set to logic 0
Reserved	-07-0	Set to logic 0
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: IR LAR Status

		CATEGORY:	Special
WORD ID:	05T/03	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	Note 1	ACCURACY:	N/A
XMIT RATE:	Note 2	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION	
IR Status	-00-D		0 = Not In-Range, 1 = In-Range
IZ Status	-01-D		0 = Not In-Zone, 1 = In-Zone
Unused	-02-0		Set to logic 0
IR LAR Conditions	-03-D		0 = Current Conditions, 1 = Predicted Conditions
IR Msn Ref Pt Description	-04-C	MSB	---
	-05-C		Set IAW Table 6.05T-1.
	-06-C	LSB	---
IR LAR Scaling	-07-C	MSB	---
			Set IAW Table 6.05T-2.
	-08-C	LSB	---
IR Altitude High	-09-D		1 = Altitude above IR LAR envelope
IR Altitude Low	-10-D		1 = Altitude below IR LAR envelope
IR Speed High	-11-D		1 = Speed above IR LAR envelope
IR Speed Low	-12-D		1 = Speed below IR LAR envelope
IR Flight Path Angle	-13-D		1 = Flight Path Angle outside IR LAR envelope
IR Ground Track	-14-D		1 = Ground Track outside IR LAR envelope
Unused	-15-0		Set to logic 0

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: IR Mission Ref Point Lat

		CATEGORY:	Angle(M)
WORD ID:	05T/04-05	MAX VALUE:	5.0000E-01
SOURCE(s):	Store	MIN VALUE:	-5.0000E-01
DEST(s):	Platform	RESOLUTION:	2^-31
COMP RATE:	Note 1	ACCURACY:	N/A
XMIT RATE:	Note 2	MSB:	2^-1
SIGNAL TYPE:	2's Complement	LSB:	2^-31
UNITS:	Semicircles	FULL SCALE:	5.0000E-01

FIELD NAME		BIT NO.	DESCRIPTION
Latitude	MSW	-00-S	Sign
		-01-N	MSB ---
		-02-N	
		-03-N	
		-04-N	
		-05-N	
		-06-N	
		-07-N	
		-08-N	
		-09-N	
		-10-N	
		-11-N	
		-12-N	
		-13-N	
		-14-N	
		-15-N	
	LSW	-00-N	
		-01-N	
		-02-N	
		-03-N	
		-04-N	
		-05-N	
		-06-N	
		-07-N	
		-08-N	
		-09-N	
		-10-N	
		-11-N	
		-12-N	
		-13-N	
		-14-N	
		-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.

2. Platform dependent and specified in the Platform Annex.

3. North latitudes are positive and south latitudes are negative.

WORD NAME: IR Mission Ref Point Long

			CATEGORY:	Angle(M)
WORD ID:	05T/06-07		MAX VALUE:	1.0000E+00
SOURCE(s):	Store		MIN VALUE:	-1.0000E+00
DEST(s):	Platform		RESOLUTION:	2^-31
COMP RATE:	Note 1		ACCURACY:	N/A
XMIT RATE:	Note 2		MSB:	2^-1
SIGNAL TYPE:	2's Complement		LSB:	2^-31
UNITS:	Semicircles		FULL SCALE:	1.0000E+00

FIELD NAME		BIT NO.	DESCRIPTION
Longitude	MSW	-00-S	Sign
		-01-N	MSB --
		-02-N	
		-03-N	
		-04-N	
		-05-N	
		-06-N	
		-07-N	
		-08-N	
		-09-N	
		-10-N	
		-11-N	
		-12-N	
		-13-N	
		-14-N	
		-15-N	
	LSW	-00-N	
		-01-N	
		-02-N	
		-03-N	
		-04-N	
		-05-N	
		-06-N	
		-07-N	
		-08-N	
		-09-N	
		-10-N	
		-11-N	
		-12-N	
		-13-N	
		-14-N	
		-15-N	LSB --

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.

2. Platform dependent and specified in the Platform Annex.

3. Longitude is defined as zero at the prime meridian with positive to the East.

WORD NAME: IR LAR Entry

WORD ID:	05T/08	CATEGORY:	Special
SOURCE(s):	Store	MAX VALUE:	Note 3
DEST(s):	Platform	MIN VALUE:	Note 3
COMP RATE:	Note 1	RESOLUTION:	Note 3
XMIT RATE:	Note 2	ACCURACY:	Note 1
SIGNAL TYPE:	2's Complement	MSB:	Note 3
UNITS:	Meters	LSB:	Note 3
		FULL SCALE:	Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IR LAR Entry	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.
3. The noted values are determined by IR LAR Scaling [05T/03/07…08] and Table 6.05T-2.

WORD NAME: IR LAR Exit

	CATEGORY:	Special
WORD ID: 05T/09	MAX VALUE:	Note 3
SOURCE(s): Store	MIN VALUE:	Note 3
DEST(s): Platform	RESOLUTION:	Note 3
COMP RATE: Note 1	ACCURACY:	Note 1
XMIT RATE: Note 2	MSB:	Note 3
SIGNAL TYPE: 2's Complement	LSB:	Note 3
UNITS: Meters	FULL SCALE:	Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IR LAR Exit	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.
3. The noted values are determined by IR LAR Scaling [05T/03/07…08] and Table 6.05T-2.

WORD NAME: IR Dynamic TOF - Min

WORD ID:	05T/10	CATEGORY:	Special
SOURCE(s):	Store	MAX VALUE:	3.2767E+04
DEST(s):	Platform	MIN VALUE:	0.0000E+00
COMP RATE:	Note 1	RESOLUTION:	5.0000E-01
XMIT RATE:	Note 2	ACCURACY:	Note 1
SIGNAL TYPE:	Unsigned	MSB:	2^{14}
UNITS:	Seconds	LSB:	2^{-1}
		FULL SCALE:	3.2767E+04

FIELD NAME	BIT NO.	DESCRIPTION
IR Dynamic TOF - Min	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: IR Dynamic TOF - Max

	CATEGORY: Special
WORD ID: 05T/11	MAX VALUE: 3.2767E+04
SOURCE(s): Store	MIN VALUE: 0.0000E+00
DEST(s): Platform	RESOLUTION: 5.0000E-01
COMP RATE: Note 1	ACCURACY: Note 1
XMIT RATE: Note 2	MSB: 2^14
SIGNAL TYPE: Unsigned	LSB: 2^-1
UNITS: Seconds	FULL SCALE: 3.2767E+04

FIELD NAME	BIT NO.	DESCRIPTION
IR Dynamic TOF - Max	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: IR TOF from Release Point - Min

	CATEGORY:	Special
WORD ID: 05T/12	MAX VALUE:	3.2767E+04
SOURCE(s): Store	MIN VALUE:	0.0000E+00
DEST(s): Platform	RESOLUTION:	5.0000E-01
COMP RATE: Note 1	ACCURACY:	Note 1
XMIT RATE: Note 2	MSB:	2^14
SIGNAL TYPE: Unsigned	LSB:	2^-1
UNITS: Seconds	FULL SCALE:	3.2767E+04

FIELD NAME	BIT NO.	DESCRIPTION
IR TOF from Release Point - Min	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

FOR OFFICIAL USE ONLY

WORD NAME: IR TOF from Release Point - Max

WORD ID:	05T/13	
SOURCE(s):	Store	
DEST(s):	Platform	
COMP RATE:	Note 1	
XMIT RATE:	Note 2	
SIGNAL TYPE:	Unsigned	
UNITS:	Seconds	

CATEGORY:	Special
MAX VALUE:	3.2767E+04
MIN VALUE:	0.0000E+00
RESOLUTION:	5.0000E-01
ACCURACY:	Note 1
MSB:	2^{14}
LSB:	2^{-1}
FULL SCALE:	3.2767E+04

FIELD NAME	BIT NO.	DESCRIPTION
IR TOF from Release Point - Max	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: IR LAR Ref Pt DR Offset

		CATEGORY:	Distance
WORD ID:	05T/14	MAX VALUE:	5.2427E+05
SOURCE(s):	Store	MIN VALUE:	-5.2429E+05
DEST(s):	Platform	RESOLUTION:	2^4
COMP RATE:	Note 1	ACCURACY:	Note 1
XMIT RATE:	Note 2	MSB:	2^18
SIGNAL TYPE:	2's Complement	LSB:	2^4
UNITS:	Meters	FULL SCALE:	5.2427E+05

FIELD NAME	BIT NO.	DESCRIPTION
IR LAR Ref Point Down Range Offset	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: IR LAR Ref Pt CR Offset

WORD ID:	05T/15	CATEGORY: Distance
SOURCE(s):	Store	MAX VALUE: 5.2427E+05
DEST(s):	Platform	MIN VALUE: -5.2429E+05
COMP RATE:	Note 1	RESOLUTION: 2^4
XMIT RATE:	Note 2	ACCURACY: Note 1
SIGNAL TYPE:	2's Complement	MSB: 2^18
UNITS:	Meters	LSB: 2^4
		FULL SCALE: 5.2427E+05

FIELD NAME	BIT NO.	DESCRIPTION
IR LAR Ref Point Cross Range Offset	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: IR LAR Offset 0°

	CATEGORY: Distance
WORD ID: 05T/16	MAX VALUE: Note 3
SOURCE(s): Store	MIN VALUE: Note 3
DEST(s): Platform	RESOLUTION: Note 3
COMP RATE: Note 1	ACCURACY: Note 1
XMIT RATE: Note 2	MSB: Note 3
SIGNAL TYPE: 2's Complement	LSB: Note 3
UNITS: Meters	FULL SCALE: Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IR LAR Offset 0°	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.
3. The noted values are determined by IR LAR Scaling [05T/03/07…08] and Table 6.05T-2.

WORD NAME: IR LAR Offset 40°

	CATEGORY: Distance
WORD ID: 05T/17	MAX VALUE: Note 3
SOURCE(s): Store	MIN VALUE: Note 3
DEST(s): Platform	RESOLUTION: Note 3
COMP RATE: Note 1	ACCURACY: Note 1
XMIT RATE: Note 2	MSB: Note 3
SIGNAL TYPE: 2's Complement	LSB: Note 3
UNITS: Meters	FULL SCALE: Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IR LAR Offset 40°	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.
3. The noted values are determined by IR LAR Scaling [05T/03/07…08] and Table 6.05T-2.

WORD NAME: IR LAR Offset 80°

	CATEGORY: Distance
WORD ID: 05T/18	MAX VALUE: Note 3
SOURCE(s): Store	MIN VALUE: Note 3
DEST(s): Platform	RESOLUTION: Note 3
COMP RATE: Note 1	ACCURACY: Note 1
XMIT RATE: Note 2	MSB: Note 3
SIGNAL TYPE: 2's Complement	LSB: Note 3
UNITS: Meters	FULL SCALE: Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IR LAR Offset 80°	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.
3. The noted values are determined by IR LAR Scaling [05T/03/07…08] and Table 6.05T-2.

WORD NAME: IR LAR Offset 120°

	CATEGORY: Distance
WORD ID: 05T/19	MAX VALUE: Note 3
SOURCE(s): Store	MIN VALUE: Note 3
DEST(s): Platform	RESOLUTION: Note 3
COMP RATE: Note 1	ACCURACY: Note 1
XMIT RATE: Note 2	MSB: Note 3
SIGNAL TYPE: 2's Complement	LSB: Note 3
UNITS: Meters	FULL SCALE: Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IR LAR Offset 120°	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.
3. The noted values are determined by IR LAR Scaling [05T/03/07…08] and Table 6.05T-2.

WORD NAME: IR LAR Offset 160°

		CATEGORY:	Distance
WORD ID:	05T/20	MAX VALUE:	Note 3
SOURCE(s):	Store	MIN VALUE:	Note 3
DEST(s):	Platform	RESOLUTION:	Note 3
COMP RATE:	Note 1	ACCURACY:	Note 1
XMIT RATE:	Note 2	MSB:	Note 3
SIGNAL TYPE:	2's Complement	LSB:	Note 3
UNITS:	Meters	FULL SCALE:	Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IR LAR Offset 160°	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.
3. The noted values are determined by IR LAR Scaling [05T/03/07…08] and Table 6.05T-2.

WORD NAME: IR LAR Offset 200°

CATEGORY:	Distance
WORD ID: 05T/21	MAX VALUE: Note 3
SOURCE(s): Store	MIN VALUE: Note 3
DEST(s): Platform	RESOLUTION: Note 3
COMP RATE: Note 1	ACCURACY: Note 1
XMIT RATE: Note 2	MSB: Note 3
SIGNAL TYPE: 2's Complement	LSB: Note 3
UNITS: Meters	FULL SCALE: Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IR LAR Offset 200°	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.
3. The noted values are determined by IR LAR Scaling [05T/03/07…08] and Table 6.05T-2.

WORD NAME: IR LAR Offset 240°

	CATEGORY: Distance
WORD ID: 05T/22	MAX VALUE: Note 3
SOURCE(s): Store	MIN VALUE: Note 3
DEST(s): Platform	RESOLUTION: Note 3
COMP RATE: Note 1	ACCURACY: Note 1
XMIT RATE: Note 2	MSB: Note 3
SIGNAL TYPE: 2's Complement	LSB: Note 3
UNITS: Meters	FULL SCALE: Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IR LAR Offset 240°	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.
3. The noted values are determined by IR LAR Scaling [05T/03/07…08] and Table 6.05T-2.

WORD NAME: IR LAR Offset 280°

	CATEGORY: Distance
WORD ID: 05T/23	MAX VALUE: Note 3
SOURCE(s): Store	MIN VALUE: Note 3
DEST(s): Platform	RESOLUTION: Note 3
COMP RATE: Note 1	ACCURACY: Note 1
XMIT RATE: Note 2	MSB: Note 3
SIGNAL TYPE: 2's Complement	LSB: Note 3
UNITS: Meters	FULL SCALE: Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IR LAR Offset 280°	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.
3. The noted values are determined by IR LAR Scaling [05T/03/07…08] and Table 6.05T-2.

WORD NAME: IR LAR Offset 320°

		CATEGORY:	Distance (L)
WORD ID:	05T/24	MAX VALUE:	Note 3
SOURCE(s):	Store	MIN VALUE:	Note 3
DEST(s):	Platform	RESOLUTION:	Note 3
COMP RATE:	Note 1	ACCURACY:	Note 1
XMIT RATE:	Note 2	MSB:	Note 3
SIGNAL TYPE:	2's Complement	LSB:	Note 3
UNITS:	Meters	FULL SCALE:	Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IR LAR Offset 320°	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.

2. Platform dependent and specified in the Platform Annex.

3. The noted values are determined by IR LAR Scaling [05T/03/07…08] and Table 6.05T-2.

WORD NAME: IR CLAR Store Quantity

		CATEGORY:	Special
WORD ID:	05T/25	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	Note 1	ACCURACY	N/A
XMIT RATE:	Note 2	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
IR CLAR Store Quantity	-00-N	MSB --
	-01-N	SIGNAL TYPE: Unsigned, MAX VALUE: 8
	-02-N	MIN VALUE: 1, RESOLUTION: 1
	-03-N	LSB --
Reserved	-04-0	
Reserved	-05-0	
Reserved	-06-0	
Reserved	-07-0	
Reserved	-08-0	
Reserved	-09-0	
Reserved	-10-0	
Reserved	-11-0	
Reserved	-12-0	
Reserved	-13-0	
Reserved	-14-0	
Reserved	-15-0	

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME:　　CLAR Fire Interval

WORD ID:	05T/26	
SOURCE(s):	Store	
DEST(s):	Platform	
COMP RATE:	Note 1	
XMIT RATE:	Note 2	
SIGNAL TYPE:	Unsigned	
UNITS:	Microseconds	

CATEGORY:	Time (L)
MAX VALUE:	4.1942E+06
MIN VALUE:	0
RESOLUTION:	1
ACCURACY:	N/A
MSB:	2^{21}
LSB:	2^6
FULL SCALE:	4.1942E+06

FIELD NAME	BIT NO.	DESCRIPTION
CLAR Fire Interval	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: IR Limit Indicators

		CATEGORY:	Special
WORD ID:	05T/27	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	Note 1	ACCURACY:	N/A
XMIT RATE:	Note 2	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
IR Limit Condition A	-00-D	1 = condition is outside IR LAR envelope
IR Limit Condition B	-01-D	1 = condition is outside IR LAR envelope
IR Limit Condition C	-02-D	1 = condition is outside IR LAR envelope
IR Limit Condition D	-03-D	1 = condition is outside IR LAR envelope
IR Limit Condition E	-04-D	1 = condition is outside IR LAR envelope
IR Limit Condition F	-05-D	1 = condition is outside IR LAR envelope
IR Limit Condition G	-06-D	1 = condition is outside IR LAR envelope
IR Limit Condition H	-07-D	1 = condition is outside IR LAR envelope
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: Reserved

WORD ID:	05T/28-30
SOURCE(s):	Store
DEST(s):	Platform
COMP RATE:	N/A
XMIT RATE:	Note 2
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	N/A
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	
	-01-0	
	-02-0	
	-03-0	
	-04-0	
	-05-0	
	-06-0	
	-07-0	
	-08-0	
	-09-0	
	-10-0	
	-11-0	
	-12-0	
	-13-0	
	-14-0	
	-15-0	

REMARKS/NOTES:

6.06R LAR CONTROL [06R]

LAR Control [06R] provides control and initialization data for the computation of IR LAR Data [05T] and IZ LAR Data [06T].This section defines the transmission of this control data by the platform and the use of this data by the store to compute the various LAR data. Sections 3.5.10, Launch Acceptability Region (LAR), and 3.8.7.7, Composite Launch Acceptability Region (CLAR), provide additional information and requirements.

6.06R.1 LAR Control [06R/03]

6.06R.1.1 IR LAR Computation Control [06R/03/00…01]

IR LAR Computation Control [06R/03/00…01] is used by the platform to direct store IR LAR computation and IR LAR Data [05T] contents which includes controlling the periodic update to IR LAR Data. There are two store provided IR LARs: Current In-Range and Predictive In-Range. Current LAR is computed by the store using current platform conditions (in PTAM [02R]). Predictive LAR is computed using predicted conditions provided in LAR Control [06R].

To provide an efficient means for the platform to receive both of the IR LARs described above, an "Auto Toggle" command is provided. In response to an "Auto Toggle" command the store will update its 05T buffer at a rate between 12.5 Hz and 20 Hz and alternate between current IR LAR data and predictive IR LAR data with each buffer update. The "Auto Toggle" command allows the platform to receive two different sets of IR LAR data by simply requesting IR LAR Data [05T] at a rate equal to or greater than 20 Hz. Note that the IR LAR Data [05T] buffer update rate when in "Auto Toggle" is independent from the store LAR computation rate which determines how often new IR LAR data will be available to the platform. 6.06R-1 provides a listing of the IR LAR Computation Control commands available to the platform.

Table 6.06R-1 IR LAR Computation Control Commands

Name	IR LAR Comp Control [06R/03/00…01]	IR LAR Data [05T] Update Description
Current IR	00 (B)	IR LAR Data [05T] updated with IR LAR data that is computed using current conditions.
Predictive IR	01 (B)	IR LAR Data [05T] updated with IR LAR data that is computed using predicted conditions.
IR Auto Toggle	10 (B)	IR LAR Data [05T] updates toggle between IR LAR data based on current conditions and IR LAR data based on predicted conditions.
Not used	11 (B)	Reserved

Platform Requirements

The platform shall **{ps_6031}** set IR LAR Computation Control [06R/03/00…01] IAW Table 6.06R-1 to direct the store IR LAR Data [05T] computation.

6.06R.1.2 <u>IZ LAR Computation Control</u> [06R/03/02…03]

<u>IZ LAR Computation Control</u> [06R/03/02…03] is used by the platform to direct store IZ LAR computation and <u>IZ LAR Data</u> [06T] contents which includes controlling the periodic update to <u>IZ LAR Data</u>. There are two store provided IZ LARs: Current In-Zone and Predictive In-Zone. Current LAR is computed by the store using current platform conditions (in <u>PTAM</u> [02R]). Predictive LAR is computed using predicted conditions provided in <u>LAR Control</u> [06R].

To provide an efficient means for the platform to receive both of the IZ LARs described above, an "Auto Toggle" command is provided by the platform. In response to an "Auto Toggle" command the store will update its 06T buffer at a rate between 12.5 Hz and 20 Hz and alternate between current IZ LAR data and predictive IZ LAR data with each buffer update. The "Auto Toggle" command allows the platform to receive two different sets of IZ LAR data by simply requesting <u>IZ LAR Data</u> [06T] at a rate equal to or greater than 20 Hz. Note that the <u>IZ LAR Data</u> [06T] buffer update rate when in "Auto Toggle" is independent from the store LAR computation rate which determines how often new IZ LAR data will be available to the platform. Table 6.06R-1.1 provides a listing of the <u>IZ LAR Computation Control</u> commands available to the platform.

Table 6.06R-1.1 <u>IZ LAR Computation Control</u> Commands

Name	IZ LAR Comp Control [06R/03/02…03]	<u>IZ LAR Data</u> [06T] Update Description
Current IZ	00 (B)	<u>IZ LAR Data</u> [06T] updated with IZ LAR data that is computed using current conditions.
Predictive IZ	01 (B)	<u>IZ LAR Data</u> [06T] updated with IZ LAR data that is computed using predicted conditions.
IZ Auto Toggle	10 (B)	<u>IZ LAR Data</u> [06T] updates toggle between IZ LAR data based on current conditions and IZ LAR data based on predicted conditions.
Not used	11 (B)	Reserved

Platform Requirements

The platform shall **{ps_6573}** set <u>IZ LAR Computation Control</u> [06R/03/02…03] IAW Table 6.06R-1.1 to direct the store <u>IZ LAR Data</u> [06T] computation.

6.06R.1.3 <u>Pred CLAR Store Quantity</u> [06R/03/04…07]

<u>Pred CLAR Store Quantity</u> [06R/03/04…07] is used by the platform to indicate the number of mission store LARs a Type 2 carriage system is to use when computing and providing a Predictive CLAR in <u>IR LAR Data [05T]</u> and <u>IZ LAR Data</u> [06T]. Beginning with the next mission store to be released and continuing sequentially in release order, the carriage system computes a Predictive CLAR for the quantity of mission store(s) specified in <u>Pred CLAR Store Quantity</u>.

Platform Requirements

The platform shall **{ps_6346}** set <u>Pred CLAR Store Quantity</u> [06R/03/04…07] to the number of mission stores in the current release order that are to be used by the carriage system in computing Predictive CLAR.

Carriage System Requirements

A Type 2 carriage system shall **{css_6156}** compute a Predictive CLAR for the quantity of mission store(s) specified in <u>Pred CLAR Store Quantity</u> [06R/03/04…07] beginning with the next mission store to be released and continuing sequentially in the release order.

Mission Store Requirements

The mission store shall **{ss_6402}** ignore the setting of <u>Pred CLAR Store Quantity</u> [06R/03/04…07].

6.06R.2 <u>Platform Rel Dly Time</u> [06R/04]

<u>Platform Rel Dly Time</u> [06R/04] is the nominal delay between the platform receipt of <u>CTSS</u> [11T/04/02 = 1] and the platform activating the S&RE store release mechanism. The store uses this time to adjust the current LAR data accordingly. Table 6.06R-2 identifies the options available to the platform in providing <u>Platform Rel Dly Time</u> to establish the total current release countdown delay time used by the store.

Note: The store internal delay used by the mission store is always based on the store battery being activated by CTS [11R/04/02 = 1]. If a platform uses <u>Activate Non-Safety Critical Release Functions</u> [11R/06/05] to activate the mission store battery, the platform must account for the timing difference in it's release sequence to ensure that the store is released within the LAR.

Table 6.06R-2 Total Release Countdown Delay Time Computation Options

Option	Platform Rel Dly Time [06R/04]	Plat Rel Dly Time Invalid [06R/02/01]	Total Release Countdown Delay Time Computed & Used by the Store
1	N/A	1	Store internal delay between receipt of <u>CTS</u> [11R/04/02=1] and setting <u>CTSS</u> [11T/04/02=1] Note 1.
2	As Specified	0	Store internal delay between receipt of <u>CTS</u> [11R/04/02=1] and setting <u>CTSS</u> [11T/04/02=1] plus <u>Platform Rel Dly Time</u> [06R/04] Note 1.

Notes:
1. The store internal delay (between receipt of <u>CTS</u> [11R/04/02 = 1] and setting <u>CTSS</u> [11T/04/02 = 1]) always assumes that the store battery is activated by <u>CTS</u> [11R/04/02 = 1].

Platform Requirements

The platform shall **{ps_6032}** provide <u>Platform Rel Dly Time</u> [06R/04] as specified in Table 6.06R-2 to establish the total release countdown delay time used by the store to compute the current LAR data.

Mission Store Requirements

The mission store shall **{ss_6017}** compute the total release countdown delay time from Platform Rel Dly Time [06R/04] IAW Table 6.06R-2.

The mission store shall **{ss_6018}** adjust the LAR boundary data to account for the total release countdown delay time by assuming that the platform maintains flight conditions during the release countdown period.

Note: LAR data actually defines the boundary within which the platform can initiate the release sequence and be assured that the store, following the total release countdown delay time, will be released within the LAR.

6.06R.3 Pred Plat Fly-to-Point Lat & Long [06R/05-08] & Pred Plat Ground Track [06R/09]

The platform has four options for establishing the ground track that is used by the store to compute the Predictive LAR data. Table 6.06R-3 identifies platform options for providing Pred Plat Fly-to-Point Lat & Long [06R/05-08], and Pred Plat Ground Track [06R/09] to establish the ground track that is used by the store to compute the Predictive LAR Data.

Table 6.06R-3 Predicted Platform Ground Track Options

Option	Pred Plat Fly-to-Point [06R/05-08]	Pred Plat Fly-to-Point Invalid [06R/02/02]	Pred Plat Gnd Track [06R/09]	Pred Plat Gnd Track Invalid [06R/02/03]	Ground Track used by the Store to Compute Predictive LAR Data
1	N/A	1	N/A	1	The store estimate of current ground track
2	N/A	1	As Specified	0	The Ground Track specified in Pred Plat Ground Track [06R/09] and extending from the platform current position.
3	As Specified	0	N/A	1	The Ground Track extending from the platform current position and through the Pred Plat Fly-to-Point Lat & Long [06R/05-08] coordinates.
4	As Specified	0	As Specified	0	A Ground Track, independent of the platform current position, that extends along the Pred Plat Ground Track [06R/09] and through the Pred Plat Fly-to-Point Lat & Long [06R/05-08] coordinates.

When providing LAR Control [06R] to a Type 2 carriage system in preparation for requesting composite LAR data the platform can set the Pred Plat Fly-to-Point Lat & Long [06R/05-08] to a convenient location (e.g., the centroid of the multiple MDS).

Platform Requirements

The platform shall **{ps_6033}** provide Pred Plat Fly-to-Point Lat & Long [06R/05-08] and/or Pred Plat Ground Track [06R/09] to define the Fly-to-Point and/or ground track for the predictive LAR, IAW Table 6.06R-3.

The platform may **{pm_6007}** set the <u>Pred Plat Fly-to-Point Lat & Long</u> [06R/05-08] to a convenient location (e.g., the centroid of the multiple MDS), if providing <u>LAR Control</u> [06R] to a Type 2 carriage system that is providing a composite LAR in <u>IR LAR Data [05T]</u> and <u>IZ LAR Data</u> [06T].

Mission Store Requirements

The mission store shall **{ss_6019}** compute predictive LAR data using <u>Pred Plat Fly-to-Point Lat & Long</u> [06R/05-08] and <u>Pred Plat Ground Track</u> [06R/09] IAW Table 6.06R-3.

6.06R.4 <u>Pred Plat Mach</u> [06R/10]

The platform has two options for establishing the mach that is used by the store to compute the Predictive LAR data. Table 6.06R-4 identifies the platform optio for providing <u>Pred Plat Mach</u> [06R/10] to establish the mach used by the store to compute the Predictive LAR Data.

Table 6.06R-4 <u>Pred Plat Mach</u> Options

Option	Pred Plat Mach [06R/10]	Pret Plat Mach Invalid [06R/02/04]	Mach used by the Store to Compute Predictive LAR Data
1	N/A	1	The store estimate of current mach
2	As Specified	0	The mach specified in <u>Pred Plat Mach</u> [06R/10].

Platform Requirements

The platform shall **{ps_6034}** provide <u>Pred Plat Mach</u> [06R/10] as the mach for the predictive LAR data, IAW Table 6.06R-4.

Mission Store Requirements

The mission store shall **{ss_6020}** compute predictive LAR using <u>Pred Plat Mach</u> [06R/10] IAW Table 6.06R-4.

6.06R.5 <u>Pred Plat Altitude</u> [06R/11]

The platform has two options for establishing the altitude that is used by the store to compute the Predictive LAR data. Table 6.06R-5 identifies the platform options for providing <u>Pred Plat Altitude</u> [06R/11] to establish the altitude used by the store to compute the Predictive LAR Data.

Table 6.06R-5 <u>Pred Plat Altitude</u> Options

Option	Pred Plat Altitude [06R/11]	Pred Plat Altitude Invalid [06R/02/05]	Altitude used by the Store to Compute Predictive LAR Data
1	N/A	1	The store estimate of current altitude
2	As Specified	0	The altitude specified in <u>Pred Plat Altitude</u> [06R/11].

Platform Requirements

The platform shall **{ps_6035}** provide <u>Pred Plat Altitude</u> [06R/11] as the altitude for the predictive LAR data, IAW Table 6.06R-5.

Mission Store Requirements

The mission store shall **{ss_6021}** compute predictive LAR data using <u>Pred Plat Altitude</u> [06R/11] IAW Table 6.06R-5.

6.06R.6 <u>Pred Plat Flight Path Angle</u> (FPA) [06R/12]

The platform has two options for establishing the flight path angle that is used by the store to compute the Predictive LAR data. Table 6.06R-6 identifies the platform options for providing <u>Pred Plat FPA</u> [06R/12] to establish the flight path angle used by the store to compute the Predictive LAR Data.

Table 6.06R-6 <u>Pred Plat FPA</u> Options

Option	Pred Plat Flight Path Angle [06R/12]	Pred Plat FPA Invalid [06R/02/06]	Flight Path Angle used by the Store to Compute Predictive LAR Data
1	N/A	1	The store estimate of current flight path angle
2	As Specified	0	The flight path angle specified in <u>Pred Plat FPA</u> [06R/12].

Platform Requirements

The platform shall **{ps_6036}** provide <u>Pred Plat FPA</u> [06R/12] as the flight path angle for the predictive LAR data, IAW Table 6.06R-6.

Mission Store Requirements

The mission store shall **{ss_6022}** compute predictive LAR data using <u>Pred Plat FPA</u> [06R/12] IAW Table 6.06R-6 or as documented in **{sup_3024}**.

6.06R.7 <u>Pred Wind at Release E & N</u> [06R/13-14]

The platform has two options for establishing the wind at release that is used by the store to compute the Predictive LAR data. Table 6.06R-7 identifies the platform options for providing <u>Pred Wind at Release E & N</u> [06R/13-14] to establish the wind at release used by the store to compute the Predictive LAR Data.

Table 6.06R-7 <u>Pred Wind at Release E & N</u> Options

Option	Pred Wind at Release E & N [06R/13-14]	Pred Wind at Release Invalid [06R/02/07]	Wind at Release used by the Store to Compute Predictive LAR Data
1	N/A	1	Current wind provided in <u>Environmental Data</u> [15R]
2	As Specified	0	The wind at release specified in [06R/13-14].

Platform Requirements

The platform shall **{ps_6037}** provide <u>Pred Wind at Release - E</u> [06R/13] and <u>Pred Wind at Release - N</u> [06R/14] as the wind at release for the predictive LAR data, IAW Table 6.06R-7.

Mission Store Requirements

The mission store shall **{ss_6023}** compute predictive LAR data using the <u>Pred Wind at Release - E</u> [06R/13] and <u>Pred Wind at Release - N</u> [06R/14] IAW Table 6.06R-7 or as documented in **{sup_3024}**.

6.06R.8 <u>Release Point Lat & Long</u> [06R/15-18]

The platform has the option of providing <u>Release Point Lat & Long</u> [06R/15-18] to the store. If the <u>Release Point Lat & Long</u> is within one or more of the LAR types, then the store will provide the associated TOF from Release Point (<u>IR TOF from Release Point</u> [05T/12-13], <u>IZ TOF from Release Point</u> [06T/12-13]) otherwise, the store will mark the associated TOF from Release Point as invalid. If the platform does not provide <u>Release Point Lat & Long</u> [06R/15-18], a Type 2 carriage system has the option of providing <u>Release Point Lat & Long</u> [06R/15-18] set to the location of the appropriate CLAR entry point to the mission stores to facilitate determining Dynamic TOFs for the CLAR. Section 3.8.4.2 Carriage System Data Manipulation (Type 2 CS Only) provides additional information and requirements on the use of this method.

Platform Requirements

The platform may **{pm_6008}** provide <u>Release Point</u> [06R/15-18] as the release point that the store will use to compute <u>IR TOF from Release Point</u> [05T/12-13] and <u>IZ TOF from Release Point</u> [06T/12-13].

Mission Store Requirements

The mission store shall **{ss_6024}** compute <u>IR TOF from Release Point</u> [05T/12-13] and <u>IZ TOF from Release Point</u> [06T/12-13] using <u>Release Point Lat & Long</u> [06R/15-18].

6.06R.9 <u>Pred CLAR Fire Interval</u> [06R/19]

<u>Pred CLAR Fire Interval</u> [06R/19] is the platform-provided time interval between individual mission store releases which the Type 2 carriage system uses in computing the Predictive CLAR. Note: If the platform does not provide <u>Pred CLAR Fire Interval</u> or the <u>Pred CLAR Fire Interval</u> is less than the carriage system default value, a Type 2 carriage system will use its default release interval for Predictive CLAR computations.

Platform Requirements

The platform shall **{ps_6347}** set <u>Pred CLAR Fire Interval</u> [06R/19] to the time interval between individual mission store releases to be used by the carriage system in computing Predictive CLAR.

Carriage System Requirements

A Type 2 carriage system shall **{css_6157}** use the greater of Pred CLAR Fire Interval [06R/19] or the carriage system default value, in conjunction with Pred CLAR Store Quantity [06R/03/04…07] to adjust the Predictive CLAR boundary data to account for the time between mission store releases.

Mission Store Requirements

The mission store shall **{ss_6403}** ignore the setting of Pred CLAR Fire Interval [06R/19].

6.06R.10 Pred Platform Rel Dly Time [06R/20]

Pred Platform Rel Dly Time [06R/20] is the predicted delay between the platform receipt of CTSS [11T/04/02 = 1] and the platform activating the S&RE store release mechanism. The store uses this time to adjust the predictive LAR data accordingly. Table 6.06R-8 identifies the options available to the platform in providing Pred Platform Rel Dly Time to establish the total predicted release countdown delay time used by the store.

Table 6.06R-8 Total Predicted Release Countdown Delay Time Computation Options

Option	Pred Platform Rel Dly Time [06R/20]	Pred Plat Rel Dly Time Invalid [06R/02/10]	Total Predicted Release Countdown Delay Time Computed & Used by the Store
1	N/A	1	Store internal delay between receipt of CTS [11R/04/02=1] and setting CTSS [11T/04/02=1] Note 1.
2	As Specified	0	Store internal delay between receipt of CTS [11R/04/02=1] and setting CTSS [11T/04/02=1] plus Pred Platform Rel Dly Time [06R/20] Note 1.

Notes:
1. The store internal delay (between receipt of CTS [11R/04/02 = 1] and setting CTSS [11T/04/02 = 1]) always assumes that the store battery is activated by CTS [11R/04/02 = 1].

Platform Requirements

The platform shall **{ps_6574}** provide Pred Platform Rel Dly Time [06R/20] as specified in Table 6.06R-8 to establish the total predicted release countdown delay time used by the store to compute the Predictive LAR data.

Mission Store Requirements

The mission store shall **{ss_6758}** compute the total predicted release countdown delay time from Pred Platform Rel Dly Time [06R/20] IAW Table 6.06R-8.

The mission store shall **{ss_6759}** adjust the predictive LAR boundary data to account for the total predicted release countdown delay time by assuming that the platform maintains flight conditions during the release countdown period.

Note: LAR data actually defines the boundary within which the platform can initiate the release sequence and be assured that the store, following the total predicted release countdown delay time, will be released within the LAR.

MESSAGE NAME: LAR Control
MESSAGE ID: 06R TRANSFER TYPE: BC-RT
SOURCE: Platform WORD COUNT: 20
DESTINATION: Store XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 00110 (B)
Header	01	Message Descriptor
Invalidity	02	Validity of Message Data
LAR Control	03	LAR Control Data
Platform Rel Dly Time	04	Platform delay between CTS and release
Pred Plat Fly-to-Point Lat	05	Predicted Fly-to-Point Latitude (MSW)
	06	Predicted Fly-to-Point Latitude (LSW)
Pred Plat Fly-to-Point Long	07	Predicted Fly-to-Point Longitude (MSW)
	08	Predicted Fly-to-Point Longitude (LSW)
Pred Plat Ground Track	09	Predicted Platform Ground Track
Pred Plat Mach	10	Predicted Platform Mach
Pred Plat Altitude	11	Predicted Platform Altitude
Pred Plat Flight Path Angle	12	Predicted Platform Flight Path Angle
Pred Wind at Release - E	13	Predicted Wind at Release - East
Pred Wind at Release - N	14	Predicted Wind at Release - North
Release Point Lat	15	Release Point Latitude (MSW)
	16	Release Point Latitude (LSW)
Release Point Long	17	Release Point Longitude (MSW)
	18	Release Point Longitude (LSW)
Pred CLAR Fire Interval	19	Predicted interval between stores releases for Predictive CLAR computation.
Pred Platform Rel Dly Time	20	Predicted platform delay between CTS and release.
Status Word	SW	MIL STD 1553 Status Word

REMARKS/NOTES:

WORD NAME: Header

			CATEGORY:	Header
WORD ID:	06R/01		MAX VALUE:	0620 (H)
SOURCE(s):	Platform		MIN VALUE:	0620 (H)
DEST(s):	Store		RESOLUTION:	1
COMP RATE:	Aperiodic		ACCURACY:	N/A
XMIT RATE:	Aperiodic		MSB:	2^15
SIGNAL TYPE:	Hexadecimal		LSB:	2^0
UNITS:	N/A		FULL SCALE:	FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB --
	-01-B	
	-02-B	Hex digit #1 value = 0 (H)
	-03-B	LSB --
Hex Digit #2	-04-B	MSB --
	-05-B	
	-06-B	Hex digit #2 value = 6 (H)
	-07-B	LSB --
Hex Digit #3	-08-B	MSB --
	-09-B	
	-10-B	Hex digit #3 value = 2 (H)
	-11-B	LSB --
Hex Digit #4	-12-B	MSB --
	-13-B	
	-14-B	Hex digit #4 value = 0 (H)
	-15-B	LSB --

REMARKS/NOTES:

WORD NAME: Invalidity

	CATEGORY: Validity
WORD ID: 06R/02	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
LAR Control Invalid	-00-V	Set to logic 1 when Word 3 is invalid
Plat Rel Dly Time Invalid	-01-V	Set to logic 1 when Word 4 is invalid
Pred Plat Fly to Point Invalid	-02-V	Set to logic 1 when Words 5, 6, 7 & 8 are invalid
Pred Plat Gnd Track Invalid	-03-V	Set to logic 1 when Word 9 is invalid
Pred Plat Mach Invalid	-04-V	Set to logic 1 when Word 10 is invalid
Pred Plat Alt Invalid	-05-V	Set to logic 1 when Word 11 is invalid
Pred Plat FPA Invalid	-06-V	Set to logic 1 when Word 12 is invalid
Pred Wind at Release Invalid	-07-V	Set to logic 1 when Words 13 - 14 are invalid
Release Point Invalid	-08-V	Set to logic 1 when Words 15 - 18 are invalid
Pred CLAR Fire Interval Invalid	-09-V	Set to logic 1 when Word 19 is invalid.
Pred Plat Rel Dly Time Invalid	-10-V	Set to logic 1 when Word 20 is invalid
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

1. This word contains the validity status of all the data items in the message.

WORD NAME: LAR Control

WORD ID:	06R/03
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
IR LAR Computation Control	-00-C	MSB ---
	-01-C	LSB ---
IZ LAR Computation Control	-02-C	MSB ---
	-03-C	LSB ---
Pred CLAR Store Quantity	-04-N	MSB ---
	-05-N	SIGNAL TYPE: Unsigned, MAX VALUE: 8
	-06-N	MIN VALUE: 1, RESOLUTION: 1
	-07-N	LSB ---
Reserved	-08-0	
Reserved	-09-0	
Reserved	-10-0	
Reserved	-11-0	
Reserved	-12-0	
Reserved	-13-0	
Reserved	-14-0	
Reserved	-15-0	

REMARKS/NOTES:

FOR OFFICIAL USE ONLY

WORD NAME: Platform Rel Dly Time

	CATEGORY:	Special
WORD ID: 06R/04	MAX VALUE:	1.6777E+07
SOURCE(s): Platform	MIN VALUE:	0.0000E+00
DEST(s): Store	RESOLUTION:	2.5600E+02
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^{23}
SIGNAL TYPE: Unsigned	LSB:	2^8
UNITS: Microseconds	FULL SCALE:	1.6777E+07

FIELD NAME	BIT NO.	DESCRIPTION
Platform Release Delay Time	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Pred Plat Fly to Point Lat

	CATEGORY: Angle(M)
WORD ID: 06R/05-06	MAX VALUE: 5.0000E-01
SOURCE(s): Platform	MIN VALUE: -5.0000E-01
DEST(s): Store	RESOLUTION: 2^-31
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^-1
SIGNAL TYPE: 2's Complement	LSB: 2^-31
UNITS: Semicircles	FULL SCALE: 1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Latitude	MSW -00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. North latitudes are positive and south latitudes are negative.

WORD NAME:	Pred Plat Fly to Point Long	

			CATEGORY:	Angle(M)
WORD ID:	06R/07-08		MAX VALUE:	1.0000E+00
SOURCE(s):	Platform		MIN VALUE:	-1.0000E+00
DEST(s):	Store		RESOLUTION:	2^-31
COMP RATE:	Aperiodic		ACCURACY:	N/A
XMIT RATE:	Aperiodic		MSB:	2^-1
SIGNAL TYPE:	2's Complement		LSB:	2^-31
UNITS:	Semicircles		FULL SCALE:	1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Longitude	MSW -00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Longitude is defined as zero at the prime meridian with positive to the East.

WORD NAME: Pred Plat Ground Track

WORD ID: 06R/09	CATEGORY: Angle(M)
SOURCE(s): Platform	MAX VALUE: 9.9997E-01
DEST(s): Store	MIN VALUE: -1.0000E101
COMP RATE: Aperiodic	RESOLUTION: 3.0518E-05
XMIT RATE: Aperiodic	ACCURACY: N/A
SIGNAL TYPE: 2's Complement	MSB: 2^-1
UNITS: Semicircles	LSB: 2^-15
	FULL SCALE: 9.9997E-01

FIELD NAME	BIT NO.	DESCRIPTION
Ground Track	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Ground Track is the direction of the platform inertial velocity with respect to true north.

2. The range of the ground track angle is ±180° where +90° is east.

WORD NAME: Pred Plat Mach

WORD ID: 06R/10	CATEGORY: Numbers(S)
SOURCE(s): Platform	MAX VALUE: 31.0
DEST(s): Store	MIN VALUE: 0.0
COMP RATE: Aperiodic	RESOLUTION: 9.7700E-04
XMIT RATE: Aperiodic	ACCURACY: N/A
SIGNAL TYPE: 2's Complement	MSB: 2^4
UNITS: Mach	LSB: 2^{-10}
	FULL SCALE: 31.0

FIELD NAME	BIT NO.	DESCRIPTION
Mach	-00-N	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Pred Plat Altitude

	CATEGORY:	Distance(M)
WORD ID: 06R/11	MAX VALUE:	3.2767E+04
SOURCE(s): Platform	MIN VALUE:	-3.2767E+04
DEST(s): Store	RESOLUTION:	1.0000E+00
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^14
SIGNAL TYPE: 2's Complement	LSB:	2^-0
UNITS: Meters	FULL SCALE:	3.2767E+04

FIELD NAME	BIT NO.	DESCRIPTION
Altitude	-00-S	Sign ---
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. The altitude reference is WGS-84 Ellipsoid (HAE).

WORD NAME: Pred Plat Flight Path Angle

WORD ID:	06R/12
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	2's Complement
UNITS:	Semicircles

CATEGORY:	Angle(M)
MAX VALUE:	5.0000E-01
MIN VALUE:	-5.0000E101
RESOLUTION:	3.0518E-05
ACCURACY:	N/A
MSB:	2^-1
LSB:	2^-15
FULL SCALE:	1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Flight Path Angle	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. FPA is the direction of the platform inertial velocity with respect to the horizontal plane.

2. The range of the flight path angle is $\pm 90°$ with positive indicating that the platform is climbing.

WORD NAME: Pred Wind at Release - E

		CATEGORY:	Velocity(M)
WORD ID:	06R/13	MAX VALUE:	1.0240E+3
SOURCE(s):	Platform	MIN VALUE:	-1.0240E+03
DEST(s):	Store	RESOLUTION:	2.5000E-01
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^12
SIGNAL TYPE:	2's Complement	LSB:	2^-2
UNITS:	Meters/Second	FULL SCALE:	8.19175E+03

FIELD NAME	BIT NO.	DESCRIPTION
Pred Wind at Release - E	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. A positive wind is defined as a wind blowing to the North or to the East.

WORD NAME: Pred Wind at Release - N

	CATEGORY: Velocity(M)
WORD ID: 06R/14	MAX VALUE: 1.0240E+3
SOURCE(s): Platform	MIN VALUE: -1.0240E+03
DEST(s): Store	RESOLUTION: 2.5000E-01
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^12
SIGNAL TYPE: 2s Complement	LSB: 2^-2
UNITS: Meters/Second	FULL SCALE: 8.19175E+03

FIELD NAME	BIT NO.	DESCRIPTION
Pred Wind at Release - N	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. A positive wind is defined as a wind blowing to the North or to the East.

WORD NAME: Release Point Lat

		CATEGORY:	Angle(M)
WORD ID:	06R/15-16	MAX VALUE:	5.0000E-01
SOURCE(s):	Platform	MIN VALUE:	-5.0000E-01
DEST(s):	Store	RESOLUTION:	2^-31
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^-1
SIGNAL TYPE:	2's Complement	LSB:	2^-31
UNITS:	Semicircles	FULL SCALE:	1.0000E+00

FIELD NAME		BIT NO.	DESCRIPTION
Latitude	MSW	-00-S	Sign
		-01-N	MSB --
		-02-N	
		-03-N	
		-04-N	
		-05-N	
		-06-N	
		-07-N	
		-08-N	
		-09-N	
		-10-N	
		-11-N	
		-12-N	
		-13-N	
		-14-N	
		-15-N	
	LSW	-00-N	
		-01-N	
		-02-N	
		-03-N	
		-04-N	
		-05-N	
		-06-N	
		-07-N	
		-08-N	
		-09-N	
		-10-N	
		-11-N	
		-12-N	
		-13-N	
		-14-N	
		-15-N	LSB --

REMARKS/NOTES:

1. North latitudes are positive and south latitudes are negative.

WORD NAME: Release Point Long

	CATEGORY: Angle(M)
WORD ID: 06R/17-18	MAX VALUE: 1.0000E+00
SOURCE(s): Platform	MIN VALUE: -1.0000E+00
DEST(s): Store	RESOLUTION: 2^-31
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^-1
SIGNAL TYPE: 2's Complement	LSB: 2^-31
UNITS: Semicircles	FULL SCALE: 1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Longitude	MSW -00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Longitude is defined as zero at the prime meridian with positive to the East.

WORD NAME: Pred CLAR Fire Interval

	CATEGORY: Time (L)
WORD ID: 06R/19	MAX VALUE: 4.1942E+06
SOURCE(s): Platform	MIN VALUE: 0
DEST(s): Store	RESOLUTION: 1
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^21
SIGNAL TYPE: Unsigned	LSB: 2^6
UNITS: Microseconds	FULL SCALE: 4.1942E+06

FIELD NAME	BIT NO.	DESCRIPTION
Pred CLAR Fire Interval	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Pred Platform Rel Dly Time

		CATEGORY:	Special
WORD ID:	06R/20	MAX VALUE:	1.6777E+07
SOURCE(s):	Platform	MIN VALUE:	0.0000E+00
DEST(s):	Store	RESOLUTION:	2.5600E+02
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^23
SIGNAL TYPE:	Unsigned	LSB:	2^8
UNITS:	Microseconds	FULL SCALE:	1.6777E+07

FIELD NAME	BIT NO.	DESCRIPTION
Pred Platform Release Delay Time	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

6.06T IZ LAR DATA [06T]

IZ LAR Data [06T] contains LAR data for either the Current In-Zone, or the Predictive In-Zone LAR or an auto-toggle between the two. The platform provides LAR Control [06R] to select the IZ LAR the store provides in IZ LAR Data [06T]. LAR Control is also used to provide conditional data to the store for its computation of LAR Data. Sections 3.5.10, Launch Acceptability Region (LAR), and 3.8.7.7, Composite Launch Acceptability Region (CLAR), provide additional information and requirements.

When a "Current" IZ LAR is selected and in the case of the default In-Zone LAR, the store provides IZ LAR Data [06T] using current conditions for all LAR independent variables.

When a "Predictive" IZ LAR is selected, the store provides IZ LAR Data [06T] using the predictive conditions provided by the platform in LAR Control [06R] and IAW Tables 6.06R-3 through 6.06R-8. The store uses current conditions for any invalid predictive conditions that are provided by the platform.

A mission store provides IZ LAR Data [06T] for the primary MDS. A Type 2 carriage system provides a composite/intersection IZ LAR in IZ LAR Data for multiple mission stores.

Section 3.5.10 and subordinate sections provide additional information.

Figure 6.06T-1 illustrates the Current IZ LAR parameters provided in IZ LAR Data [06T]. Figures 6.06T-2 and 6.06T-3 illustrate the Predictive IZ LAR parameters provided in IZ LAR Data [06T] for two different scenarios. These figures are often referred to within the IZ LAR Data message requirements specified herein.

Store Requirements

The store shall **{ss_6404}** provide IZ LAR Data [06T] using current conditions for all LAR independent variables until IZ LAR Computation Control [06R/03/02…03] has been received.

The store shall **{ss_6025}** provide IZ LAR Data [06T] for the Current In-Zone LAR or the Predictive In-Zone LAR or an auto toggle between the two IAW IZ LAR Computation Control [06R/03/02…03] and Table 6.06R-1.1.

The store may **{sm_6014}** provide IZ LAR Data [06T] computed with adjusted values when current or predictive LAR conditions exceed the IZ LAR envelope.

The store shall **{ss_6026}** update IZ LAR Data [06T] buffer at a rate between 12.5 Hz and 20 Hz and alternate between current IZ LAR data and predictive IZ LAR data with each buffer update when IZ LAR Computation Control [06R/03/02…03 = 10 (B)].

Carriage System Requirements

A Type 2 carriage system shall **{css_6004}** set IZ LAR Ref Pt DR Offset [06T/14], IZ LAR Ref Pt CR Offset [06T/15], and IZ LAR Offset 0º, 40º, 80º, … 320º [06T/16-24] (that define a composite 9-sided region as shown in Figures 6.06T-1 through 6.06T-

3) such that if the number of mission store(s) indicated in <u>Number to Fire</u> [11T/13] (for Current CLAR) or <u>Pred CLAR Store Quantity</u> [06R/03/04…07] (for Predictive CLAR) are released within that region with the release interval specified in <u>Fire Interval</u> [11T/12] (for Current CLAR) or <u>Pred CLAR Fire Interval</u> [06R/19] (for Predictive CLAR), the mission store(s) can achieve their mission objectives IAW the criteria specified in the mission store supplement **{sup_6017}**.

Mission Store Requirements

The mission store shall **{ss_6028}** set <u>IZ LAR Ref Pt DR Offset</u> [06T/14], <u>IZ LAR Ref Pt CR Offset</u> [06T/15], and <u>IZ LAR Offset 0º, 40º, 80º, … 320º</u> [06T/16-24] to the ranges that define the 9-sided IZ LAR relative to the <u>IZ Mission Reference Point</u> [06T/04-07] and aligned with the platform ground track if conditions for computing a valid IZ LAR Polygon have been met.
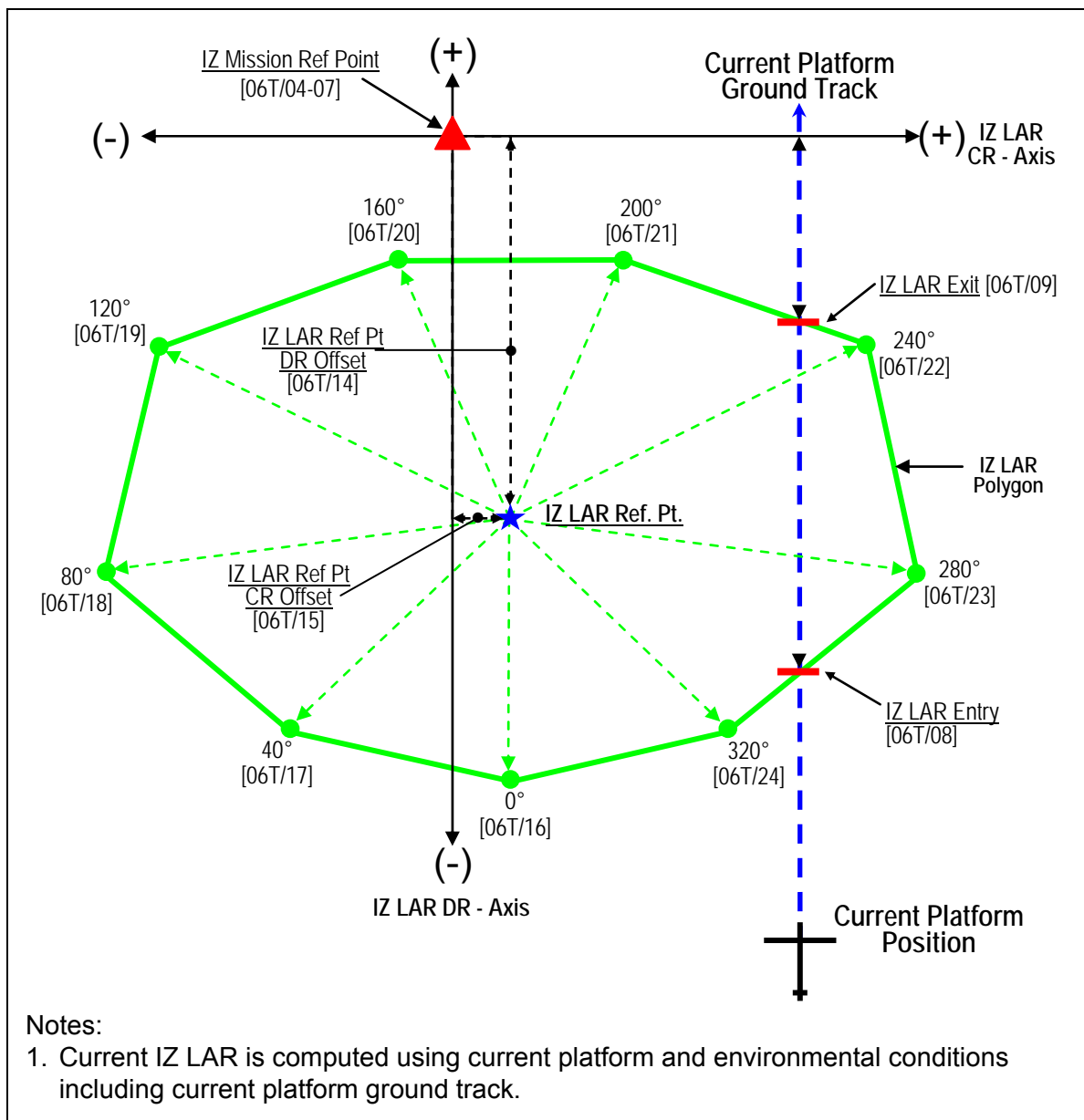
Figure 6.06T-1 Current In-Zone Launch Acceptability Region
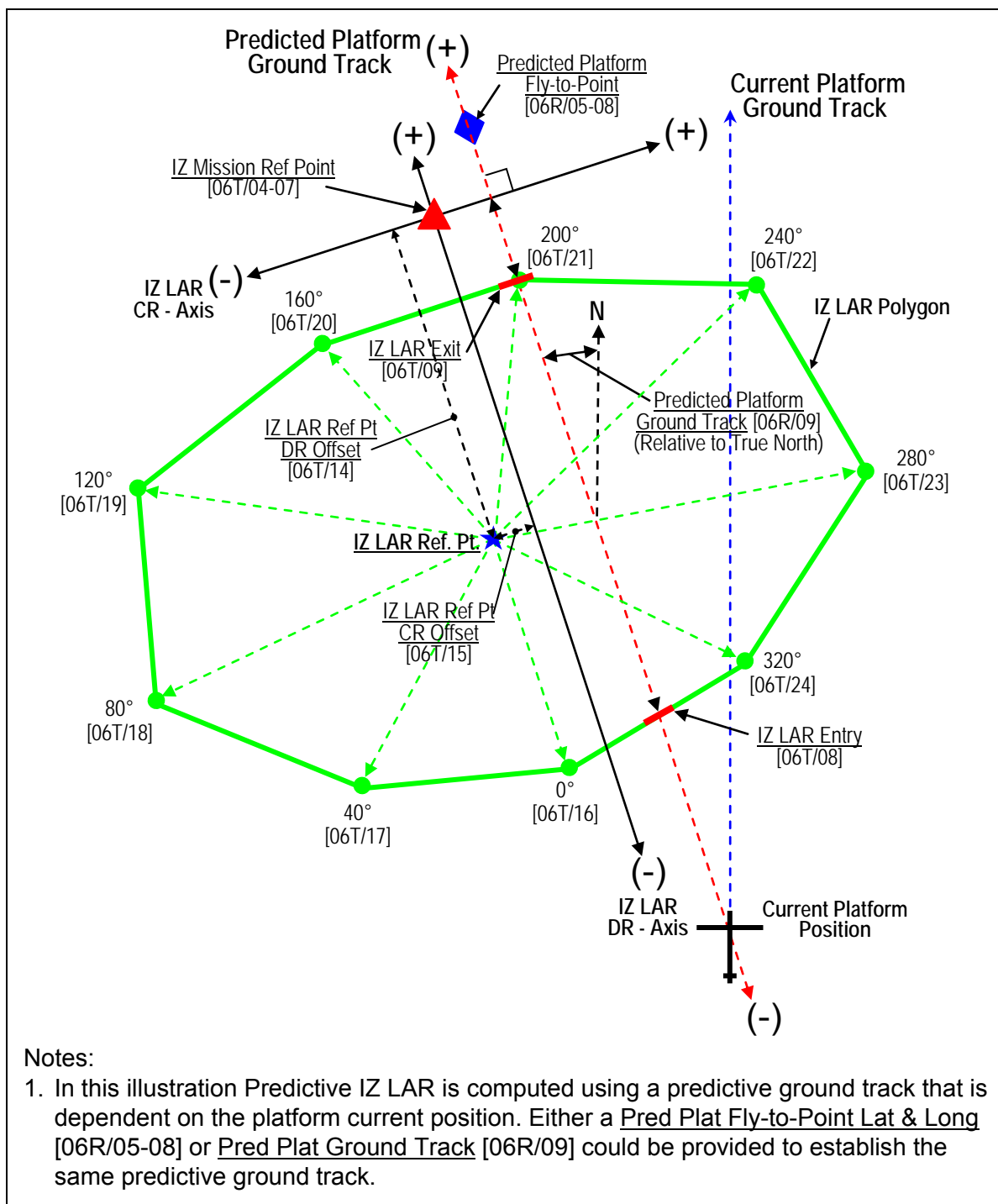
Figure 6.06T-2 Predictive In-Zone Launch Acceptability Region - Scenario #1

Notes:

1. In this illustration Predictive IZ LAR is computed using a predictive ground track that is dependent on the platform current position. Either a Pred Plat Fly-to-Point Lat & Long [06R/05-08] or Pred Plat Ground Track [06R/09] could be provided to establish the same predictive ground track.
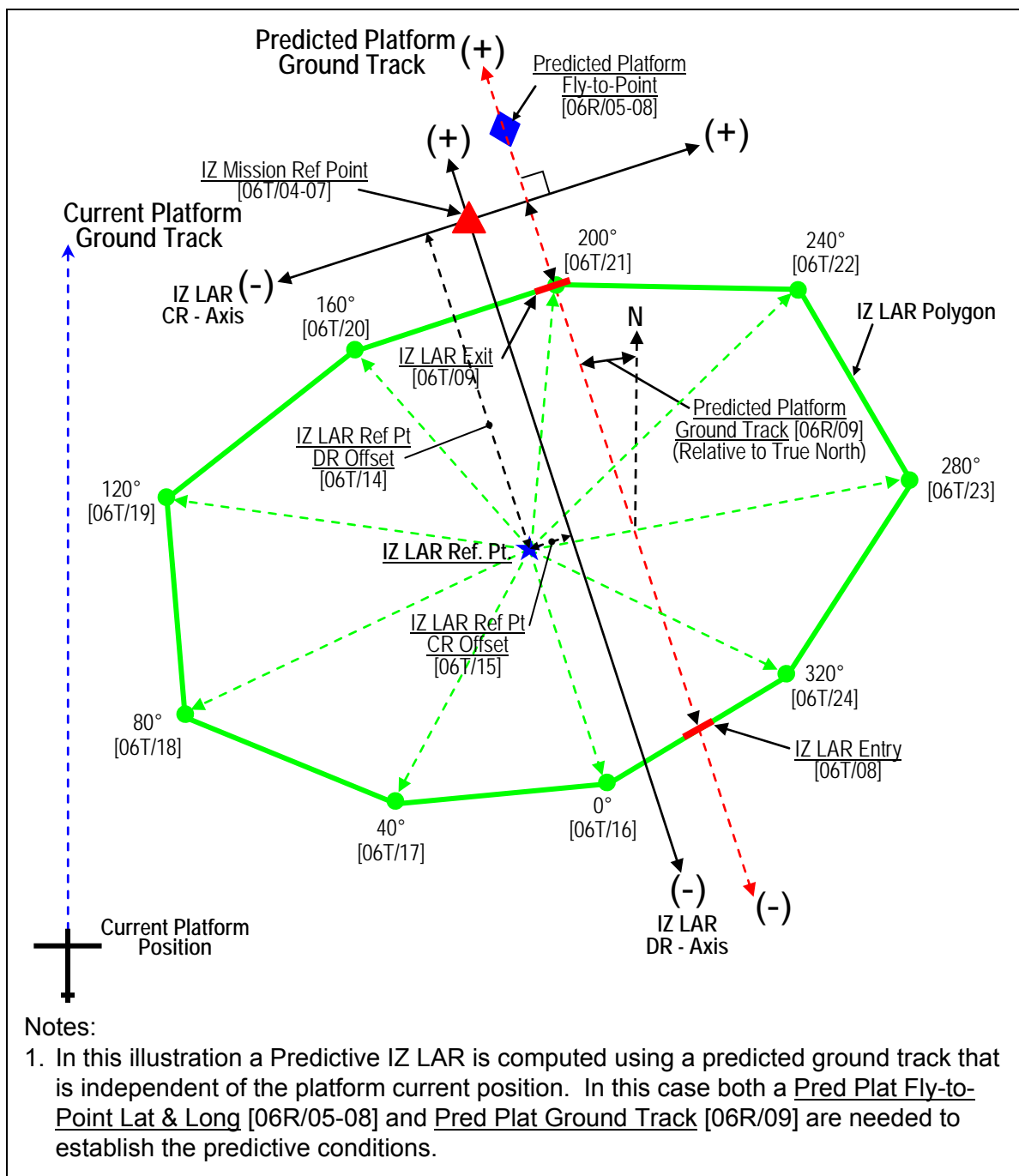
Figure 6.06T-3 Predictive In-Zone Launch Acceptability Region - Scenario #2

Notes:
1. In this illustration a Predictive IZ LAR is computed using a predicted ground track that is independent of the platform current position. In this case both a Pred Plat Fly-to-Point Lat & Long [06R/05-08] and Pred Plat Ground Track [06R/09] are needed to establish the predictive conditions.

6.06T.1 Invalidity [06T/02]

6.06T.1.1 IZ LAR Entry/Exit Invalid [06T/02/00]

The store reports the validity status of the IZ LAR Entry/Exit [06T/08-09] data in IZ LAR Entry/Exit Invalid [06T/02/00].

Store Requirements

The store shall **{ss_6029}** set IZ LAR Entry/Exit Invalid [06T/02/00 = 1] if any of the following conditions are true:

  a. IZ LAR Polygon Invalid [06T/02/03 = 1]

  b. The platform ground track used to compute the IZ LAR Data [06T] does not intersect the IZ LAR Polygon.

  c. Other conditions as defined in the store supplement **{sup_6018}**.

6.06T.1.2 IZ Dynamic TOF Invalid [06T/02/01]

The store reports the validity status of IZ Dynamic TOF - Min [06T/10] and IZ Dynamic TOF - Max [06T/11] in IZ Dynamic TOF Invalid [06T/02/01].

Store Requirements

The store shall **{ss_6030}** set IZ Dynamic TOF Invalid [06T/02/01 = 1] if any of the following conditions are true:

  a. IZ LAR Polygon Invalid [06T/02/03 = 1]

  b. The platform is not within the IZ LAR and the platform ground track used to compute LAR does not intersect the IZ LAR.

6.06T.1.3 IZ TOF from Release Point Invalid [06T/02/02]

The store reports the validity status of IZ TOF from Release Point - Min [06T/12] and IZ TOF from Release Point - Max [06T/13] in IZ TOF from Release Point Invalid [06T/02/02].

Store Requirements

The store shall **{ss_6031}** set IZ TOF from Release Point Invalid [06T/02/02 = 1] if any of the following conditions are true:

  a. IZ LAR Polygon Invalid [06T/02/03 = 1]

  b. Release Point [06R/15-18] not received

  c. Release Point [06R/15-18] not within the IZ LAR

6.06T.1.4 <u>IZ LAR Polygon Invalid</u> [06T/02/03]

The store reports the validity of the IZ LAR Polygon Data as defined by <u>IZ LAR Ref Pt DR Offset</u> [06T/14], <u>IZ LAR Ref Pt CR Offset</u> [06T/15] and <u>IZ LAR Offset 0°, 40°, 80°, …320°</u> [06T/16-24] in <u>IZ LAR Polygon Invalid</u> [06T/02/03].

Carriage System Requirements

A Type 2 carriage system shall **{css_6005}** set <u>IZ LAR Polygon Invalid</u> [06T/02/03 = 1] if there is no intersection of the multiple mission store IZ LARs being used to compute a composite IZ LAR.

Mission Store Requirements

The mission store shall **{ss_6032}** set <u>IZ LAR Polygon Invalid</u> [06T/02/03 = 1] if any of the following conditions are true:

    a. The platform flight conditions, environmental conditions or mission parameters exceed the LAR envelope that is modeled by the store as defined in the store supplement **{sup_6019}**, except when the mission store implements **{sm_6014}**.

    b. No IZ LAR can be computed for the combination of platform flight conditions, environmental conditions and mission parameters (or adjusted values if the mission store implements **{sm_6014}**) being used.

    c. Other conditions as defined in the store supplement **{sup_6020}**.

6.06T.1.5 <u>IZ CLAR Status Invalid</u> [06T/02/04]

The carriage system reports the validity status of the <u>IZ CLAR Store Quantity</u> [06T/25/00…03] and <u>CLAR Fire Interval</u> [06T/26] in <u>IZ CLAR Status Invalid</u> [06T/02/04].

Carriage System Requirements

A Type 2 carriage system shall **{css_6246}** set <u>IZ CLAR Status Invalid</u> [06T/02/04 = 1] as documented in the store supplement **{sup_6329}**.

6.06T.1.6 <u>IZ Limit Indicators Invalid</u> [06T/02/05]

The store reports the validity status of <u>IZ Limit Indicators</u> [06T/27] in <u>IZ Limit Indicators Invalid</u> [06T/02/05]. Section 4.7 Invalidity Word(s) provides additional information and requirements.

6.06T.2 <u>IZ LAR Status</u> [06T/03]

6.06T.2.1 <u>IR/IZ Status</u> [06T/03/00…01]

<u>IR Status</u> [06T/03/00] and <u>IZ Status</u> [06T/03/01] indicate whether the store is inside or outside the Current In-Range LAR and Current In-Zone LAR respectively. <u>IR Status</u> and <u>IZ Status</u> are always based on unadjusted current platform flight, release countdown delay time derived from <u>LAR Control</u> [06R], and environmental conditions; and provided

in both LAR data messages (IR LAR Data [05T], IZ LAR Data [06T]), and in Mission Monitor [22T].

Carriage System Requirements

A Type 2 carriage system shall **{css_6158}** set IR Status [06T/03/00 = 1] if all individual mission stores used in the Current In-Range CLAR calculation are reporting that they are In-Range (i.e., IR Status [05T/03/00 = 1] or IR Status [06T/03/00 = 1]).

A Type 2 carriage system shall **{css_6159}** set IZ Status [06T/03/01 = 1] if all individual mission stores used in the Current In-Zone CLAR calculation are reporting that they are In-Zone (i.e., IZ Status [05T/03/01 = 1] or IZ Status [06T/03/01 = 1]).

Mission Store Requirements

The mission store shall **{ss_6033}** set IR Status [06T/03/00 = 1] if the platform is inside the Current In-Range LAR polygon and the current conditions are within the IR LAR envelope.

The mission store shall **{ss_6034}** set IZ Status [06T/03/01 = 1] if the platform is inside the Current In-Zone LAR polygon and the current conditions are within the IZ LAR envelope.

6.06T.2.2 IZ LAR Conditions [06T/03/03]

Store Requirements

The store shall **{ss_6037}** set IZ LAR Conditions [06T/03/03 = 0] when IZ LAR Data [06T] is computed using current platform flight and environmental conditions.

The store shall **{ss_6038}** set IZ LAR Conditions [06T/03/03 = 1] when IZ LAR Data [06T] is computed using predicted platform flight or environmental conditions.

6.06T.2.3 IZ Msn Ref Pt Description [06T/03/04…06]

IZ Msn Ref Pt Description [06T/03/04…06] provides IZ Mission Ref Point Lat & Long [06T/04-07] definition IAW Table 6.05T-1.

Store Requirements

The store shall **{ss_6039}** set the IZ Msn Ref Pt Description [06T/03/04…06] IAW Table 6.05T-1.

The store supplement **{sup_6021}** documents all possible settings of IZ Msn Ref Pt Description [06T/03/04…06] and the conditions under which each would be set.

6.06T.2.4 IZ LAR Scaling [06T/03/07…08]

IZ LAR Scaling [06T/03/07…08] indicates the scaling factor applied to IZ LAR Entry [06T/08], IZ LAR Exit [06T/09] and IZ LAR Offset 0°, 40°, 80°, … 320° [06T/16-24] IAW

Table 6.05T-2. IZ LAR Scaling adjusts IZ LAR entry, exit, and offset ranges to accommodate different store maximum range capabilities.

Store Requirements

The store shall **{ss_6040}** set IZ LAR Scaling [06T/03/07…08] IAW Table 6.05T-2 to indicate the common scaling that applies to IZ LAR Entry [06T/08], IZ LAR Exit [06T/09] and IZ LAR Offset 0°, 40°, 80°, … 320° [06T/16-24].

6.06T.2.5 IZ Out-of-Bound Indicators [06T/03/09…14]

IZ Out-of-Bound Indicators [06T/03/09…14] include: IZ Altitude High [06T/03/09], IZ Altitude Low [06T/03/10], IZ Speed High [06T/03/11], IZ Speed Low [06T/03/12], IZ Flight Path Angle [06T/03/13] and IZ Ground Track [06T/03/14]. These indicate that the current or predictive platform flight conditions exceed the altitude, speed, flight path angle, or ground track limits of the IZ LAR envelope and the provided IZ LAR Data [06T] is not useable for store release.

Platform Requirements

The platform shall **{ps_6580}** provide an indication to the aircrew as defined in the platform annex **{ann_6019}** when IZ Out-of-Bound Indicators [06T/03/09…14 ≠ 000000 (B)].

Carriage System Requirements

A Type 2 carriage system shall **{css_6237}** set the IZ Out-of-Bound Indicators [06T/03/09…14] as a logical OR of all individual mission stores IZ Out-of-Bound Indicators [06T/03/09…14] used in the CLAR IZ LAR Data [06T] calculation.

Mission Store Requirements

The mission store shall **{ss_6041}** set the applicable out-of-bound indicators listed below to logic 1 to indicate that the respective IZ LAR input data is outside the IZ LAR envelope:

    a. IZ Altitude High [06T/03/09]

    b. IZ Altitude Low [06T/03/10]

    c. IZ Speed High [06T/03/11]

    d. IZ Speed Low [06T/03/12]

    e. IZ Flight Path Angle [06T/03/13]

    f. IZ Ground Track [06T/03/14]

The mission store supplement **{sup_6022}** documents the limits on the IZ LAR out-of-bound conditions beyond which the store will set IZ LAR Polygon Invalid [06T/02/03 = 1].

6.06T.3 <u>IZ Mission Ref Point Lat & Long</u> [06T/04-07]

<u>IZ Mission Ref Point Lat & Long</u> [06T/04-07] is the origin of the coordinate system for the <u>IZ LAR Entry/Exit Data</u> [06T/08-09] and <u>IZ LAR Polygon Data</u> [06T/14-24] as shown in Figures 6.06T-1 through 6.06T-3. <u>IZ Mission Ref Point Lat & Long</u> coordinates correspond to <u>IZ Msn Ref Pt Description</u> [06T/03/04…06] IAW in Table 6.05T-1 and are based on the type of mission the store performs and whether <u>IZ LAR Data</u> [06T] is for a single mission store LAR or a carriage system composite LAR.

Carriage System Requirements

A Type 2 carriage system shall **{css_6006}** use the <u>Pred Plat Fly-to-Point Lat & Long</u> [06R/05-08], if provided, as the <u>IZ Mission Ref Point Lat & Long</u> [06T/04-07].

A Type 2 carriage system shall **{css_6007}** determine the <u>IZ Mission Ref Point Lat & Long</u> [06T/04-07], if <u>Pred Plat Fly to Point Invalid</u> [06R/02/02 = 1], as documented in the carriage system supplement **{sup_6023}**.

Mission Store Requirements

The mission store shall **{ss_6042}** provide <u>IZ Mission Ref Point Lat & Long</u> [06T/04-07] as the origin of the coordinate system for <u>IZ LAR Entry/Exit Data</u> [06T/08-09] and <u>IZ LAR Polygon Data</u> [06T/14-24].

6.06T.4 <u>IZ LAR Entry/Exit Data</u> [06T/08-09]

<u>IZ LAR Entry/Exit Data</u> consists of <u>IZ LAR Entry</u> [06T/08] and <u>IZ LAR Exit</u> [06T/09]. The <u>IZ LAR Entry/Exit Data</u> parameters are defined as ranges along the platform ground track and from the IZ LAR CR-Axis line that the platform will enter and exit the IZ LAR as shown in Figures 6.06T-1 through 6.06T-3.

The IZ LAR CR-Axis line intersects the <u>IZ Mission Reference Point Lat & Long</u> [06T/04-07] and is perpendicular to platform ground track used to compute the <u>IZ LAR Data</u> [06T] as shown in Figures 6.06T-1 through 6.06T-3. A negative value is the distance from the IZ LAR CR-Axis line in the opposite direction of the platform ground track and a positive value is the distance from the IZ LAR CR-Axis line in the same direction as the platform ground track.

Store Requirements

The store shall **{ss_6043}** set <u>IZ LAR Entry</u> [06T/08] equal to the range along the platform ground track and from the IZ LAR CR-Axis where the platform enters the IZ LAR if the platform ground track intersects the IZ LAR.

The store shall **{ss_6044}** set <u>IZ LAR Exit</u> [06T/09] equal to the range along the platform ground track and from the IZ LAR CR-Axis line where the platform exits the IZ LAR if the platform ground track intersects the IZ LAR.

6.06T.5 <u>IZ Dynamic TOF Min & Max</u> [06T/10-11]

<u>IZ Dynamic TOF</u> consisting of <u>IZ Dynamic TOF - Min</u> [06T/10] and <u>IZ Dynamic TOF - Max</u> [06T/11] reports the store TOF to aid the platform in carrying out "Time-On-Target"

critical missions or simply to support a determination of the estimated time of impact. For a mission store IZ Dynamic TOF - Min [06T/10] and IZ Dynamic TOF - Max [06T/11] will always be set equal to the same value. For a Type 2 carriage system that is providing a composite IZ LAR from multiple mission store IZ LARs, IZ Dynamic TOF - Min [06T/10] and IZ Dynamic TOF - Max [06T/11] can be set in either of two ways. In the simpler method, IZ Dynamic TOF - Min [06T/10] is set equal to the shortest IZ Dynamic TOF reported by a mission store and IZ Dynamic TOF - Max [06T/11] is set equal to the longest IZ Dynamic TOF reported by a mission store. The TOF values provided in this method are based on the point at which the platform ground track intersects the mission store IZ LAR or the current location of the mission store if the store is within the mission store IZ LAR. Since these TOF values are not based on the IZ CLAR, they are not always accurate TOFs for the CLAR, depending on the particular CLAR situation (size differences between the IZ LARs of the individual mission stores, spacing between the mission store targets, arrangement of the mission store targets, etc.). Another method which is used to provide CLAR TOFs is available to a Type 2 carriage system if the platform does not provide a Release Point [06R/15-18]. This method allows the Type 2 carriage system to set the Release Point [06R/15-18] to the IZ CLAR entry point and use the resulting IZ TOF from Release Point values from the mission stores to determine the IZ Dynamic TOF - Min and IZ Dynamic TOF - Max for the IZ CLAR. Section 3.8.4.2 Carriage System Data Manipulation (Type 2 CS Only) provides additional information and requirements on the use of this method.

The mission store will provide IZ Dynamic TOF if IZ LAR Polygon Invalid [06T/03/03 = 0] and the platform is either within the IZ LAR or on a ground track that intersects the IZ LAR. In the former case IZ Dynamic TOF is periodically updated assuming an instantaneous receipt of CTS [11R/04/02 = 1] and release from the platform following the total release countdown delay time determine per Table 6.06R-2. In the latter case IZ Dynamic TOF is set equal to the TOF at the IZ LAR entry point.

Carriage System Requirements

A Type 2 carriage system shall **{css_6231}** set IZ Dynamic TOF - Min [06T/10] equal to the shortest IZ TOF from Release Point [06T/12-13] reported by any mission store(s) in the release sequence when all of the following are true:

    a. the platform is outside the IZ CLAR,

    b. the platform did not provide a Release Point [06R/15-18] to the carriage system, and

    c. the Type 2 carriage system has provided the coordinates of the IZ CLAR entry point as the Release Point [06R/15-18] to the mission store(s).

A Type 2 carriage system shall **{css_6232}** set IZ Dynamic TOF - Max [06T/11] equal to the longest IZ TOF from Release Point [06T/12-13] reported by any mission store(s) in the release sequence when all of the following are true:

    a. the platform is outside the IZ CLAR,

    b. the platform did not provide a Release Point [06R/15-18] to the carriage system, and

c. the Type 2 carriage system has provided the coordinates of the IZ CLAR entry point as the Release Point [06R/15-18] to the mission store(s).

A Type 2 carriage system shall **{css_6008}** set IZ Dynamic TOF - Min [06T/10] equal to the shortest IZ Dynamic TOF reported by any mission store(s) in the release sequence when **{css_6231}** is not invoked.

A Type 2 carriage system shall **{css_6009}** set IZ Dynamic TOF - Max [06T/11] equal to the longest IZ Dynamic TOF reported by any mission store(s) in the release sequence when **{css_6232}** is not invoked.

Mission Store Requirements

The mission store shall **{ss_6045}** set IZ Dynamic TOF - Min [06T/10] and IZ Dynamic TOF - Max [06T/11] equal to the current time of flight assuming CTS [11R/04/02] is commanded instantaneously if the platform is inside the IZ LAR.

The mission store shall **{ss_6046}** set IZ Dynamic TOF - Min [06T/10] and IZ Dynamic TOF - Max [06T/11] equal to the time of flight from the IZ LAR entry point to the target, if platform is outside the IZ LAR and the platform ground track intersects the IZ LAR.

The mission store shall **{ss_6047}** compute IZ Dynamic TOF as the summation of the following two times:

a. Total Release Countdown Time Delay as computed IAW Table 6.06R-2 (delay between CTS [11R/04/02] and store release), and

b. TOF from a Release Point that is projected ahead of the platform by the Total Release Countdown Time Delay computed IAW Table 6.06R-2 and assuming the platform maintains current flight conditions or predictive flight conditions, as applicable, during the delay between CTS [11R/04/02] and store release.

6.06T.6 IZ TOF from Release Point Min & Max [06T/12-13]

IZ TOF from Release Point consisting of IZ TOF from Release Point - Min [06T/12] and IZ TOF from Release Point - Max [06T/13] reports the store TOF at a Release Point [06R/15-18] that is provided by the platform. For a mission store IZ TOF from Release Point - Min [06T/12] and IZ TOF from Release Point - Max [06T/13] will always be set equal to the same value. For a carriage system that is providing a composite LAR from multiple mission store LARs, IZ TOF from Release Point - Min [06T/12] will set to the shortest IZ TOF from Release Point reported by a mission store and IZ TOF from Release Point - Max [06T/13] will be set equal the longest IZ TOF from Release Point reported by a mission store.

The store provides IZ TOF from Release Point if IZ LAR Polygon Invalid [06T/03/03 = 0] and Release Point [06R/15-18] is within the IZ LAR.

Carriage System Requirements

A Type 2 carriage system shall **{css_6010}** set IZ TOF from Release Point - Min [06T/12] equal to the shortest IZ TOF from Release Point reported by any mission store(s) in the release sequence when a Release Point [06R/15-18] is provided by the platform.

A Type 2 carriage system shall **{css_6011}** set IZ TOF from Release Point - Max [06T/13] equal to the longest IZ TOF from Release Point reported by any mission store(s) in the release sequence when a Release Point [06R/15-18] is provided by the platform.

Mission Store Requirements

The mission store shall **{ss_6048}** set IZ TOF from Release Point - Min [06T/12] and IZ TOF from Release Point - Max [06T/13] equal to the time of flight from the Release Point [06R/15-18] to the target, if the Release Point is within the IZ LAR and assuming CTS [11R/04/02] is commanded at the Release Point.

The mission store shall **{ss_6049}** compute IZ TOF from Release Point by applying the same conditions at Release Point [06R/15-18] as used to compute the IZ LAR.

The mission store shall **{ss_6050}** compute IZ TOF from Release Point as the summation of the following two times:

a. Total Release Countdown Time Delay as computed IAW Table 6.06R-2 (delay between CTS [11R/04/02] and store release).

b. TOF from an actual Release Point that is projected ahead of the Release Point [06R/15-18] provided by the platform by the Total Release Countdown Time Delay computed IAW Table 6.06R-2 and assuming the platform maintains current flight conditions during the delay between CTS [11R/04/02] and store release.

6.06T.7 IZ LAR Polygon Data

IZ LAR Polygon Data consists of (1) IZ LAR Ref Pt DR Offset [06T/14], (2) IZ LAR Ref Pt CR Offset [06T/15], and (3) IZ LAR Offset 0º, 40º, 80º, … 320º [06T/16-24]. The IZ LAR Polygon Data parameters are defined by a IZ LAR Reference Point and nine offset ranges as illustrated in Figures 6.06T-1 through 6.06T-3.

6.06T.7.1 IZ LAR Reference Point

The store computes an IZ LAR Reference Point that is defined by the IZ LAR Ref Pt DR Offset [06T/14] and IZ LAR Ref Pt CR Offset [06T/15] from the IZ Mission Ref Point Lat & Long [06T/04-07] within a coordinate system that is illustrated in Figures 6.06T-1 through 6.06T-3 and defined as follows:

1. Origin is the IZ Mission Ref Point Lat & Long [06T/04-07].

2. The IZ LAR DR-Axis intersects the IZ Mission Ref Point Lat & Long and is parallel with the platform current or predicted ground track, as applicable.

Negative is in the opposite direction of the platform ground track and positive is in the same direction as the platform ground track.

3. The IZ LAR CR-Axis intersects the IZ Mission Ref Point Lat & Long and is perpendicular to the IZ LAR DR-Axis. From the platform perspective negative is to the left and positive is to the right of the IZ Mission Ref Point Lat & Long.

Store Requirements

The store shall **{ss_6401}** provide a IZ LAR Reference Point as a down range offset IZ LAR Ref Pt DR Offset [06T/14] and a cross range offset IZ LAR Ref Pt CR Offset [06T/15] from the IZ Mission Ref Point Lat & Long [06T/04-07].

6.06T.7.2 IZ LAR Offsets

The nine offset ranges, IZ LAR Offset 0º, IZ LAR Offset 40º…IZ LAR Offset 320º, extending from the IZ LAR Reference Point are spaced in 40º increments about the IZ LAR Reference Point and aligned with the platform ground track as shown in Figures 6.06T-1 through 6.06T-3. IZ LAR Offset 0º extends from the IZ LAR Reference Point on a line that is parallel with, and in the opposite direction of, the platform ground track.

Store Requirements

The store shall **{ss_6051}** set IZ LAR Offset 0º, 40º, 80º, … 320º [06T/16-24] to the ranges that define the 9-sided IZ LAR relative to the IZ LAR Reference Point and aligned with the platform ground track if conditions for computing a valid IZ LAR Polygon have been met.

6.06T.8 IZ CLAR Store Quantity [06T/25/00…03]

A Type 2 carriage system provides IZ CLAR Store Quantity [06T/25/00…03] to inform the platform of the number of stores actually being used in computing the IZ CLAR, which is equal to Number to Fire [11T/13] for Current CLAR or Pred CLAR Store Quantity [06R/03/04…07] for Predictive CLAR.

Carriage System Requirements

A Type 2 carriage system shall **{css_6160}** set IZ CLAR Store Quantity [06T/25/00…03] to the number of mission stores being used in computing IZ CLAR.

Mission Store Requirements

The mission store shall **{ss_6407}** set IZ CLAR Store Quantity [06T/25/00…03 = 0].

6.06T.9 CLAR Fire Interval [06T/26]

A Type 2 carriage system provides CLAR Fire Interval [06T/26] to inform the platform of the fire interval being used in computing the CLAR, which is equal to Fire Interval [11T/12] for Current CLAR or Pred CLAR Fire Interval [06R/19] for Predictive CLAR.

Carriage System Requirements

A Type 2 carriage system shall **{css_6161}** set CLAR Fire Interval [06T/26] to the time interval between individual mission store releases being used in computing CLAR.

Mission Store Requirements

The mission store shall **{ss_6408}** set CLAR Fire Interval [06T/26 = 0].

6.06T.10 IZ Limit Indicators [06T/27]

IZ Limit Condition A-H [06T/27/00…07] allow each store to define up to eight additional conditions that are included in the IZ LAR envelope. These indicators could be defined to consider roll, yaw, terminal conditions, wind effects, or any other parameters as specified in the store supplement. These indicate that the current or predictive platform flight conditions exceed limits of the IZ LAR envelope and the provided IZ LAR Data [06T] is not useable for store release.

Platform Requirements

The platform shall **{ps_6581}** provide an indication to the aircrew as defined in the platform annex **{ann_6020}** when IZ Limit Condition A-H [06T/27/00…07 ≠ 00000000 (B)].

Carriage System Requirements

A Type 2 carriage system shall **{css_6238}** set the IZ Limit Condition A-H [06T/27/00…07] as a logical OR of all individual mission stores IZ Limit Condition A-H [06T/27/00…07] used in the CLAR IZ LAR Data [06T] calculation.

Mission Store Requirements

The mission store shall **{ss_6771}** set the applicable IZ limit indicators listed below to logic 1 to indicate that the respective IZ LAR input data is outside the IZ LAR envelope.

   a. IZ Limit Condition A [06T/27/00]

   b. IZ Limit Condition B [06T/27/01]

   c. IZ Limit Condition C [06T/27/02]

   d. IZ Limit Condition D [06T/27/03]

   e. IZ Limit Condition E [06T/27/04]

   f. IZ Limit Condition F [06T/27/05]

   g. IZ Limit Condition G [06T/27/06]

   h. IZ Limit Condition H [06T/27/07]

The mission store shall **{ss_6834}** set either IZ Limit Condition A-H [06T/27/00…07 ≠ 00000000 (B)] or IZ Out-of-Bound Indicators [06T/03/09…14 ≠ 000000 (B)] to

indicate the exceeded IZ parameter(s), when reporting current <u>IZ LAR Data</u> [06T] if the current platform position (Latitude and Longitude) is inside the reported current IZ LAR polygon and <u>IZ Status</u> [06T/03/01 = 0].

MESSAGE NAME: IZ LAR Data
MESSAGE ID: 06T TRANSFER TYPE: RT-BC
SOURCE: Store WORD COUNT: 30
DESTINATION: Platform XMIT RATE: 32.0Hz (Max)

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 00110 (B)
Status Word	SW	MIL-STD-1553 Status Word
Header	01	Message Descriptor
IZ LAR Invalidity	02	Validity of Message Data
IZ LAR Status	03	IZ LAR Status
IZ Mission Ref Point Lat	04	IZ Mission Reference Point Latitude (MSW)
	05	IZ Mission Reference Point Latitude (LSW)
IZ Mission Ref Point Long	06	IZ Mission Reference Point Longitude (MSW)
	07	IZ Mission Reference Point Longitude (LSW)
IZ LAR Entry	08	Range to leading edge of IZ LAR boundary
IZ LAR Exit	09	Range to trailing edge of IZ LAR boundary
IZ Dynamic TOF - Min	10	IZ Dynamic Time of Flight - Min
IZ Dynamic TOF - Max	11	IZ Dynamic Time of Flight - Max
IZ TOF from Release Point - Min	12	IZ Time of Flight at Release Point - Min
IZ TOF from Release Point - Max	13	IZ Time of Flight at Release Point - Max
IZ LAR Ref Pt DR Offset	14	IZ LAR Reference Point Down Range Offset
IZ LAR Ref Pt CR Offset	15	IZ LAR Reference Point Cross Range Offset
IZ LAR Offset 0°	16	IZ LAR Offset 0° relative to platform grd trk
IZ LAR Offset 40°	17	IZ LAR Offset 40° relative to platform grd trk
IZ LAR Offset 80°	18	IZ LAR Offset 80° relative to platform grd trk
IZ LAR Offset 120°	19	IZ LAR Offset 120° relative to platform grd trk
IZ LAR Offset 160°	20	IZ LAR Offset 160° relative to platform grd trk
IZ LAR Offset 200°	21	IZ LAR Offset 200° relative to platform grd trk
IZ LAR Offset 240°	22	IZ LAR Offset 240° relative to platform grd trk
IZ LAR Offset 280°	23	IZ LAR Offset 280° relative to platform grd trk
IZ LAR Offset 320°	24	IZ LAR Offset 320° relative to platform grd trk
IZ CLAR Store Quantity	25	Quantity of mission stores included in IZ CLAR
CLAR Fire Interval	26	Interval between stores releases for CLAR computation
IZ Limit Indicators	27	IZ LAR Limit Condition Indicators
Reserved	28	Reserved
Reserved	29	Reserved
Reserved	30	Reserved

REMARKS/NOTES:

WORD NAME: Header

	CATEGORY: Header
WORD ID: 06T/01	MAX VALUE: 0600 (H)
SOURCE(s): Store	MIN VALUE: 0600 (H)
DEST(s): Platform	RESOLUTION: 1
COMP RATE: Note 1	ACCURACY: N/A
XMIT RATE: Note 2	MSB: 2^15
SIGNAL TYPE: Hexadecimal	LSB: 2^0
UNITS: N/A	FULL SCALE: FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB ---
	-01-B	
	-02-B	Hex digit #1 value = 0 (H)
	-03-B	LSB ---
Hex Digit #2	-04-B	MSB ---
	-05-B	
	-06-B	Hex digit #2 value = 6 (H)
	-07-B	LSB ---
Hex Digit #3	-08-B	MSB ---
	-09-B	
	-10-B	Hex digit #3 value = 0 (H)
	-11-B	LSB ---
Hex Digit #4	-12-B	MSB ---
	-13-B	
	-14-B	Hex digit #4 value = 0 (H)
	-15-B	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: IZ LAR Invalidity

			CATEGORY:	Validity
WORD ID:	06T/02		MAX VALUE:	N/A
SOURCE(s):	Store		MIN VALUE:	N/A
DEST(s):	Platform		RESOLUTION:	N/A
COMP RATE:	Note 1		ACCURACY:	N/A
XMIT RATE:	Note 2		MSB:	N/A
SIGNAL TYPE:	N/A		LSB:	N/A
UNITS:	N/A		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
IZ LAR Entry/Exit Invalid	-00-V	Set to logic 1 when Words 8-9 are invalid
IZ Dynamic TOF Invalid	-01-V	Set to logic 1 when Words 10-11 are invalid
IZ TOF from Release Point Invalid	-02-V	Set to logic 1 when Words 12-13 are invalid
IZ LAR Polygon Invalid	-03-V	Set to logic 1 when Words 4-7 and 14-24 are invalid
IZ CLAR Status Invalid	-04-V	Set to logic 1 when Words 25 and 26 are invalid
IZ Limit Indicators Invalid	-05-V	Set to logic 1 when Word 27 is invalid
Reserved	-06-0	Set to logic 0
Reserved	-07-0	Set to logic 0
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: IZ LAR Status

		CATEGORY:	Special
WORD ID:	06T/03	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	Note 1	ACCURACY:	N/A
XMIT RATE:	Note 2	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.		DESCRIPTION
IR Status	-00-D		0 = Not In-Range, 1 = In-Range
IZ Status	-01-D		0 = Not In-Zone, 1 = In-Zone
Unused	-02-0		Set to logic 0
IZ LAR Conditions	-03-D		0 = Current Conditions, 1 = Predicted Conditions
IZ Msn Ref Pt Description	-04-C	MSB	--
	-05-C		Set IAW Table 6.05T-1
	-06-C	LSB	--
IZ LAR Scaling	-07-C	MSB	--
			Set IAW Table 6.05T-2
	-08-C	LSB	--
IZ Altitude High	-09-D		1 = Altitude above IZ LAR envelope
IZ Altitude Low	-10-D		1 = Altitude below IZ LAR envelope
IZ Speed High	-11-D		1 = Speed above IZ LAR envelope
IZ Speed Low	-12-D		1 = Speed below IZ LAR envelope
IZ Flight Path Angle	-13-D		1 = Flight Path Angle outside IZ LAR envelope
IZ Ground Track	-14-D		1 = Ground Track outside IZ LAR envelope
Unused	-15-0		Set to logic 0

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: IZ Mission Ref Point Lat

		CATEGORY:	Angle(M)
WORD ID:	06T/04-05	MAX VALUE:	5.0000E-01
SOURCE(s):	Store	MIN VALUE:	-5.0000E-01
DEST(s):	Platform	RESOLUTION:	2^-31
COMP RATE:	Note 1	ACCURACY:	N/A
XMIT RATE:	Note 2	MSB:	2^-1
SIGNAL TYPE:	2's Complement	LSB:	2^-31
UNITS:	Semicircles	FULL SCALE:	5.0000E-01

FIELD NAME		BIT NO.	DESCRIPTION
Latitude	MSW	-00-S	Sign
		-01-N	MSB ---
		-02-N	
		-03-N	
		-04-N	
		-05-N	
		-06-N	
		-07-N	
		-08-N	
		-09-N	
		-10-N	
		-11-N	
		-12-N	
		-13-N	
		-14-N	
		-15-N	
	LSW	-00-N	
		-01-N	
		-02-N	
		-03-N	
		-04-N	
		-05-N	
		-06-N	
		-07-N	
		-08-N	
		-09-N	
		-10-N	
		-11-N	
		-12-N	
		-13-N	
		-14-N	
		-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.

2. Platform dependent and specified in the Platform Annex.

3. North latitudes are positive and south latitudes are negative.

WORD NAME: IZ Mission Ref Point Long

		CATEGORY:	Angle(M)
WORD ID: 06T/06-07 MAX VALUE: 1.0000E+00
SOURCE(s): Store MIN VALUE: -1.0000E+00
DEST(s): Platform RESOLUTION: 2^-31
COMP RATE: Note 1 ACCURACY: N/A
XMIT RATE: Note 2 MSB: 2^-1
SIGNAL TYPE: 2's Complement LSB: 2^-31
UNITS: Semicircles FULL SCALE: 1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Longitude	MSW -00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.
3. Longitude is defined as zero at the prime meridian with positive to the East.

WORD NAME: IZ LAR Entry

		CATEGORY:	Special
WORD ID:	06T/08	MAX VALUE:	Note 3
SOURCE(s):	Store	MIN VALUE:	Note 3
DEST(s):	Platform	RESOLUTION:	Note 3
COMP RATE:	Note 1	ACCURACY:	Note 1
XMIT RATE:	Note 2	MSB:	Note 3
SIGNAL TYPE:	2's Complement	LSB:	Note 3
UNITS:	Meters	FULL SCALE:	Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IZ LAR Entry	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.
3. The noted values are determined by IZ LAR Scaling [06T/03/07…08] and Table 6.05T-2.

WORD NAME: IZ LAR Exit

	CATEGORY: Special
WORD ID: 06T/09	MAX VALUE: Note 3
SOURCE(s): Store	MIN VALUE: Note 3
DEST(s): Platform	RESOLUTION: Note 3
COMP RATE: Note 1	ACCURACY: Note 1
XMIT RATE: Note 2	MSB: Note 3
SIGNAL TYPE: 2's Complement	LSB: Note 3
UNITS: Meters	FULL SCALE: Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IZ LAR Exit	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.
3. The noted values are determined by IZ LAR Scaling [06T/03/07…08] and Table 6.05T-2.

WORD NAME: IZ Dynamic TOF - Min

WORD ID:	06T/10	
SOURCE(s):	Store	
DEST(s):	Platform	
COMP RATE:	Note 1	
XMIT RATE:	Note 2	
SIGNAL TYPE:	Unsigned	
UNITS:	Seconds	

CATEGORY:	Special
MAX VALUE:	3.2767E+04
MIN VALUE:	0.0000E+00
RESOLUTION:	5.0000E-01
ACCURACY:	Note 1
MSB:	2^{14}
LSB:	2^{-1}
FULL SCALE:	3.2767E+04

FIELD NAME	BIT NO.	DESCRIPTION
IZ Dynamic TOF - Min	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: IZ Dynamic TOF - Max

	CATEGORY: Special
WORD ID: 06T/11	MAX VALUE: 3.2767E+04
SOURCE(s): Store	MIN VALUE: 0.0000E+00
DEST(s): Platform	RESOLUTION: 5.0000E-01
COMP RATE: Note 1	ACCURACY: Note 1
XMIT RATE: Note 2	MSB: 2^14
SIGNAL TYPE: Unsigned	LSB: 2^-1
UNITS: Seconds	FULL SCALE: 3.2767E+04

FIELD NAME	BIT NO.	DESCRIPTION
IZ Dynamic TOF - Max	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME:　IZ TOF from Release Point - Min

		CATEGORY:	Special
WORD ID:	06T/12	MAX VALUE:	3.2767E+04
SOURCE(s):	Store	MIN VALUE:	0.0000E+00
DEST(s):	Platform	RESOLUTION:	5.0000E-01
COMP RATE:	Note 1	ACCURACY:	Note 1
XMIT RATE:	Note 2	MSB:	2^14
SIGNAL TYPE:	Unsigned	LSB:	2^-1
UNITS:	Seconds	FULL SCALE:	3.2767E+04

FIELD NAME	BIT NO.	DESCRIPTION
IZ TOF from Release Point - Min	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: IZ TOF from Release Point - Max

	CATEGORY:	Special
WORD ID: 06T/13	MAX VALUE:	3.2767E+04
SOURCE(s): Store	MIN VALUE:	0.0000E+00
DEST(s): Platform	RESOLUTION:	5.0000E-01
COMP RATE: Note 1	ACCURACY:	Note 1
XMIT RATE: Note 2	MSB:	2^14
SIGNAL TYPE: Unsigned	LSB:	2^-1
UNITS: Seconds	FULL SCALE:	3.2767E+04

FIELD NAME	BIT NO.	DESCRIPTION
IZ TOF from Release Point - Max	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: IZ LAR Ref Pt DR Offset

	CATEGORY: Distance
WORD ID: 06T/14	MAX VALUE: 5.2427E+05
SOURCE(s): Store	MIN VALUE: -5.2429E+05
DEST(s): Platform	RESOLUTION: 2^4
COMP RATE: Note 1	ACCURACY: Note 1
XMIT RATE: Note 2	MSB: 2^18
SIGNAL TYPE: 2's Complement	LSB: 2^4
UNITS: Meters	FULL SCALE: 5.2427E+05

FIELD NAME	BIT NO.	DESCRIPTION
IZ LAR Ref Point Down Range Offset	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: IZ LAR Ref Pt CR Offset

		CATEGORY:	Distance
WORD ID:	06T/15	MAX VALUE:	5.2427E+05
SOURCE(s):	Store	MIN VALUE:	-5.2429E+05
DEST(s):	Platform	RESOLUTION:	2^4
COMP RATE:	Note 1	ACCURACY:	Note 1
XMIT RATE:	Note 2	MSB:	2^18
SIGNAL TYPE:	2's Complement	LSB:	2^4
UNITS:	Meters	FULL SCALE:	5.2427E+05

FIELD NAME	BIT NO.	DESCRIPTION
IZ LAR Ref Point Cross Range Offset	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: IZ LAR Offset 0°

	CATEGORY: Distance
WORD ID: 06T/16	MAX VALUE: Note 3
SOURCE(s): Store	MIN VALUE: Note 3
DEST(s): Platform	RESOLUTION: Note 3
COMP RATE: Note 1	ACCURACY: Note 1
XMIT RATE: Note 2	MSB: Note 3
SIGNAL TYPE: 2's Complement	LSB: Note 3
UNITS: Meters	FULL SCALE: Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IZ LAR Offset 0°	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.
3. The noted values are determined by IZ LAR Scaling [06T/03/07…08] and Table 6.05T-2.

WORD NAME:　　IZ LAR Offset 40°

	CATEGORY:　　Distance
WORD ID:　　06T/17	MAX VALUE:　　Note 3
SOURCE(s):　　Store	MIN VALUE:　　Note 3
DEST(s):　　Platform	RESOLUTION:　　Note 3
COMP RATE:　　Note 1	ACCURACY:　　Note 1
XMIT RATE:　　Note 2	MSB:　　Note 3
SIGNAL TYPE:　　2's Complement	LSB:　　Note 3
UNITS:　　Meters	FULL SCALE:　　Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IZ LAR Offset 40°	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.

2. Platform dependent and specified in the Platform Annex.

3. The noted values are determined by IZ LAR Scaling [06T/03/07…08] and Table 6.05T-2.

WORD NAME: IZ LAR Offset 80°

WORD ID:	06T/18
SOURCE(s):	Store
DEST(s):	Platform
COMP RATE:	Note 1
XMIT RATE:	Note 2
SIGNAL TYPE:	2's Complement
UNITS:	Meters

CATEGORY:	Distance
MAX VALUE:	Note 3
MIN VALUE:	Note 3
RESOLUTION:	Note 3
ACCURACY:	Note 1
MSB:	Note 3
LSB:	Note 3
FULL SCALE:	Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IZ LAR Offset 80°	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.

2. Platform dependent and specified in the Platform Annex.

3. The noted values are determined by IZ LAR Scaling [06T/03/07…08] and Table 6.05T-2.

WORD NAME: IZ LAR Offset 120°

		CATEGORY:	Distance
WORD ID:	06T/19	MAX VALUE:	Note 3
SOURCE(s):	Store	MIN VALUE:	Note 3
DEST(s):	Platform	RESOLUTION:	Note 3
COMP RATE:	Note 1	ACCURACY:	Note 1
XMIT RATE:	Note 2	MSB:	Note 3
SIGNAL TYPE:	2's Complement	LSB:	Note 3
UNITS:	Meters	FULL SCALE:	Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IZ LAR Offset 120°	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.

2. Platform dependent and specified in the Platform Annex.

3. The noted values are determined by IZ LAR Scaling [06T/03/07…08] and Table 6.05T-2.

WORD NAME: IZ LAR Offset 160°

		CATEGORY:	Distance
WORD ID:	06T/20	MAX VALUE:	Note 3
SOURCE(s):	Store	MIN VALUE:	Note 3
DEST(s):	Platform	RESOLUTION:	Note 3
COMP RATE:	Note 1	ACCURACY:	Note 1
XMIT RATE:	Note 2	MSB:	Note 3
SIGNAL TYPE:	2's Complement	LSB:	Note 3
UNITS:	Meters	FULL SCALE:	Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IZ LAR Offset 160°	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.
3. The noted values are determined by IZ LAR Scaling [06T/03/07…08] and Table 6.05T-2.

WORD NAME:　　IZ LAR Offset 200°

		CATEGORY:	Distance
WORD ID:	06T/21	MAX VALUE:	Note 3
SOURCE(s):	Store	MIN VALUE:	Note 3
DEST(s):	Platform	RESOLUTION:	Note 3
COMP RATE:	Note 1	ACCURACY:	Note 1
XMIT RATE:	Note 2	MSB:	Note 3
SIGNAL TYPE:	2's Complement	LSB:	Note 3
UNITS:	Meters	FULL SCALE:	Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IZ LAR Offset 200°	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.
3. The noted values are determined by IZ LAR Scaling [06T/03/07…08] and Table 6.05T-2.

WORD NAME: IZ LAR Offset 240°

	CATEGORY: Distance
WORD ID: 06T/22	MAX VALUE: Note 3
SOURCE(s): Store	MIN VALUE: Note 3
DEST(s): Platform	RESOLUTION: Note 3
COMP RATE: Note 1	ACCURACY: Note 1
XMIT RATE: Note 2	MSB: Note 3
SIGNAL TYPE: 2's Complement	LSB: Note 3
UNITS: Meters	FULL SCALE: Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IZ LAR Offset 240°	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.
3. The noted values are determined by IZ LAR Scaling [06T/03/07…08] and Table 6.05T-2.

WORD NAME: IZ LAR Offset 280°

	CATEGORY:	Distance
WORD ID: 06T/23	MAX VALUE:	Note 3
SOURCE(s): Store	MIN VALUE:	Note 3
DEST(s): Platform	RESOLUTION:	Note 3
COMP RATE: Note 1	ACCURACY:	Note 1
XMIT RATE: Note 2	MSB:	Note 3
SIGNAL TYPE: 2's Complement	LSB:	Note 3
UNITS: Meters	FULL SCALE:	Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IZ LAR Offset 280°	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.
3. The noted values are determined by IZ LAR Scaling [06T/03/07…08] and Table 6.05T-2.

WORD NAME: IZ LAR Offset 320°

	CATEGORY: Distance (L)
WORD ID: 06T/24	MAX VALUE: Note 3
SOURCE(s): Store	MIN VALUE: Note 3
DEST(s): Platform	RESOLUTION: Note 3
COMP RATE: Note 1	ACCURACY: Note 1
XMIT RATE: Note 2	MSB: Note 3
SIGNAL TYPE: 2's Complement	LSB: Note 3
UNITS: Meters	FULL SCALE: Note 3

FIELD NAME	BIT NO.	DESCRIPTION
IZ LAR Offset 320°	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.
3. The noted values are determined by IZ LAR Scaling [06T/03/07…08] and Table 6.05T-2.

WORD NAME: IZ CLAR Store Quantity

	CATEGORY: Special
WORD ID: 06T/25	MAX VALUE: N/A
SOURCE(s): Store	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: Note 1	ACCURACY N/A
XMIT RATE: Note 2	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
IZ CLAR Store Quantity	-00-N	MSB --
	-01-N	SIGNAL TYPE: Unsigned, MAX VALUE: 8
	-02-N	MIN VALUE: 1, RESOLUTION: 1
	-03-N	LSB --
Reserved	-04-0	
Reserved	-05-0	
Reserved	-06-0	
Reserved	-07-0	
Reserved	-08-0	
Reserved	-09-0	
Reserved	-10-0	
Reserved	-11-0	
Reserved	-12-0	
Reserved	-13-0	
Reserved	-14-0	
Reserved	-15-0	

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: CLAR Fire Interval

		CATEGORY:	Time (L)
WORD ID:	06T/26	MAX VALUE:	4.1942E+06
SOURCE(s):	Store	MIN VALUE:	0
DEST(s):	Platform	RESOLUTION:	1
COMP RATE:	Note 1	ACCURACY:	N/A
XMIT RATE:	Note 2	MSB:	2^{21}
SIGNAL TYPE:	Unsigned	LSB:	2^6
UNITS:	Microseconds	FULL SCALE:	4.1942E+06

FIELD NAME	BIT NO.	DESCRIPTION
CLAR Fire Interval	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: IZ Limit Indicators

		CATEGORY:	Special
WORD ID:	06T/27	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	Note 1	ACCURACY:	N/A
XMIT RATE:	Note 2	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
IZ Limit Condition A	-00-D	1 = condition is outside IZ LAR envelope
IZ Limit Condition B	-01-D	1 = condition is outside IZ LAR envelope
IZ Limit Condition C	-02-D	1 = condition is outside IZ LAR envelope
IZ Limit Condition D	-03-D	1 = condition is outside IZ LAR envelope
IZ Limit Condition E	-04-D	1 = condition is outside IZ LAR envelope
IZ Limit Condition F	-05-D	1 = condition is outside IZ LAR envelope
IZ Limit Condition G	-06-D	1 = condition is outside IZ LAR envelope
IZ Limit Condition H	-07-D	1 = condition is outside IZ LAR envelope
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

1. Store dependent and specified in the Store Supplement.
2. Platform dependent and specified in the Platform Annex.

WORD NAME: Reserved

WORD ID:	06T/28-30
SOURCE(s):	Store
DEST(s):	Platform
COMP RATE:	N/A
XMIT RATE:	Note 2
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	N/A
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	
	-01-0	
	-02-0	
	-03-0	
	-04-0	
	-05-0	
	-06-0	
	-07-0	
	-08-0	
	-09-0	
	-10-0	
	-11-0	
	-12-0	
	-13-0	
	-14-0	
	-15-0	

REMARKS/NOTES:

6.09R MOMENT ARM [09R]

Moment Arm [09R] contains distance and mounting angle offsets to allow the store navigation function to correct transfer alignment data and GPS RF data, if provided, for position and angular differences between the platform and store body coordinate frames.

Platform Requirements

The platform shall **{ps_6038}** provide Moment Arm [09R] data as defined in the platform body coordinate frame (see section 3.2.2.4).

The platform shall **{ps_6039}** indicate changes in Moment Arm [09R] data by transmission of a new Moment Arm [09R].

Mission Store Requirements

The mission store shall **{ss_6052}** process Moment Arm [09R] to obtain moment arm distances and offset angles of the store with respect to the platform body frame.

6.09R.1 Moment Arm Distances [09R/03-05] and Offset Angles [09R/06-08]

Moment Arm X [09R/03], Moment Arm Y [09R/04] and Moment Arm Z [09R/05] contain the X, Y, and Z components of the moment arm distance from the platform reference for navigation data to the store station reference point. The store station reference point is defined as the point at the store station midway between the Suspension and Release Equipment (S&RE) hooks. The midpoint position between the S&RE hooks is based on the hooks in the closed position and the vertical position (platform Z body axis) coincident with the surface of the hooks that suspend the store. The buttline position (platform Y body axis) of this midpoint is the center of the closed hooks. The moment arms are expressed in terms of platform body coordinates (see section 3.2.2.4). Figure 6.09R-1 illustrates the moment arm distances.
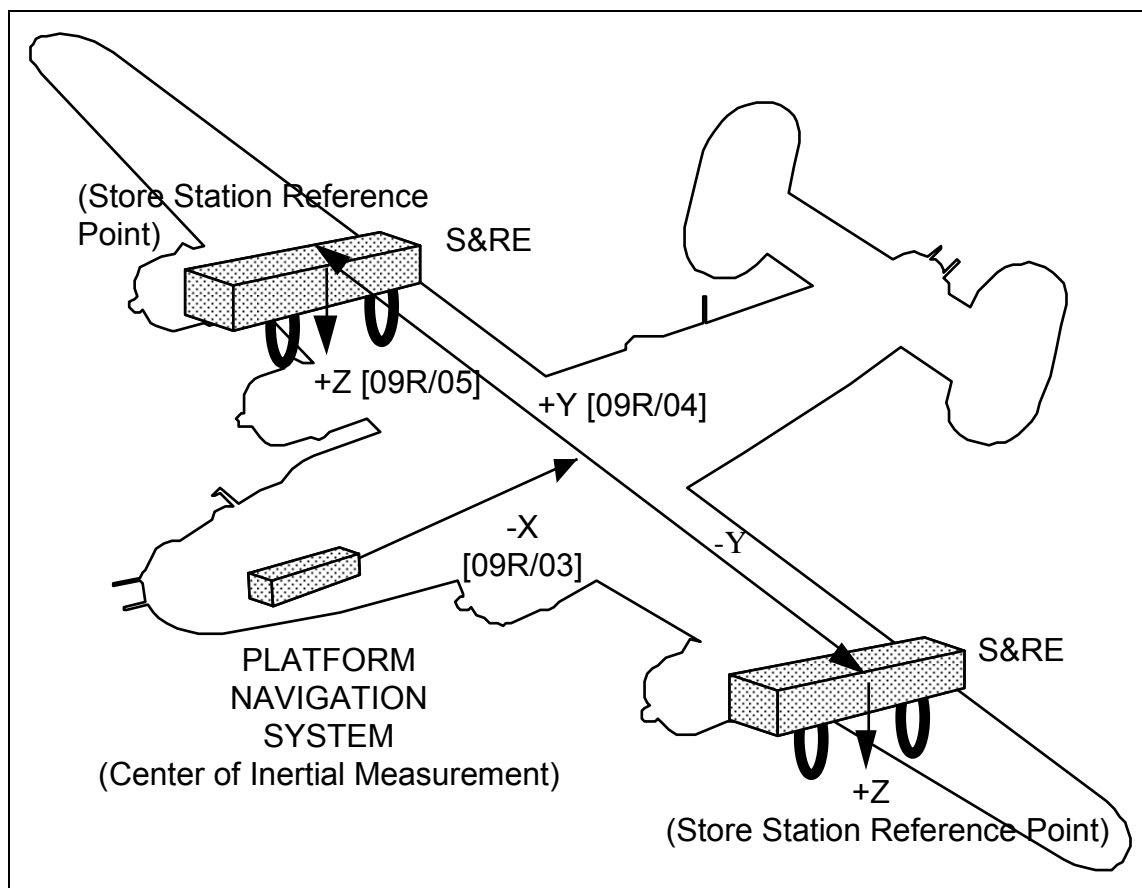
Figure 6.09R-1 Moment Arm Distances

The station offset angles in pitch, yaw, and roll define the angular orientation of the store body frame with respect to the platform body frame. The station offset angles are used by the store to resolve the angular orientation differences between the store and the platform due to mounting on the store suspension equipment. See section 3.2.2.4.1 for a definition of vehicle pitch, yaw, and roll angles.

Pitch Offset [09R/06] is the angle between the platform body pitch angle and the store suspension equipment pitch angle at the selected store station. A positive pitch offset indicates that the store has a higher nose up pitch angle than the platform.

Yaw Offset [09R/07] is the angle between the platform body yaw angle and the store suspension equipment yaw angle at the selected store station. A positive yaw offset indicates that the store has a greater yaw right angle than the platform.

Roll Offset [09R/08] is the angle between the platform body roll angle and the store suspension equipment roll angle at the selected store station. A positive roll offset indicates that the store has a greater right wing down roll angle than the platform.

Figure 6.09R-2 provides the order of rotation used for the station offset angles to rotate from the platform body frame to the store body frame.
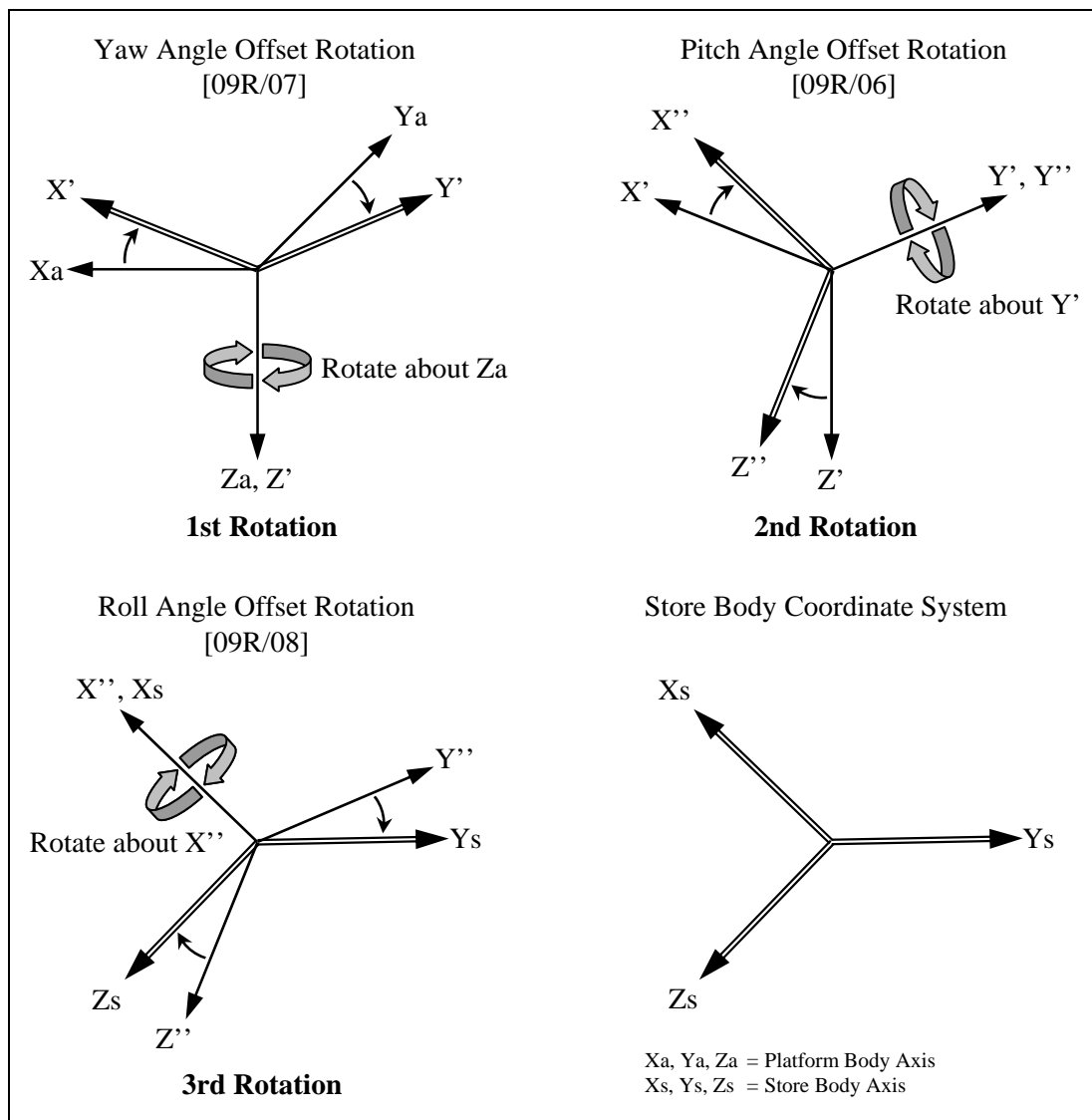
Figure 6.09R-2 Mounting Angle Offsets Rotation Order

6.09R.2 GPS Ant Lever Arms [09R/09-11] and GPS RF Delay [09R/12]

GPS Ant X [09R/09], GPS Ant Y [09R/10] and GPS Ant Z [09R/11] contain the X, Y, and Z components of the lever arm from the phase center of the platform GPS antenna to the store station reference point (as defined for Moment Arm Distances [09R/03-05]). The GPS lever arms are expressed in terms of platform body coordinates (see section 3.2.2.4).

GPS RF Delay [09R/12] contains the transmission delay between the platform GPS antenna and RF input to the carriage system/store.

Platform Requirements

The platform shall **{ps_6040}** provide valid GPS Ant Lever Arms [09R/09-11] and GPS RF Delay [09R/12] if GPS RF is provided to the store.

6.09R.3 Radius of Rotation [09R/13]

The Radius of Rotation [09R/13] is defined as the shortest distance from the rotary launcher axis of rotation to the store station reference point (as defined for Moment Arm Distances [09R/03-05]). If the platform is not equipped with a rotary launcher, this word is set invalid and set to a value of zero.

Platform Requirements

The platform shall **{ps_6041}** provide a valid Radius of Rotation [09R/13] if configured with a rotary launcher.

The platform shall **{ps_6042}** set Radius of Rot Invalid [09R/02/04 = 1] and set Radius of Rotation [09R/13 = 0], if not configured with a rotary launcher.

MESSAGE NAME: Moment Arm
MESSAGE ID: 09R   TRANSFER TYPE: BC-RT
SOURCE: Platform   WORD COUNT: 13
DESTINATION: Store   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01001 (B)
Header	01	Message Descriptor
Invalidity	02	Validity of message data
Moment Arm X	03	Platform INS-Station Moment Arm X
Moment Arm Y	04	Platform INS-Station Moment Arm Y
Moment Arm Z	05	Platform INS-Station Moment Arm Z
Pitch Offset	06	Station Pitch Offset
Yaw Offset	07	Station Yaw Offset
Roll Offset	08	Station Roll Offset
GPS Ant X	09	Platform GPS Antenna-Station Lever Arm X
GPS Ant Y	10	Platform GPS Antenna-Station Lever Arm Y
GPS Ant Z	11	Platform GPS Antenna-Station Lever Arm Z
GPS RF Delay	12	Platform GPS Antenna RF Delay
Radius of Rotation	13	Rotary Launch Moment Arm
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Header

		CATEGORY:	Header
WORD ID:	09R/01	MAX VALUE:	2001 (H)
SOURCE(s):	Platform	MIN VALUE:	2001 (H)
DEST(s):	Store	RESOLUTION:	1
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^15
SIGNAL TYPE:	Hexadecimal	LSB:	2^0
UNITS:	N/A	FULL SCALE:	FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB --
	-01-B	
	-02-B	Hex digit #1 value = 2 (H)
	-03-B	LSB --
Hex Digit #2	-04-B	MSB --
	-05-B	
	-06-B	Hex digit #2 value = 0 (H)
	-07-B	LSB --
Hex Digit #3	-08-B	MSB --
	-09-B	
	-10-B	Hex digit #3 value = 0 (H)
	-11-B	LSB --
Hex Digit #4	-12-B	MSB --
	-13-B	
	-14-B	Hex digit #4 value = 1 (H)
	-15-B	LSB --

REMARKS/NOTES:

WORD NAME: Invalidity

WORD ID: 09R/02	CATEGORY: Validity
SOURCE(s): Platform	MAX VALUE: N/A
DEST(s): Store	MIN VALUE: N/A
COMP RATE: Aperiodic	RESOLUTION N/A
XMIT RATE: Aperiodic	ACCURACY: N/A
SIGNAL TYPE: N/A	MSB: N/A
UNITS: N/A	LSB: N/A
	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
INS MA Invalid	-00-V	Set to logic 1 when Words 3 or 4 or 5 are invalid
Offset Invalid	-01-V	Set to logic 1 when Words 6 or 7 or 8 are invalid
GPS MA Invalid	-02-V	Set to logic 1 when Words 9 or 10 or 11 are invalid
RF Delay Invalid	-03-V	Set to logic 1 when Word 12 is invalid
Radius of Rot Invalid	-04-V	Set to logic 1 when Word 13 is invalid
Reserved	-05-0	Set to logic 0
Reserved	-06-0	Set to logic 0
Reserved	-07-0	Set to logic 0
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Moment Arm X

	CATEGORY: Distance(S)
WORD ID: 09R/03	MAX VALUE: 2.5599E+02
SOURCE(s): Platform	MIN VALUE: -2.5600E+02
DEST(s): Store	RESOLUTION: 7.8125E-03
COMP RATE: Aperiodic	ACCURACY: 8.0000E-02
XMIT RATE: Aperiodic	MSB: 2^7
SIGNAL TYPE: 2's Complement	LSB: 2^-7
UNITS: Meters	FULL SCALE: 2.5599E+02

FIELD NAME	BIT NO.	DESCRIPTION
Moment Arm X	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Moment Arm Y

		CATEGORY:	Distance(S)
WORD ID:	09R/04	MAX VALUE:	2.5599E+02
SOURCE(s):	Platform	MIN VALUE:	-2.5600E+02
DEST(s):	Store	RESOLUTION:	7.8125E-03
COMP RATE:	Aperiodic	ACCURACY:	8.0000E-02
XMIT RATE:	Aperiodic	MSB:	2^7
SIGNAL TYPE:	2's Complement	LSB:	2^-7
UNITS:	Meters	FULL SCALE:	2.5599E+02

FIELD NAME	BIT NO.	DESCRIPTION
Moment Arm Y	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Moment Arm Z

	CATEGORY:	Distance(S)
WORD ID: 09R/05	MAX VALUE:	2.5599E+02
SOURCE(s): Platform	MIN VALUE:	-2.5600E+02
DEST(s): Store	RESOLUTION:	7.8125E-03
COMP RATE: Aperiodic	ACCURACY:	8.0000E-02
XMIT RATE: Aperiodic	MSB:	2^7
SIGNAL TYPE: 2's Complement	LSB:	2^{-7}
UNITS: Meters	FULL SCALE:	2.5599E+02

FIELD NAME	BIT NO.	DESCRIPTION
Moment Arm Z	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

FOR OFFICIAL USE ONLY

WORD NAME:	Pitch Offset			
		CATEGORY:	Angle(M)	
WORD ID:	09R/06	MAX VALUE:	5.0000E-01	
SOURCE(s):	Platform	MIN VALUE:	-5.0000E-01	
DEST(s):	Store	RESOLUTION:	3.0518E-05	
COMP RATE:	Aperiodic	ACCURACY:	5.6000E-03	
XMIT RATE:	Aperiodic	MSB:	2^-1	
SIGNAL TYPE:	2's Complement	LSB:	2^-15	
UNITS:	Semicircles	FULL SCALE:	1.0000E+00	

FIELD NAME	BIT NO.	DESCRIPTION
Pitch Offset	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

FOR OFFICIAL USE ONLY

WORD NAME: Yaw Offset

WORD ID:	09R/07
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	2's Complement
UNITS:	Semicircles

CATEGORY:	Angle(M)
MAX VALUE:	9.9997E-01
MIN VALUE:	-1.0000E+00
RESOLUTION:	3.0518E-05
ACCURACY:	5.6000E-03
MSB:	2^-1
LSB:	2^-15
FULL SCALE:	9.9997E-01

FIELD NAME	BIT NO.	DESCRIPTION
Yaw Offset	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Roll Offset

	CATEGORY:	Angle(M)
WORD ID: 09R/08	MAX VALUE:	9.9997E-01
SOURCE(s): Platform	MIN VALUE:	-1.0000E+00
DEST(s): Store	RESOLUTION:	3.0518E-05
COMP RATE: Aperiodic	ACCURACY:	1.6700E-02
XMIT RATE: Aperiodic	MSB:	2^-1
SIGNAL TYPE: 2's Complement	LSB:	2^-15
UNITS: Semicircles	FULL SCALE:	9.9997E-01

FIELD NAME	BIT NO.	DESCRIPTION
Roll Offset	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: GPS Ant X

WORD ID:	09R/09
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	2's Complement
UNITS:	Meters

CATEGORY:	Distance(S)
MAX VALUE:	2.5599E+02
MIN VALUE:	-2.5600E+02
RESOLUTION:	7.8125E-03
ACCURACY:	1.2000E-01
MSB:	2^7
LSB:	2^-7
FULL SCALE:	2.5599E+02

FIELD NAME	BIT NO.	DESCRIPTION
GPS Ant X	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: GPS Ant Y

CATEGORY:	Distance(S)

WORD ID: 09R/10
SOURCE(s):   Platform
DEST(s):   Store
COMP RATE: Aperiodic
XMIT RATE: Aperiodic
SIGNAL TYPE: 2's Complement
UNITS: Meters

MAX VALUE: 2.5599E+02
MIN VALUE: -2.5600E+02
RESOLUTION: 7.8125E-03
ACCURACY: 1.2000E-01
MSB: 2^7
LSB: 2^{-7}
FULL SCALE: 2.5599E+02

FIELD NAME	BIT NO.	DESCRIPTION
GPS Ant Y	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: GPS Ant Z

	CATEGORY:	Distance(S)
WORD ID: 09R/11	MAX VALUE:	2.5599E+02
SOURCE(s): Platform	MIN VALUE:	-2.5600E+02
DEST(s): Store	RESOLUTION:	7.8125E-03
COMP RATE: Aperiodic	ACCURACY:	1.2000E-01
XMIT RATE: Aperiodic	MSB:	2^7
SIGNAL TYPE: 2's Complement	LSB:	2^-7
UNITS: Meters	FULL SCALE:	2.5599E+02

FIELD NAME	BIT NO.	DESCRIPTION
GPS Ant Z	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: GPS RF Delay

	CATEGORY:	Time(LL)
WORD ID: 09R/12	MAX VALUE:	6.3999E+01
SOURCE(s): Platform	MIN VALUE:	0.0000E+00
DEST(s): Store	RESOLUTION:	9.7656E-04
COMP RATE: Aperiodic	ACCURACY:	2.5000E-02
XMIT RATE: Aperiodic	MSB:	2^5
SIGNAL TYPE: Unsigned	LSB:	2^{-10}
UNITS: Microseconds	FULL SCALE:	6.3999E+01

FIELD NAME	BIT NO.	DESCRIPTION
GPS RF Delay	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME:	Radius of Rotation	

		CATEGORY:	Distance(S)
WORD ID:	09R/13	MAX VALUE:	2.5599E+02
SOURCE(s):	Platform	MIN VALUE:	-2.5600E+02
DEST(s):	Store	RESOLUTION:	7.8125E-03
COMP RATE:	Aperiodic	ACCURACY:	1.0000E-02
XMIT RATE:	Aperiodic	MSB:	2^7
SIGNAL TYPE:	2's Complement	LSB:	2^-7
UNITS:	Meters	FULL SCALE:	2.5599E+02

FIELD NAME	BIT NO.	DESCRIPTION
Radius of Rotation	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

6.10R CARRIAGE SYSTEM CONTROL [10R]

Carriage System Control [10R] is a message from the platform to the carriage system providing carriage system and mission store(s) control such as carriage initialization, MIL-STD-1760 discrete routing, power, RT Address assignment, mission store communication routing. Section 3.6 provides further information and requirements.

Carriage System Requirements

The carriage system shall **{css_6012}** ignore commands that are not implemented for its type of carriage system.

6.10R.1 Carriage Control 1 [10R/02]

6.10R.1.1 Reset Power Dropout [10R/02/00]

Reset Power Dropout [10R/02/00] provides the platform with the capability to reset the carriage system Power Interruption status indication from the store after either initial power application or a subsequent power interruption event. For a Type 2 carriage system, it can also be used to reset the Power Interruption status indication from a mission store after a power interruption event.

Platform Requirements

The platform shall **{ps_6043}** set Reset Power Dropout [10R/02/00 = 1] to a Type 1 carriage system when Power Interruption [10T/02/00 = 1] or remove power from the carriage system.

The platform shall **{ps_6044}** set Reset Power Dropout [10R/02/00 = 0] in the next Carriage System Control [10R] after Power Interruption [10T/02/00 = 0].

Carriage System Requirements

A Type 2 carriage system shall **{css_6225}** send Reset Power Dropout [22R/05/04 = 1] to all powered mission stores which are indicating Power Interruption [22T/02/14 = 1] whenever Reset Power Dropout [10R/02/00 = 1] is received.

6.10R.1.2 CS Power Supply On [10R/02/01]

The carriage system can contain a controllable internal power supply for producing 28V DC power from 115V AC/270V DC platform power for use as mission store power. The presence of this power supply is indicated in the CDS.

Platform Requirements

The platform shall **{ps_6046}** set CS Power Supply On [10R/02/01 = 1] prior to commanding power to any mission store if CDS CS Controllable Power Supply Present **{cds_3029}**.

Carriage System Requirements

The carriage system shall **{css_6013}** enable the carriage system power supply output after receiving CS Power Supply On [10R/02/01 = 1], if controllable power supply present.

The carriage system shall **{css_6014}** disable the carriage system power supply output after CS Power Supply On [10R/02/01 = 0], if controllable power supply present.

The supplement **{sup_6024}** documents the presence of a controllable carriage system power supply and its power on/off timeline.

6.10R.1.3 Resort Stores [10R/02/02]

A Type 2 carriage system provides the capability for the platform to renumber the store(s) in the platform-specific release order by indicating Resort Allowed [10T/03/04 = 1]. This renumbering moves empty stations, released stations, hung mission stores, failed stores, or unusable stores to the end of the release order, thereby allowing the next available mission store to be addressed as release order number 1. The carriage system uses the last known status for unpowered mission stores and renumbers them based on this status. The carriage system indicates when a resort is allowed, however, it is up to the platform to command Resort Stores [10R/02/02 = 1] before the carriage system performs any resort actions.

Platform Requirements

The platform may **{pm_6010}** set Resort Stores [10R/02/02 = 1] to renumber stores in the release order if Resort Allowed [10T/03/04 = 1] in a Type 2 carriage system.

Carriage System Requirements

A Type 2 carriage system shall **{css_6015}** renumber the stores by moving empty stations, released stations, hung mission stores, failed stores, unusable stores, and other stores as documented in the carriage system supplement **{sup_6043}**, to the end of the release order after receipt of Resort Stores [10R/02/02 = 1] when Resort Allowed [10T/03/04 = 1].

The supplement **{sup_6025}** documents the resort stores function.

6.10R.1.4 Training Mode [10R/02/03]

Training Mode [10R/02/03] provides an interface to facilitate training when no mission stores are loaded on a Type 2 carriage system.

Platform Requirements

The platform may **{pm_6011}** command a Type 2 carriage system to enter training mode, if CDS CS Training Mode Available **{cds_6002}**, by setting Training Mode [10R/02/03 = 1] with Release Consent [Discrete] not present, Critical Monitor 1 [11T/04/00…07 = 00 (H)], and no mission stores loaded.

Carriage System Requirements

A Type 2 carriage system shall **{css_6016}** enter training mode after receipt of Training Mode [10R/02/03 = 1] with zero (0) stores present, Release Consent [Discrete] not present, and Critical Monitor 1 [11T/04/00…07 = 00 (H)], if Training Mode is supported by the Type 2 Carriage system.

The supplement **{sup_6026}** documents the details of training mode.

6.10R.1.5 Training Reload [10R/02/04]

Training Reload [10R/02/04] provides a capability to reset a Type 2 carriage system simulated store loadout in conjunction with Training Mode [10R/02/03 = 1].

Platform Requirements

The platform may **{pm_6012}** command a Type 2 carriage system to reload simulated store inventory by:

a. Setting Training Reload [10R/02/04 = 1] when In Training [10T/03/00 = 1].

b. Resetting Training Reload [10R/02/04 = 0] in the next Carriage System Control [10R].

Carriage System Requirements

A Type 2 carriage system shall **{css_6017}** perform a training store reload after receipt of Training Reload [10R/02/04 = 1] and update Store Availability [10T/03/12…15] and Store Present Status [10T/04-11/14…15] as appropriate for a full carriage system loadout.

6.10R.1.6 TM On [10R/02/05]

The carriage system can have a Telemetry (TM) system installed for test purposes. The platform can command the carriage system to turn TM RF emissions on and off.

Platform Requirements

The platform may **{pm_6013}** set TM On [10R/02/05 = 1] to command Carriage System TM RF to radiate if TM Present [10T/03/02 = 1].

Carriage System Requirements

The carriage system shall **{css_6018}** default the telemetry RF to off, when the carriage system is powered up.

The carriage system shall **{css_6019}** turn the telemetry RF on when TM On [10R/02/05 = 1].

The supplement **{sup_6027}** documents the availability of carriage system telemetry.

6.10R.1.7 <u>Compressor Inhibit</u> [10R/02/06]

<u>Compressor Inhibit</u> [10R/02/06] provides the capability to shut down the carriage system compressor.

Platform Requirements

The platform may **{pm_6014}** set <u>Compressor Inhibit</u> [10R/02/06 = 1] to command Carriage System to disable power loads (e.g., compressors, environmental conditioning, etc.) not directly associated with mission store release processes if <u>CDS CS Compressor Present</u> **{cds_6003}**.

Carriage System Requirements

The carriage system shall **{css_6020}** inhibit all its power loads not directly associated with mission store release (e.g., compressors, environmental conditioning, etc.) when <u>Compressor Inhibit</u> [10R/02/06 = 1].

The supplement **{sup_6028}** documents the presence of power loads (e.g., compressors, environmental conditioning, etc.) and the response to <u>Compressor Inhibit</u> [10R/02/06 = 1].

6.10R.1.8 <u>CS IBIT Control</u> [10R/02/07]

<u>CS IBIT Control</u> [10R/02/07] provides the platform with the capability to command IBIT on just the Type 2 carriage system or both the Type 2 carriage system and mission stores, in conjunction with <u>Activate Initiated BIT</u> [11R/04/06]. <u>CS IBIT Control</u> [10R/02/07 = 0] selects IBIT on the carriage system only. <u>CS IBIT Control</u> [10R/02/07 = 1] selects IBIT on the carriage system and mission stores. Section 3.8.3.1 Initiated BIT (IBIT) provides further information and requirements.

6.10R.1.9 <u>Store Number</u> [10R/02/08…11]

For a Type 2 carriage system, the <u>Store Number</u> identifies a store (in the mission store release order) to be communicated with, using Directed Protocol.

Platform Requirements

The platform may **{pm_6015}** set <u>Store Number</u> [10R/02/08…11 = 0] to communicate directly with a Type 2 carriage system.

The platform may **{pm_6016}** set <u>Store Number</u> [10R/02/08…11] to enable the platform to communicate directly with a store loaded on a Type 2 carriage system.

6.10R.2 <u>Store 1-8 Control</u> [10R/04-11]

<u>Store Control</u> [10R/04-11] provides the platform selective control of rack functions, MIL-STD-1760 discrete signals, and power through the carriage system to individual stores.

6.10R.2.1 <u>RIFL Unlock</u> [10R/04-11/00]

<u>RIFL Unlock</u> [10R/04-11/00] is used to unlock/lock the ejector Reversible In-Flight Lock (RIFL) which is used to enable/prevent jettison or release of mission stores.

Platform Requirements

The platform shall **{ps_6047}** set <u>RIFL Unlock</u> [10R/04-11/00 = 1] to unlock the RIFL for the respective store if <u>CDS CS RIFL Control Available</u> **{cds_6004}**.

Carriage System Requirements

The carriage system shall **{css_6021}** unlock the RIFL for the selected store after receipt of <u>RIFL Unlock</u> [10R/04-11/00 = 1], as documented in the carriage system supplement **{sup_6030}**.

The supplement **{sup_6031}** documents if CS RIFL control is available and, if so, the maximum time to lock/unlock the RIFL(s).

6.10R.2.2 Lanyard Arming

The Carriage System can energize the ejector unit arming units upon command from the platform. An un-energized arming unit is considered safe. An energized arming unit activates the store functions associated by retaining the attached arming lanyard when that store is released. The Carriage System can contain a nose, tail, and center arming unit for each ejector unit.

Platform Requirements

The platform shall **{ps_6048}** request the appropriate (Nose, Tail, and/or Center) arming unit(s) be energized a minimum of 80 msec prior to initiating store release.

Carriage System Requirements

The supplement **{sup_6032}** documents the lanyard arming unit(s) contained in the CS (Nose, Tail, and/or Center) and the maximum time to activate them.

6.10R.2.2.1 <u>Nose Arm</u> [10R/04-11/01]

Platform Requirements

The platform shall **{ps_6049}** set <u>Nose Arm</u> [10R/04-11/01 = 1] to request the arming unit solenoid be energized for the respective mission store(s) on the carriage system, if <u>CDS CS Nose Arm Available</u> **{cds_6005}** and <u>CDS Active Arming Lanyards</u> **{cds_3021}**.

Carriage System Requirements

The carriage system shall **{css_6022}** energize the nose arm solenoid after receipt of <u>Nose Arm</u> [10R/04-11/01 = 1].

6.10R.2.2.2 <u>Tail Arm</u> [10R/04-11/02]

Platform Requirements

The platform shall **{ps_6050}** set <u>Tail Arm</u> [10R/04-11/02 = 1] to request the arming unit solenoid be energized for the respective mission store(s) on the carriage

system, if <u>CDS CS Tail Arm Available</u> **{cds_6006}** and <u>CDS Active Arming Lanyards</u> **{cds_3021}**.

Carriage System Requirements

The carriage system shall **{css_6023}** energize the tail arm solenoid after receipt of <u>Tail Arm</u> [10R/04-11/02 = 1].

6.10R.2.2.3 <u>Center Arm</u> [10R/04-11/03]

Platform Requirements

The platform shall **{ps_6051}** set <u>Center Arm</u> [10R/04-11/03 = 1] to request the arming unit solenoid be energized for the respective mission store(s) on the carriage system, if <u>CDS CS Center Arm Available</u> **{cds_6007}** and <u>CDS Active Arming Lanyards</u> **{cds_3021}**.

Carriage System Requirements

The carriage system shall **{css_6024}** energize the center arm solenoid after receipt of <u>Center Arm</u> [10R/04-11/03 = 1].

6.10R.2.3 <u>LB Select</u> [10R/04-11/04]

<u>LB Select</u> [10R/04-11/04] is used to route a low bandwidth signal from the platform to the respective store.

Platform Requirements

The platform may **{pm_6017}** set <u>LB Select</u> [10R/04-11/04 = 1] to route a low bandwidth signal between the platform and the respective store(s) if <u>CDS CS Low Band Available</u> **{cds_6008}**.

The platform annex **{ann_6004}** documents the implementation of low bandwidth signal capability.

Carriage System Requirements

The carriage system shall **{css_6025}** route the low bandwidth signal to the respective store(s) after receipt of <u>LB Select</u> [10R/04-11/04 = 1].

The supplement **{sup_6033}** documents the implementation of low bandwidth signal capability.

6.10R.2.4 <u>HB 1-4 Select</u> [10R/04-11/05…08]

<u>HB 1-4 Select</u> [10R/04-11/05…08] is used to route high bandwidth signal(s) from the platform to the respective store(s).

Platform Requirements

The platform may **{pm_6018}** set HB 1-4 Select [10R/04-11/05…08 = 1] to route high bandwidth signal(s) between the platform and the respective store(s) if CDS CS High Band 1-4 Available **{cds_3012}**.

The platform annex **{ann_6005}** documents the implementation of high bandwidth signal capabilities.

Carriage System Requirements

The carriage system shall **{css_6026}** route the high bandwidth signal(s) to the respective store(s) after receipt of HB 1-4 Select [10R/04-11/05…08 = 1].

The supplement **{sup_6034}** documents the implementation of high bandwidth signal capabilities.

6.10R.2.5 Operating Power/28V DC1 Select [10R/04-11/09]

Operating Power/28V DC1 Select [10R/04-11/09] applies Operating Power/28V DC1 [Power] to the mission store(s).

Platform Requirements

The platform shall **{ps_6349}** set Operating Power/28V DC1 Select [10R/04-11/09 = 1] to apply Operating Power/28V DC1 [Power] to the respective mission store(s) if CDS CS Operating Power/28V DC1 Select **{cds_6009}**.

Carriage System Requirements

The carriage system shall **{css_6027}** apply Operating Power/28V DC1 [Power] to the respective mission store after receipt of Operating Power/28V DC1 Select [10R/04-11/09 = 1].

6.10R.2.6 Safety Enable Pwr/28V DC2 Select [10R/04-11/10]

Safety Enable Pwr/28V DC2 Select [10R/04-11/10] routes Safety Enable Pwr/28V DC2 [Power] from the platform to the selected mission store(s) to power safety critical functions or operations. This command only applies to a Type 1 carriage system. Section 3.8.6.1 provides further information and requirements. A Type 2 carriage system routes this power autonomously during the release sequence and does not use this command. Section 3.8.6.2 provides further information and requirements.

6.10R.2.7 115V AC 3 ph Select [10R/04-11/11]

115V AC 3 ph Select [10R/04-11/11] applies 115V AC 3 ph [Power] to the store(s). Note: 115V AC 3 ph [Power] cannot be applied simultaneously with 270V DC [Power].

Platform Requirements

The platform shall **{ps_6514}** set 115V AC 3 ph Select [10R/04-11/11 = 1] to apply 115V AC 3 ph [Power] to the respective store(s) if CDS CS Operating Power 115V AC/270V DC Select **{cds_6011}**.

Carriage System Requirements

The carriage system shall **{css_6029}** apply 115V AC 3 ph [Power] to the respective store(s) after receipt of 115V AC 3 ph Select [10R/04-11/11 = 1].

The supplement **{sup_6285}** documents the implementation of the 115V AC 3 ph Select [10R/04-11/11].

6.10R.2.8 270V DC Select [10R/04-11/12]

270V DC Select [10R/04-11/12] applies platform 270V DC [Power] to the respective store(s). Note: 270V DC [Power] cannot be applied simultaneously with 115V AC [Power].

Platform Requirements

The platform shall **{ps_6515}** set 270V DC Select [10R/04-11/12 = 1] to apply 270V DC [Power] to the respective store(s) if CDS CS Operating Power 115V AC/270V DC Select **{cds_6011}**.

Carriage System Requirements

The carriage system shall **{css_6030}** apply 270V DC [Power] to the respective store(s) after receipt of 270V DC Select [10R/04-11/12 = 1].

The supplement **{sup_6036}** documents the implementation of 270V DC Select.

6.10R.2.9 Safety Enable/Release Consent Select [10R/04-11/13]

Safety Enable/Release Consent Select [10R/04-11/13] commands the carriage system to route or apply (as applicable) Safety Enable/Release Consent [Discrete] to the selected mission store(s). This command only applies to a Type 1 carriage system. Section 3.8.6.1 provides further information and requirements. A Type 2 carriage system routes/applies this power autonomously during the release sequence and does not use this command. Section 3.8.6.2 provides further information and requirements.

6.10R.3 Station Address Control [10R/12-15]

The multiplex bus remote terminal address associated with a particular carriage system store station can be hardwired or set by the platform via Carriage System Control [10R].

6.10R.3.1 Station (X) RT Address [10R/12-15/03…07, 11…15]

Station (X) RT Address [10R/12-15/03…07, 11…15], (where X represents a store station from 1 to 8) is the address field to be assigned to the selected carriage store station.

Platform Requirements

The platform shall **{ps_6054}** set the address for the respective store in Station (X) RT Address [10R/12-15/03…07, 11…15] a minimum of 10 msec prior to commanding a Type 1 carriage system to apply power to the selected mission store(s).

The platform shall **{ps_6312}** maintain the Station (X) RT Address [10R/12-15/03…07, 11…15] assignment a minimum of 200 msec (safety margin) after Store Present Status [10T/04-11/14…15 = 00] for the respective mission store(s).

Carriage System Requirements

A Type 1 carriage system shall **{css_6032}** set the remote terminal addresses at respective onboard store stations to values indicated in Station (X) RT Address [10R/12-15/03…07, 11…15] within 10 msec after receipt of the associated Carriage System Control [10R].

The supplement **{sup_6038}** documents the capability to assign a station RT address to a selected store station(s).

6.10R.4 First Mission [10R/16] (Type 2 CS Only)

First Mission [10R/16] indicates the platform provided MDS mission storage location to use as the primary MDS into the first mission store in the release sequence. Section 3.8.5.3 provides additional information and requirements.

6.10R.5 Training Loadout [10R/17]

The platform provides Training Loadout [10R/17] to a Type 2 carriage system to specify the identity of the simulated store(s) for the carriage system Training Mode [10R/02/03 = 1].

Platform Requirements

The platform may **{pm_6022}** set Training Loadout [10R/17] on a Type 2 carriage system to identify the simulated store(s) to be simulated in Training Mode [10R/02/03] as limited by CDS CS Max Training Loadout Options **{cds_6014}**.

Carriage System Requirements

A Type 2 carriage system shall **{css_6034}** use Training Loadout [10R/17] to simulate a specific store type while in Training Mode [10R/02/03].

The supplement **{sup_6040}** documents its loadout options for training mode, numbered sequentially starting at zero.

MESSAGE NAME: Carriage System Control
MESSAGE ID: 10R   TRANSFER TYPE: BC-RT
SOURCE: Platform   WORD COUNT: 22
DESTINATION: Carriage System   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01010 (B)
Header	01	Message Descriptor
Carriage Control 1	02	Carriage Control Word 1
Carriage Control 2	03	Reserved
Store 1 Control	04	Store 1 Control Word
Store 2 Control	05	Store 2 Control Word
Store 3 Control	06	Store 3 Control Word
Store 4 Control	07	Store 4 Control Word
Store 5 Control	08	Store 5 Control Word
Store 6 Control	09	Store 6 Control Word
Store 7 Control	10	Store 7 Control Word
Store 8 Control	11	Store 8 Control Word
Station 1 & 2 Address Control	12	Station 1 & 2 Address control word
Station 3 & 4 Address Control	13	Station 3 & 4 Address control word
Station 5 & 6 Address Control	14	Station 5 & 6 Address control word
Station 7 & 8 Address Control	15	Station 7 & 8 Address control word
First Mission	16	Target to use from the target list
Training Loadout	17	Training Loadout Code
Reserved	18-21	Reserved
Checksum	22	Checksum of Message Data
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Header

	CATEGORY: Header
WORD ID: 10R/01	MAX VALUE: 0424 (H)
SOURCE(s): Platform	MIN VALUE: 0424 (H)
DEST(s): Carriage System	RESOLUTION: 1
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^15
SIGNAL TYPE: Hexadecimal	LSB: 2^0
UNITS: N/A	FULL SCALE: FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB ---
	-01-B	
	-02-B	Hex digit #1 value = 0 (H)
	-03-B	LSB ---
Hex Digit #2	-04-B	MSB ---
	-05-B	
	-06-B	Hex digit #2 value = 4 (H)
	-07-B	LSB ---
Hex Digit #3	-08-B	MSB ---
	-09-B	
	-10-B	Hex digit #3 value = 2 (H)
	-11-B	LSB ---
Hex Digit #4	-12-B	MSB ---
	-13-B	
	-14-B	Hex digit #4 value = 4 (H)
	-15-B	LSB ---

REMARKS/NOTES:

WORD NAME: Carriage Control 1

	CATEGORY:	Special
WORD ID: 10R/02	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Carriage System	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.		DESCRIPTION
Reset Power Dropout	-00-D		1 = Resets the <u>Power Interruption</u> [10T/02/00] status bit to logic 0
CS Power Supply On	-01-D		1 = Carriage System Power Supply On
Resort Stores	-02-D		1 = Carriage System renumbers stores in the release order
Training Mode	-03-D		1 = Carriage system commanded to training mode
Training Reload	-04-D		1 = Carriage system commanded to reset store loadout
TM On	-05-D		1 = Enable Carriage system Telemetry unit RF radiation
Compressor Inhibit	-06-D		1 = Inhibit Carriage System compressor operation
CS IBIT Control	-07-D		0 = IBIT Carriage System only 1 = IBIT Carriage System and Mission Stores
Store Number	-08-N	MSB	---
(see note 1)	-09-N		SIGNAL TYPE: Unsigned, MAX VALUE: 8
	-10-N		MIN VALUE: 0, RESOLUTION: 1
	-11-N	LSB	---
Reserved	-12-0		Set to logic 0
Reserved	-13-0		Set to logic 0
Reserved	-14-0		Set to logic 0
Reserved	-15-0		Set to logic 0

REMARKS/NOTES:

1.   This field is used to select the Store for Directed Protocol message routing.

WORD NAME: Carriage Control 2

WORD ID:	10R/03	CATEGORY:	Special
SOURCE(s):	Platform	MAX VALUE:	N/A
DEST(s):	Carriage System	MIN VALUE:	N/A
COMP RATE:	Aperiodic	RESOLUTION:	N/A
XMIT RATE:	Aperiodic	ACCURACY:	N/A
SIGNAL TYPE:	N/A	MSB:	N/A
UNITS:	N/A	LSB:	N/A
		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	
	-01-0	
	-02-0	
	-03-0	
	-04-0	
	-05-0	
	-06-0	
	-07-0	
	-08-0	
	-09-0	
	-10-0	
	-11-0	
	-12-0	
	-13-0	
	-14-0	
	-15-0	

REMARKS/NOTES:

1. Reserved for UAI growth.

WORD NAME: Store 1 Control

		CATEGORY:	Special
WORD ID: 10R/04   MAX VALUE: N/A
SOURCE(s):   Platform   MIN VALUE: N/A
DEST(s):   Carriage System   RESOLUTION: N/A
COMP RATE: Aperiodic   ACCURACY: N/A
XMIT RATE: Aperiodic   MSB: N/A
SIGNAL TYPE: N/A   LSB: N/A
UNITS: N/A   FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
RIFL Unlock	-00-D	0 = Lock, 1 = Unlock
Nose Arm	-01-D	1 = Energize nose arm solenoid
Tail Arm	-02-D	1 = Energize tail arm solenoid
Center Arm	-03-D	1 = Energize center arm solenoid
LB Select	-04-D	1 = Route LB to Store 1 (see note 1)
HB 1 Select	-05-D	1 = Route HB1 to Store 1
HB 2 Select	-06-D	1 = Route HB2 to Store 1
HB 3 Select	-07-D	1 = Route HB3 to Store 1
HB 4 Select	-08-D	1 = Route HB4 to Store 1
Operating Power/28V DC1 Select	-09-D	1 = Apply Operation Power/28V DC1 to Store 1 (see note 2)
Safety Enable Pwr/ 28V DC2 Select	-10-D	1 = Route Safety Enable Power/28V DC2 to Store 1
115V AC 3 ph Select	-11-D	1 = Apply 3 phase 115V AC to Store 1
270V DC Select	-12-D	1 = Apply 270V DC to Store 1
Safety Enable/Release Consent Select	-13-D	1 = Route Safety Enable/Release Consent to Store 1
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

1. Route means the signal is routed from the platform to the store.
2. Apply means the signal can be routed or generated from within the carriage system and provided to the store.

WORD NAME: Store 2 Control

		CATEGORY:	Special
WORD ID:	10R/05	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Carriage System	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
RIFL Unlock	-00-D	0 = Lock, 1 = Unlock
Nose Arm	-01-D	1 = Energize nose arm solenoid
Tail Arm	-02-D	1 = Energize tail arm solenoid
Center Arm	-03-D	1 = Energize center arm solenoid
LB Select	-04-D	1 = Route LB to Store 2 (see note 1)
HB 1 Select	-05-D	1 = Route HB1 to Store 2
HB 2 Select	-06-D	1 = Route HB2 to Store 2
HB 3 Select	-07-D	1 = Route HB3 to Store 2
HB 4 Select	-08-D	1 = Route HB4 to Store 2
Operating Power/28V DC1 Select	-09-D	1 = Apply Operation Power/28V DC1 to Store 2 (see note 2)
Safety Enable Pwr/ 28V DC2 Select	-10-D	1 = Route Safety Enable Power/28V DC2 to Store 2
115V AC 3 ph Select	-11-D	1 = Apply 3 phase 115V AC to Store 2
270V DC Select	-12-D	1 = Apply 270V DC to Store 2
Safety Enable/Release Consent Select	-13-D	1 = Route Safety Enable/Release Consent to Store 2
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

1. Route means the signal is routed from the platform to the store.
2. Apply means the signal can be routed or generated from within the carriage system and provided to the store.

WORD NAME:　　Store 3 Control

	CATEGORY:　　Special
WORD ID:　　10R/06	MAX VALUE:　　N/A
SOURCE(s):　　Platform	MIN VALUE:　　N/A
DEST(s):　　Carriage System	RESOLUTION:　　N/A
COMP RATE:　　Aperiodic	ACCURACY:　　N/A
XMIT RATE:　　Aperiodic	MSB:　　N/A
SIGNAL TYPE:　　N/A	LSB:　　N/A
UNITS:　　N/A	FULL SCALE:　　N/A

FIELD NAME	BIT NO.	DESCRIPTION
RIFL Unlock	-00-D	0 = Lock, 1 = Unlock
Nose Arm	-01-D	1 = Energize nose arm solenoid
Tail Arm	-02-D	1 = Energize tail arm solenoid
Center Arm	-03-D	1 = Energize center arm solenoid
LB Select	-04-D	1 = Route LB to Store 3 (see note 1)
HB 1 Select	-05-D	1 = Route HB1 to Store 3
HB 2 Select	-06-D	1 = Route HB2 to Store 3
HB 3 Select	-07-D	1 = Route HB3 to Store 3
HB 4 Select	-08-D	1 = Route HB4 to Store 3
Operating Power/28V DC1 Select	-09-D	1 = Apply Operation Power/28V DC1 to Store 3 (see note 2)
Safety Enable Pwr/ 28V DC2 Select	-10-D	1 = Route Safety Enable Power/28V DC2 to Store 3
115V AC 3 ph Select	-11-D	1 = Apply 3 phase 115V AC to Store 3
270V DC Select	-12-D	1 = Apply 270V DC to Store 3
Safety Enable/Release Consent Select	-13-D	1 = Route Safety Enable/Release Consent to Store 3
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

1. Route means the signal is routed from the platform to the store.
2. Apply means the signal can be routed or generated from within the carriage system and provided to the store.

WORD NAME: Store 4 Control

		CATEGORY:	Special
WORD ID:	10R/07	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Carriage System	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
RIFL Unlock	-00-D	0 = Lock, 1 = Unlock
Nose Arm	-01-D	1 = Energize nose arm solenoid
Tail Arm	-02-D	1 = Energize tail arm solenoid
Center Arm	-03-D	1 = Energize center arm solenoid
LB Select	-04-D	1 = Route LB to Store 4 (see note 1)
HB 1 Select	-05-D	1 = Route HB1 to Store 4
HB 2 Select	-06-D	1 = Route HB2 to Store 4
HB 3 Select	-07-D	1 = Route HB3 to Store 4
HB 4 Select	-08-D	1 = Route HB4 to Store 4
Operating Power/28V DC1 Select	-09-D	1 = Apply Operation Power/28V DC1 to Store 4 (see note 2)
Safety Enable Pwr/ 28V DC2 Select	-10-D	1 = Route Safety Enable Power/28V DC2 to Store 4
115V AC 3 ph Select	-11-D	1 = Apply 3 phase 115V AC to Store 4
270V DC Select	-12-D	1 = Apply 270V DC to Store 4
Safety Enable/Release Consent Select	-13-D	1 = Route Safety Enable/Release Consent to Store 4
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

1. Route means the signal is routed from the platform to the store.
2. Apply means the signal can be routed or generated from within the carriage system and provided to the store.

WORD NAME: Store 5 Control

CATEGORY:	Special
WORD ID: 10R/08	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Carriage System	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
RIFL Unlock	-00-D	0 = Lock, 1 = Unlock
Nose Arm	-01-D	1 = Energize nose arm solenoid
Tail Arm	-02-D	1 = Energize tail arm solenoid
Center Arm	-03-D	1 = Energize center arm solenoid
LB Select	-04-D	1 = Route LB to Store 5 (see note 1)
HB 1 Select	-05-D	1 = Route HB1 to Store 5
HB 2 Select	-06-D	1 = Route HB2 to Store 5
HB 3 Select	-07-D	1 = Route HB3 to Store 5
HB 4 Select	-08-D	1 = Route HB4 to Store 5
Operating Power/28V DC1 Select	-09-D	1 = Apply Operation Power/28V DC1 to Store 5 (see note 2)
Safety Enable Pwr/ 28V DC2 Select	-10-D	1 = Route Safety Enable Power/28V DC2 to Store 5
115V AC 3 ph Select	-11-D	1 = Apply 3 phase 115V AC to Store 5
270V DC Select	-12-D	1 = Apply 270V DC to Store 5
Safety Enable/Release Consent Select	-13-D	1 = Route Safety Enable/Release Consent to Store 5
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

1. Route means the signal is routed from the platform to the store.
2. Apply means the signal can be routed or generated from within the carriage system and provided to the store.

WORD NAME: Store 6 Control

WORD ID:	10R/09
SOURCE(s):	Platform
DEST(s):	Carriage System
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
RIFL Unlock	-00-D	0 = Lock, 1 = Unlock
Nose Arm	-01-D	1 = Energize nose arm solenoid
Tail Arm	-02-D	1 = Energize tail arm solenoid
Center Arm	-03-D	1 = Energize center arm solenoid
LB Select	-04-D	1 = Route LB to Store 6 (see note 1)
HB 1 Select	-05-D	1 = Route HB1 to Store 6
HB 2 Select	-06-D	1 = Route HB2 to Store 6
HB 3 Select	-07-D	1 = Route HB3 to Store 6
HB 4 Select	-08-D	1 = Route HB4 to Store 6
Operating Power/28V DC1 Select	-09-D	1 = Apply Operation Power/28V DC1 to Store 6 (see note 2)
Safety Enable Pwr/ 28V DC2 Select	-10-D	1 = Route Safety Enable Power/28V DC2 to Store 6
115V AC 3 ph Select	-11-D	1 = Apply 3 phase 115V AC to Store 6
270V DC Select	-12-D	1 = Apply 270V DC to Store 6
Safety Enable/Release Consent Select	-13-D	1 = Route Safety Enable/Release Consent to Store 6
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

1. Route means the signal is routed from the platform to the store.
2. Apply means the signal can be routed or generated from within the carriage system and provided to the store.

WORD NAME: Store 7 Control

		CATEGORY:	Special
WORD ID:	10R/10	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Carriage System	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
RIFL Unlock	-00-D	0 = Lock, 1 = Unlock
Nose Arm	-01-D	1 = Energize nose arm solenoid
Tail Arm	-02-D	1 = Energize tail arm solenoid
Center Arm	-03-D	1 = Energize center arm solenoid
LB Select	-04-D	1 = Route LB to Store 7 (see note 1)
HB 1 Select	-05-D	1 = Route HB1 to Store 7
HB 2 Select	-06-D	1 = Route HB2 to Store 7
HB 3 Select	-07-D	1 = Route HB3 to Store 7
HB 4 Select	-08-D	1 = Route HB4 to Store 7
Operating Power/28V DC1 Select	-09-D	1 = Apply Operation Power/28V DC1 to Store 7 (see note 2)
Safety Enable Pwr/ 28V DC2 Select	-10-D	1 = Route Safety Enable Power/28V DC2 to Store 7
115V AC 3 ph Select	-11-D	1 = Apply 3 phase 115V AC to Store 7
270V DC Select	-12-D	1 = Apply 270V DC to Store 7
Safety Enable/Release Consent Select	-13-D	1 = Route Safety Enable/Release Consent to Store 7
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

1. Route means the signal is routed from the platform to the store.
2. Apply means the signal can be routed or generated from within the carriage system and provided to the store.

WORD NAME: Store 8 Control

WORD ID:	10R/11
SOURCE(s):	Platform
DEST(s):	Carriage System
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
RIFL Unlock	-00-D	0 = Lock, 1 = Unlock
Nose Arm	-01-D	1 = Energize nose arm solenoid
Tail Arm	-02-D	1 = Energize tail arm solenoid
Center Arm	-03-D	1 = Energize center arm solenoid
LB Select	-04-D	1 = Route LB to Store 8 (see note 1)
HB 1 Select	-05-D	1 = Route HB1 to Store 8
HB 2 Select	-06-D	1 = Route HB2 to Store 8
HB 3 Select	-07-D	1 = Route HB3 to Store 8
HB 4 Select	-08-D	1 = Route HB4 to Store 8
Operating Power/28V DC1 Select	-09-D	1 = Apply Operation Power/28V DC1 to Store 8 (see note 2)
Safety Enable Pwr/ 28V DC2 Select	-10-D	1 = Route Safety Enable Power/28V DC2 to Store 8
115V AC 3 ph Select	-11-D	1 = Apply 3 phase 115V AC to Store 8
270V DC Select	-12-D	1 = Apply 270V DC to Store 8
Safety Enable/Release Consent Select	-13-D	1 = Route Safety Enable/Release Consent to Store 8
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

1. Route means the signal is routed from the platform to the store.
2. Apply means the signal can be routed or generated from within the carriage system and provided to the store.

WORD NAME: Station 1 & 2 Address Control

		CATEGORY:	Special
WORD ID:	10R/12	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Carriage System	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0
Reserved	-01-0	Set to logic 0
Reserved	-02-0	Set to logic 0
Station 1 RT Address	-03-N	MSB ---
	-04-N	SIGNAL TYPE: Unsigned, UNITS: N/A
	-05-N	MAX VALUE: 31, MIN VALUE: 0
	-06-N	RESOLUTION: 1, ACCURACY: N/A
	-07-N	LSB ---
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Station 2 RT Address	-11-N	MSB ---
	-12-N	SIGNAL TYPE: Unsigned, UNITS: N/A
	-13-N	MAX VALUE: 31, MIN VALUE: 0
	-14-N	RESOLUTION: 1, ACCURACY: N/A
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Station 3 & 4 Address Control

CATEGORY:	Special

WORD ID: 10R/13
SOURCE(s):   Platform
DEST(s):   Carriage System
COMP RATE: Aperiodic
XMIT RATE: Aperiodic
SIGNAL TYPE: N/A
UNITS: N/A

MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION	
Reserved	-00-0		Set to logic 0
Reserved	-01-0		Set to logic 0
Reserved	-02-0		Set to logic 0
Station 3 RT Address	-03-N	MSB	---
	-04-N		SIGNAL TYPE: Unsigned, UNITS: N/A
	-05-N		MAX VALUE: 31, MIN VALUE: 0
	-06-N		RESOLUTION: 1, ACCURACY: N/A
	-07-N	LSB	---
Reserved	-08-0		Set to logic 0
Reserved	-09-0		Set to logic 0
Reserved	-10-0		Set to logic 0
Station 4 RT Address	-11-N	MSB	---
	-12-N		SIGNAL TYPE: Unsigned, UNITS: N/A
	-13-N		MAX VALUE: 31, MIN VALUE: 0
	-14-N		RESOLUTION: 1, ACCURACY: N/A
	-15-N	LSB	---

REMARKS/NOTES:

WORD NAME: Station 5 & 6 Address Control

WORD ID:	10R/14	CATEGORY: Special
SOURCE(s):	Platform	MAX VALUE: N/A
DEST(s):	Carriage System	MIN VALUE: N/A
COMP RATE:	Aperiodic	RESOLUTION: N/A
XMIT RATE:	Aperiodic	ACCURACY: N/A
SIGNAL TYPE:	N/A	MSB: N/A
UNITS:	N/A	LSB: N/A
		FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0
Reserved	-01-0	Set to logic 0
Reserved	-02-0	Set to logic 0
Station 5 RT Address	-03-N	MSB ---
	-04-N	SIGNAL TYPE: Unsigned, UNITS: N/A
	-05-N	MAX VALUE: 31, MIN VALUE: 0
	-06-N	RESOLUTION: 1, ACCURACY: N/A
	-07-N	LSB ---
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Station 6 RT Address	-11-N	MSB ---
	-12-N	SIGNAL TYPE: Unsigned, UNITS: N/A
	-13-N	MAX VALUE: 31, MIN VALUE: 0
	-14-N	RESOLUTION: 1, ACCURACY: N/A
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Station 7 & 8 Address Control

WORD ID:	10R/15	CATEGORY:	Special
SOURCE(s):	Platform	MAX VALUE:	N/A
DEST(s):	Carriage System	MIN VALUE:	N/A
COMP RATE:	Aperiodic	RESOLUTION:	N/A
XMIT RATE:	Aperiodic	ACCURACY:	N/A
SIGNAL TYPE:	N/A	MSB:	N/A
UNITS:	N/A	LSB:	N/A
		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0
Reserved	-01-0	Set to logic 0
Reserved	-02-0	Set to logic 0
Station 7 RT Address	-03-N	MSB ---
	-04-N	SIGNAL TYPE: Unsigned, UNITS: N/A
	-05-N	MAX VALUE: 31, MIN VALUE: 0
	-06-N	RESOLUTION: 1, ACCURACY: N/A
	-07-N	LSB ---
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Station 8 RT Address	-11-N	MSB ---
	-12-N	SIGNAL TYPE: Unsigned, UNITS: N/A
	-13-N	MAX VALUE: 31, MIN VALUE: 0
	-14-N	RESOLUTION: 1, ACCURACY: N/A
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: First Mission

CATEGORY:	Number(L)
WORD ID: 10R/16	MAX VALUE: 65535
SOURCE(s): Platform	MIN VALUE: 0
DEST(s): Carriage System	RESOLUTION: 1
COMP RATE: N/A	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^15
SIGNAL TYPE: Unsigned	LSB: 2^0
UNITS: N/A	FULL SCALE: 65535

FIELD NAME	BIT NO.	DESCRIPTION
First Mission	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Training Loadout

	CATEGORY: Number(L)
WORD ID: 10R/17	MAX VALUE: 65535
SOURCE(s): Platform	MIN VALUE: 0
DEST(s): Carriage System	RESOLUTION: 1
COMP RATE: N/A	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^{15}
SIGNAL TYPE: Unsigned	LSB: 2^0
UNITS: N/A	FULL SCALE: 65535

FIELD NAME	BIT NO.	DESCRIPTION
Training Loadout Code	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Reserved

	CATEGORY: N/A
WORD ID: 10R/18-21	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Carriage System	RESOLUTION: N/A
COMP RATE: N/A	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	
	-01-0	
	-02-0	
	-03-0	
	-04-0	
	-05-0	
	-06-0	
	-07-0	
	-08-0	
	-09-0	
	-10-0	
	-11-0	
	-12-0	
	-13-0	
	-14-0	
	-15-0	

REMARKS/NOTES:

WORD NAME: Checksum

	CATEGORY: Number(L)
WORD ID: 10R/22	MAX VALUE: 65535
SOURCE(s): Platform	MIN VALUE: 0
DEST(s): Carriage System	RESOLUTION: N/A
COMP RATE: N/A	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^{15}
SIGNAL TYPE: N/A	LSB: 2^0
UNITS: N/A	FULL SCALE: 65535

FIELD NAME	BIT NO.	DESCRIPTION
Checksum	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

6.10T   CARRIAGE SYSTEM MONITOR [10T]

Carriage System Monitor [10T] provides operational status of the carriage system.

Carriage System Requirements

The carriage system shall **{css_6035}** update Carriage System Monitor [10T] data from the stores at a minimum rate of 25 Hz.

The carriage system shall **{css_6036}** initialize Carriage System Monitor [10T] status IAW Table 6.10T-1.

Table 6.10T-1   Carriage System Monitor [10T] Initialization

Interface Configuration at Power-On (Platform Identification [01R] Not Received)	
Non-UAI	**UAI**
Header [10T/01] = Legacy 10T Header All other Carriage System Monitor [10T] data words can be set to any value	Header [10T/01 = 042D (H)] Power Interruption [10T/02/00 = 1] Platform ID Received [10T/02/11 = 0] All other Carriage System Monitor [10T] bits and data words are set to "0".

6.10T.1   Carriage Monitor 1 [10T/02]

6.10T.1.1   Power Interruption [10T/02/00]

Power Interruption [10T/02/00] is an indication that initial power to the carriage system, or a power dropout, has occurred.

Carriage System Requirements

The carriage system shall **{css_6037}** reset the Power Interruption [10T/02/00 = 0] after receipt of a valid Reset Power Dropout [10R/02/00 = 1].

The carriage system shall **{css_6038}** set Power Interruption [10T/02/00 = 1] upon application of Operating Power, and after any subsequent power dropout greater than 200 microseconds which may have compromised the integrity of carriage system hardware or software processes IAW Table 6.10T-1.

6.10T.1.2   Reserved

6.10T.1.3   Reserved

6.10T.1.4   CSI Release Consent Present [10T/02/05]

Release Consent [Discrete] from the platform is used by the Carriage System as an interlock for carriage safety critical operations (such as jettison and release) and is also used as an interlock for routing Release Consent/Safety Critical [Discrete] to the loaded mission store(s). The platform can use this bit to determine the successful application of Release Consent [Discrete] at the carriage system.

Carriage System Requirements

The carriage system shall **{css_6044}** set CSI Release Consent Present [10T/02/05 = 1] to denote the presence of Release Consent [Discrete].

6.10T.1.5 CSI 28V DC2 Present [10T/02/06]

28V DC2 [Power] from the platform is used by the Carriage System as the power source for carriage safety critical operations (such as jettison and release) and is also routed as Safety Enable Pwr/28V DC2 [Power] to the carried mission stores. The platform can use CSI 28V DC2 Present [10T/02/06] to determine the successful application of 28V DC2 [Power] at the carriage system.

Carriage System Requirements

The carriage system shall **{css_6045}** set CSI 28V DC2 Present [10T/02/06 = 1] to denote the presence of 28V DC2 [Power].

6.10T.1.6 CS PS Output Present [10T/02/07]

The carriage system can contain a controllable internal power supply for producing 28V DC [Power] from platform provided 115V AC 3 ph [Power] or 270V DC [Power] for use as mission store Operating Power. The presence of this power supply is indicated in the supplement.

Carriage System Requirements

The carriage system shall **{css_6046}** set CS PS Output Present [10T/02/07 = 1] when carriage system power supply output is within limits.

6.10T.1.7 Pressure Good [10T/02/08]

If a carriage system has a pneumatic release system, Pressure Good [10T/02/08] indicates the carriage system pneumatic system (if applicable) has sufficient pressure to jettison and release mission stores. The time to obtain Pressure Good [10T/02/08 = 1] is a function of initial pressure, temperature, and altitude. Once the carriage system pneumatic system is properly charged, it automatically controls the compressor and pressure venting system to maintain Pressure Good [10T/02/08 = 1].

Carriage System Requirements

The carriage system shall **{css_6047}** set Pressure Good [10T/02/08 = 1] when Carriage system pneumatic pressure is adequate to support mission store release or jettison.

The carriage system shall **{css_6048}** inhibit release or jettison of any mission store if Pressure Good [10T/02/08 = 0] and the carriage system uses a pneumatic release system.

The carriage system supplement **{sup_6041}** documents the details of its pneumatic system.

6.10T.1.8 Carriage Ready [10T/02/09]

Carriage Ready [10T/02/09] indicates the carriage is capable of operating with full mission capability. Carriage Ready does not reflect the status of loaded mission stores.

Platform Requirements

The platform shall **{ps_6057}** verify Carriage Ready [10T/02/09 = 1] prior to initiation of mission store release.

Carriage System Requirements

The carriage system shall **{css_6049}** set Carriage Ready [10T/02/09 = 1] when:

    a. Carriage System Critical BIT Failure [10T/20/00 = 0].

    b. Pressure Good [10T/02/08 = 1], if the carriage system employs a pneumatic ejection system.

    c. Carriage Inventory Complete [10T/02/10 = 1].

    d. Invalid Release Order [10T/03/06 = 0] (Type 2 carriage system only).

    e. Invalid Loadout [10T/03/05 = 0] (Type 2 Carriage system only).

    f. Platform ID Received [10T/02/11 = 1].

    g. Any other conditions documented in the carriage system supplement **{sup_6042}**.

6.10T.1.9 Carriage Inventory Complete [10T/02/10]

Carriage Inventory Complete [10T/02/10] informs the platform that a carriage system has inventoried all loaded mission stores and can provide a complete Store Description [01T] message.

Platform Requirements

The platform may **{pm_6023}** monitor Carriage Inventory Complete [10T/02/10 = 1] to determine when a Type 2 carriage system Store Description [01T] contains mission store inventory data in Station ID Store Code 1-8 [01T/16-23].

Carriage System Requirements

A Type 1 carriage system shall **{css_6227}** set Carriage Inventory Complete [10T/02/10 = 1] when Station ID Store Code 1-8 [01T/16-23] contains valid data.

A Type 2 carriage system shall **{css_6050}** set Carriage Inventory Complete [10T/02/10 = 1] when loaded mission stores have been identified and Station ID Store Code 1-8 [01T/16-23] contains valid data.

6.10T.1.10 Platform ID Received [10T/02/11]

Platform ID Received [10T/02/11] is used to inform the platform that a valid Platform Description [01R] was received by the carriage system.

Carriage System Requirements

The carriage system shall **{css_6051}** set <u>Platform ID Received</u> [10T/02/11] after receipt of a valid <u>Platform Description</u> [01R].

6.10T.1.11 <u>Store Selected</u> [10T/02/12…15]

For a Type 2 carriage system, <u>Store Selected</u> [10T/02/12…15] identifies the selected mission store for Directed Protocol communication. The carriage system is the selected mission store when <u>Store Selected</u> [10T/02/12…15 = 0] and Directed Protocol is disabled.

Platform Requirements

The platform may **{pm_6024}** monitor <u>Store Selected</u> [10T/02/12…15] to verify the correct mission store is selected for Directed Protocol communication after setting a valid <u>Store Number</u> [10R/02/08…11].

Carriage System Requirements

A Type 2 carriage system shall **{css_6052}** set <u>Store Selected</u> [10T/02/12…15] equal to a valid <u>Store Number</u> [10R/02/08…11].

6.10T.2 <u>Carriage Monitor 2</u> [10T/03]

6.10T.2.1 <u>In Training</u> [10T/03/00]

<u>In Training</u> [10T/03/00] is an indication to the platform that a Type 2 carriage system is set to facilitate aircrew training when no mission stores are loaded on the carriage system.

Carriage System Requirements

The carriage system shall **{css_6053}** set <u>In Training</u> [10T/03/00 = 1] when a Type 2 carriage system is in <u>Training Mode</u> [10R/02/03 = 1], and no mission stores are loaded.

6.10T.2.2 <u>TM Present</u> [10T/03/02]

<u>TM Present</u> [10T/03/02] indicates the carriage system is instrumented with a telemetry (TM) system.

Carriage System Requirements

The carriage system shall **{css_6054}** set <u>TM Present</u> [10T/03/02 = 1] to indicate an installed TM system.

6.10T.2.3 <u>TM On</u> [10T/03/03]

<u>TM On</u> [10T/03/03] indicates the carriage system telemetry RF radiation status.

Carriage System Requirements

The carriage system shall **{css_6055}** set TM On [10T/03/03 = 1] when carriage system telemetry is radiating RF.

6.10T.2.4 Resort Allowed [10T/03/04]

Resort Allowed [10T/03/04] indicates a Type 2 carriage system allows renumbering of the mission store release order. A "Healthy Available Mission Store" is defined as Store Present Status [10T/04-11/14…15 = 01 (B)], Critical HW Passed [20T/07,09,11,13,15,17,19,21/01 = 1], and XX - Store Not Usable [10T/12/00…07 = 0]. A resort is effective under the following conditions:

- When an empty mission store station, (Store Present Status [10T/04-11/14…15 = 00 (B) or 11 (B)]) is currently assigned a smaller mission release order number (making it earlier in the release order) than a Healthy Available Mission Store.

- When a failed or unusable store is currently assigned a smaller release order number (making it earlier in the release order) than a Healthy Available Mission Store.

- When a hung store(s) (Store Present Status [10T/04-11/14…15 = 10 (B)]) is currently assigned a smaller release order number (making it lower in the release order) than a Healthy Available Mission Store(s).

Carriage System Requirements

The carriage system shall **{css_6224}** set Resort Allowed [10T/03/04 = 1] when resort is allowed.

The Type 2 carriage system supplement **{sup_6043}** documents the following resort characteristics:

a. Conditions warranting a resort.

b. Effects of a resort.

c. Relationship of resort and invalid loadout

d. Any other resort limitations/interactions.

6.10T.2.5 Invalid Loadout [10T/03/05]

Invalid Loadout [10T/03/05] indicates that mission stores are not loaded in a valid carriage system loadout.

Carriage System Requirements

The Type 2 carriage system shall **{css_6056}** set Invalid Loadout [10T/03/05 = 1] when an invalid loadout has been determined.

The carriage system supplement **{sup_6044}** documents the conditions for an invalid loadout.

6.10T.2.6 <u>Invalid Release Order</u> [10T/03/06]

When the carriage system detects that mission stores cannot be released and/or jettisoned in the predefined order due to more than one mission store failure (including a stepped over non-failed, non-AUR mission store), it sets <u>Invalid Release Order</u> [10T/03/06].

Carriage System Requirements

The Type 2 carriage system shall **{css_6057}** set <u>Invalid Release Order</u> [10T/03/06 = 1] after <u>Carriage Inventory Complete</u> [10T/02/10 = 1] when:

    a. An invalid release order has been determined, or

    b. <u>Invalid Loadout</u> [10T/03/05 = 1], or

    c. More than one mission store failure (<u>Critical HW Passed</u> [22T/02/01 = 0]) is present.

The carriage system supplement **{sup_6045}** documents the conditions for an invalid release order.

6.10T.2.7 <u>CS IBIT Control</u> [10T/03/07]

A Type-2 carriage system uses the <u>CS IBIT Control</u> [10T/03/07] bit to echo the status of last received <u>CS IBIT Control</u> [10R/02/07] command.

Carriage System Requirements

The Type 2 carriage system shall **{css_6150}** set <u>CS IBIT Control</u> [10T/03/07 = 0] (IBIT Carriage System only), at the completion of <u>Carriage Inventory Complete</u> [10T/02/10 = 1].

The Type 2 carriage system shall **{css_6151}** set <u>CS IBIT Control</u> [10T/03/07] equal to the value of the last received <u>CS IBIT Control</u> [10R/02/07] command.

6.10T.2.7.1 <u>CS CDS Rcvd</u> [10T/03/08]

Carriage System Requirement

A Type 2 carriage system shall **{css_6215}** set <u>CS CDS Rcvd</u> [10T/03/08 = 1] to indicate that the CDS has been received, stored, and validated.

6.10T.2.7.2 <u>CDS Compatibility Fault</u> [10T/03/09]

<u>CDS Compatibility Fault</u> [10T/03/09] indicates the Type 2 carriage system does not have a CS CDS appropriate for at least one of the mission stores present.

Carriage System Requirement

A Type 2 carriage system shall **{css_6216}** set <u>CDS Compatibility Fault</u> [10T/03/09 = 1] when a mission store is not compatible with the carriage system OFP and CS CDS.

6.10T.2.7.3 <u>CS UAI Config ID Complete</u> [10T/03/10]

<u>CS UAI Config ID Complete</u> [10T/03/10] indicates the Type 2 carriage system has determined the <u>UAI Configuration ID</u> [01R/29/04…15] of the mission stores and updated its <u>UAI Configuration ID</u> [01R/29/04…15] to the highest common UAI version supported by both the carriage system and the mission stores.

Carriage System Requirement

A Type 2 carriage system shall **{css_6223}** set <u>CS UAI Config ID Complete</u> [10T/03/10 = 1] when it has updated its <u>UAI Configuration ID</u> [01T/29/04…15] to the highest common UAI version supported by the carriage system, CS_CDS, the platform, and the mission stores.

6.10T.2.8 <u>Store Availability</u> [10T/03/12…15]

The Type 2 carriage system sets <u>Store Availability</u> [10T/03/12…15] to indicate the number of Healthy Available Mission Store(s) onboard.

Carriage System Requirements

The Type 2 carriage system shall **{css_6058}** set <u>Store Availability</u> [10T/03/12…15] to indicate the number of Healthy Available Mission Stores when <u>Carriage Inventory Complete</u> [10T/02/10 = 1].

The Type 2 carriage system shall **{css_6059}** set <u>Store Availability</u> [10T/03/12…15] to indicate the number of simulated mission stores available when in <u>Training Mode</u> [10R/02/03 = 1].

The Type 2 carriage system shall **{css_6060}** set <u>Store Availability</u> [10T/03/12…15], as appropriate for full carriage system loadout, and <u>Store Present Status</u> [10T/04-11/14…15] as appropriate for full carriage system loadout, after receipt of <u>Training Mode</u> [10R/02/03 = 1] indicating an initial full carriage system loadout.

6.10T.3 <u>Store X (1-8) Monitor</u> [10T/04-11]

6.10T.3.1 <u>RIFL State</u> [10T/04-11/00]

<u>RIFL State</u> [10T/04-11/00] can be used to monitor the status of the ejector Reversible In-Flight Lock (RIFL) which prevents jettison or release when activated.

Carriage System Requirements

The carriage system shall **{css_6061}** set <u>RIFL State</u> [10T/04-11/00] to indicate the current state of the RIFL for the respective mission store.

The carriage system supplement **{sup_6046}** documents RIFL applicability.

6.10T.4 Lanyard Arming Monitors

The platform can monitor the ejector unit arming units. The carriage system can contain a nose, tail, and center arming unit for each ejector unit.

6.10T.4.1 <u>Nose Arm Active</u> [10T/04-11/01]

Carriage System Requirements

The carriage system shall **{css_6062}** set <u>Nose Arm Active</u> [10T/04-11/01 = 1] when the nose arm solenoid is activated for the respective mission store.

6.10T.4.2 <u>Tail Arm Active</u> [10T/04-11/02]

Carriage System Requirements

The carriage system shall **{css_6063}** set <u>Tail Arm Active</u> [10T/04-11/02 = 1] when the tail arm solenoid is activated for the respective mission store.

6.10T.4.3 <u>Center Arm Active</u> [10T/04-11/03]

Carriage System Requirements

The carriage system shall **{css_6064}** set <u>Center Arm Active</u> [10T/04-11/03 = 1] when the center arm solenoid is activated for the respective mission store.

6.10T.4.4 <u>LB Selected</u> [10T/04-11/04]

The carriage system provides status to the platform as to the routing or un-routing of the low bandwidth signal to the respective mission store(s).

Carriage System Requirements

The carriage system shall **{css_6065}** set <u>LB Selected</u> [10T/04-11/04 = 1] when the LB signal is routed to the respective mission store(s), as documented in the carriage system supplement **{sup_6047}**.

6.10T.4.5 <u>HB 1-4 Selected</u> [10T/04-11/05…08]

The carriage system provides status to the platform as to the routing or un-routing of the high bandwidth signal(s) to the respective mission store(s).

Carriage System Requirements

The carriage system shall **{css_6066}** set <u>HB 1-4 Selected</u> [10T/04-11/05…08 = 1] when HB 1-4 signal is routed to the respective mission store(s), as documented in the carriage system supplement **{sup_6048}**.

6.10T.4.6 <u>Operating Pwr/28V DC1 Present</u> [10T/04-11/09]

The carriage system provides status to the platform as to the application or removal of the <u>28V DC1</u> [Power] signal to the respective mission store(s).

Carriage System Requirements

The carriage system shall **{css_6067}** set <u>Operating Pwr/28V DC1 Present</u> [10T/04-11/09 = 1] when <u>Operating Pwr/28V DC1</u> [Power] is applied to the respective mission store.

6.10T.4.7 Safety Enable Pwr/28V DC2 Present [10T/04-11/10]

The carriage system provides status to the platform as to the routing or un-routing of the Safety Enable Pwr/28V DC2 [Power] signal to the respective mission store(s).

Carriage System Requirements

The carriage system shall **{css_6068}** set Safety Enable Pwr/28V DC2 Present [10T/04-11/10 = 1] when Safety Enable Pwr/28V DC2 [Power] is applied to the respective mission store.

6.10T.4.8 115V AC 3 ph Present [10T/04-11/11]

The carriage system provides status to the platform as to the application or removal of 115V AC 3 ph [Power] to the respective mission store(s).

Carriage System Requirements

The carriage system shall **{css_6069}** set 115V AC 3 ph Present [10T/04-11/11 = 1] when 115V AC 3 ph [Power] is applied to the respective mission store.

6.10T.4.9 270V DC Present [10T/04-11/12]

The carriage system provides status to the platform as to the application or removal of 270V DC [Power] to the respective mission store(s).

Carriage System Requirements

The carriage system shall **{css_6070}** set 270V DC Present [10T/04-11/12 = 1] when 270V DC [Power] is applied to the respective mission store.

6.10T.4.10 Safety Enable/Release Consent Present [10T/04-11/13]

The carriage system provides status to the platform as to the application or removal of the Safety Enable/Release Consent [Discrete] signal to the respective mission store(s).

Carriage System Requirements

The carriage system shall **{css_6071}** set Safety Enable/Release Consent Present [10T/04-11/13 = 1] when Safety Enable or Release Consent [Discrete] is applied to the respective mission store.

6.10T.4.11 Store Present Status [10T/04-11/14…15]

The carriage can provide Store Present Status [10T/04-11/14…15] to the platform IAW Table 6.10T-2.

Table 6.10T-2 Store Present Status

10T/04-11/14…15	Description
00	No Store Present/Released
01	Store Present
10	Hung Store
11	Store Stepped Over

Carriage System Requirements

The carriage system shall **{css_6072}** set Store Present Status [10T/04-11/14…15] according to Table 6.10T-2 prior to setting Carriage Inventory Complete [10T/02/10 = 1], and thereafter update Store Present Status [10T/04-11/14…15] as documented in the carriage system supplement **{sup_6049}**.

6.10T.5　Store Availability [10T/12]

6.10T.5.1　XX - Store Not Usable [10T/12/00…07]

XX - Store Not Usable [10T/12/00…07] indicates that the carriage system has determined that a failure has occurred that makes the mission store unusable for armed release.

Carriage System Requirement

A Type 2 carriage system shall **{css_6234}** set XX - Store Not Usable [10T/12/00…07= 1] to indicate that a failure has occurred either in the carriage system or in the mission store that makes the mission store unusable for armed release as documented in the Type 2 carriage system supplement **{sup_6286}**.

6.10T.6　Release Order Word 1 & 2 [10T/16-17]

Release Order Word 1 & 2 define the mapping between the mission store release order number and the Type 2 carriage system station location. Release Order Number X (1-8) CS Station Number [10T/16-17/00…03, 04…07, 08…11, 12…15] contains the Number (physical position) of the corresponding mission store. The mission store release order number defines the mission store sequence number in the release order. Note: The release order is initialized at Carriage Inventory Complete [10T/02/10 = 1] and is updated when Resort Stores [10R/02/02 = 1] is commanded.

Carriage System Requirements

A Type 2 carriage system shall **{css_6073}** set Release Order Word 1 & 2 [10T/16-17] to the mission store release order as documented in the carriage system supplement **{sup_6050}** when Carriage Inventory Complete [10T/02/10 = 1].

6.10T.7　Store Release Config [10T/18]

6.10T.7.1　Jettison Interval Selected [10T/18/00…07]

The carriage system provides the platform with the jettison interval to be used between each mission store in a multiple mission stores jettison release. The Jettison Interval Selected [10T/18/00…07] is dependent upon platform type and station\bay location. Note: Jettison Interval Selected can be different than Fire Interval [11T/12].

Carriage System Requirements

The carriage system shall **{css_6075}** limit mission store to mission store jettison interval to the time specified in Jettison Interval Selected [10T/18/00…07].

The carriage system shall **{css_6076}** set <u>Jettison Interval Selected</u> [10T/18/00…07] to the carriage system default value or to a platform specific value derived from <u>Platform</u> Description [01R] data, as documented in platform/store addendum **{add_6001}**.

The carriage system supplement **{sup_6051}** documents its default, minimum, and maximum jettison interval.

6.10T.7.2 <u>Store to Jettison</u> [10T/18/12…15]

A Type 2 carriage system provides the identity of the mission store to be jettisoned to the platform in <u>Store to Jettison</u> [10T/18/12…15]. The mission store that the carriage system selects for jettison is the first mission store in the release sequence. Note: The command to the carriage system to jettison this selected mission store is <u>Jettison</u> [11R/04/01 = 1].

Carriage System Requirements

A Type 1 carriage system shall **{css_6177}** set <u>Store to Jettison</u> [10T/18/12…15 = 0].

A Type 2 carriage system shall **{css_6077}** set <u>Store to Jettison</u> [10T/18/12…15] to the first mission store in the release sequence that is to be jettisoned, as documented in the carriage system supplement **{sup_6052}**.

6.10T.8 <u>First Mission Selected</u> [10T/19]

<u>First Mission Selected</u> [10T/19] indicates the MDS the first mission store to be released from a Type 2 carriage system is to execute. Note: The platform can change the <u>First Mission Selected</u> with <u>First Mission</u> [10R/16].

Carriage System Requirements

A Type 2 carriage system shall **{css_6078}** set <u>First Mission Selected</u> [10T/19] equal to <u>Pri Msn Storage Location</u> [22T/06] reported by the first mission store in the carriage system release sequence.

6.10T.9 <u>Carriage Operating Faults</u> [10T/20]

6.10T.9.1 <u>Carriage System Critical BIT Failure</u> [10T/20/00]

<u>Carriage System Critical BIT Failure</u> [10T/20/00] is an indication to the platform that a fault in the carriage system would preclude minimum capability operation.

Carriage System Requirements

The carriage system shall **{css_6079}** set <u>Carriage System Critical BIT Failure</u> [10T/20/00 = 1] if BIT detected a subsystem fault which would preclude minimum capability operation of the carriage system.

The carriage system shall **{css_6080}** set <u>Carriage System Critical BIT Failure</u> [10T/20/00 = 0] from application of <u>Operating Power</u> until completion of a BIT that indicates a subsystem failure.

The carriage system supplement **{sup_6053}** documents BIT failures that are considered critical.

6.10T.9.2 <u>Carriage System Degraded</u> [10T/20/01]

<u>Carriage System Degraded</u> [10T/20/01] is an indication to the platform that a fault in the carriage system would preclude full capability but allow minimum capability operation.

Carriage System Requirements

The carriage system shall **{css_6081}** set <u>Carriage System Degraded</u> [10T/20/01 = 1] if BIT detected a subsystem fault which would preclude full capability operation but allow for minimum capability operation of the carriage system.

The carriage system shall **{css_6082}** set <u>Carriage System Degraded</u> [10T/20/01 = 0] from initial <u>Operating Power</u> application until completion of a BIT that indicates a subsystem failure.

The carriage system supplement **{sup_6054}** documents BIT failures that are considered degraded carriage system operation.

6.10T.9.3 <u>Carriage System Unsafe</u> [10T/20/02]

<u>Carriage System Unsafe</u> [10T/20/02] is an indication to the platform that a safety critical fault in the carriage system that is significant enough to preclude continued operations.

Platform Requirements

The platform shall **{ps_6058}** remove and prohibit reapplication of <u>Conditioning Power</u> and <u>Operating Power</u> from the carriage system when <u>Carriage System Unsafe</u> [10T/20/02 = 1].

Carriage System Requirements

The carriage system shall **{css_6083}** set <u>Carriage System Unsafe</u> [10T/20/02 = 1] if BIT detected a subsystem fault which renders the carriage system unsafe to power-up.

The carriage system shall **{css_6084}** set <u>Carriage System Unsafe</u> [10T/20/02 = 0] from application of <u>Conditioning Power</u> and <u>Operating Power</u> until completion of a BIT that indicates the carriage system is unsafe to power up.

The carriage system supplement **{sup_6055}** defines which BIT failures are considered unsafe that the platform is required to remove and not reapply <u>Conditioning Power</u> and <u>Operating Power</u>.

6.10T.10 BIT Code Words 1-8 [10T/21-28]

The carriage system populates BIT Code Words 1-8 [10T/21-28] with carriage system BIT data as defined in the supplement.

Platform Requirements

The platform shall **{ps_6059}** interpret carriage system status in BIT Code Words 1-8 [10T/21-28], if CDS CS BIT Codes Available **{cds_6015}**, and respond to any abnormal conditions IAW the platform-specific fault handling procedures.

Carriage System Requirements

The carriage system shall **{css_6085}** set BIT Code Words 1-8 [10T/21-28] to identify any detected subsystem faults and set unused BIT Code Words 1-8 to all zeroes.

The carriage system and/or store supplement(s) **{sup_6056}** documents the meaning of each BIT Code in BIT Code Words 1-8 [10T/21-28] and how these bit codes roll up into Carriage System Critical BIT Failure [10T/20/00], Carriage System Degraded [10T/20/01], and Carriage System Unsafe [10T/20/02].

6.10T.11 CS CDS ID [10T/29]

CS CDS ID [10T/29] provides the identifier associated with the CS CDS utilized by the carriage system.

Carriage System Requirement

A Type 2 carriage system shall **{css_6217}** set CS CDS ID [10T/29] to the CS CDS data file identifier that has been received, stored, and validated.

MESSAGE NAME: Carriage System Monitor
MESSAGE ID: 10T   TRANSFER TYPE: RT-BC
SOURCE: Carriage System   WORD COUNT: 30
DESTINATION: Platform   XMIT RATE: 0.167 Hz to 32.0 Hz

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01010 (B)
Status Word	SW	MIL-STD-1553 Status Word
Header	01	Message Descriptor
Carriage Monitor 1	02	Carriage Configuration Monitor Word 1
Carriage Monitor 2	03	Carriage Configuration Monitor Word 2
Store 1 Monitor	04	Store 1 Monitor Word
Store 2 Monitor	05	Store 2 Monitor Word
Store 3 Monitor	06	Store 3 Monitor Word
Store 4 Monitor	07	Store 4 Monitor Word
Store 5 Monitor	08	Store 5 Monitor Word
Store 6 Monitor	09	Store 6 Monitor Word
Store 7 Monitor	10	Store 7 Monitor Word
Store 8 Monitor	11	Store 8 Monitor Word
Store Availability	12	Store Availability Monitor
Reserved	13	Reserved
Reserved	14	Reserved
Reserved	15	Reserved
Release Order Word 1	16	Release Order Number 1-4 CS Station
Release Order Word 2	17	Release Order Number 5-8 CS Station
Store Release Config	18	Selected Release Parameters
First Mission Selected	19	Indicates First Target to be prosecuted
Carriage Operating Faults	20	Carriage System Operating Faults
BIT Code Word 1	21	BIT Failures Word 1
BIT Code Word 2	22	BIT Failures Word 2
BIT Code Word 3	23	BIT Failures Word 3
BIT Code Word 4	24	BIT Failures Word 4
BIT Code Word 5	25	BIT Failures Word 5
BIT Code Word 6	26	BIT Failures Word 6
BIT Code Word 7	27	BIT Failures Word 7
BIT Code Word 8	28	BIT Failures Word 8
Reserved	29	Reserved
Checksum	30	Checksum of Message Data

REMARKS/NOTES:

WORD NAME: Header

		CATEGORY:	Header
WORD ID:	10T/01	MAX VALUE:	042D (H)
SOURCE(s):	Carriage System	MIN VALUE:	042D (H)
DEST(s):	Platform	RESOLUTION:	1
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 32.0 Hz	MSB:	2^{15}
SIGNAL TYPE:	N/A	LSB:	2^0
UNITS:	N/A	FULL SCALE:	FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB --
	-01-B	
	-02-B	Hex digit #1 value = 0 (H)
	-03-B	LSB --
Hex Digit #2	-04-B	MSB --
	-05-B	
	-06-B	Hex digit #2 value = 4 (H)
	-07-B	LSB --
Hex Digit #3	-08-B	MSB --
	-09-B	
	-10-B	Hex digit #3 value = 2 (H)
	-11-B	LSB --
Hex Digit #4	-12-B	MSB --
	-13-B	
	-14-B	Hex digit #4 value = D (H)
	-15-B	LSB --

REMARKS/NOTES:

WORD NAME: Carriage Monitor 1

	CATEGORY: Special
WORD ID: 10T/02	MAX VALUE: N/A
SOURCE(s): Carriage System	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: As Required	ACCURACY: N/A
XMIT RATE: 0.167 Hz to 32.0 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Power Interruption	-00-D	Note 1
Reserved	-01-0	Set to logic 0
Reserved	-02-0	Set to logic 0
Reserved	-03-0	Set to logic 0
Reserved	-04-0	Set to logic 0
CSI Release Consent Present	-05-D	1 = Platform Release Consent present at the CSI
CSI 28V DC2 Present	-06-D	1 = Platform 28V DC2 voltage present at the CSI
CS PS Output Present	-07-D	1 = CS Internal Power Supply output present
Pressure Good	-08-D	1 = Pneumatic System pressurized
Carriage Ready	-09-D	1 = Carriage System ready for Store(s) release
Carriage Inventory Complete	-10-D	1 = Carriage System inventory is complete
Platform ID Received	-11-D	1 = Platform Description [01R] received.
Store Selected	-12-N	MSB ---
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 8
	-14-N	MIN VALUE: 0, RESOLUTION: 1 (see note 2)
	-15-N	LSB ---

REMARKS/NOTES:

1. Set to logic 1 when initialization power is first applied to Carriage System or when the Carriage System has detected a power dropout.
2. Indicates the selected Store for Directed Protocol message routing. A value of zero routes all messages to the Carriage System.

WORD NAME: Carriage Monitor 2

		CATEGORY:	Special
WORD ID:	10T/03	MAX VALUE:	N/A
SOURCE(s):	Carriage System	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 32.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
In Training	-00-D	1 = In Training Mode
Reserved	-01-D	Set to logic 0
TM Present	-02-D	1 = Carriage system TM Installed.
TM On	-03-D	1 = Carriage system TM is radiating.
Resort Allowed	-04-D	1 = Resorting of Stores is allowed.
Invalid Loadout	-05-D	1 = Invalid Carriage Store Loadout
Invalid Release Order	-06-D	1 = Carriage Detected Invalid Release Order
CS IBIT Control	-07-D	0 = IBIT Carriage System only
		1 = IBIT Carriage System and Mission Stores Set to logic 0
CS CDS Rcvd	-08-D	1 = CS CDS is validated and stored
CDS Compatibility Fault	-09-D	1 = Mission Store outside CS CDS coverage
CS UAI Config ID Complete	-10-D	1 = Highest compatible Carriage System/Mission Store UAI Configuration has been established
Reserved	-11-0	Set to logic 0
Store Availability	-12-N	MSB --
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 8
	-14-N	MIN VALUE: 0, RESOLUTION: 1
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Store 1 Monitor

		CATEGORY:	Special
WORD ID:	10T/04	MAX VALUE:	N/A
SOURCE(s):	Carriage System	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 32.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
RIFL State	-00-D	0 = Locked, 1 = Unlocked
Nose Arm Active	-01-D	1 = Nose arm solenoid energized
Tail Arm Active	-02-D	1 = Tail arm solenoid energized
Center Arm Active	-03-D	1 = Center arm solenoid energized
LB Selected	-04-D	1 = LB routed to Store 1
HB 1 Selected	-05-D	1 = HB1 routed to Store 1
HB 2 Selected	-06-D	1 = HB2 routed to Store 1
HB 3 Selected	-07-D	1 = HB3 routed to Store 1
HB 4 Selected	-08-D	1 = HB4 routed to Store 1
Operating Pwr/28V DC1 Present	-09-D	1= Operating Power/28V DC1 applied to Store 1
Safety Enable Pwr/ 28V DC2 Present	-10-D	1= Safety Enable Power/28V DC2 routed to Store 1
115V AC 3 ph Present	-11-D	1 = 3 phase 115V AC applied to Store 1
270V DC Present	-12-D	1 = 270V DC applied to Store 1
Safety Enable/Release Consent Present	-13-D	1= Safety Enable/Release Consent applied to Store 1
Store Present Status	-14-C	MSB See note 1---
	-15-C	LSB ---

REMARKS/NOTES:

1. 00 = No Store Present/Released
    01 = Store Present
    10 = Hung Store
    11 = Store Stepped Over

WORD NAME: Store 2 Monitor

		CATEGORY:	Special
WORD ID:	10T/05	MAX VALUE:	N/A
SOURCE(s):	Carriage System	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 32.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
RIFL State	-00-D	0=Locked, 1=Unlocked
Nose Arm Active	-01-D	1 = Nose arm solenoid energized
Tail Arm Active	-02-D	1 = Tail arm solenoid energized
Center Arm Active	-03-D	1 = Energize center arm solenoid
LB Selected	-04-D	1 = LB routed to Store 2
HB 1 Selected	-05-D	1 = HB1 routed to Store 2
HB 2 Selected	-06-D	1 = HB2 routed to Store 2
HB 3 Selected	-07-D	1 = HB3 routed to Store 2
HB 4 Selected	-08-D	1 = HB4 routed to Store 2
Operating Pwr/28V DC1 Present	-09-D	1= Operating Power/28V DC1 applied to Store 2
Safety Enable Pwr/ 28V DC2 Present	-10-D	1= Safety Enable Power/28V DC2 routed to Store 2
115V AC 3 ph Present	-11-D	1 = 3 phase 115V AC applied to Store 2
270V DC Present	-12-D	1 = 270V DC applied to Store 2
Safety Enable/Release Consent Present	-13-D	1= Safety Enable/Release Consent applied to Store 2
Store Present Status	-14-C	MSB See note 1---
	-15-C	LSB ---

REMARKS/NOTES:

1. 00 = No Store Present/Released
    01 = Store Present
    10 = Hung Store
    11 = Store Stepped Over

WORD NAME: Store 3 Monitor

		CATEGORY:	Special
WORD ID:	10T/06	MAX VALUE:	N/A
SOURCE(s):	Carriage System	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 32.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
RIFL State	-00-D	0=Locked, 1=Unlocked
Nose Arm Active	-01-D	1 = Nose arm solenoid energized
Tail Arm Active	-02-D	1 = Tail arm solenoid energized
Center Arm Active	-03-D	1 = Energize center arm solenoid
LB Selected	-04-D	1 = LB routed to Store 3
HB 1 Selected	-05-D	1 = HB1 routed to Store 3
HB 2 Selected	-06-D	1 = HB2 routed to Store 3
HB 3 Selected	-07-D	1 = HB3 routed to Store 3
HB 4 Selected	-08-D	1 = HB4 routed to Store 3
Operating Pwr/28V DC1 Present	-09-D	1= Operating Power/28V DC1 applied to Store 3
Safety Enable Pwr/ 28V DC2 Present	-10-D	1= Safety Enable Power/28V DC2 routed to Store 3
115V AC 3 ph Present	-11-D	1 = 3 phase 115V AC applied to Store 3
270V DC Present	-12-D	1 = 270V DC applied to Store 3
Safety Enable/Release Consent Present	-13-D	1= Safety Enable/Release Consent applied to Store 3
Store Present Status	-14-C	MSB See note 1---
	-15-C	LSB ---

REMARKS/NOTES:

1. 00 = No Store Present/Released
    01 = Store Present
    10 = Hung Store
    11 = Store Stepped Over

WORD NAME: Store 4 Monitor

CATEGORY:	Special
WORD ID: 10T/07	MAX VALUE: N/A
SOURCE(s): Carriage System	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: As Required	ACCURACY: N/A
XMIT RATE: 0.167 Hz to 32.0 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
RIFL State	-00-D	0=Locked, 1=Unlocked
Nose Arm Active	-01-D	1 = Nose arm solenoid energized
Tail Arm Active	-02-D	1 = Tail arm solenoid energized
Center Arm Active	-03-D	1 = Energize center arm solenoid
LB Selected	-04-D	1 = LB routed to Store 4
HB 1 Selected	-05-D	1 = HB1 routed to Store 4
HB 2 Selected	-06-D	1 = HB2 routed to Store 4
HB 3 Selected	-07-D	1 = HB3 routed to Store 4
HB 4 Selected	-08-D	1 = HB4 routed to Store 4
Operating Pwr/28V DC1 Present	-09-D	1= Operating Power/28V DC1 applied to Store 4
Safety Enable Pwr/ 28V DC2 Present	-10-D	1= Safety Enable Power/28V DC2 routed to Store 4
115V AC 3 ph Present	-11-D	1 = 3 phase 115V AC applied to Store 4
270V DC Present	-12-D	1 = 270V DC applied to Store 4
Safety Enable/Release Consent Present	-13-D	1= Safety Enable/Release Consent applied to Store 4
Store Present Status	-14-C	MSB See note 1--
	-15-C	LSB --

REMARKS/NOTES:

1. 00 = No Store Present/Released
    01 = Store Present
    10 = Hung Store
    11 = Store Stepped Over

WORD NAME: Store 5 Monitor

		CATEGORY:	Special
WORD ID:	10T/08	MAX VALUE:	N/A
SOURCE(s):	Carriage System	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 32.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
RIFL State	-00-D	0=Locked, 1=Unlocked
Nose Arm Active	-01-D	1 = Nose arm solenoid energized
Tail Arm Active	-02-D	1 = Tail arm solenoid energized
Center Arm Active	-03-D	1 = Energize center arm solenoid
LB Selected	-04-D	1 = LB routed to Store 5
HB 1 Selected	-05-D	1 = HB1 routed to Store 5
HB 2 Selected	-06-D	1 = HB2 routed to Store 5
HB 3 Selected	-07-D	1 = HB3 routed to Store 5
HB 4 Selected	-08-D	1 = HB4 routed to Store 5
Operating Pwr/28V DC1 Present	-09-D	1= Operating Power/28V DC1 applied to Store 5
Safety Enable Pwr/ 28V DC2 Present	-10-D	1= Safety Enable Power/28V DC2 routed to Store 5
115V AC 3 ph Present	-11-D	1 = 3 phase 115V AC applied to Store 5
270V DC Present	-12-D	1 = 270V DC applied to Store 5
Safety Enable/Release Consent Present	-13-D	1= Safety Enable/Release Consent applied to Store 5
Store Present Status	-14-C	MSB See note 1--
	-15-C	LSB --

REMARKS/NOTES:

1. 00 = No Store Present/Released
   01 = Store Present
   10 = Hung Store
   11 = Store Stepped Over

WORD NAME: Store 6 Monitor

WORD ID:	10T/09
SOURCE(s):	Carriage System
DEST(s):	Platform
COMP RATE:	As Required
XMIT RATE:	0.167 Hz to 32.0 Hz
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
RIFL State	-00-D	0=Locked, 1=Unlocked
Nose Arm Active	-01-D	1 = Nose arm solenoid energized
Tail Arm Active	-02-D	1 = Tail arm solenoid energized
Center Arm Active	-03-D	1 = Energize center arm solenoid
LB Selected	-04-D	1 = LB routed to Store 6
HB 1 Selected	-05-D	1 = HB1 routed to Store 6
HB 2 Selected	-06-D	1 = HB2 routed to Store 6
HB 3 Selected	-07-D	1 = HB3 routed to Store 6
HB 4 Selected	-08-D	1 = HB4 routed to Store 6
Operating Pwr/28V DC1 Present	-09-D	1= Operating Power/28V DC1 applied to Store 6
Safety Enable Pwr/ 28V DC2 Present	-10-D	1= Safety Enable Power/28V DC2 routed to Store 6
115V AC 3 ph Present	-11-D	1 = 3 phase 115V AC applied to Store 6
270V DC Present	-12-D	1 = 270V DC applied to Store 6
Safety Enable/Release Consent Present	-13-D	1= Safety Enable/Release Consent applied to Store 6
Store Present Status	-14-C	MSB See note 1---
	-15-C	LSB ---

REMARKS/NOTES:

1. 00 = No Store Present/Released
    01 = Store Present
    10 = Hung Store
    11 = Store Stepped Over

WORD NAME: Store 7 Monitor

			CATEGORY:	Special
WORD ID:	10T/10		MAX VALUE:	N/A
SOURCE(s):	Carriage System		MIN VALUE:	N/A
DEST(s):	Platform		RESOLUTION:	N/A
COMP RATE:	As Required		ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 32.0 Hz		MSB:	N/A
SIGNAL TYPE:	N/A		LSB:	N/A
UNITS:	N/A		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
RIFL State	-00-D	0=Locked, 1=Unlocked
Nose Arm Active	-01-D	1 = Nose arm solenoid energized
Tail Arm Active	-02-D	1 = Tail arm solenoid energized
Center Arm Active	-03-D	1 = Energize center arm solenoid
LB Selected	-04-D	1 = LB routed to Store 7
HB 1 Selected	-05-D	1 = HB1 routed to Store 7
HB 2 Selected	-06-D	1 = HB2 routed to Store 7
HB 3 Selected	-07-D	1 = HB3 routed to Store 7
HB 4 Selected	-08-D	1 = HB4 routed to Store 7
Operating Pwr/28V DC1 Present	-09-D	1= Operating Power/28V DC1 applied to Store 7
Safety Enable Pwr/ 28V DC2 Present	-10-D	1= Safety Enable Power/28V DC2 routed to Store 7
115V AC 3 ph Present	-11-D	1 = 3 phase 115V AC applied to Store 7
270V DC Present	-12-D	1 = 270V DC applied to Store 7
Safety Enable/Release Consent Present	-13-D	1= Safety Enable/Release Consent applied to Store 7
Store Present Status	-14-C	MSB See note 1---
	-15-C	LSB ---

REMARKS/NOTES:

1. 00 = No Store Present/Released
    01 = Store Present
    10 = Hung Store
    11 = Store Stepped Over

WORD NAME: Store 8 Monitor

		CATEGORY:	Special
WORD ID:	10T/11	MAX VALUE:	N/A
SOURCE(s):	Carriage System	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 32.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
RIFL State	-00-D	0=Locked, 1=Unlocked
Nose Arm Active	-01-D	1 = Nose arm solenoid energized
Tail Arm Active	-02-D	1 = Tail arm solenoid energized
Center Arm Active	-03-D	1 = Energize center arm solenoid
LB Selected	-04-D	1 = LB routed to Store 8
HB 1 Selected	-05-D	1 = HB1 routed to Store 8
HB 2 Selected	-06-D	1 = HB2 routed to Store 8
HB 3 Selected	-07-D	1 = HB3 routed to Store 8
HB 4 Selected	-08-D	1 = HB4 routed to Store 8
Operating Pwr/28V DC1 Present	-09-D	1= Operating Power/28V DC1 applied to Store 8
Safety Enable Pwr/ 28V DC2 Present	-10-D	1= Safety Enable Power/28V DC2 routed to Store 8
115V AC 3 ph Present	-11-D	1 = 3 phase 115V AC applied to Store 8
270V DC Present	-12-D	1 = 270V DC applied to Store 8
Safety Enable/Release Consent Present	-13-D	1= Safety Enable/Release Consent applied to Store 8
Store Present Status	-14-C	MSB See note 1--
	-15-C	LSB --

REMARKS/NOTES:

1. 00 = No Store Present/Released
    01 = Store Present
    10 = Hung Store
    11 = Store Stepped Over

WORD NAME: Store Availability

	CATEGORY: Special
WORD ID: 10T/12	MAX VALUE: N/A
SOURCE(s): Carriage System	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: 25.0 Hz Minimum	ACCURACY: N/A
XMIT RATE: 0.167 Hz to 32.0 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
01 - Store Not Usable	-00-D	1 = Store 1 is not usable for armed release.
02 - Store Not Usable	-01-D	1 = Store 2 is not usable for armed release.
03 - Store Not Usable	-02-D	1 = Store 3 is not usable for armed release.
04 - Store Not Usable	-03-D	1 = Store 4 is not usable for armed release.
05 - Store Not Usable	-04-D	1 = Store 5 is not usable for armed release.
06 - Store Not Usable	-05-D	1 = Store 6 is not usable for armed release.
07 - Store Not Usable	-06-D	1 = Store 7 is not usable for armed release.
08 - Store Not Usable	-07-D	1 = Store 8 is not usable for armed release.
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Reserved

WORD ID:	10T/13-15
SOURCE(s):	Carriage System
DEST(s):	Platform
COMP RATE:	As Required
XMIT RATE:	0.167 Hz to 32.0 Hz
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	N/A
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	
	-01-0	
	-02-0	
	-03-0	
	-04-0	
	-05-0	
	-06-0	
	-07-0	
	-08-0	
	-09-0	
	-10-0	
	-11-0	
	-12-0	
	-13-0	
	-14-0	
	-15-0	

REMARKS/NOTES:

WORD NAME: Release Order Word 1

WORD ID:	10T/16
SOURCE(s):	Carriage System
DEST(s):	Platform
COMP RATE:	As Required
XMIT RATE:	0.167 Hz to 32.0 Hz
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Release Order Number 1 CS Station Number	-00-N	MSB --
	-01-N	SIGNAL TYPE: Unsigned, MAX VALUE: 8
	-02-N	MIN VALUE: 0, RESOLUTION: 1
	-03-N	LSB --
Release Order Number 2 CS Station Number	-04-N	MSB --
	-05-N	SIGNAL TYPE: Unsigned, MAX VALUE: 8
	-06-N	MIN VALUE: 0, RESOLUTION: 1
	-07-N	LSB --
Release Order Number 3 CS Station Number	-08-N	MSB --
	-09-N	SIGNAL TYPE: Unsigned, MAX VALUE: 8
	-10-N	MIN VALUE: 0, RESOLUTION: 1
	-11-N	LSB --
Release Order Number 4 CS Station Number	-12-N	MSB --
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 8
	-14-N	MIN VALUE: 0, RESOLUTION: 1
	-15-N	LSB --

REMARKS/NOTES:

1. CS Station Number (1-8) is the physical location on the carriage system as documented in the carriage system supplement.
2. CS Station Number = 0 indicates no store is present or no carriage system station exists.

WORD NAME: Release Order Word 2

WORD ID: 10T/17	CATEGORY: Special
SOURCE(s): Carriage System	MAX VALUE: N/A
DEST(s): Platform	MIN VALUE: N/A
COMP RATE: As Required	RESOLUTION: N/A
XMIT RATE: 0.167 Hz to 32.0 Hz	ACCURACY: N/A
SIGNAL TYPE: N/A	MSB: N/A
UNITS: N/A	LSB: N/A
	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Release Order Number 5 CS Station Number	-00-N	MSB ---
	-01-N	SIGNAL TYPE: Unsigned, MAX VALUE: 8
	-02-N	MIN VALUE: 0, RESOLUTION: 1
	-03-N	LSB ---
Release Order Number 6 CS Station Number	-04-N	MSB ---
	-05-N	SIGNAL TYPE: Unsigned, MAX VALUE: 8
	-06-N	MIN VALUE: 0, RESOLUTION: 1
	-07-N	LSB ---
Release Order Number 7 CS Station Number	-08-N	MSB ---
	-09-N	SIGNAL TYPE: Unsigned, MAX VALUE: 8
	-10-N	MIN VALUE: 0, RESOLUTION: 1
	-11-N	LSB ---
Release Order Number 8 CS Station Number	-12-N	MSB ---
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 8
	-14-N	MIN VALUE: 0, RESOLUTION: 1
	-15-N	LSB ---

REMARKS/NOTES:

1. CS Station Number (1-8) is the physical location on the carriage system as documented in the carriage system supplement.
2. CS Station Number = indicates no store is present or no carriage system station exists.

WORD NAME: Store Release Config

	CATEGORY: Special
WORD ID: 10T/18	MAX VALUE: N/A
SOURCE(s): Carriage System	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: As Required	ACCURACY: N/A
XMIT RATE: 0.167 Hz to 32.0 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Jettison Interval Selected	-00-N	MSB : 2^2---
	-01-N	
	-02-N	SIGNAL TYPE: Unsigned UNITS: Seconds MAX VALUE: 7.96875
	-03-N	MIN VALUE: 0 RESOLUTION: 0.03125
	-04-N	FULL SCALE: 7.96875
	-05-N	
	-06-N	
	-07-N	LSB : 2^-5---
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Store to Jettison	-12-N	MSB --
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 8
	-14-N	MIN VALUE: 0, RESOLUTION: 1
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: First Mission Selected

	CATEGORY:	Number(L)
WORD ID: 10T/19	MAX VALUE:	9
SOURCE(s): Carriage System	MIN VALUE:	0
DEST(s): Platform	RESOLUTION:	1
COMP RATE: As Required	ACCURACY:	1
XMIT RATE: 0.167 Hz to 32.0 Hz	MSB:	2^{15}
SIGNAL TYPE: N/A	LSB:	2^0
UNITS: N/A	FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
First Mission Selected	-00-N	MSB ---
	-01-N	
	-02-M	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Carriage Operating Faults

	CATEGORY: Special
WORD ID: 10T/20	MAX VALUE: N/A
SOURCE(s): Carriage System	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: As Required	ACCURACY: N/A
XMIT RATE: 0.167 Hz to 32.0 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Carriage System Critical BIT Failure	-00-D	1 = Carriage System Critical BIT Failure
Carriage System Degraded	-01-D	1 = Carriage System Degraded
Carriage System Unsafe	-02-D	1 = Carriage System is Unsafe to be Powered Up.
Reserved	-03-0	Set to logic 0
Reserved	-04-0	Set to logic 0
Reserved	-05-0	Set to logic 0
Reserved	-06-0	Set to logic 0
Reserved	-07-0	Set to logic 0
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: BIT Code Word 1

	CATEGORY: Special
WORD ID: 10T/21	MAX VALUE: N/A
SOURCE(s): Carriage System	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: As Required	ACCURACY: N/A
XMIT RATE: 0.167 Hz to 32.0 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
BIT Code Word 1	-00-N	MSB
(See Note 1)	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB

REMARKS/NOTES:

1. The carriage system populates this data word with carriage system BIT status data. Format is defined in the supplement.

WORD NAME: BIT Code Word 2

		CATEGORY:	Special
WORD ID:	10T/22	MAX VALUE:	N/A
SOURCE(s):	Carriage System	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 32.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Bit Code Word 2	-00-N	MSB
(See Note 1)	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB

REMARKS/NOTES:

1. The carriage system populates this data word with carriage system BIT status data. Format is defined in the supplement.

WORD NAME: BIT Code Word 3

	CATEGORY: Special
WORD ID: 10T/23	MAX VALUE: N/A
SOURCE(s): Carriage System	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: As Required	ACCURACY: N/A
XMIT RATE: 0.167 Hz to 32.0 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Bit Code Word 3	-00-N	MSB
(See Note 1)	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB

REMARKS/NOTES:

1. The carriage system populates this data word with carriage system BIT status data. Format is defined in the supplement.

WORD NAME: BIT Code Word 4

CATEGORY:	Special

WORD ID:	10T/24	MAX VALUE: N/A
SOURCE(s):	Carriage System	MIN VALUE: N/A
DEST(s):	Platform	RESOLUTION: N/A
COMP RATE:	As Required	ACCURACY: N/A
XMIT RATE:	0.167 Hz to 32.0 Hz	MSB: N/A
SIGNAL TYPE:	N/A	LSB: N/A
UNITS:	N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Bit Code Word 4	-00-N	MSB
(See Note 1)	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB

REMARKS/NOTES:

1. The carriage system populates this data word with carriage system BIT status data. Format is defined in the supplement.

WORD NAME: BIT Code Word 5

	CATEGORY: Special
WORD ID: 10T/25	MAX VALUE: N/A
SOURCE(s): Carriage System	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: As Required	ACCURACY: N/A
XMIT RATE: 0.167 Hz to 32.0 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Bit Code Word 5	-00-N	MSB
(See Note 1)	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB

REMARKS/NOTES:

1. The carriage system populates this data word with carriage system BIT status data. Format is defined in the supplement.

WORD NAME: BIT Code Word 6

		CATEGORY:	Special
WORD ID:	10T/26	MAX VALUE:	N/A
SOURCE(s):	Carriage System	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 32.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Bit Code Word 6	-00-N	MSB
(See Note 1)	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB

REMARKS/NOTES:

1. The carriage system populates this data word with carriage system BIT status data. Format is defined in the supplement.

WORD NAME: BIT Code Word 7

	CATEGORY:	Special
WORD ID: 10T/27	MAX VALUE:	N/A
SOURCE(s): Carriage System	MIN VALUE:	N/A
DEST(s): Platform	RESOLUTION:	N/A
COMP RATE: As Required	ACCURACY:	N/A
XMIT RATE: 0.167 Hz to 32.0 Hz	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Bit Code Word 7	-00-N	MSB
(See Note 1)	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB

REMARKS/NOTES:

1. The carriage system populates this data word with carriage system BIT status data. Format is defined in the supplement.

WORD NAME: BIT Code Word 8

	CATEGORY: Special
WORD ID: 10T/28	MAX VALUE: N/A
SOURCE(s): Carriage System	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: As Required	ACCURACY: N/A
XMIT RATE: 0.167 Hz to 32.0 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Bit Code Word 8	-00-N	MSB
(See Note 1)	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB

REMARKS/NOTES:

1. The carriage system populates this data word with carriage system BIT status data. Format is defined in the supplement.

WORD NAME: CS CDS ID

	CATEGORY: Special
WORD ID: 10T/29	MAX VALUE: 255
SOURCE(s): Carriage System	MIN VALUE: 0
DEST(s): Platform	RESOLUTION: 1
COMP RATE: As Required	ACCURACY: N/A
XMIT RATE: 0.167 Hz to 32.0 Hz	MSB: 2^7
SIGNAL TYPE: N/A	LSB: 2^0
UNITS: N/A	FULL SCALE: 255

FIELD NAME	BIT NO.	DESCRIPTION
CD CDS ID	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	LSB ---
	-08-0	Set to logic 0.
	-09-0	Set to logic 0.
	-10-0	Set to logic 0.
	-11-0	Set to logic 0.
	-12-0	Set to logic 0.
	-13-0	Set to logic 0.
	-14-0	Set to logic 0.
	-15-0	Set to logic 0.

REMARKS/NOTES:

WORD NAME: Checksum

	CATEGORY:	Number(L)
WORD ID: 10T/30	MAX VALUE:	65535
SOURCE(s): Carriage System	MIN VALUE:	0
DEST(s): Platform	RESOLUTION:	1
COMP RATE: As Required	ACCURACY:	N/A
XMIT RATE: 0.167 Hz to 32.0 Hz	MSB:	2^{15}
SIGNAL TYPE: Unsigned	LSB:	2^0
UNITS: N/A	FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Checksum	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

6.11R Store Control [11R]

Store Control [11R] is a MIL-STD-1760 message used to control mission store safety critical functions including fuze data when header, identifier, address confirm, and critical authority validation criteria are met. Additional requirements for the maximum time to program Store Control [11R] fuze control words [11R/08-12], [11R/15-19], and [11T/25-28] into programmable fuze memory are specified in section 3.5.12.3 Mission Store Pre-Release: Programmable Fuze.

The Store Control [11R] message is discarded, its functions are not performed and its data is not used, unless the protocol checks of section 4.1.7 are successfully completed.

6.11R.1 Critical Control 1 [11R/04]

Critical Control 1 is the first of two words that the platform utilizes to command the store to activate safety critical functions.

6.11R.1.1 Fire/Launch/Release [11R/04/00]

Fire/Launch/Release [11R/04/00] commands a Type 2 carriage system to physically release the Number to Fire [11R/14] mission stores (i.e., fire rocket motor for rail launched stores, activate bomb rack cartridges, open bomb rack hooks, etc.) or commands a Type 1 carriage system to fire the S&RE for the carriage system station defined in Carriage Store S&RE Unit(s) Selected [11R/22]. Section 3.8.6 Mission Store Releases (Armed Release) provides further information and requirements and a detailed description of the carriage system release timeline for Type 1 and Type 2 carriage systems.

Mission Store Requirements

The mission store shall **{ss_6053}** ignore Fire/Launch/Release [11R/04/00].

6.11R.1.2 Jettison [11R/04/01]

The platform can jettison the mission store at any time. The carriage system jettison functions can be independent of mission store status. The mission store can be jettisoned with or without power applied. Section 3.8.7.3 Mission Store Jettison (Unarmed Release) provides further information and requirements for Type 1 and Type 2 carriage systems.

Mission Store Requirements

The mission store shall **{ss_6054}** ignore Jettison [11R/04/01].

6.11R.1.3 Commit to Separate Store [11R/04/02] (CTS)

CTS [11R/04/02] initiates potentially irreversible store processes (such as activating mission store internal batteries, activating mission store one-shot devices, etc.) associated with a store release. For Type 2 carriage systems, this command results in initiating potentially irreversible store processes for Number to Fire [11R/14] mission

store(s) and is not issued using either directed or embedded protocol. Section 3.5.13.4 Commit to Separate Store (CTS) and 3.8.6 Mission Store Releases (Armed Release) provide further information and requirements.

Carriage System Requirements

A Type 2 carriage system shall **{css_6089}** inhibit forwarding Store Control [11R] data from the platform to any mission store, using either Embedded Protocol or Directed Protocol, subsequent to receipt of CTS [11R/04/02 = 1] by the carriage system until all mission stores selected for release (i.e., XX - Store Selected for Release [20T/02-05/01, 09 = 1]) for that release sequence are released or aborted.

6.11R.1.4 Activate Initiated BIT [11R/04/06]

Activate Initiated BIT [11R/04/06] commands the store to perform its Initiated Built-In-Test (IBIT). Paragraph 3.5.5.1 Initiated Built-In-Test (IBIT) provides a detailed description of store IBIT timeline. Section 3.8.3.1 Carriage System Initiated Built-In-Test (IBIT) provides additional information and requirements for the platform to command IBIT for carriage systems and mission stores on carriage systems.

Platform Requirements

The platform shall **{ps_6063}** set Activate Initiated BIT [11R/04/06 = 1] to command IBIT.

Store Requirements

The store shall **{ss_6056}** perform IBIT when Activate Initiated BIT [11R/04/06 = 1].

6.11R.1.5 Identifier 1 [11R/04/08…10]

Identifier 1 [11R/04/08…10] is used to support Store Control [11R] protocol checks. Refer to section 4.1.7 for further information and requirements.

Platform Requirements

The platform shall **{ps_6064}** set Identifier 1 [11R/04/08…10] as follows:

001 (B)	=	Mission Store
010 (B)	=	Carriage Store
All Others	=	All other settings are not valid.

6.11R.1.6 Address Confirm 1 [11R/04/11…15]

Address Confirm 1 [11R/04/11…15] is set equal to the corresponding MIL-STD-1553 remote terminal address discretes A4 through A0. This field provides confirmation that the functions commanded in the store control field are intended for the receiving store and is used to support Store Control [11R] protocol checks. Refer to section 4.1.7 for further information and requirements.

Platform Requirements

The platform shall **{ps_6065}** set Address Confirm 1 [11R/04/11…15] equal to the store or carriage system MIL-STD-1553 RT address.

6.11R.2 Critical Authority 1 [11R/05]

Critical Authority 1 [11R/05] is a coded check for Critical Control 1 [11R/04] word. Coded check bits are generated using modulo 2 arithmetic IAW MIL-STD-1760. D0 through D10 refer to the corresponding bits of the Critical Control 1 word and is used to support Store Control [11R] protocol checks. Refer to section 4.1.7 for further information and requirements.

Platform Requirements

The platform shall **{ps_6066}** set Critical Authority 1 [11R/05] IAW MIL-STD-1760, Table XXXIV.

6.11R.3 Critical Control 2 [11R/06]

Critical Control 2 is the second of two words that the platform utilizes to command the store to activate safety critical functions. See section 6.11R.1 Critical Control 1.

6.11R.3.1 Erase Command/Authority [11R/06/00]

Erase Command/Authority [11R/06/00] commands the mission store to erase any sensitive data provided by the platform, including GPS crypto data, held within the stores memory. Erase Command/Authority [11R/06/00] is effective when Operating Power is applied. Erase Command/Authority [11R/06/00] does not command the store to erase the store operational flight software. Section 3.5.11 Data Erase Processing provides further information and requirements.

Platform Requirements

The platform shall **{ps_6067}** set Erase Command/Authority [11R/06/00 = 1] to command a store to erase all sensitive data.

Carriage System Requirements

A Type 2 carriage system shall **{css_6093}** erase all carriage system sensitive data and command all powered mission store(s) to erase all sensitive data when Erase Command/Authority [11R/06/00 = 1].

Mission Store Requirements

The mission store shall **{ss_6060}** erase all sensitive data when Erase Command/Authority [11R/06/00 = 1].

6.11R.3.2 Control Surface Pre-launch Inhibit [11R/06/03]

Control Surface Pre-launch Inhibit [11R/06/03] commands the mission store to inhibit store control surface deployment or movement prior to launch.

Platform Requirements

The platform shall **{ps_6068}** set Control Surface Pre-launch Inhibit [11R/06/03 = 1] to command the powered mission store(s) to inhibit store control surface deployment or movement prior to launch.

Carriage System Requirements

A Type 2 carriage system shall **{css_6094}** pass Control Surface Pre-launch Inhibit [11R/06/03] to all powered mission store(s).

Mission Store Requirements

The mission store shall **{ss_6061}** inhibit store control surface deployment or movement prior to launch when Control Surface Pre-launch Inhibit [11R/06/03 = 1].

6.11R.3.3 Abort Release/Launch [11R/06/04]

Abort Release/Launch [11R/06/04] commands the Type 2 carriage system or mission store to put itself in the safest configuration possible, to include halting any release/launch sequence that is underway. The Type 2 carriage system does not "abort" its operation in that it continues to process commands from the platform. This command does not apply to a Type 1 carriage system since all carriage system functions are controlled by the platform.

Platform Requirements

The platform shall **{ps_6069}** set Abort Release/Launch [11R/06/04 = 1] to command the Type 2 carriage system/mission store to immediately halt its release/launch sequence (if applicable) and safe itself.

Carriage System Requirements

A Type 2 carriage system shall **{css_6095}** immediately halt release/launch of remaining store(s) from the current launch/release sequence (if applicable), put itself in the safest configuration possible, and continue to support all commanded operations when Abort Release/Launch [11R/06/04 = 1].

A Type 2 carriage system shall **{css_6096}** pass Abort Release/Launch [11R/06/04 = 1] to all mission store(s) remaining in the current release sequence.

Mission Store Requirements

The mission store shall **{ss_6062}** terminate launch preparations (if applicable) and enter its safest possible state when it receives Abort Release/Launch [11R/06/04 = 1].

The mission store shall **{ss_6063}** erase all stored sensitive data in volatile and non-volatile memory after receipt of both CTS [11R/04/02= 1] and Abort Release/Launch [11R/06/04 = 1].

6.11R.3.4 <u>Activate Non-Safety Critical Release Functions</u> [11R/06/05]

<u>Activate Non-Safety Critical Release Functions</u> [11R/06/05] commands the mission store to activate non-safety critical functions which are part of the launch/release sequence, if implemented in the mission store. This may include potentially irreversible processes (such as activating mission store internal batteries, activating mission store one-shot devices, etc.) associated with a mission store release but which have been determined to be "non-safety critical". For Type 2 carriage systems, this command could result in activating potentially irreversible store processes for <u>Number to Fire</u> [11R/14] mission store(s), and is not issued using either directed or embedded protocol.

This command allows the platform to activate non-safety critical release functions in the mission stores prior to <u>Release Consent</u> [Discrete] being applied to the carriage system and prior to sending <u>CTS</u> [11R/04/02 = 1] to the carriage system. This allows the platform to minimize the time the weapon bay doors are open.

Section 3.8.6.2 Type 2 Carriage System Mission Store Releases (Armed Release) provides further information and requirements.

Carriage System Requirements

A Type 1 carriage system shall **{css_6220}** ignore <u>Activate Non-Safety Critical Release Functions</u> [11R/06/05].

6.11R.3.5 <u>Identifier 2</u> [11R/06/08…10]

<u>Identifier 2</u> [11R/06/08…10] is used to support <u>Store Control</u> [11R] protocol checks. Refer to section 4.1.7 for further information and requirements.

Platform Requirements

The platform shall **{ps_6070}** set <u>Identifier 2</u> [11R/06/08…10] as follows:

001 (B)   =   Mission Store

010 (B)   =   Carriage Store

All Others=All other settings are not valid.

6.11R.3.6 <u>Address Confirm 2</u> [11R/06/11…15]

<u>Address Confirm 2</u> [11R/06/11…15] is set equal to the corresponding MIL-STD-1553 remote terminal address discretes A4 through A0. This field provides confirmation that the functions commanded in the store control field are intended for the receiving store and is used to support <u>Store Control</u> [11R] protocol checks. Refer to section 4.1.7 for further information and requirements.

Platform Requirements

The platform shall **{ps_6071}** set <u>Address Confirm 2</u> [11R/06/11…15] equal to the store MIL-STD-1553 RT address.

6.11R.4 Critical Authority 2 [11R/07]

Critical Authority 2 [11R/07] is a coded check for Critical Control 2 [11R/06] word. Coded check bits are generated using modulo 2 arithmetic IAW MIL-STD-1760. D0 through D10 refer to the corresponding bits of the Critical Control 2 word and is used to support Store Control [11R] protocol checks. Refer to section 4.1.7 for further information and requirements.

Platform Requirements

The platform shall **{ps_6072}** set Critical Authority 2 [11R/07] IAW MIL-STD-1760, Table XXXIV.

6.11R.5 Fuze Mode 1 [11R/08]

Fuze Mode 1 [11R/08] is the first of two words that the platform utilizes to command the mission store to activate various fuze functions or store programmable fuze data.

Platform Requirements

The platform shall **{ps_6074}** display all available fuze mode selections to the aircrew if PF Onboard [22T/02/12 = 1].

6.11R.5.1 Function At Impact [11R/08/00]

Platform Requirements

The platform shall **{ps_6075}** set Function At Impact [11R/08/00 = 1], if CDS Function at Impact Available **{cds_6019}** and PF Onboard [22T/02/12 = 1], to command the mission store fuze to function at impact.

Mission Store Requirements

The mission store shall **{ss_6067}** set its fuze to function at impact when it receives Function At Impact [11R/08/00 = 1].

6.11R.5.2 Function On Time After Release [11R/08/01]

Reserved for future growth. Function On Time After Release [11R/08/01] commands the mission store to program its fuze to function on time after release and Fuze Function Delay from Release [11R/10] defines the time delay after release for fuze function.

6.11R.5.3 Function On Time After Impact [11R/08/02]

Function On Time After Impact [11R/08/02] commands the mission store to program its fuze to function on time after impact, and Fuze Function Delay from Impact [11R/11] defines the time delay after impact for fuze function.

Platform Requirements

The platform shall **{ps_6076}** set Function on Time After Impact [11R/08/02 = 1], if CDS Function on Time After Impact **{cds_6020}** and PF Onboard [22T/02/12 = 1], to

command the mission store fuze to function at <u>Fuze Function Delay from Impact</u> [11R/11].

Mission Store Requirements

The mission store shall **{ss_6068}** set its fuze to function at <u>Fuze Function Delay from Impact</u> [11R/11] when it receives <u>Function on Time After Impact</u> [11R/08/02 = 1].

6.11R.5.4 **Function At Altitude [11R/08/03]**

<u>Function At Altitude</u> [11R/08/03] commands the mission store to program its fuze to function at the altitude specified by <u>Fuze Function Distance</u> [11R/12].

Platform Requirements

The platform shall **{ps_6077}** set <u>Function At Altitude</u> [11R/08/03 = 1], if <u>CDS Function at Altitude</u> **{cds_6021}** and <u>PF Onboard</u> [22T/02/12 = 1], to command the mission store fuze to function at the altitude specified in <u>Fuze Function Distance</u> [11R/12].

Mission Store Requirements

The mission store shall **{ss_6069}** set its fuze to function at the altitude specified in <u>Fuze Function Distance</u> [11R/12] when it receives <u>Function At Altitude</u> [11R/08/03 = 1].

6.11R.5.5 **Function At Depth [11R/08/04]**

<u>Function At Depth</u> [11R/08/04] commands the mission store to program its fuze to function at the specified depth after impact in <u>Fuze Function Distance</u> [11R/12].

Platform Requirements

The platform shall **{ps_6078}** set <u>Function At Depth</u> [11R/08/04 = 1], if <u>CDS Function at Depth</u> **{cds_6022}** and <u>PF Onboard</u> [22T/02/12 = 1], to command the mission store fuze to function at <u>Fuze Function Distance</u> [11R/12] depth after impact.

Mission Store Requirements

The mission store shall **{ss_6070}** set its fuze to function at the depth after impact specified in <u>Fuze Function Distance</u> [11R/12] when it receives <u>Function At Depth</u> [11R/08/04 = 1].

6.11R.5.6 **Function On Proximity [11R/08/05]**

<u>Function On Proximity</u> [11R/08/05] is used by the mission store to program its fuze to function at the distance from target, or point of closest approach to the target, specified by <u>Fuze Function Distance</u> [11R/12] and delay time specified by <u>Function Time From Event</u> [11R/16].

Platform Requirements

The platform shall **{ps_6079}** set <u>Function On Proximity</u> [11R/08/05 = 1], if <u>CDS Function at Proximity</u> **{cds_6023}** and <u>PF Onboard</u> [22T/02/12 = 1], to command the mission store to function at either:

    a. <u>Fuze Function Distance</u> [11R/12] from the target adjusted by <u>Function Time From Event</u> [11R/16] delay if <u>Fuze Function Distance</u> [11R/12 > 0], or

    b. the point of closest approach to the target adjusted by <u>Function Time From Event</u> [11R/16] delay if <u>Fuze Function Distance</u> [11R/12 = 0].

Mission Store Requirements

The mission store shall **{ss_6071}** set its fuze to function, when <u>Function On Proximity</u> [11R/08/05 = 1], at either:

    a. <u>Fuze Function Distance</u> [11R/12] from the target adjusted by <u>Function Time From Event</u> [11T/15] delay if <u>Fuze Function Distance</u> [11T/11 > 0], or

    b. the point of closest approach to the target adjusted by <u>Function Time From Event</u> [11T/15] delay if <u>Fuze Function Distance</u> [11T/11 = 0].

6.11R.5.7 <u>Function At Position Of Target</u> [11R/08/06]

Reserved for future growth. <u>Function At Position Of Target</u> [11R/08/06] sets fuze function at a position relative to the target.

6.11R.5.8 <u>Function On Interference</u> [11R/08/07]

Reserved for future growth. <u>Function On Interference</u> [11R/08/07] enables fuze function on interference detection.

6.11R.5.9 <u>Function On Void</u> [11R/08/08]

<u>Function On Void</u> [11R/08/08] is used by the mission store to program its fuze to function in the void specified by <u>Void/Layer Number</u> [11R/17] sensed after impact.

Platform Requirements

The platform shall **{ps_6080}** set <u>Function on Void</u> [11R/08/08 = 1], if <u>CDS Function on Void</u> **{cds_6024}** and <u>PF Onboard</u> [22T/02/12 = 1], to command the mission store to function at void number specified by <u>Void/Layer Number</u> [11R/17] sensed after impact.

Mission Store Requirements

The mission store shall **{ss_6072}** set its fuze to function in the void specified by <u>Void/Layer Number</u> [11R/17] sensed after impact, when it receives <u>Function on Void</u> [11R/08/08 = 1].

6.11R.5.10 Function On Layer [11R/08/09]

Function On Layer [11R/08/09] is used by the mission store to program its fuze to function in the layer specified in Void/Layer Number [11R/17] sensed after impact.

Platform Requirements

The platform shall **{ps_6081}** set Function on Layer [11R/08/09 = 1], if CDS Function on Layer **{cds_6025}** and PF Onboard [22T/02/12 = 1], to command the mission store to function at layer number specified by Void/Layer Number [11R/17] sensed after impact.

Mission Store Requirements

The mission store shall **{ss_6073}** set its fuze to function in the layer specified by Void/Layer Number [11R/17] sensed after impact, when it receives Function on Layer [11R/08/09 = 1].

6.11R.5.11 Low Voltage Detect [11R/08/10]

Low Voltage Detect [11R/08/10] is used by the fuze to function when low battery voltage is detected. This fuze function is not enabled until after mission store is released and armed.

Platform Requirements

The platform shall **{ps_6082}** set Low Voltage Detect [11R/08/10 = 1], if CDS Function on Low Voltage **{cds_6026}** and PF Onboard [22T/02/12 = 1], to command the mission store to function at low voltage detect.

Mission Store Requirements

The mission store shall **{ss_6074}** set its fuze to function when low battery voltage is detected, when it receives Low Voltage Detect [11R/08/10 = 1].

6.11R.5.12 Long Delay Enable [11R/08/11]

Reserved for future growth. Long Delay Enable [11R/08/11] enables Fuze Function after a long time delay. This fuze function is not enabled until after mission store is released and armed.

6.11R.5.13 Function At Height [11R/08/12]

Function At Height [11R/08/12] commands the mission store to program its fuze to function at the height above the target specified by Fuze Function Distance [11R/12] sensed by a ranging sensor on the mission store and delay time specified by Function Time From Event [11R/16].

Platform Requirements

The platform shall **{ps_6083}** set Function At Height [11R/08/12 = 1], if CDS Function at Height **{cds_6027}** and PF Onboard [22T/02/12 = 1], to command the

mission store fuze to function at Fuze Function Distance [11R/12] height above target adjusted by Function Time From Event [11R/16] delay.

Mission Store Requirements

The mission store shall **{ss_6075}** set its fuze to function at the distance specified in Fuze Function Distance [11T/11] height above target adjusted by Function Time From Event [11T/15] delay when it receives Function At Height [11R/08/12 = 1].

6.11R.5.14 Enable End Of Life Function [11R/08/13]

Enable End Of Life Function [11R/08/13] commands the mission store to program its fuze to execute its end of life function when the fuze determines it has neared the end of its programmed life (e.g., a timer). This fuze function is not enabled until after mission store is released and armed.

Platform Requirements

The platform shall **{ps_6084}** set Enable End Of Life Function [11R/08/13 = 1], if CDS Function on End of Life **{cds_6028}** and PF Onboard [22T/02/12 = 1], to command the mission store fuze to execute its end of life function at the end of its programmed life.

Mission Store Requirements

The mission store shall **{ss_6076}** set its fuze to execute its end of life function (function depends on the fuze design) at the end of its programmed life, when it receives Enable End Of Life Function [11R/08/13 = 1] as documented in the store supplement **{sup_6060}**.

6.11R.5.15 Arm Delay Enable [11R/08/14]

Arm Delay Enable [11R/08/14] commands the fuze to enable arming at the designated time given in Arm Delay From Release [11R/09] after separation is detected.

Platform Requirements

The platform shall **{ps_6085}** set Arm Delay Enable [11R/08/14 = 1], if CDS Arm Delay Enabled **{cds_6029}** and PF Onboard [22T/02/12 = 1], to command the mission store fuze to delay the start of arming until Arm Delay From Release [11R/09] time after separation is detected.

Mission Store Requirements

The mission store shall **{ss_6077}** set its fuze to delay the start of arming for the time specified in Arm Delay From Release [11R/09] after separation is detected when it receives Arm Delay Enable [11R/08/14 = 1].

6.11R.5.16 Status Signal Enable [11R/08/15]

Status Signal Enable [11R/08/15] commands the fuze to transmit fuze status information after mission store release and during fuze operation.

Platform Requirements

The platform shall **{ps_6086}** set Status Signal Enable [11R/08/15 = 1], if CDS Status Transmission Capable **{cds_6030}** and PF Onboard [22T/02/12 = 1], to command the mission store fuze to transmit its status information after separation from the platform.

Mission Store Requirements

The mission store shall **{ss_6078}** set its fuze to transmit its status information after mission store release and during fuze operation when it receives Status Signal Enable [11R/08/15 = 1].

6.11R.6 Arm Delay From Release [11R/09]

Arm Delay From Release [11R/09] defines the time delay from mission store separation detection to arming of the fuze.

Platform Requirements

The platform shall **{ps_6087}** set Arm Delay From Release [11R/09] to the time for the mission store to delay arming of the fuze after detection of separation when Arm Delay Enable [11R/08/14 = 1].

Mission Store Requirements

The mission store shall **{ss_6079}** use in Arm Delay From Release [11R/09] when Arm Delay Enable [11R/08/14 = 1].

6.11R.7 Fuze Function Delay From Release [11R/10]

Reserved for future growth. Fuze Function Delay From Release [11R/10] enables Fuze Function delay after release.

6.11R.8 Fuze Function Delay From Impact [11R/11]

Fuze Function Delay From Impact [11R/11] defines the time delay after impact the fuze waits before it functions.

Platform Requirements

The platform shall **{ps_6088}** set Fuze Function Delay from Impact [11R/11], if Function on Time After Impact [11R/08/02 = 1], to specify the fuze delay time after impact.

The platform shall **{ps_6089}** provide the capability for the aircrew to select or enter Fuze Delay from Impact between CDS Fuze Delay from Impact Minimum **{cds_6031}** and CDS Fuze Delay from Impact Maximum **{cds_6032}** when Function on Time After Impact [11R/08/02 = 1].

Mission Store Requirements

The mission store shall **{ss_6080}** set its fuze function delay after impact, as specified by Fuze Function Delay from Impact [11R/11], when Function on Time After Impact [11R/08/02 = 1].

6.11R.9 Fuze Function Distance [11R/12]

Fuze Function Distance [11R/12] has different meanings, depending on the settings in Fuze Mode 1 [11R/08]. See requirements below for these definitions.

Platform Requirements

The platform shall **{ps_6090}** set Fuze Function Distance [11R/12] to the preplanned or crew entered altitude for fuze activation when Function At Altitude [11R/08/03 = 1].

The platform shall **{ps_6091}** provide the capability for the aircrew to select or enter Fuze Function Altitude between CDS Fuze Altitude Minimum **{cds_6033}** and CDS Fuze Altitude Maximum **{cds_6034}** when Function At Altitude [11R/08/03 = 1].

The platform shall **{ps_6092}** set Fuze Function Distance [11R/12] to the preplanned or crew entered depth for fuze activation when Function At Depth [11R/08/04 = 1].

The platform shall **{ps_6093}** provide the capability for the aircrew to select or enter Fuze Function Depth between CDS Fuze Depth Minimum **{cds_6035}** and CDS Fuze Depth Maximum **{cds_6036}** when Function At Depth [11R/08/04 = 1].

The platform shall **{ps_6094}** set Fuze Function Distance [11R/12] to the preplanned or crew entered distance from the target for fuze activation when Function On Proximity [11R/08/05 = 1].

The platform shall **{ps_6095}** provide the capability for the aircrew to select or enter Fuze Function Distance between CDS Fuze Proximity Minimum **{cds_6037}** and CDS Fuze Proximity Maximum **{cds_6038}** when Function On Proximity [11R/08/05 = 1].

The platform shall **{ps_6096}** set Fuze Function Distance [11R/12] to the preplanned or crew entered height above target for fuze activation when Function At Height [11R/08/12 = 1].

The platform shall **{ps_6097}** provide the capability for the aircrew to select or enter Fuze Function Height between CDS Fuze Height Minimum **{cds_6039}** and CDS Fuze Height Maximum **{cds_6040}** when Function At Height [11R/08/12 = 1].

Mission Store Requirements

The mission store supplement **{sup_6061}** documents Fuze Function Distance [11R/12] data entity references (e.g., HAE, slant range, etc.) and valid ranges.

6.11R.10 Fire Interval [11R/13]

For Type 2 carriage systems, when Fire/Launch/Release [11R/04/00 =1] and Number to Fire [11R/14 > 1], Fire Interval [11R/13] is the time interval between individual mission store releases. For Type 2 carriage systems, when Jettison [11R/04/01 =1] and Number to Fire [11R/14 > 1], Fire Interval [11R/13] is the time interval between individual mission store jettisons. For a mission store Fire Interval [11R/13] is the time interval between individual deployments of its submunitions. This time can be mission planned, aircrew entered, or platform calculated based on the current release conditions.

Platform Requirements

The platform may **{pm_6025}** set Fire Interval [11R/13 > 0] to specify the time interval between individual mission stores releases (or jettisons) for a Type 2 carriage system.

The platform shall **{ps_6098}** set Fire Interval [11R/13 = 0] to command a Type 2 carriage system use its default release interval.

The platform may **{pm_6026}** set Fire Interval [11R/13 > 0] to specify the time interval between individual deployments of its submunitions for a mission store.

The platform shall **{ps_6099}** set Fire Interval [11R/13 = 0] to command a mission store use its default interval between individual deployments of its submunitions.

The platform annex **{ann_6006}** documents the platform utilization of Fire Interval [11R/13].

Carriage System Requirements

A Type 2 carriage system shall **{css_6100}** use Fire Interval [11R/13] as the time interval between individual mission stores releases (or jettisons), when Fire Interval [11R/13] is greater than the carriage system default value.

A Type 2 carriage system shall **{css_6101}** use its default fire interval when Fire Interval [11R/13] is less than the carriage system default value, or is not provided.

A Type 2 carriage system supplement **{sup_6062}** documents minimum, default, and maximum store release interval(s).

Mission Store Requirements

The mission store shall **{ss_6081}** use Fire Interval [11R/13] as the time interval between individual deployments of its submunitions, when Fire Interval [11R/13] is greater than the mission store default value.

The mission store shall **{ss_6082}** use its default fire interval when Fire Interval [11R/13] is less than the mission store default value, or is not provided.

The mission store supplement **{sup_6063}** documents minimum, default, and maximum mission store dispense interval(s), if applicable.

6.11R.11 Number to Fire [11R/14]

Number to Fire [11R/14] is used in conjunction with multiple Type 2 Carriage System functions and for mission store submunition selection. Sections 3.8.5.3 MDS Selection using First Mission [10R/16], 3.8.6.2 Type 2 Carriage System Mission Store Releases (Armed Release), 3.8.7.3.2 Type 2 Carriage System Mission Store Jettison (Unarmed Release), and 3.8.7.7.1 Current CLAR provide further information and requirements.

Carriage System Requirements

A Type 1 carriage system shall **{css_6148}** ignore Number to Fire [11R/14].

Mission Store Requirements

The mission store shall **{ss_6083}** apply the associated Critical Control 1 [11R/04] and/or Critical Control 2 [11R/06] command to the Number to Fire [11R/14] submuntions if the mission store has submunitions.

6.11R.12 High Drag Arm Time [11R/15]

High Drag Arm Time [11R/15] defines the time delay, from store separation detection, for a store operating in a high drag configuration to begin arming of its fuze.

Platform Requirements

The platform shall **{ps_6101}** set High Drag Arm Time [11R/15], if CDS High Drag Capable **{cds_6041}**, to the time for a high drag mission store to delay before beginning arming of the fuze after mission store detection of separation.

Mission Store Requirements

The mission store shall **{ss_6084}** delay High Drag Arm Time [11R/15] before beginning arming of the fuze after detection of separation, when the mission store is operating in a high drag configuration.

6.11R.13 Function Time From Event [11R/16]

Function Time From Event [11R/16] defines the time delay from detection of a fuze/store event (e.g., delay after release, altitude, distance, etc.) to activation of specified fuzing functions or retard mechanism events. Note: This word is used in conjunction with Function On Proximity [11R/08/05], Function At Height [11R/08/12] or Enable Store Retard Mechanism [11R/19/08].

Platform Requirements

The platform shall **{ps_6103}** set Function Time From Event [11R/16], if CDS Function Time from Event **{cds_6042}**, to the preplanned or crew entered time for the mission store to perform specific fuze functions (note: the specific event that triggers the start of this time is defined in the mission store supplement).

The platform shall **{ps_6104}** provide the capability for the aircrew to select or enter Function Time From Event between CDS Time From Event Minimum **{cds_6043}**

and CDS Time From Event Maximum **{cds_6044}** when Function At Height [11R/08/12], Function On Proximity [11R/08/05], or CDS Function Time from Event **{cds_6042}**.

Mission Store Requirements

The mission store shall **{ss_6085}** use Function Time From Event [11R/16], as documented in the programmable fuze specification or mission store supplement **{sup_6064}**.

6.11R.14 Void/Layer Number [11R/17]

Void/Layer Number [11R/17] defines the void number or layer number (mutually exclusive) at which the fuze is to function.

Platform Requirements

The platform shall **{ps_6105}** set Void/Layer Number [11R/17] to the void number at which fuze is to function, as limited by CDS Max Void Number **{cds_6145}**, when Function on Void [11R/08/08 = 1].

The platform shall **{ps_6106}** set Void/Layer Number [11R/17] to the layer number at which the fuze is to function, as limited by CDS Max Layer Number **{cds_6146}**, when Function on Layer [11R/08/09 = 1].

The platform shall **{ps_6107}** provide the capability for the aircrew to select or enter Void/Layer Number [11R/17 > 0], as limited by CDS Max Void Number **{cds_6145}** and CDS Max Layer Number **{cds_6146}**.

Mission Store Requirements

The mission store shall **{ss_6086}** set its fuze to function within the void number specified by Void/Layer Number [11R/17], when Function on Void [11R/08/08 = 1].

The mission store shall **{ss_6087}** set its fuze to function within the layer number specified by Void/Layer Number [11R/17] when Function on Layer [11R/08/09 = 1].

6.11R.15 Impact Velocity [11R/18]

Impact Velocity [11R/18] defines the minimum velocity the fuzing mechanism is expected to see at target impact in meters/second. Note: Impact Velocity [11R/18] is expected to be ≤ Velocity [17R/11].

Platform Requirements

The platform shall **{ps_6108}** set Impact Velocity [11R/18], per mission fuzing requirements, if CDS Impact Velocity Enabled **{cds_6045}**, for the mission store fuze to use.

The platform shall **{ps_6109}** provide the capability for the aircrew to select or enter Impact Velocity [11R/18] between CDS Impact Velocity Minimum **{cds_6046}** and CDS Impact Velocity Maximum **{cds_6047}** when CDS Impact Velocity Enabled **{cds_6045}**.

Mission Store Requirements

The mission store shall **{ss_6088}** set its fuze minimum impact velocity to the value received in Impact Velocity [11R/18].

The mission store shall **{ss_6089}** use its default fuze minimum impact velocity when Impact Velocity [11R/18 = 0].

6.11R.16 Fuze Mode 2 [11R/19]

Fuze Mode 2 [11R/19] is the second of two words that the platform utilizes to command the mission store to activate various fuze functions or store programmable fuze data.

Platform Requirements

The platform shall **{ps_6111}** display all available fuze mode selections to the aircrew if PF Onboard [22T/02/12 = 1].

6.11R.16.1 Selected Store [11R/19/00…03]

Selected Store [11R/19/00…03] provides the capability to select a mission store on a Type 2 carriage system for transfer of Store Control [11R] programmable fuze settings (Embedded Protocol). The Type 2 carriage system receives the data and based on the value in Selected Store, forwards the data to the corresponding mission store. The Selected Store number corresponds to the mission store release order number.

Platform Requirements

The platform shall **{ps_6313}** set Selected Store [11R/19/00…03 = 1-8] (Embedded Protocol) to indicate that the Store Control [11R] data is intended for a particular mission store in the release order.

The platform shall **{ps_6314}** set Selected Store [11R/19/00…03 = 0] to indicate that Embedded Protocol is not being used for transfer of Store Control [11R] data to a mission store.

Carriage System Requirements

A Type 2 carriage system shall **{css_6103}** transfer Store Control [11R] data (Embedded Protocol) to the corresponding mission store whose release order number equals the value in Selected Store when Selected Store [11R/19/00…03 = 1-8], with the exception of CTS [11R/04/02] and Activate Non-Safety Critical Release Functions [11R/06/05].

A Type 2 carriage system shall **{css_6104}** route the Store Control [11R] data to the mission store selected in Store Number [10R/02/08…11] (Directed Protocol) when Selected Store [11R/19/00…03 = 0], with the exception of CTS [11R/04/02] and Activate Non-Safety Critical Release Functions [11R/06/05].

6.11R.16.2 Fuze Initiation [11R/19/04…05]

Fuze Initiation [11R/19/04…05] indicates the fuze initiation method to be used by the mission store.

Table 6.11R-1 Fuze Initiation [11R/19/04…05]

Fuze Initiation [11R/19/04…05]	Definition
00 (B)	Default
01 (B)	External Fuze Sensor (s)
10 (B)	Internal Fuze Sensor (s)
11 (B)	Reserved for Growth

Note:
1. Fuze Initiation is documented in the store supplement.

Platform Requirements

The platform shall **{ps_6572}** set Fuze Initiation [11R/19/04…05] IAW Table 6.11R-1 if CDS Fuze Initiation Selection Enabled **{cds_6117}** and PF Onboard [22T/02/12 = 1].

Mission Store Requirements

The mission store shall **{ss_6413}** set its fuze initiation IAW Table 6.11R-1, as documented in the mission store supplement **{sup_6197}**.

6.11R.16.3 Target Hardness [11R/19/06…07]

Target Hardness [11R/19/06…07] commands the mission store to use fuze settings appropriate for the hardness of the target.

Table 6.11R-2 Target Hardness [11R/19/06…07]

Target Hardness [11R/19/06…07]	Definition
00 (B)	Hardness Level 1
01 (B)	Hardness Level 2
10 (B)	Hardness Level 3
11 (B)	Hardness Level 4

Note:
1. A value of 00 (B) is the lowest target hardness and a value of 11 (B) is the highest target hardness as documented in the store supplement.

Platform Requirements

The platform shall **{ps_6112}** set Target Hardness [11R/19/06…07] IAW Table 6.11R-2, if CDS Target Hardness Enabled **{cds_6048}** and PF Onboard [22T/02/12 = 1].

Mission Store Requirements

The mission store shall **{ss_6090}** set its fuze to function as appropriate for the hardness of the target IAW Table 6.11R-2, when it receives Target Hardness [11R/19/06…07] as documented in the mission store supplement **{sup_6198}**.

6.11R.16.4 Enable Store Retard Mechanism [11R/19/08]

Enable Store Retard Mechanism [11R/19/08] commands the mission store to enable its retard (i.e., high drag) mechanism. If the retard mechanism is programmable, the time after release at which the retard mechanism is to activate is defined in Function Time From Event [11R/16].

Platform Requirements

The platform shall **{ps_6113}** set:

   a. Enable Store Retard Mechanism [11R/19/08 = 1], if CDS Programmable Retard Mechanism **{cds_6049}** and Programmable Retard Device Onboard [22T/05/10 = 1], to command the mission store to enable its high drag configuration and use the CDS Retard Delay **{cds_6050}** specified by Function Time From Event [11R/16], or

   b. Enable Store Retard Mechanism [11R/19/08 = 0] to command the mission store to separate in a low drag configuration.

The platform shall **{ps_6110}** provide the capability to enter the retard delay and display the retard settings to the aircrew if Programmable Retard Device Onboard [22T/05/10 = 1].

Mission Store Requirements

The mission store shall **{ss_6091}** enable its retard (i.e., high drag) mechanism to function after the time specified in Function Time From Event [11R/16] after separation is sensed, when it receives Enable Store Retard Mechanism [11R/19/08 = 1].

The mission store supplement **{sup_6065}** documents the retard mechanism characteristics.

The platform/store addendum **{add_6002}** documents the retard mechanism flight limitations and restrictions.

6.11R.16.5 Enable Post Release Fuze Control [11R/19/09]

Enable Post Release Fuze Control [11R/19/09] commands the mission store to accept post release commands from authorized sources.

Platform Requirements

The platform shall **{ps_6114}** set Enable Post Release Fuze Control [11R/19/09 = 1], if CDS Post Release Fuze Control **{cds_6051}**, and PF Onboard [22T/02/12 = 1], to command the mission store fuze to accept post release commands from authorized sources.

Mission Store Requirements

The mission store shall **{ss_6092}** set its fuze to accept post release commands from authorized sources when it receives <u>Enable Post Release Fuze Control</u> [11R/19/09 = 1].

6.11R.16.6 <u>Enable Post Impact Fuze Surveillance</u> **[11R/19/10]**

<u>Enable Post Impact Fuze Surveillance</u> [11R/19/10] commands the mission store to set its fuze to begin post impact fuze target surveillance functions at <u>Fuze Time 1</u> [11R/25] and end post impact fuze target surveillance functions at <u>Fuze Time 2</u> [11R/26].

Platform Requirements

The platform shall **{ps_6115}** set <u>Enable Post Impact Fuze Surveillance</u> [11R/19/10 = 1], if <u>CDS Post Impact Fuze Surveillance</u> **{cds_6052}** and <u>PF Onboard</u> [22T/02/12 = 1], to command the mission store fuze to begin post impact target surveillance functions at <u>Fuze Time 1</u> [11R/25] and terminate surveillance functions at <u>Fuze Time 2</u> [11R/26].

Mission Store Requirements

The mission store shall **{ss_6093}** set its fuze to begin post impact target surveillance functions at <u>Fuze Time 1</u> [11R/25] and terminate surveillance functions at <u>Fuze Time 2</u> [11R/26], when it receives <u>Enable Post Impact Fuze Surveillance</u> [11R/19/10 = 1].

6.11R.16.7 <u>Proximity RF Broadcast Enable - Time After Launch</u> **[11R/19/11]**

Reserved for future growth.

6.11R.16.8 <u>Proximity RF Broadcast Enable - Time Before Impact</u> **[11R/19/12]**

Reserved for future growth.

6.11R.17 <u>Dispersion Data</u> **[11R/20]**

This word is used to control the movement of the mission store in the immediate vicinity of the platform to avoid collision with the platform or other released stores. Section 3.5.12.4 Store Pre-Release: Surface Delays and Separation Events, provides further information and requirements.

6.11R.17.1 <u>Horizontal Dispersion</u> **[11R/20/00…01]**

Platform Requirements

The platform shall **{ps_6116}** set <u>Horizontal Dispersion</u> [11R/20/00…01], if <u>CDS Dispersion Control Enabled</u> **{cds_6053}**, to one of the following values:

    a. 00 (B) = No Horizontal Dispersion Requirement

    b. 01 (B) = Right Horizontal Dispersion

c. 10 (B) = Left Horizontal Dispersion

d. 11 (B) = Not Used

Mission Store Requirements

The mission store shall **{ss_6094}** use Horizontal Dispersion [11R/20/00…01] to determine the direction of post separation maneuvering to clear the platform flight path as follows:

a. 00 (B) = No Horizontal Dispersion Requirement. Use default horizontal post separation maneuver.

b. 01 (B) = Right Horizontal Dispersion

c. 10 (B) = Left Horizontal Dispersion

d. 11 (B) = Reject data in this word

6.11R.17.2 Horizontal Dispersion Angle [11R/20/02…07]

If an angular dispersion is defined in this field with no associated horizontal dispersion requirement then the word is rejected. All bits set to logic 0 or 1 signify an invalid dispersion angle.

Platform Requirements

The platform shall **{ps_6117}** set Horizontal Dispersion Angle [11R/20/02…07], if CDS Dispersion Control Enabled **{cds_6053}**.

Mission Store Requirements

The mission store shall **{ss_6095}** use Horizontal Dispersion Angle [11R/20/02…07] to determine the angle away from the platform for post separation maneuvering to clear the platform flight path. Horizontal Dispersion Angle [11R/20/02…07] is used in conjunction with Horizontal Dispersion [11R/20/00…01] to specify the required horizontal angular dispersion in semicircles.

The mission store shall **{ss_6096}** reject data in this word if Horizontal Dispersion Angle [11R/20/02…07 = 000000 (B) or 111111 (B)]

6.11R.17.3 Vertical Dispersion [11R/20/08…09]

Platform Requirements

The platform shall **{ps_6118}** set Vertical Dispersion [11R/20/08…09], if CDS Dispersion Control Enabled **{cds_6053}**, as defined IAW the following:

a. 00 (B) = No Dispersion Requirement

b. 01 (B) = Down Vertical Dispersion

c. 10 (B) = Up Vertical Dispersion

d. 11 (B) = Not Used

Mission Store Requirements

The mission store shall **{ss_6097}** use Vertical Dispersion [11R/20/08…09] to determine the direction of post separation maneuvering to clear the platform flight path as follows:

    a. 00 (B) = No Vertical Dispersion Requirement Use default vertical post separation maneuver.

    b. 01 (B) = Down Vertical Dispersion

    c. 10 (B) = Up Vertical Dispersion

    d. 11 (B) = Reject data in this word

6.11R.17.4 Vertical Dispersion Angle [11R/20/10…15]

If an angular dispersion is defined in this field with no associated vertical dispersion requirement then the word is rejected. All bits set to logic 0 or 1 signify an invalid dispersion angle.

Platform Requirements

The platform shall **{ps_6119}** set Vertical Dispersion Angle [11R/20/10…15], if CDS Dispersion Control Enabled **{cds_6053}**.

Mission Store Requirements

The mission store shall **{ss_6098}** use Vertical Dispersion Angle [11R/20/10…15] to determine the angle away from the platform for post separation maneuvering to clear the platform flight path. Vertical Dispersion Angle [11R/20/10…15] is used in conjunction with Vertical Dispersion [11R/20/08…09] to specify the required horizontal angular dispersion in semicircles.

The mission store shall **{ss_6099}** reject data in this word if Vertical Dispersion Angle [11R/20/10…15 = 000000 (B) or 111111 (B)].

6.11R.18 Dispersion Duration [11R/21]

This word is used to control the duration of the movement of the mission store in the immediate vicinity of the platform to avoid collision with the platform or other released stores. Section 3.5.12.4 Store Pre-Release: Surface Delays and Separation Events provides further information and requirements.

Platform Requirements

The platform shall **{ps_6120}** set Dispersion Duration [11R/21], if CDS Dispersion Control Enabled **{cds_6053}**.

Mission Store Requirements

The mission store shall **{ss_6100}** use Dispersion Duration [11R/21] to determine the length of time the store's dispersion post separation maneuvering must be performed to clear the platform flight path.

6.11R.19 Carriage Store S&RE Unit(s) Select [11R/22]

This word is used to specify the Type 1 carriage system physical station to which Fire/Launch/Release [11R/04/00 = 1] or Jettison [11R/04/01 = 1] is to be applied.

Platform Requirements

The platform shall **{ps_6121}** set Carriage Store S&RE Unit(s) Select [11R/22] to a valid carriage system station number (as defined in the CDS) when Fire/Launch/Release [11R/04/00 = 1] or Jettison [11R/04/01 = 1] is to be applied to a Type 1 carriage store.

Carriage System Requirements

The Type 1 carriage system shall **{css_6105}** perform the functions demanded by valid Fire/Launch/Release [11R/04/00] or Jettison [11R/04/01] on the carriage system S&RE unit specified in Carriage Store S&RE Unit(s) Select [11R/22].

The carriage system supplement **{sup_6066}** documents its Rack S&RE Control functions.

6.11R.20 Separation Elements [11R/23]

Separation Elements [11R/23] defines the time or distance (mutually exclusive) after umbilical separation is detected prior to mission store initiation of the dispersion maneuver defined in Dispersion Data [11R/20]. Section 3.5.12.4 Store Pre-Release: Surface Delays and Separation Events provides further information and requirements.

6.11R.20.1 Separation Duration [11R/23/00…07]

Platform Requirements

The platform shall **{ps_6122}** set Separation Duration [11R/23/00…07], if CDS Dispersion Control Enabled **{cds_6053}**, and a valid Horizontal Dispersion [11R/20/00…01] or Vertical Dispersion [11R/20/08…09] have been set, as defined in CDS Separation Duration **{cds_6055}**.

Mission Store Requirements

The mission store shall **{ss_6101}** use Separation Duration [11R/23/00…07] to determine the length of time after umbilical separation is detected before beginning dispersion maneuver defined in Dispersion Data [11R/20].

6.11R.20.2 Separation Distance [11R/23/08…15]

Platform Requirements

The platform shall **{ps_6123}** set Separation Distance [11R/23/08…15], if CDS Dispersion Control Enabled **{cds_6053}**, and a valid Horizontal Dispersion [11R/20/00…01] or Vertical Dispersion [11R/20/08…09] have been set, as defined in the CDS Separation Distance **{cds_6056}**.

Mission Store Requirements

The mission store shall **{ss_6102}** use <u>Separation Distance</u> [11R/23/08…15] to determine the separation distance after umbilical separation is detected before beginning dispersion maneuver defined in <u>Dispersion Data</u> [11R/20].

6.11R.21 <u>Surface Delays</u> [11R/24]

Section 3.5.12.4 Store Pre-Release: Surface Delays and Separation Events provides further information and requirements.

6.11R.21.1 <u>Surface Deployment Delay</u> [11R/24/00…07]

Provides programmable control of the minimum time from umbilical disconnect before first movement of deployable control surfaces by the mission store to enable safe separation from the platform.

Platform Requirements

The platform shall **{ps_6124}** set <u>Surface Deployment Delay</u> [11R/24/00…07], if <u>CDS Deployment Delay Control Enabled</u> **{cds_6057}**, as defined in the CDS.

Mission Store Requirements

The mission store shall **{ss_6103}** use <u>Surface Deployment Delay</u> [11R/24/00…07] to determine the minimum time from umbilical disconnect before first movement of deployable control surfaces.

6.11R.21.2 <u>Control Surface Unlock Delay</u> [11R/24/08…15]

Provides programmable control of the minimum time from umbilical disconnect before first movement of mission store control surfaces to enable safe separation from the platform.

Platform Requirements

The platform shall **{ps_6125}** set <u>Control Surface Unlock Delay</u> [11R/24/08…15], if <u>CDS Control Surface Unlock Delay Control Enabled</u> **{cds_6058}**, as defined in the CDS.

Mission Store Requirements

The mission store shall **{ss_6104}** use <u>Control Surface Unlock Delay</u> [11R/24/08…15] to determine the minimum time from umbilical disconnect before first movement of control surfaces is enabled.

6.11R.22 <u>Fuze Time 1</u> [11R/25]

<u>Fuze Time 1</u> [11R/25] defines the start time after impact for the fuze to begin post impact target surveillance functions.

Platform Requirements

The platform shall **{ps_6126}** set <u>Fuze Time 1</u> [11R/25] to the start time for the fuze to begin post impact fuze target surveillance functions when <u>PF Onboard</u> [22T/02/12 = 1] and <u>Enable Post Impact Fuze Surveillance</u> [11R/19/10 = 1].

The platform shall **{ps_6127}** provide the capability for the aircrew to select or enter <u>Fuze Time 1</u> between <u>CDS Fuze Time 1 Minimum</u> **{cds_6059}** and <u>CDS Fuze Time 1 Maximum</u> **{cds_6060}** when <u>Enable Post Impact Fuze Surveillance</u> [11R/19/10 = 1].

Mission Store Requirements

The mission store shall **{ss_6105}** use <u>Fuze Time 1</u> [11R/25] for the time to begin post impact fuze target surveillance functions when <u>PF Onboard</u> [22T/02/12 = 1] and <u>Enable Post Impact Fuze Surveillance</u> [11R/19/10 = 1] as documented in the store supplement **{sup_6067}**.

6.11R.23 <u>Fuze Time 2</u> [11R/26]

<u>Fuze Time 2</u> [11R/26] defines the stop time after impact for the fuze to end post impact target surveillance functions.

Platform Requirements

The platform shall **{ps_6128}** set <u>Fuze Time 2</u> [11R/26] to the stop time for the fuze to end post impact fuze target surveillance functions when <u>PF Onboard</u> [22T/02/12 = 1] and <u>Enable Post Impact Fuze Surveillance</u> [11R/19/10 = 1].

The platform shall **{ps_6129}** provide the capability for the aircrew to select or enter <u>Fuze Time 2</u> between <u>CDS Fuze Time 2 Minimum</u> **{cds_6061}** and <u>CDS Fuze Time 2 Maximum</u> **{cds_6062}** when <u>Enable Post Impact Fuze Surveillance</u> [11R/19/10 = 1].

Mission Store Requirements

The mission store shall **{ss_6106}** use <u>Fuze Time 2</u> [11R/26] for the time to begin post impact fuze target surveillance functions when <u>PF Onboard</u> [22T/02/12 = 1] and <u>Enable Post Impact Fuze Surveillance</u> [11R/19/10 = 1] as documented in the store supplement **{sup_6068}**.

6.11R.24 <u>Tether Length</u> [11R/27]

<u>Tether Length</u> [11R/27] defines the length of tether that the fuze is to deploy to enable post impact fuze status transmissions. If the mission store does not have a tether capability, but can broadcast a status message, it ignores the data in this word.

Platform Requirements

The platform shall **{ps_6130}** set <u>Tether Length</u> [11R/27] to the tether length to be deployed by the mission store when <u>PF Onboard</u> [22T/02/12 = 1] and <u>Status Signal Enable</u> [11R/08/15 = 1].

The platform shall **{ps_6131}** provide the capability for the aircrew to select or enter Tether Length [11R/27] between CDS Tether Length Minimum **{cds_6063}** and CDS Tether Length Maximum **{cds_6064}** when Status Signal Enable [11R/08/15 = 1].

Mission Store Requirements

The mission store shall **{ss_6107}** use Tether Length [11R/27] to determine how much tether cable to deploy if Status Signal Enable [11R/08/15 = 1], as documented in the mission store supplement **{sup_6069}**.

6.11R.25 Interstage Gap Time [11R/28]

Interstage Gap Time [11R/28] defines the time gap between functioning of the fuze for each stage of a multi stage warhead.

Platform Requirements

The platform shall **{ps_6132}** set Interstage Gap Time [11R/28] to the time between stage functions when CDS Multistage Warhead Enabled **{cds_6065}**, and PF Onboard [22T/02/12 = 1].

The platform shall **{ps_6133}** provide the capability for the aircrew to select or enter Interstage Gap Time [11R/28] between CDS Interstage Gap Time Minimum **{cds_6066}** and CDS Interstage Gap Time Maximum **{cds_6067}** when CDS Multistage Warhead Enabled **{cds_6065}**.

Mission Store Requirements

The mission store shall **{ss_6108}** set its fuze to use the Interstage Gap Time [11R/28] if the store contains a multi-stage warhead with a programmable fuze, as documented in the store supplement **{sup_6070}**.

MESSAGE NAME: Store Control
MESSAGE ID: 11R TRANSFER TYPE: BC-RT
SOURCE: Platform WORD COUNT: 30
DESTINATION: Store XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01011 (B)
Header	01	Message Descriptor
Invalidity 1	02	Validity of Words 1-16
Invalidity 2	03	Validity of Words 17-30
Critical Control 1	04	Critical Store State Control
Critical Authority 1	05	Critical Control 1 Authorization
Critical Control 2	06	Critical Store State Control
Critical Authority 2	07	Critical Control 2 Authorization
Fuze Mode 1	08	Fuzing/Arming mode Status 1
Arm Delay from Release	09	Time delay from release to fuze arming
Fuze Function Delay from Release	10	Time delay for fuze functioning after release
Fuze Function Delay From Impact	11	Time delay for fuze functioning after impact
Fuze Function Distance	12	Distance from target for fuze functioning
Fire Interval	13	Interval between stores events
Number to Fire	14	Number of stores controlled
High Drag Arm Time	15	Fuze arming time for high drag store
Function Time From Event	16	Time delay from specific event for fuze function or retard mechanism function
Void/Layer Number	17	Void/layer number at which fuze is to function.
Impact Velocity	18	Sets the impact velocity
Fuze Mode 2	19	Controls fuze modes
Dispersion Data	20	Horizontal and vertical dispersion requirements.
Dispersion Duration	21	Dispersion duration maneuver
Carr Store S&RE Unit(s) Select	22	Identify Carriage Store S&RE being controlled/monitored
Separation Elements	23	Min Separation time & distance before dispersion maneuver
Surface Delays	24	Control Surface Unlock/Deployment delay
Fuze Time 1	25	Adaptable Fuze Time
Fuze Time 2	26	Adaptable Fuze Time
Tether Length	27	BIA Device Tether Length
Interstage Gap Time	28	Multi-Stage Gap Time
Reserved	29	Reserved for MIL STD 1760
Checksum	30	Checksum of Message Data
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Header

WORD ID:	11R/01	CATEGORY: Header
SOURCE(s):	Platform	MAX VALUE: 0400 (H)
DEST(s):	Store	MIN VALUE: 0400 (H)
COMP RATE:	Aperiodic	RESOLUTION: N/A
XMIT RATE:	Aperiodic	ACCURACY: N/A
SIGNAL TYPE:	Hexadecimal	MSB: N/A
UNITS:	N/A	LSB: N/A
		FULL SCALE: FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB ---
	-01-B	
	-02-B	Hex digit #1 value=0 (H)
	-03-B	LSB ---
Hex Digit #2	-04-B	MSB ---
	-05-B	
	-06-B	Hex digit #2 value=4 (H)
	-07-B	LSB ---
Hex Digit #3	-08-B	MSB ---
	-09-B	
	-10-B	Hex digit #3 value=0 (H)
	-11-B	LSB ---
Hex Digit #4	-12-B	MSB ---
	-13-B	
	-14-B	Hex digit #4 value=0 (H)
	-15-B	LSB ---

REMARKS/NOTES:

WORD NAME: Invalidity 1

WORD ID:	11R/02
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Word 1 Invalidity	-00-V	Set to logic 1 when word 1 is invalid
Word 2 Invalidity	-01-V	Set to logic 1 when word 2 is invalid
Word 3 Invalidity	-02-V	Set to logic 1 when word 3 is invalid
Word 4 Invalidity	-03-V	Set to logic 1 when word 4 is invalid
Word 5 Invalidity	-04-V	Set to logic 1 when word 5 is invalid
Word 6 Invalidity	-05-V	Set to logic 1 when word 6 is invalid
Word 7 Invalidity	-06-V	Set to logic 1 when word 7 is invalid
Word 8 Invalidity	-07-V	Set to logic 1 when word 8 is invalid
Word 9 Invalidity	-08-V	Set to logic 1 when word 9 is invalid
Word 10 Invalidity	-09-V	Set to logic 1 when word 10 is invalid
Word 11 Invalidity	-10-V	Set to logic 1 when word 11 is invalid
Word 12 Invalidity	-11-V	Set to logic 1 when word 12 is invalid
Word 13 Invalidity	-12-V	Set to logic 1 when word 13 is invalid
Word 14 Invalidity	-13-V	Set to logic 1 when word 14 is invalid
Word 15 Invalidity	-14-V	Set to logic 1 when word 15 is invalid
Word 16 Invalidity	-15-V	Set to logic 1 when word 16 is invalid

REMARKS/NOTES:

WORD NAME: Invalidity 2

		CATEGORY:	Special	
WORD ID:	11R/03	MAX VALUE:	N/A	
SOURCE(s):	Platform	MIN VALUE:	N/A	
DEST(s):	Store	RESOLUTION:	N/A	
COMP RATE:	Aperiodic	ACCURACY:	N/A	
XMIT RATE:	Aperiodic	MSB:	N/A	
SIGNAL TYPE:	N/A	LSB:	N/A	
UNITS:	N/A	FULL SCALE:	N/A	

FIELD NAME	BIT NO.	DESCRIPTION
Word 17 Invalidity	-00-V	Set to logic 1 when word 17 is invalid
Word 18 Invalidity	-01-V	Set to logic 1 when word 18 is invalid
Word 19 Invalidity	-02-V	Set to logic 1 when word 19 is invalid
Word 20 Invalidity	-03-V	Set to logic 1 when word 20 is invalid
Word 21 Invalidity	-04-V	Set to logic 1 when word 21 is invalid
Word 22 Invalidity	-05-V	Set to logic 1 when word 22 is invalid
Word 23 Invalidity	-06-V	Set to logic 1 when word 23 is invalid
Word 24 Invalidity	-07-V	Set to logic 1 when word 24 is invalid
Word 25 Invalidity	-08-V	Set to logic 1 when word 25 is invalid
Word 26 Invalidity	-09-V	Set to logic 1 when word 26 is invalid
Word 27 Invalidity	-10-V	Set to logic 1 when word 27 is invalid
Word 28 Invalidity	-11-V	Set to logic 1 when word 28 is invalid
Word 29 Invalidity	-12-V	Set to logic 1 when word 29 is invalid
Word 30 Invalidity	-13-V	Set to logic 1 when word 30 is invalid
Reserved	-14-0	Set to logic 0. See Note 2
Reserved	-15-0	Set to logic 0. See note 2

REMARKS/NOTES:

1. Invalidity bits for MIL-STD-1760 Reserved words are set to the valid state (logic 0).
2. Bits 14 and 15 are reserved by MIL-STD-1760 for routing of messages to/from a mission store carried on a carriage store. For UAI, bits 14 and 15 are not used and are set to logic 0.

WORD NAME:　Critical Control 1

WORD ID:	11R/04	CATEGORY:	Special
SOURCE(s):	Platform	MAX VALUE:	N/A
DEST(s):	Store	MIN VALUE:	N/A
COMP RATE:	Aperiodic	RESOLUTION:	N/A
XMIT RATE:	Aperiodic	ACCURACY:	N/A
SIGNAL TYPE:	N/A	MSB:	N/A
UNITS:	N/A	LSB:	N/A
		FULL SCALE:	N/A

FIELD NAME	BIT NO.		DESCRIPTION
Store Control 1	-00-D		D10 = Fire/Launch/Release
	-01-D		D9 = Jettison
	-02-D		D8 = Commit to Separate Store
	-03-0		D7 = Reserved for MIL-STD-1760
	-04-0		D6 = Reserved for MIL-STD-1760
	-05-0		D5 = Reserved for MIL-STD-1760
	-06-D		D4 = Activate Initiated BIT
	-07-0		D3 = Reserved for MIL-STD-1760
Identifier 1	-08-D	MSB	D2
	-09-D		D1
	-10-D	LSB	D0
Address Confirm 1	-11-D		A4
	-12-D		A3
	-13-D		A2
	-14-D		A1
	-15-D		A0

REMARKS/NOTES:

WORD NAME: Critical Authority 1

WORD ID: 11R/05	CATEGORY: Special
SOURCE(s): Platform	MAX VALUE: N/A
DEST(s): Store	MIN VALUE: N/A
COMP RATE: Aperiodic	RESOLUTION: N/A
XMIT RATE: Aperiodic	ACCURACY: N/A
SIGNAL TYPE: Coded	MSB: N/A
UNITS: N/A	LSB: N/A
	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Coded Check 1	-00-C	$C14 = D10+D9+D6+D1+D0$
	-01-C	$C13 = D9+D8+D5+D$
	-02-C	$C12 = D8+D7+D4$
	-03-C	$C11 = D7+D6+D3$
	-04-C	$C10 = D10+D9+D5+D2+D1+D0$
	-05-C	$C9 = D10+D8+D6+D4$
	-06-C	$C8 = D10+D7+D6+D5+D3+D1+D0$
	-07-C	$C7 = D10+D5+D4+D2+D1$
	-08-C	$C6 = D10+D6+D4+D3$
	-09-C	$C5 = D9+D5+D3+D2$
	-10-C	$C4 = D10+D9+D8+D6+D4+D2+D0$
	-11-C	$C3 = D9+D8+D7+D5+D3+D1$
	-12-C	$C2 = D10+D9+D8+D7+D4+D2+D1$
	-13-C	$C1 = D10+D8+D7+D3$
	-14-C	$C0 = D10+D7+D2+D1+D0$
Set to Logic 0	-15-0	Set to Logic 0

REMARKS/NOTES:

1. This field is used as a coded check for Critical Control 1 word. The store does not act on the Critical Control 1 word if the check bits in this word are not set as indicated. Coded check bits are generated using modulo 2 arithmetic IAW MIL-STD-1760. D0 through D10 refer to the corresponding bits of the Critical Control 1 word.

WORD NAME: Critical Control 2

WORD ID:	11R/06
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.		DESCRIPTION
Store Control 2	-00-D		D10 = Erase Command/Authority
	-01-0		D9 = Reserved for MIL-STD-1760
	-02-0		D8 = Reserved for MIL-STD-1760
	-03-D		D7 = Control Surface Pre-launch Inhibit
	-04-D		D6 = Abort Release/Launch
	-05-D		D5 = Activate Non-Safety Critical Release Functions
	-06-0		D4 = Reserved for MIL-STD-1760
	-07-0		D3 = Reserved for MIL-STD-1760
Identifier 2	-08-D	MSB	D2
	-09-D		D1
	-10-D	LSB	D0
Address Confirm 2	-11-D		A4
	-12-D		A3
	-13-D		A2
	-14-D		A1
	-15-D		A0

REMARKS/NOTES:

WORD NAME: Critical Authority 2

	CATEGORY: Special
WORD ID: 11R/07	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: Coded	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Coded Check 2	-00-C	$C14 = D10+D9+D6+D1+D0$
	-01-C	$C13 = D9+D8+D5+D0$
	-02-C	$C12 = D8+D7+D4$
	-03-C	$C11 = D7+D6+D3$
	-04-C	$C10 = D10+D9+D5+D2+D1+D0$
	-05-C	$C9 = D10+D8+D6+D4$
	-06-C	$C8 = D10+D7+D6+D5+D3+D1+D0$
	-07-C	$C7 = D10+D5+D4+D2+D1$
	-08-C	$C6 = D10+D6+D4+D3$
	-09-C	$C5 = D9+D5+D3+D2$
	-10-C	$C4 = D10+D9+D8+D6+D4+D2+D0$
	-11-C	$C3 = D9+D8+D7+D5+D3+D1$
	-12-C	$C2 = D10+D9+D8+D7+D4+D2+D1$
	-13-C	$C1 = D10+D8+D7+D3$
	-14-C	$C0 = D10+D7+D2+D1+D0$
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

1. This field is used as a coded check for <u>Critical Control 2</u> word. The store does not act on the <u>Critical Control 2</u> word if the check bits in this word are not set as indicated. Coded check bits are generated using modulo 2 arithmetic IAW MIL-STD-1760. D0 through D10 refer to the corresponding bits of the <u>Critical Control 2</u> word.

WORD NAME: Fuze Mode 1

WORD ID:	11R/08
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Fuze Control	-00-D	Function At Impact
	-01-D	Function On Time After Release
	-02-D	Function On Time After Impact
	-03-D	Function At Altitude
	-04-D	Function At Depth
	-05-D	Function On Proximity
	-06-D	Function At Position Of Target
	-07-D	Function On Interference
	-08-D	Function On Void
	-09-D	Function On Layer
	-10-D	Low Voltage Detect
	-11-D	Long Delay Enable
	-12-D	Function At Height
	-13-D	Enable End Of Life Function
	-14-D	Arm Delay Enable
	-15-D	Status Signal Enable

REMARKS/NOTES:

1. This word used by Stores with interface controllable post release operation to enable/disable fuze modes.

2. Data bits set to a logic 1 indicate that the associated function is required to be active.

WORD NAME: Arm Delay from Release

	CATEGORY: Time(F)
WORD ID: 11R/09	MAX VALUE: 2.3611E+21
SOURCE(s): Platform	MIN VALUE: 0
DEST(s): Store	RESOLUTION: Note 1
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: Scientific	LSB: N/A
UNITS: Microseconds	FULL SCALE: 2.3611E+21

FIELD NAME	BIT NO.	DESCRIPTION
Integer	-00-S	Sign
	-01-N	MSB : 1024 ---
	-02-N	
	-03-N	SIGNAL TYPE: 2's Complement
	-04-N	MAX VALUE: 2047
	-05-N	MIN VALUE: 0
	-06-N	RESOLUTION: 1
	-07-N	ACCURACY: N/A
	-08-N	FULL SCALE: 2047
	-09-N	
	-10-N	
	-11-N	LSB : 1---
Exponent	-12-N	MSB : 8---
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 15
	-14-N	MIN VALUE: 0, RESOLUTION: 1
	-15-N	LSB : 1---

REMARKS/NOTES:

1. Resolution equals sixteen raised to the exponent value.
2. The value represented by this format is given by: (Integer) x 16^(Exponent)

WORD NAME: Fuze Function Delay From Release

		CATEGORY:	Time(F)
WORD ID:	11R/10	MAX VALUE:	2.3611E+21
SOURCE(s):	Platform	MIN VALUE:	0
DEST(s):	Store	RESOLUTION:	Note 1
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	Scientific	LSB:	N/A
UNITS:	Microseconds	FULL SCALE:	2.3611E+21

FIELD NAME	BIT NO.	DESCRIPTION
Integer	-00-S	Sign
	-01-N	MSB : 1024 ---
	-02-N	
	-03-N	SIGNAL TYPE: 2's Complement
	-04-N	MAX VALUE: 2047
	-05-N	MIN VALUE: 0
	-06-N	RESOLUTION: 1
	-07-N	ACCURACY: N/A
	-08-N	FULL SCALE: 2047
	-09-N	
	-10-N	
	-11-N	LSB : 1 ---
Exponent	-12-N	MSB : 8 ---
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 15
	-14-N	MIN VALUE: 0, RESOLUTION: 1
	-15-N	LSB : 1 ---

REMARKS/NOTES:

1. Resolution equals sixteen raised to the exponent value.
2. The value represented by this format is given by: (Integer) x 16^(Exponent)

WORD NAME: Fuze Function Delay From Impact

		CATEGORY:	Time(F)
WORD ID:	11R/11	MAX VALUE:	2.3611E+21
SOURCE(s):	Platform	MIN VALUE:	0
DEST(s):	Store	RESOLUTION:	Note 1
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	Scientific	LSB:	N/A
UNITS:	Microseconds	FULL SCALE:	2.3611E+21

FIELD NAME	BIT NO.	DESCRIPTION
Integer	-00-S	Sign
	-01-N	MSB : 1024 --
	-02-N	
	-03-N	SIGNAL TYPE: 2's Complement
	-04-N	MAX VALUE: 2047
	-05-N	MIN VALUE: 0
	-06-N	RESOLUTION: 1
	-07-N	ACCURACY: N/A
	-08-N	FULL SCALE: 2047
	-09-N	
	-10-N	
	-11-N	LSB : 1 ---
Exponent	-12-N	MSB : 8 ---
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 15
	-14-N	MIN VALUE: 0, RESOLUTION: 1
	-15-N	LSB : 1 ---

REMARKS/NOTES:

1. Resolution equals sixteen raised to the exponent value.
2. The value represented by this format is given by: (Integer) x 16^(Exponent).

WORD NAME: Fuze Function Distance

	CATEGORY:	Distance
WORD ID: 11R/12	MAX VALUE:	32767
SOURCE(s): Platform	MIN VALUE:	-32767
DEST(s): Store	RESOLUTION:	1
COMP RATE: Aperiodic	ACCURACY:	1
XMIT RATE: Aperiodic	MSB:	2^14
SIGNAL TYPE: 2's Complement	LSB:	2^0
UNITS: Meters	FULL SCALE:	32767

FIELD NAME	BIT NO.	DESCRIPTION
Fuze Function Distance	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Fire Interval

WORD ID:	11R/13
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	Unsigned
UNITS:	Microseconds

CATEGORY:	Time (L)
MAX VALUE:	4.1942E+06
MIN VALUE:	0.0000E+00
RESOLUTION:	6.4000E+01
ACCURACY:	N/A
MSB:	2^{21}
LSB:	2^{6}
FULL SCALE:	4.1942E+06

FIELD NAME	BIT NO.	DESCRIPTION
Fire Interval	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Number to Fire

	CATEGORY:	Number(L)
WORD ID: 11R/14	MAX VALUE:	65535
SOURCE(s): Platform	MIN VALUE:	0
DEST(s): Store	RESOLUTION:	1
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^{15}
SIGNAL TYPE: Unsigned	LSB:	2^0
UNITS: N/A	FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Number to Fire	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. This word contains the number of mission stores that respond to a <u>Critical Control 1</u> [11R/04/00…07] and <u>Critical Control 2</u> [11R/06/00…07] command.

WORD NAME: High Drag Arm Time

	CATEGORY: Time(F)
WORD ID: 11R/15	MAX VALUE: 2.3611E+21
SOURCE(s): Platform	MIN VALUE: 0
DEST(s): Store	RESOLUTION: Note 1
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: Scientific	LSB: N/A
UNITS: Microseconds	FULL SCALE: 2.3611E+21

FIELD NAME	BIT NO.	DESCRIPTION
Integer	-00-S	Sign
	-01-N	MSB : 1024---
	-02-N	
	-03-N	SIGNAL TYPE: 2's Complement
	-04-N	MAX VALUE: 2047
	-05-N	MIN VALUE: 0
	-06-N	RESOLUTION: 1
	-07-N	ACCURACY: N/A
	-08-N	FULL SCALE: 2047
	-09-N	
	-10-N	
	-11-N	LSB : 1--
Exponent	-12-N	MSB : 8--
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 15
	-14-N	MIN VALUE: 0, RESOLUTION: 1
	-15-N	LSB : 1--

REMARKS/NOTES:

1. Resolution equals sixteen raised to the exponent value.
2. The value represented by this format is given by: (Integer) x 16^(Exponent).

WORD NAME: Fuze Function Time From Event

	CATEGORY:	Time(F)
WORD ID: 11R/16	MAX VALUE:	2.3611E+21
SOURCE(s): Platform	MIN VALUE:	0
DEST(s): Store	RESOLUTION:	Note 1
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: Scientific	LSB:	N/A
UNITS: Microseconds	FULL SCALE:	2.3611E+21

FIELD NAME	BIT NO.	DESCRIPTION
Integer	-00-S	Sign
	-01-N	MSB : 1024 --
	-02-N	
	-03-N	SIGNAL TYPE: 2's Complement
	-04-N	MAX VALUE: 2047
	-05-N	MIN VALUE: 0
	-06-N	RESOLUTION: 1
	-07-N	ACCURACY: N/A
	-08-N	FULL SCALE: 2047
	-09-N	
	-10-N	
	-11-N	LSB : 1--
Exponent	-12-N	MSB : 8--
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 15
	-14-N	MIN VALUE: 0, RESOLUTION: 1
	-15-N	LSB : 1--

REMARKS/NOTES:

1. Resolution equals sixteen raised to the exponent value.
2. The value represented by this format is given by: (Integer) x 16^(Exponent).

WORD NAME: Void/Layer Number

	CATEGORY: Number(L)
WORD ID: 11R/17	MAX VALUE: 65535
SOURCE(s): Platform	MIN VALUE: 0
DEST(s): Store	RESOLUTION: 1
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^15
SIGNAL TYPE: Unsigned	LSB: 2^0
UNITS: N/A	FULL SCALE: 65535

FIELD NAME	BIT NO.	DESCRIPTION
Void/Layer Number	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Impact Velocity

	CATEGORY: Velocity(M)
WORD ID: 11R/18	MAX VALUE: 8.1920E+03
SOURCE(s): Platform	MIN VALUE: 0.0000E+00
DEST(s): Store	RESOLUTION: 2.5000E-01
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^12
SIGNAL TYPE: 2's Complement	LSB: 2^-2
UNITS: Meters/Second	FULL SCALE: 8.1920E+03

FIELD NAME	BIT NO.	DESCRIPTION
Impact Velocity	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Fuze Mode 2

		CATEGORY:	Special
WORD ID:	11R/19	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION (See Note 1)
Selected Store	-00-N	MSB 2^3 ---
	-01-N	Max value = 8
	-02-N	
	-03-N	LSB 2^0 ---
Fuze Initiation	-04-N	MSB 2^1 ---
	-05-N	LSB 2^0 ---
Target Hardness	-06-N	MSB 2^1 ---
	-07-N	LSB 2^0 ---
Store Retard Mech	-08-D	Enable store retard mechanism (See note 2).
Post Release Control	-09-D	Enable post release fuze control.
Post Impact	-10-D	Enable Post Impact Fuze Surveillance
Prox RF After Launch	-11-D	Proximity RF Broadcast Enable - Time After Launch
Prox RF Before Impact	-12-D	Proximity RF Broadcast Enable - Time Before Impact
Reserved	-13-0	Set to logic 0.
Reserved	-14-0	Set to logic 0.
Reserved	-15-0	Set to logic 0.

REMARKS/NOTES:

1. Data bits 08 through 12 set to a logic 1 indicate that the associated fuze function is active.
2. Any designated time is given in data word [11R/16].

WORD NAME: Dispersion Data

WORD ID: 11R/20	CATEGORY: Special
SOURCE(s): Platform	MAX VALUE: N/A
DEST(s): Store	MIN VALUE: N/A
COMP RATE: Aperiodic	RESOLUTION: N/A
XMIT RATE: Aperiodic	ACCURACY: N/A
SIGNAL TYPE: N/A	MSB: N/A
UNITS: N/A	LSB: N/A
	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Horizontal dispersion	-00-D	MSB Left
	-01-D	LSB Right
Horizontal dispersion angle	-02-	MSB : 2^-2---
	-03-	SIGNAL TYPE: Unsigned, UNITS: Semicircles
		MAX VALUE: 4.9218E-01, MIN VALUE: 7.8125E-03
	-04-	RESOLUTION: 7.8125E-03, ACCURACY: N/A
		FULL SCALE: 4.9218E-01
	-05-	
	-06-	
	-07-	LSB : 2^-7---
Vertical dispersion	-08-	MSB Up
	-09-	LSB Down
Vertical dispersion angle	-10-	MSB : 2^-2---
	-11-	SIGNAL TYPE: Unsigned, UNITS: Semicircles
		MAX VALUE: 4.9218E-01, MIN VALUE: 7.8125E-03
	-12-	RESOLUTION: 7.8125E-03, ACCURACY: N/A
		FULL SCALE: 4.9218E-01
	-13-	
	-14-	
	-15-	LSB : 2^-7---

REMARKS/NOTES:

WORD NAME: Dispersion Duration

WORD ID:	11R/21	CATEGORY: Time(L)
		MAX VALUE: 4.1942E+06
SOURCE(s):	Platform	MIN VALUE: 0
DEST(s):	Store	RESOLUTION: 64
COMP RATE:	Aperiodic	ACCURACY: N/A
XMIT RATE:	Aperiodic	MSB: 2^21
SIGNAL TYPE:	Unsigned	LSB: 2^6
UNITS:	Microseconds	FULL SCALE: 4.1942E+06

FIELD NAME	BIT NO.	DESCRIPTION
Dispersion Duration	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Carr Store S&RE Unit(s) Select

	CATEGORY: Number(L)
WORD ID: 11R/22	MAX VALUE: 8
SOURCE(s): Platform	MIN VALUE: 0
DEST(s): Store	RESOLUTION: 1
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^15
SIGNAL TYPE: Unsigned	LSB: 2^0
UNITS: N/A	FULL SCALE: 65535

FIELD NAME	BIT NO.	DESCRIPTION
Carr Store S&RE Unit(s) Select	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Separation Elements

	CATEGORY: Special
WORD ID: 11R/23	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Separation Duration	-00-N	MSB : 2^7---
	-01-N	SIGNAL TYPE: Unsigned
		UNITS: Seconds
	-02-N	MAX VALUE: 255
		MIN VALUE: 0
	-03-N	RESOLUTION: 1
		ACCURACY: N/A
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^{-0}--
Separation Distance	-08-N	MSB : 2^7---
	-09-N	SIGNAL TYPE: Unsigned
		UNITS: Meters
	-10-N	MAX VALUE: 255
		MIN VALUE: 0
	-11-N	RESOLUTION: 1
		ACCURACY: N/A
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0--

REMARKS/NOTES:

WORD NAME: Surface Delays

	CATEGORY: Special
WORD ID: 11R/24	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Surface Deployment Delay	-00-N	MSB : ---
	-01-N	SIGNAL TYPE: Unsigned UNITS: Seconds
	-02-N	MAX VALUE: 5.100 MIN VALUE: 0.0
	-03-N	RESOLUTION: 0.020 ACCURACY: N/A
	-04-N	LSB: 0.020, MSB: 2.56 FULL SCALE: 5.100
	-05-N	
	-06-N	
	-07-N	LSB : ---
Control Surface Unlock Delay	-08-N	MSB : ---
	-09-N	SIGNAL TYPE: Unsigned UNITS: Seconds
	-10-N	MAX VALUE: 5.100 MIN VALUE: 0.0
	-11-N	RESOLUTION: 0.020 ACCURACY: N/A
	-12-N	LSB: 0.020, MSB: 2.56 FULL SCALE: 5.100
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Fuze Time 1

	CATEGORY: Time(F)
WORD ID: 11R/25	MAX VALUE: 2.3611E+21
SOURCE(s): Platform	MIN VALUE: 0
DEST(s): Store	RESOLUTION: Note 1
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: Scientific	LSB: N/A
UNITS: Microseconds	FULL SCALE: 2.3611E+21

FIELD NAME	BIT NO.	DESCRIPTION
Integer	-00-N	Sign
	-01-N	MSB : 1024 ---
	-02-N	
	-03-N	SIGNAL TYPE: 2's Complement
	-04-N	MAX VALUE: 2047
	-05-N	MIN VALUE: 0
	-06-N	RESOLUTION: 1
	-07-N	ACCURACY: N/A
	-08-N	FULL SCALE: 2047
	-09-N	
	-10-N	
	-11-N	LSB : 1 ---
Exponent	-12-N	MSB : 8 ---
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 15
	-14-N	MIN VALUE: 0, RESOLUTION: 1
	-15-N	LSB : 1 ---

REMARKS/NOTES:

1. Resolution equals sixteen raised to the exponent value.
2. The value represented by this format is given by: (Integer) x 16^(Exponent)

WORD NAME: Fuze Time 2

WORD ID:	11R/26
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	Scientific
UNITS:	Microseconds

CATEGORY:	Time(F)
MAX VALUE:	2.3611E+21
MIN VALUE:	0
RESOLUTION:	Note 1
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	2.3611E+21

FIELD NAME	BIT NO.	DESCRIPTION
Integer	-00-N	Sign
	-01-N	MSB : 1024 --
	-02-N	
	-03-N	SIGNAL TYPE: 2's Complement
	-04-N	MAX VALUE: 2047
	-05-N	MIN VALUE: 0
	-06-N	RESOLUTION: 1
	-07-N	ACCURACY: N/A
	-08-N	FULL SCALE: 2047
	-09-N	
	-10-N	
	-11-N	LSB : 1 --
Exponent	-12-N	MSB : 8 ---
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 15
	-14-N	MIN VALUE: 0, RESOLUTION: 1
	-15-N	LSB : 1 --

REMARKS/NOTES:

1. Resolution equals sixteen raised to the exponent value.
2. The value represented by this format is given by: (Integer) x 16^(Exponent)

WORD NAME: Tether Length

WORD ID:	11R/27
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	Unsigned
UNITS:	Meters

CATEGORY:	Distance(L)
MAX VALUE:	5.1199E+02
MIN VALUE:	0
RESOLUTION:	2^-7
ACCURACY:	N/A
MSB:	2^8
LSB:	2^-7
FULL SCALE:	5.1199E+02

FIELD NAME	BIT NO.	DESCRIPTION
Tether Length	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Interstage Gap Time

	CATEGORY: Time(L)
WORD ID: 11R/28	MAX VALUE: 4.194E+6
SOURCE(s): Platform	MIN VALUE: 0
DEST(s): Store	RESOLUTION: 64
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^21
SIGNAL TYPE: Unsigned	LSB: 2^6
UNITS: Microseconds	FULL SCALE: 4.194E+6

FIELD NAME	BIT NO.	DESCRIPTION
Integer	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME:	Reserved	

			CATEGORY:	N/A
WORD ID:	11R/29		MAX VALUE:	N/A
SOURCE(s):	Platform		MIN VALUE:	N/A
DEST(s):	Store		RESOLUTION:	N/A
COMP RATE:	N/A		ACCURACY:	N/A
XMIT RATE:	Aperiodic		MSB:	N/A
SIGNAL TYPE:	N/A		LSB:	N/A
UNITS:	N/A		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	
	-01-0	
	-02-0	
	-03-0	
	-04-0	
	-05-0	
	-06-0	
	-07-0	
	-08-0	
	-09-0	
	-10-0	
	-11-0	
	-12-0	
	-13-0	
	-14-0	
	-15-0	

REMARKS/NOTES:

WORD NAME: Checksum

WORD ID:	11R/30
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	Unsigned
UNITS:	N/A

CATEGORY:	Number(L)
MAX VALUE:	65535
MIN VALUE:	0
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	2^{15}
LSB:	2^0
FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Checksum	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

6.11T <u>STORE MONITOR</u> **[11T]**

<u>Store Monitor</u> [11T] is a MIL-STD-1760 message that provides mission store safety critical function status. All of the fuze data within <u>Store Monitor</u> [11T] informs the platform of the settings that the fuze uses if <u>Mod Msn Storage Location</u> [22T/12] becomes the <u>Pri Msn Storage Location</u> [22T/06].

Platform Requirements

The platform annex **{ann_6007}** documents platform fault processing for any of the information contained in this message.

Carriage System Requirements

A Type 1 carriage system shall **{css_6106}** set <u>Invalidity 1</u> [11T/02] and <u>Invalidity 2</u> [11T/03] invalidity bits corresponding to fuzing data words [11T/06], [11T/08-11], [11T/14-18], [11T/24-27], and to dispersion/separation data words [11T/19-20] and [11T/22-23] to logic 1 (invalid).

A Type 2 carriage system shall **{css_6107}** update, at a minimum rate of 25 Hz, fuzing data in <u>Store Monitor</u> words [11T/06], [11T/08-11], [11T/14-18], and [11T/24-27] and in dispersion/separation data words [11T/19-20] and [11T/22-23] using data from the next mission store to be released.

Mission Store Requirements

The mission store shall **{ss_6409}** set <u>Store Monitor</u> [11T] invalidity bits and corresponding fuzing data words [11T/06], [11T/08-11], [11T/14-18], and [11T/24-27] to the fuze settings that the fuze uses if <u>Mod Msn Storage Location</u> [22T/12] becomes the <u>Pri Msn Storage Location</u> [22T/06].

6.11T.1 <u>Critical Monitor 1</u> **[11T/04]**

<u>Critical Monitor 1</u> is the first of two words that the platform uses to status the store safety critical functions.

6.11T.1.1 <u>Fire/Launch/Release Status</u> **[11T/04/00]**

<u>Fire/Launch/Release Status</u> [11T/04/00] indicates the carriage system is executing the release process for the <u>Number to Fire</u> [11T/13] mission stores (i.e., fire rocket motor for rail launched stores, activate bomb rack cartridges, open bomb rack hooks, etc.).

Carriage System Requirements

The carriage system shall **{css_6108}** set <u>Fire/Launch/Release Status</u> [11T/04/00 = 1] when <u>Fire/Launch/Release</u> [11R/04/00 = 1] and the carriage system is executing the release process for the <u>Number to Fire</u> [11T/13] mission stores.

The carriage system shall **{css_6109}** set <u>Fire/Launch/Release Status</u> [11T/04/00 = 0] at the completion of the store release process or a minimum of 0.5 seconds after receipt of <u>Fire/Launch/Release</u> [11R/04/00 = 1], whichever is greater.

6.11T.1.2 Jettison Status [11T/04/01]

Jettison Status [11T/04/01] indicates the carriage system is executing the jettison process. The carriage system jettison functions can be independent of mission store status. The mission store can be jettisoned with or without power applied.

Carriage System Requirements

The carriage system shall **{css_6110}** set Jettison Status [11T/04/01 = 1] when Jettison [11R/04/01 = 1] and the carriage system is executing the jettison process.

The carriage system shall **{css_6111}** set Jettison Status [11T/04/01 = 0] at the completion of the store jettison process or a minimum of 0.5 seconds after receipt of Jettison [11R/04/01 = 1], whichever is greater.

6.11T.1.3 Committed to Store Separation [11T/04/02] (CTSS)

CTSS [11T/04/02] indicates the store has completed all pre-release preparation and is waiting to be released from the platform or carriage system.

Carriage System Requirements

A Type 2 carriage system shall **{css_6112}** set CTSS [11T/04/02 = 1], subsequent to receiving a valid CTS [11R/04/02 = 1], when the next releasable mission store out of Number to Fire [11T/13] has reported CTSS [11T/04/02 = 1] to the carriage system.

6.11T.1.4 Store in Initiated BIT [11T/04/06]

Store in Initiated BIT [11T/04/06] indicates the store is performing Initiated Built-In-Test (IBIT). Store in Initiated BIT is maintained at logic 1 for a minimum of 2 seconds so the platform has the opportunity to query the store for IBIT status.

Carriage System Requirements

The carriage system shall **{css_6113}** set Store in Initiated BIT [11T/04/06 = 1] for a minimum of 2 seconds or while the carriage system is performing IBIT and/or its mission store(s) are performing their IBIT(s), whichever is greater.

The carriage system shall **{css_6114}** set Store in Initiated BIT [11T/04/06 = 0] at the completion of the carriage system IBIT and its mission store(s) have completed their IBIT(s).

Mission Store Requirements

The mission store shall **{ss_6110}** set Store in Initiated BIT [11T/04/06 = 1] for a minimum of 2 seconds or while it is performing IBIT, whichever is greater.

The mission store shall **{ss_6111}** set Store in Initiated BIT [11T/04/06 = 0] at the completion of its IBIT.

6.11T.1.5 <u>Demanded State 1</u> [11T/04/08…15]

<u>Demanded State 1</u> [11T/04/08…15] echoes the last received value of <u>Store Control 1</u> [11R/04/00…07].

Carriage System Requirements

The carriage system shall **{css_6115}** set <u>Demanded State 1</u> [11T/04/08…15] to the last received value of <u>Store Control 1</u> [11R/04/00…07].

Mission Store Requirements

The mission store shall **{ss_6112}** set <u>Demanded State 1</u> [11T/04/08…15] to the last received value of <u>Store Control 1</u> [11R/04/00…07].

6.11T.2 <u>Critical Monitor 2</u> [11T/05]

6.11T.2.1 <u>Erase Process Status</u> [11T/05/00]

<u>Erase Process Status</u> [11T/05/00] indicates the store is in the process of erasing all sensitive data provided by the platform, including GPS crypto keys, held within the stores memory. Section 3.5.11 Data Erase Processing provides further information and requirements.

Carriage System Requirements

A Type 2 carriage system shall **{css_6116}** set <u>Erase Process Status</u> [11T/05/00 = 1] to indicate the carriage system is in the process of erasing all its sensitive data and its powered mission store(s) are in the process of erasing their sensitive data.

A Type 2 carriage system shall **{css_6117}** set <u>Erase Process Status</u> [11T/05/00 = 0] a minimum of 0.5 seconds after receipt of <u>Erase Command/Authority</u> [11R/06/00 = 1] or at the completion of the carriage system and its powered mission store(s) sensitive data erase processes, whichever is greater.

Mission Store Requirements

The mission store shall **{ss_6113}** set <u>Erase Process Status</u> [11T/05/00 = 1] to indicate the mission store is in the process of erasing all sensitive data.

The mission store shall **{ss_6114}** set <u>Erase Process Status</u> [11T/05/00 = 0] when the mission store has completed the sensitive data erase process or a minimum of 0.5 seconds after receipt of <u>Erase Command/Authority</u> [11R/06/00 = 1], whichever is greater.

6.11T.2.2 <u>Control Surface Inhibit Status</u> [11T/05/03]

<u>Control Surface Inhibit Status</u> [11T/05/03] indicates the mission store is inhibiting store control surface deployment or movement prior to launch.

Mission Store Requirements

The mission store shall **{ss_6115}** set <u>Control Surface Inhibit Status</u> [11T/05/03 = 1] to indicate store control surface deployment or movement is inhibited.

6.11T.2.3 <u>Abort Release/Launch Status</u> [11T/05/04]

<u>Abort Release/Launch Status</u> [11T/05/04] indicates the Type 2 carriage system or mission store has halted the release/launch sequence (if applicable) and put itself in the safest configuration possible. This status does not apply to a Type 1 carriage system.

Carriage System Requirements

A Type 2 carriage system shall **{css_6118}** set <u>Abort Release/Launch Status</u> [11T/05/04 = 1] to indicate the carriage system has halted release/launch of remaining store(s) from the current launch/release sequence in progress, received <u>Abort Release/Launch Status</u> [11T/05/04 = 1] status from all the unreleasable mission stores remaining in the current release sequence, put itself in the safest possible configuration, and is ready to support all subsequent commanded functions.

Mission Store Requirements

The mission store shall **{ss_6116}** set <u>Abort Release/Launch Status</u> [11T/05/04 = 1] to indicate it has entered its safest possible state and terminated launch preparations (if applicable).

6.11T.2.4 <u>Non-Safety Critical Release Functions Activated</u> [11T/05/05]

<u>Non-Safety Critical Release Functions Activated</u> [11T/05/05] indicates the mission store has completed non-safety critical functions which are part of the mission store launch/release sequence. For a Type 2 carriage system, it indicates that the next mission store in the release order has completed its non-safety critical release functions and the carriage system has completed any additional mission store release processing, such as verifying that the mission store is operating on internal battery power, for that mission store.

Carriage System Requirements

A Type 1 carriage system shall **{css_6221}** set <u>Non-Safety Critical Release Functions Activated</u> [11T/05/05 = 0].

A Type 2 carriage system shall **{css_6222}** set <u>Non-Safety Critical Release Functions Activated</u> [11T/05/05 = 1], subsequent to receiving a valid <u>Activate Non-Safety Critical Release Functions</u> [11R/06/05 = 1], when the next releasable mission store out of <u>Number to Fire</u> [11T/13] has reported <u>Non-Safety Critical Release Functions Activated</u> [11T/05/05 = 1] and any additional mission store release process functions that are accomplished by the carriage system, such as verifying that the mission store is operating on internal power, have been completed by the carriage system for that mission store.

Mission Store Requirements

The mission store shall **{ss_6755}** set <u>Non-Safety Critical Release Functions Activated</u> [11T/05/05 = 1], subsequent to receiving a valid <u>Activate Non-Safety Critical Release Functions</u> [11R/06/05 = 1] when the mission store has completed all the non-safety critical release functions as documented in the mission store supplement **{sup_3074}**.

6.11T.2.5 <u>Demanded State 2</u> [11T/05/08…15]

<u>Demanded State 2</u> [11T/05/08…15] echoes the last received value of <u>Store Control 2</u> [11R/06/00…07].

Carriage System Requirements

The carriage system shall **{css_6119}** set <u>Demanded State 2</u> [11T/05/08…15] to the last received value of <u>Store Control 2</u> [11R/06/00…07].

Mission Store Requirements

The mission store shall **{ss_6117}** set <u>Demanded State 2</u> [11T/05/08…15] to the last received value of <u>Store Control 2</u> [11R/06/00…07].

6.11T.3 <u>Fuzing/Arming Mode Status</u> 1 [11T/06]

<u>Fuzing/Arming Mode Status 1</u> [11T/06] is the first of two words that the mission store uses to inform the platform of the fuze and arm settings.

6.11T.3.1 <u>Function At Impact</u> [11T/06/00]

<u>Function At Impact</u> [11T/06/00] reflects the mission store fuze is to function at impact.

6.11T.3.2 <u>Function On Time After Release</u> [11T/06/01]

Reserved for future growth.

6.11T.3.3 <u>Function On Time After Impact</u> [11T/06/02]

<u>Function On Time After Impact</u> [11T/06/02] reflects the mission store fuze is to function on time after impact. <u>Fuze Function Delay From Impact</u> [11T/10] indicates the time delay after impact for fuze function.

6.11T.3.4 <u>Function At Altitude</u> [11T/06/03]

<u>Function At Altitude</u> [11T/06/03] reflects the mission store fuze is to function at an altitude. <u>Fuze Function Distance</u> [11T/11] indicates the fuze function altitude.

6.11T.3.5 <u>Function At Depth</u> [11T/06/04]

<u>Function At Depth</u> [11T/06/04] reflects the mission store fuze is to function at a depth. <u>Fuze Function Distance</u> [11T/11] indicates the fuze function depth.

6.11T.3.6 Function On Proximity [11T/06/05]

Function On Proximity [11T/06/05] reflects the mission store fuze is to function on proximity. Fuze Function Distance [11T/11] indicates the fuze function distance from the target.

6.11T.3.7 Function At Position Of Target [11T/06/06]

Reserved for future growth.

6.11T.3.8 Function On Interference [11T/06/07]

Reserved for future growth.

6.11T.3.9 Function On Void [11T/06/08]

Function On Void [11T/06/08] reflects the mission store fuze void mode selection. Void/Layer Number [11T/16] indicates the number of voids to be sensed before the fuze is to function.

6.11T.3.10 Function On Layer [11T/06/09]

Function On Layer [11T/06/09] reflects the mission store fuze layer mode selection. Void/Layer Number [11T/16] indicates the number of layers to be sensed before the fuze is to function.

6.11T.3.11 Low Voltage Detect [11T/06/10]

Low Voltage Detect [11T/06/10] reflects the mission store fuze is to detect low battery voltage.

6.11T.3.12 Long Delay Enable [11T/06/11]

Reserved for Future Growth.

6.11T.3.13 Function At Height [11T/06/12]

Function At Height [11T/06/12] reflects the mission store fuze is to function at height. Fuze Function Distance [11T/11] indicates the fuze function distance above the surface.

6.11T.3.14 Enable End Of Life Function [11T/06/13]

Enable End Of Life Function [11T/06/13] reflects the mission store fuze is to function in End Of Life Mode.

6.11T.3.15 Arm Delay From Release is Set [11T/06/14]

Arm Delay From Release is Set [11T/06/14] reflects the mission store fuze is to enable arming at the designated time given in Arm Delay From Release [11T/08] after separation is detected.

6.11T.3.16 Status Signal Enable [11T/06/15]

Status Signal Enable [11T/06/15] reflects the mission store fuze is to transmit status information prior to functioning.

6.11T.4 Protocol Status [11T/07]

Protocol Status [11T/07] is set whenever a MIL-STD-1760 protocol check performed on a received message is unsuccessful. The store will communicate this to the platform by setting one or more of the error flags in Protocol Status [11T/07] and setting Subaddress [11T/07/11…15] to the subaddress where the erroneous message was received. Section 4.1.7 provides further information and requirements.

6.11T.5 Arm Delay From Release [11T/08]

Arm Delay From Release [11T/08] reflects the time, after separation is detected, before the fuze begins warhead arming.

> **Mission Store Requirements**
>
> The mission store shall **{ss_6119}** set Arm Delay From Release [11T/08] to the time to begin warhead arming after separation detection if Arm Delay From Release is Set [11T/06/14 = 1].

6.11T.6 Fuze Function Delay From Release [11T/09]

Reserved for future growth.

6.11T.7 Fuze Function Delay From Impact [11T/10]

Fuze Function Delay from Impact [11T/10] indicates the fuze function time after impact.

> **Mission Store Requirements**
>
> The mission store shall **{ss_6120}** set Fuze Function Delay from Impact [11T/10] to the applicable post-impact delay when Function on Time After Impact [11T/06/02 = 1].

6.11T.8 Fuze Function Distance [11T/11]

Depending on the fuze mode commanded, this field has different meanings. See requirements below for definitions.

> **Mission Store Requirements**
>
> The mission store shall **{ss_6121}** set Fuze Function Distance [11T/11] to the applicable altitude for the fuze to function when Function At Altitude [11T/06/03 = 1].
>
> The mission store shall **{ss_6122}** set Fuze Function Distance [11T/11] to the applicable depth for the fuze to function when Function At Depth [11T/06/04 = 1].

The mission store shall **{ss_6123}** set Fuze Function Distance [11T/11] to the applicable distance from the target for the fuze to function when Function On Proximity [11T/06/05 = 1].

The mission store shall **{ss_6124}** set Fuze Function Distance [11T/11 = 0] to indicate the mission store fuze functions at the closest point of approach to the target when Function On Proximity [11T/06/05 = 1].

The mission store shall **{ss_6125}** set Fuze Function Distance [11T/11] to the applicable height above the local level for the fuze to function when Function At Height [11T/06/12 = 1].

6.11T.9 Fire Interval [11T/12]

Fire Interval [11T/12] is the time interval in msec between mission store releases when Number to Fire [11T/13 > 1].

Carriage System Requirements

The carriage system shall **{css_6120}** set Fire Interval [11T/12] to the time between mission store releases.

Mission Store Requirements

The mission store shall **{ss_6126}** set Fire Interval [11T/12] to the time between mission store submunition releases, if the mission store has a timed dispense for submunitions.

6.11T.10 Number to Fire [11T/13]

Number to Fire [11T/13] is the number of mission stores to be acted upon by a Type 2 carriage system or a mission store with regards to Activate Non-Safety Critical Release Functions [11R/06/05], CTS [11R/04/02 = 1], or Fire/Launch/Release [11R/04/00 = 1]. If the number of mission stores which can be acted upon by the associated command is less than the Number to Fire [11R/14], the Type 2 carriage system sets Number to Fire [11T/13] to the number of mission stores that will be acted upon.

Carriage System Requirements

A Type 1 carriage system shall **{css_6149}** set Number to Fire [11T/13 = 1].

A Type 2 carriage system shall **{css_6121}** set Number to Fire [11T/13] to the number of mission stores that will be acted upon (based on Number to Fire [11R/14], the number of mission stores remaining/available, and how the carriage system handles stepover) when receiving any of the following commands:

   a. Activate Non-Safety Critical Release Functions [11R/06/05 = 1]
   b. CTS [11R/04/02 = 1]
   c. Fire/Launch/Release [11R/04/00 = 1].

Mission Store Requirements

The mission store shall **{ss_6127}** set Number to Fire [11T/13] equal to the number of submunitions to be released by the mission store, if the mission store can selectively release its submunitions.

6.11T.11 High Drag Arm Time [11T/14]

High Drag Arm Time [11T/14] indicates the time after separation detection in a high drag configuration before the fuze arms.

Mission Store Requirements

The mission store shall **{ss_6128}** set High Drag Arm Time [11T/14] to the time before arming the fuze after separation detection in a high drag configuration if the mission store is capable of a high drag release and the store has set PF Onboard [22T/02/12 = 1].

6.11T.12 Function Time From Event [11T/15]

Function Time From Event [11T/15] indicates the delay time from detection of an event to activation of specified fuzing functions or retard mechanism events.

Mission Store Requirements

The mission store shall **{ss_6129}** set Function Time From Event [11T/15] to indicate the time that the mission store fuze is to perform a specific fuze function when capable of time related events and PF Onboard [22T/02/12 = 1].

The mission store shall **{ss_6130}** set Function Time From Event [11T/15] to indicate the time that the mission store is to enable its retard mechanism after separation detection when Enable Store Retard Mechanism [11T/18/08 = 1].

The mission store supplement **{sup_6073}** documents fuzing time from event function(s) and store retard mechanism mechanical event(s).

6.11T.13 Void/Layer Number [11T/16]

Void/Layer Number [11T/16] indicates the void or layer number (mutually exclusive) prior to fuze function.

Mission Store Requirements

The mission store shall **{ss_6131}** set Void/Layer Number [11T/16] to the actual number of voids to be detected before fuze function when Function on Void [11T/06/08 = 1].

The mission store shall **{ss_6132}** set Void/Layer Number [11T/16] to actual number of layers to be detected before fuze function when Function on Layer [11T/06/09 = 1].

6.11T.14 Impact Velocity [11T/17]

Impact Velocity [11T/17] indicates the planned velocity to be used for fuze function.

> **Mission Store Requirements**
>
> The mission store shall **{ss_6133}** set Impact Velocity [11T/17] to the applicable velocity setting for the fuze to function.

6.11T.15 Fuzing/Arming Mode Status 2 [11T/18]

Fuzing/Arming Mode Status 2 [11T/18] is the second of two words that the mission store uses to inform the platform of the fuze and arm settings.

6.11T.15.1 Fuze Initiation [11T/18/04…05]

Fuze Initiation [11T/18/04…05] indicates the fuze initiation device sensor used by the mission store. Section 6.11R.16.2 Fuze Initiation [11R/19/04…05] includes fuze device sensor definition.

6.11T.15.2 Target Hardness [11T/18/06…07]

Target Hardness [11T/18/06…07] indicates the target hardness value being used by the mission store. Section 6.11R.16.2 Target Hardness [11R/19/06…07] includes target hardness definition.

6.11T.15.3 Enable Store Retard Mechanism [11T/18/08]

Enable Store Retard Mechanism [11T/18/08] reflects the mission store status of its selection of retard mode.

6.11T.15.4 Enable Post Release Fuze Control [11T/18/09]

Enable Post Release Fuze Control [11T/18/09] reflects the mission store fuze status of its selection of post release fuze control mode.

6.11T.15.5 Enable Post Impact Fuze Surveillance [11T/18/10]

Enable Post Impact Fuze Surveillance [11T/18/10] reflects the mission store fuze status of its selection of post impact fuze surveillance mode.

6.11T.15.6 Proximity RF Broadcast Enable - Time After Launch [11T/18/11]

Reserved for future growth.

6.11T.15.7 Proximity RF Broadcast Enable - Time Before Impact [11T/18/12]

Reserved for future growth.

6.11T.16 Dispersion Data [11T/19]

Dispersion Data [11T/19] is used to status the movement of the mission store in the immediate vicinity of the platform to avoid collision with the platform or other released stores.

6.11T.16.1 Horizontal Dispersion [11T/19/00…01]

Mission Store Requirements

The mission store shall **{ss_6136}** set Horizontal Dispersion [11T/19/00…01] to indicate the planned horizontal dispersion maneuver after release:

    00 (B) = No Dispersion Requirement

    01 (B) = Right Horizontal Dispersion

    10 (B) = Left Horizontal Dispersion

    11 (B) = Not Used

6.11T.16.2 Horizontal Dispersion Angle [11T/19/02…07]

Mission Store Requirements

The mission store shall **{ss_6137}** set Horizontal Dispersion Angle [11T/19/02…07] to the planned horizontal dispersion angle.

6.11T.16.3 Vertical Dispersion [11T/19/08…09]

Mission Store Requirements

The mission store shall **{ss_6138}** set Vertical Dispersion [11T/19/08…09] to indicate the planned vertical dispersion maneuver:

    00 (B) = No Dispersion Requirement

    01 (B) = Down Vertical Dispersion

    10 (B) = Up Vertical Dispersion

    11 (B) = Not Used

6.11T.16.4 Vertical Dispersion Angle [11T/19/10…15]

Mission Store Requirements

The mission store shall **{ss_6139}** set Vertical Dispersion Angle [11T/19/10…15] to indicate the planned vertical dispersion angle.

6.11T.17 Dispersion Duration [11T/20]

Mission Store Requirements

The mission store shall **{ss_6140}** set Dispersion Duration [11T/20] to indicate the planned length of time for post separation maneuvering to clear the platform flight path.

6.11T.18 Carriage Store S&RE Select [11T/21]

Carriage System Requirements

A Type 1 carriage system shall **{css_6124}** set Carriage Store S&RE Select [11T/21] to the station number of the S&RE on which the current or next valid Fire/Launch/Release [11R/04/00] or Jettison [11R/04/01] command acts.

6.11T.19 Separation Elements [11T/22]

6.11T.19.1 Separation Duration [11T/22/00…07]

Mission Store Requirements

The mission store shall **{ss_6141}** set Separation Duration [11T/22/00…07] to the planned length of time after umbilical separation detection to initiation of the dispersion maneuver defined in Dispersion Data [11T/19].

6.11T.19.2 Separation Distance [11T/22/08…15]

Mission Store Requirements

The mission store shall **{ss_6142}** set Separation Distance [11T/22/08…15] to the planned distance after umbilical separation detection before beginning dispersion the maneuver defined in Dispersion Data [11T/19].

6.11T.20 Surface Delays [11T/23]

6.11T.20.1 Surface Deployment Delay [11T/23/00…07]

Mission Store Requirements

The mission store shall **{ss_6143}** set Surface Deployment Delay [11T/23/00…07] to the planned time from umbilical disconnect until control surface deployment.

6.11T.20.2 Control Surface Unlock Delay [11T/23/08…15]

Mission Store Requirements

The mission store shall **{ss_6144}** set Control Surface Unlock Delay [11T/23/08…15] to the planned time from umbilical disconnect until control surface first movement.

6.11T.21 Fuze Time 1 [11T/24]

Mission Store Requirements

The mission store shall **{ss_6145}** set Fuze Time 1 [11T/24] to the planned time from impact to beginning target surveillance functions when PF Onboard [22T/02/12 = 1] and Enable Post Impact Fuze Surveillance [11T/18/10 = 1].

6.11T.22 <u>Fuze Time 2</u> **[11T/25]**

Mission Store Requirements

The mission store shall **{ss_6146}** set <u>Fuze Time 2</u> [11T/25] to the planned time from impact to ending post impact fuze target surveillance functions when <u>PF Onboard</u> [22T/02/12 = 1] and <u>Enable Post Impact Fuze Surveillance</u> [11T/18/10 = 1].

6.11T.23 <u>Tether Length</u> **[11T/26]**

Mission Store Requirements

The mission store shall **{ss_6147}** set <u>Tether Length</u> [11T/26] to the tether length to be deployed by the mission store if <u>PF Onboard</u> [22T/02/12 = 1] and <u>Status Signal Enabled</u> [11T/06/15 = 1].

The mission store shall **{ss_6148}** set <u>Tether Length</u> [11T/26 = 0] if the store does not have a tether capability.

6.11T.24 <u>Interstage Gap Time</u> **[11T/27]**

Mission Store Requirements

The mission store shall **{ss_6149}** set <u>Interstage Gap Time</u> [11T/27] to the time between warhead stage functions to be used when <u>PF Onboard</u> [22T/02/12 = 1] and the mission store has a multistage warhead.

MESSAGE NAME: Store Monitor
MESSAGE ID: 11T   TRANSFER TYPE: RT-BC
SOURCE: Store   WORD COUNT: 30
DESTINATION: Platform   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01011 (B)
Status Word	SW	MIL-STD-1553 Status Word
Header	01	Message Descriptor
Invalidity 1	02	Validity of Words 1-16
Invalidity 2	03	Validity of Words 17-30
Critical Monitor 1	04	Critical Store State Monitor 1
Critical Monitor 2	05	Critical Store State Monitor 2
Fuzing/Arming Mode Status 1	06	Fuzing/Arming mode Status 1
Protocol Status	07	Data bus interface protocol status
Arm Delay From Release	08	Monitor of Arm Delay From Release
Fuze Function Delay from Release	09	Monitor of Fuze Function Delay from Release
Fuze Function Delay from Impact	10	Monitor of Fuze Function Delay from Impact
Fuze Function Distance	11	Monitor of Fuze Function Distance
Fire Interval	12	Monitor of Fire Interval
Number to Fire	13	Monitor of Number to Fire
High Drag Arm Time	14	Monitor of High Drag Arm Time
Function Time From Event	15	Monitor of Function Time from Event
Void/Layer Number	16	Monitor of Void/layer number
Impact Velocity	17	Monitor of Impact Velocity
Fuzing/Arming Mode Status 2	18	Fuze/Arming Mode Status 2.
Dispersion Data	19	Monitor of Dispersion Data Settings
Dispersion Duration	20	Monitor of Dispersion Duration
Carriage Store S&RE Select	21	Monitor of Carriage Store S&RE Unit(s) Selected
Separation Elements	22	Monitor of Separation Elements
Surface Delays	23	Monitor of Surface Delay Settings
Fuze Time 1	24	Fuze Time 1 Monitor
Fuze Time 2	25	Fuze Time 2 Monitor
Tether Length	26	Tether Length
Interstage Gap Time	27	Interstage Gap Time Monitor
Reserved	28	Reserved for MIL STD 1760
Reserved	29	Reserved for MIL STD 1760
Checksum	30	Checksum of Message Data

REMARKS/NOTES:

WORD NAME: Header

		CATEGORY:	Header
WORD ID:	11T/01	MAX VALUE:	0420 (H)
SOURCE(s):	Store	MIN VALUE:	0420 (H)
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	Hexadecimal	LSB:	N/A
UNITS:	N/A	FULL SCALE:	FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB --
	-01-B	
	-02-B	Hex digit #1 value = 0 (H)
	-03-B	LSB --
Hex Digit #2	-04-B	MSB --
	-05-B	
	-06-B	Hex digit #2 value = 4 (H)
	-07-B	LSB --
Hex Digit #3	-08-B	MSB --
	-09-B	
	-10-B	Hex digit #3 value = 2 (H)
	-11-B	LSB --
Hex Digit #4	-12-B	MSB --
	-13-B	
	-14-B	Hex digit #4 value = 0 (H)
	-15-B	LSB --

REMARKS/NOTES:

WORD NAME: Invalidity 1

WORD ID: 11T/02	CATEGORY: Special
SOURCE(s): Store	MAX VALUE: N/A
DEST(s): Platform	MIN VALUE: N/A
COMP RATE: Aperiodic	RESOLUTION: N/A
XMIT RATE: Aperiodic	ACCURACY: N/A
SIGNAL TYPE: N/A	MSB: N/A
UNITS: N/A	LSB: N/A
	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Word 1 Invalidity	-00-V	Set to logic 1 when word 1 is invalid
Word 2 Invalidity	-01-V	Set to logic 1 when word 2 is invalid
Word 3 Invalidity	-02-V	Set to logic 1 when word 3 is invalid
Word 4 Invalidity	-03-V	Set to logic 1 when word 4 is invalid
Word 5 Invalidity	-04-V	Set to logic 1 when word 5 is invalid
Word 6 Invalidity	-05-V	Set to logic 1 when word 6 is invalid
Word 7 Invalidity	-06-V	Set to logic 1 when word 7 is invalid
Word 8 Invalidity	-07-V	Set to logic 1 when word 8 is invalid
Word 9 Invalidity	-08-V	Set to logic 1 when word 9 is invalid
Word 10 Invalidity	-09-V	Set to logic 1 when word 10 is invalid
Word 11 Invalidity	-10-V	Set to logic 1 when word 11 is invalid
Word 12 Invalidity	-11-V	Set to logic 1 when word 12 is invalid
Word 13 Invalidity	-12-V	Set to logic 1 when word 13 is invalid
Word 14 Invalidity	-13-V	Set to logic 1 when word 14 is invalid
Word 15 Invalidity	-14-V	Set to logic 1 when word 15 is invalid
Word 16 Invalidity	-15-V	Set to logic 1 when word 16 is invalid

REMARKS/NOTES:

WORD NAME: Invalidity 2

		CATEGORY:	Special
WORD ID:	11T/03	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Word 17 Invalidity	-00-V	Set to logic 1 when word 17 is invalid
Word 18 Invalidity	-01-V	Set to logic 1 when word 18 is invalid
Word 19 Invalidity	-02-V	Set to logic 1 when word 19 is invalid
Word 20 Invalidity	-03-V	Set to logic 1 when word 20 is invalid
Word 21 Invalidity	-04-V	Set to logic 1 when word 21 is invalid
Word 22 Invalidity	-05-V	Set to logic 1 when word 22 is invalid
Word 23 Invalidity	-06-V	Set to logic 1 when word 23 is invalid
Word 24 Invalidity	-07-V	Set to logic 1 when word 24 is invalid
Word 25 Invalidity	-08-V	Set to logic 1 when word 25 is invalid
Word 26 Invalidity	-09-V	Set to logic 1 when word 26 is invalid
Word 27 Invalidity	-10-V	Set to logic 1 when word 27 is invalid
Word 28 Invalidity	-11-V	Set to logic 1 when word 28 is invalid
Word 29 Invalidity	-12-V	Set to logic 1 when word 29 is invalid
Word 30 Invalidity	-13-V	Set to logic 1 when word 30 is invalid
Reserved	-14-0	Set to logic 0. See Note 2
Reserved	-15-0	Set to logic 0. See Note 2

REMARKS/NOTES:

1. Invalidity bits for MIL-STD-1760 Reserved words are set to the valid state (logic 0).
2. Bits 14 and 15 are reserved by MIL-STD-1760 for routing of messages to/from a mission store carried on a carriage store. For UAI, bits 14 and 15 are not used and are set to logic 0.

WORD NAME: Critical Monitor 1

		CATEGORY:	Special
WORD ID:	11T/04	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Fire/Launch/Release Status	-00-D	1 = Fire/Launch/Release.
Jettison Status	-01-D	1 = Jettison.
Committed to Store Separation	-02-D	1 = Committed to Store Separation.
Reserved.	-03-0	Reserved for MIL-STD-1760.
Reserved.	-04-0	Reserved for MIL-STD-1760.
Reserved.	-05-0	Reserved for MIL-STD-1760.
Store in Initiated BIT.	-06-D	1 = Store in Initiated BIT.
Reserved.	-07-0	Reserved for MIL-STD-1760.
Demanded State 1	-08-D	D10 = [11R/04/00]
	-09-D	D9 = [11R/04/01]
	-10-D	D8 = [11R/04/02]
	-11-D	D7 = [11R/04/03]
	-12-D	D6 = [11R/04/04]
	-13-D	D5 = [11R/04/05]
	-14-D	D4 = [11R/04/06]
	-15-D	D3 = [11R/04/07]

REMARKS/NOTES:

WORD NAME: Critical Monitor 2

WORD ID:	11T/05	CATEGORY:	Special
SOURCE(s):	Store	MAX VALUE:	N/A
DEST(s):	Platform	MIN VALUE:	N/A
COMP RATE:	Aperiodic	RESOLUTION:	N/A
XMIT RATE:	Aperiodic	ACCURACY:	N/A
SIGNAL TYPE:	N/A	MSB:	N/A
UNITS:	N/A	LSB:	N/A
		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Erase Process Status	-00-D	1 = Erase in Progress.
Reserved	-01-0	Reserved for MIL-STD-1760.
Reserved	-02-0	Reserved for MIL-STD-1760.
Control Surface Inhibit Status	-03-D	1 = Control Surface Pre-launch Movement Inhibited.
Abort Release/Launch Status	-04-D	1 = Store in Abort State
Non-Safety Critical Release Functions Activated	-05-D	1 = Non-Safety Critical Release Functions are Complete
Reserved	-06-0	Reserved for MIL-STD-1760.
Reserved	-07-0	Reserved for MIL-STD-1760.
Demanded State 2	-08-D	D10 = [11R/06/00]
	-09-D	D9 = [11R/06/01]
	-10-D	D8 = [11R/06/02]
	-11-D	D7 = [11R/06/03]
	-12-D	D6 = [11R/06/04]
	-13-D	D5 = [11R/06/05]
	-14-D	D4 = [11R/06/06]
	-15-D	D3 = [11R/06/07]

REMARKS/NOTES:

WORD NAME: Fuzing/Arming Mode Status 1

		CATEGORY:	Special
WORD ID:	11T/06	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Fuze Settings	-00-D	1 = Function at impact is set.
	-01-D	1 = Function on time after release is set.
	-02-D	1 = Function on time after impact is set.
	-03-D	1 = Function at altitude is set.
	-04-D	1 = Function at depth is set.
	-05-D	1 = Function on proximity is set.
	-06-D	1 = Function at position of target is set.
	-07-D	1 = Function on interference is set.
	-08-D	1 = Function on void is set.
	-09-D	1 = Function on layer is set.
	-10-D	1 = Function on low voltage is set.
	-11-D	1 = Long delay is set.
	-12-D	1 = Function at height is set.
	-13-D	1 = End Of Life Function Enabled.
	-14-D	1 = Arm Delay From Release is Set
	-15-D	1 = Status Signal Enable is set

REMARKS/NOTES:

1. Bit numbers 00 through 15 of both fuzing/arming mode status 1 and fuzing/arming mode status 2, all set to Logic 0, indicate that the store is safe.

WORD NAME: Protocol Status

	CATEGORY: Special
WORD ID: 11T/07	MAX VALUE: N/A
SOURCE(s): Store	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Error Flag (See note 1)	-00-	Commanded Word Count Not Implemented.
	-01-	Illegal Header For Commanded Subaddress.
	-02-	Message Checksum Failure.
	-03-	Critical Control/Authority 1 Failure.
	-04-	Critical Control/Authority 2 Failure.
Reserved	-05-	Reserved for MIL-STD-1760.
Reserved	-06-	Reserved for MIL-STD-1760.
Reserved	-07-	Reserved for MIL-STD-1760.
Reserved	-08-	Reserved for MIL-STD-1760.
Reserved	-09-	Reserved for MIL-STD-1760.
Reserved	-10-	Reserved for MIL-STD-1760.
Subaddress (See note 1)	-11-	MSB : 16 --
	-12-	
	-13-	Subaddress of last erroneous message
	-14-	
	-15-	LSB : 1--

REMARKS/NOTES:

1. Error flag data bit(s) set to logic 1 designate the error(s) detected in the last erroneous message received by the subsystem. Bit numbers 11 through 15 designate the subaddress of this last erroneous message. Subsequent receipt of an error-free message to this designated subaddress results in resetting of this data word to 0000 (H).

WORD NAME: Arm Delay from Release

	CATEGORY: Time(F)
WORD ID: 11T/08	MAX VALUE: 2.3611E+21
SOURCE(s): Store	MIN VALUE: 0
DEST(s): Platform	RESOLUTION: Note 1
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: Scientific	LSB: N/A
UNITS: Microseconds	FULL SCALE: 2.3611E+21

FIELD NAME	BIT NO.	DESCRIPTION
Integer	-00-S	Sign
	-01-N	MSB : 1024 ---
	-02-N	
	-03-N	SIGNAL TYPE: 2's Complement
	-04-N	MAX VALUE: 2047
	-05-N	MIN VALUE: 0
	-06-N	RESOLUTION: 1
	-07-N	ACCURACY: N/A
	-08-N	FULL SCALE: 2047
	-09-N	
	-10-N	
	-11-N	LSB : 1 ---
Exponent	-12-N	MSB : 8 ---
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 15
	-14-N	MIN VALUE: 0, RESOLUTION: 1
	-15-N	LSB : 1 ---

REMARKS/NOTES:

1. Resolution equals sixteen raised to the exponent value.
2. The value represented by this format is given by: (Integer) x 16^(Exponent).

WORD NAME: Fuze Function Delay from Release

	CATEGORY:	Time(F)
WORD ID: 11T/09	MAX VALUE:	2.3611E+21
SOURCE(s): Store	MIN VALUE:	0
DEST(s): Platform	RESOLUTION:	Note 1
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: Scientific	LSB:	N/A
UNITS: Microseconds	FULL SCALE:	2.3611E+21

FIELD NAME	BIT NO.	DESCRIPTION
Integer	-00-S	Sign
	-01-N	MSB : 1024 ---
	-02-N	
	-03-N	SIGNAL TYPE: 2's Complement
	-04-N	MAX VALUE: 2047
	-05-N	MIN VALUE: 0
	-06-N	RESOLUTION: 1
	-07-N	ACCURACY: N/A
	-08-N	FULL SCALE: 2047
	-09-N	
	-10-N	
	-11-N	LSB : 1 ---
Exponent	-12-N	MSB : 8 ---
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 15
	-14-N	MIN VALUE: 0, RESOLUTION: 1
	-15-N	LSB : 1 ---

REMARKS/NOTES:

1. Resolution equals sixteen raised to the exponent value.
2. The value represented by this format is given by: (Integer) x 16^(Exponent).

WORD NAME: Fuze Function Delay from Impact

		CATEGORY:	Time(F)
WORD ID:	11T/10	MAX VALUE:	2.3611E+21
SOURCE(s):	Store	MIN VALUE:	0
DEST(s):	Platform	RESOLUTION:	Note 1
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	Scientific	LSB:	N/A
UNITS:	Microseconds	FULL SCALE:	2.3611E+21

FIELD NAME	BIT NO.	DESCRIPTION
Integer	-00-S	Sign
	-01-N	MSB : 1024 --
	-02-N	
	-03-N	SIGNAL TYPE: 2's Complement
	-04-N	MAX VALUE: 2047
	-05-N	MIN VALUE: 0
	-06-N	RESOLUTION: 1
	-07-N	ACCURACY: N/A
	-08-N	FULL SCALE: 2047
	-09-N	
	-10-N	
	-11-N	LSB : 1 --
Exponent	-12-N	MSB : 8 ---
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 15
	-14-N	MIN VALUE: 0, RESOLUTION: 1
	-15-N	LSB : 1 ---

REMARKS/NOTES:

1. Resolution equals sixteen raised to the exponent value.
2. The value represented by this format is given by: (Integer) x 16^(Exponent).

WORD NAME: Fuze Function Distance

	CATEGORY:	Distance(F)
WORD ID: 11T/11	MAX VALUE:	32767
SOURCE(s): Store	MIN VALUE:	-32767
DEST(s): Platform	RESOLUTION:	1
COMP RATE: Aperiodic	ACCURACY:	1
XMIT RATE: Aperiodic	MSB:	2^14
SIGNAL TYPE: 2's Complement	LSB:	2^0
UNITS: Meters	FULL SCALE:	32767

FIELD NAME	BIT NO.	DESCRIPTION
Fuze Function Distance	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Fire Interval

WORD ID: 11T/12	CATEGORY: Time (L)
SOURCE(s): Store	MAX VALUE: 4.1942E+06
DEST(s): Platform	MIN VALUE: 0.0000E+00
COMP RATE: Aperiodic	RESOLUTION: 6.4000E+01
XMIT RATE: Aperiodic	ACCURACY: N/A
SIGNAL TYPE: Unsigned	MSB: 2^{21}
UNITS: Microseconds	LSB: 2^6
	FULL SCALE: 4.1942E+06

FIELD NAME	BIT NO.	DESCRIPTION
Fire Interval	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Number To Fire

	CATEGORY: Number(L)
WORD ID: 11T/13	MAX VALUE: 65535
SOURCE(s): Store	MIN VALUE: 0
DEST(s): Platform	RESOLUTION: 1
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^15
SIGNAL TYPE: Unsigned	LSB: 2^0
UNITS: N/A	FULL SCALE: 65535

FIELD NAME	BIT NO.	DESCRIPTION
Number To Fire	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. This word contains the number of mission stores that respond to a Critical Control 1 [11R/04/00…07] and Critical Control 2 [11R/06/00…07] command.

WORD NAME: High Drag Arm Time

	CATEGORY: Time(F)
WORD ID: 11T/14	MAX VALUE: 2.3611E+21
SOURCE(s): Store	MIN VALUE: 0
DEST(s): Platform	RESOLUTION: Note 1
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: Scientific	LSB: N/A
UNITS: Microseconds	FULL SCALE: 2.3611E+21

FIELD NAME	BIT NO.	DESCRIPTION
Integer	-00-S	Sign
	-01-N	MSB : 1024 --
	-02-N	
	-03-N	SIGNAL TYPE: 2's Complement
	-04-N	MAX VALUE: 2047
	-05-N	MIN VALUE: 0
	-06-N	RESOLUTION: 1
	-07-N	ACCURACY: N/A
	-08-N	FULL SCALE: 2047
	-09-N	
	-10-N	
	-11-N	LSB : 1 --
Exponent	-12-N	MSB : 8 --
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 15
	-14-N	MIN VALUE: 0, RESOLUTION: 1
	-15-N	LSB : 1 --

REMARKS/NOTES:

1. Resolution equals sixteen raised to the exponent value.
2. The value represented by this format is given by: (Integer) x 16^(Exponent)

WORD NAME: Function Time From Event

		CATEGORY:	Time(F)
WORD ID:	11T/15	MAX VALUE:	2.3611E+21
SOURCE(s):	Store	MIN VALUE:	0
DEST(s):	Platform	RESOLUTION:	Note 1
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	Scientific	LSB:	N/A
UNITS:	Microseconds	FULL SCALE:	2.3611E+21

FIELD NAME	BIT NO.	DESCRIPTION
Integer	-00-S	Sign
	-01-N	MSB : 1024 ---
	-02-N	
	-03-N	SIGNAL TYPE: 2's Complement
	-04-N	MAX VALUE: 2047
	-05-N	MIN VALUE: 0
	-06-N	RESOLUTION: 1
	-07-N	ACCURACY: N/A
	-08-N	FULL SCALE: 2047
	-09-N	
	-10-N	
	-11-N	LSB : 1 ---
Exponent	-12-N	MSB : 8 ---
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 15
	-14-N	MIN VALUE: 0, RESOLUTION: 1
	-15-N	LSB : 1 ---

REMARKS/NOTES:

1. Resolution equals sixteen raised to the exponent value.
2. The value represented by this format is given by: (Integer) x 16^(Exponent).

FOR OFFICIAL USE ONLY

WORD NAME: Void/Layer Number

CATEGORY:	Number(L)

WORD ID: 11T/16
SOURCE(s):   Store
DEST(s):   Platform
COMP RATE: Aperiodic
SIGNAL TYPE: Unsigned
UNITS: N/A

MAX VALUE: 65535
MIN VALUE: 0
RESOLUTION: 1
ACCURACY: N/A
LSB: 2^0
FULL SCALE: 65535

FIELD NAME	BIT NO.	DESCRIPTION
Void/Layer Number	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Impact Velocity

WORD ID:	11T/17	CATEGORY: Velocity(M)
SOURCE(s):	Store	MAX VALUE: 8.1920E+03
DEST(s):	Platform	MIN VALUE: 0.0000E+00
COMP RATE:	Aperiodic	RESOLUTION: 2.5000E-01
XMIT RATE:	Aperiodic	ACCURACY: N/A
SIGNAL TYPE:	2's Complement	MSB: 2^12
UNITS:	Meters/Second	LSB: 2^-2
		FULL SCALE: 8.1920E+03

FIELD NAME	BIT NO.	DESCRIPTION
Impact Velocity	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Fuzing/Arming Mode Status 2

		CATEGORY:	Special
WORD ID:	11T/18	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	D15 = Reserved. Set to logic 0.
Reserved	-01-0	D14 = Reserved. Set to logic 0.
Reserved	-02-0	D13 = Reserved. Set to logic 0.
Reserved	-03-0	D12 = Reserved. Set to logic 0.
Fuze Initiation	-04-N	MSB D11 = 2^1---
	-05-N	LSB D10 = 2^0---
Target Hardness	-06-N	MSB D9 = 2^1 ---
	-07-N	LSB D8 = 2^0 ---
Store Retard Mech	-08-D	D7 = Enable store retard mechanism is set.
Post Release Control	-09-D	D6 = Enable post release fuze control is set.
Post Impact	-10-D	D5 = Enable Post Impact Fuze Surveillance is set
Prox RF After Launch	-11-D	D4 = Proximity RF Broadcast Enable - Time after Launch is set
Prox RF Before Impact	-12-D	D3 = Proximity RF Broadcast Enable - Time Before Impact is set
Reserved	-13-0	D2 = Reserved. Set to logic 0.
Reserved	-14-0	D1 = Reserved. Set to logic 0.
Reserved	-15-0	D0 = Reserved. Set to logic 0.

REMARKS/NOTES:

1. Data bits 08 through 12 set to a logic 1 indicate that the associated function is active.

WORD NAME: Dispersion Data

	CATEGORY: Special
WORD ID: 11T/19	MAX VALUE: N/A
SOURCE(s): Store	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Horizontal dispersion	-00-D	MSB Left
	-01-D	LSB Right
Horizontal dispersion angle	-02-	MSB : 2^-2--
	-03-	SIGNAL TYPE: Unsigned, UNITS: Semicircles
		MAX VALUE: 4.9218E-01, MIN VALUE: 7.8125E-03
	-04-	RESOLUTION: 7.8125E-03, ACCURACY: N/A
		FULL SCALE: 4.9218E-01
	-05-	
	-06-	
	-07-	LSB : 2^-7--
Vertical dispersion	-08-	MSB Up
	-09-	LSB Down
Vertical dispersion angle	-10-	MSB : 2^-2--
	-11-	SIGNAL TYPE: Unsigned, UNITS: Semicircles
		MAX VALUE: 4.9218E-01, MIN VALUE: 7.8125E-03
	-12-	RESOLUTION: 7.8125E-03, ACCURACY: N/A
		FULL SCALE: 4.9218E-01
	-13-	
	-14-	
	-15-	LSB : 2^-7--

REMARKS/NOTES:

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WORD NAME:	Dispersion Duration		
		CATEGORY:	Time(L)
WORD ID:	11T/20	MAX VALUE:	4.1942E+06
SOURCE(s):	Store	MIN VALUE:	0
DEST(s):	Platform	RESOLUTION:	64
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^21
SIGNAL TYPE:	Unsigned	LSB:	2^6
UNITS:	Microseconds	FULL SCALE:	4.1942E+06

FIELD NAME	BIT NO.	DESCRIPTION
Dispersion Duration	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Carriage Store S&RE Select

	CATEGORY:	Number(L)
WORD ID: 11T/21	MAX VALUE:	8
SOURCE(s): Store	MIN VALUE:	0
DEST(s): Platform	RESOLUTION:	1
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^{15}
SIGNAL TYPE: Unsigned	LSB:	2^0
UNITS: N/A	FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Carr Store S&RE Unit(s) Select	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Separation Elements

		CATEGORY:	Special
WORD ID:	11T/22	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Separation Duration	-00-N	MSB : 2^7--
	-01-N	SIGNAL TYPE: Unsigned
		UNITS: Seconds
	-02-N	MAX VALUE: 255
		MIN VALUE: 0
	-03-N	RESOLUTION: 1
		ACCURACY: N/A
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0--
Separation Distance	-08-N	MSB : 2^7--
	-09-N	SIGNAL TYPE: Unsigned
		UNITS: Meters
	-10-N	MAX VALUE: 255
		MIN VALUE: 0
	-11-N	RESOLUTION: 1
		ACCURACY: N/A
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0--

REMARKS/NOTES:

WORD NAME: Surface Delays

WORD ID: 11T/23	CATEGORY: Special
SOURCE(s): Store	MAX VALUE: N/A
DEST(s): Platform	MIN VALUE: N/A
COMP RATE: Aperiodic	RESOLUTION: N/A
XMIT RATE: Aperiodic	ACCURACY: N/A
SIGNAL TYPE: N/A	MSB: N/A
UNITS: N/A	LSB: N/A
	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Surface Deployment Delay	-00-N	MSB ---
	-01-N	SIGNAL TYPE: Unsigned UNITS: Seconds
	-02-N	MAX VALUE: 5.100 MIN VALUE: 0.0
	-03-N	RESOLUTION: 0.020 ACCURACY: N/A
	-04-N	LSB: 0.020, MSB: 2.56 FULL SCALE: 5.100
	-05-N	
	-06-N	
	-07-N	LSB ---
Control Surface Unlock Delay	-08-N	MSB ---
	-09-N	SIGNAL TYPE: Unsigned UNITS: Seconds
	-10-N	MAX VALUE: 5.100 MIN VALUE: 0.0
	-11-N	RESOLUTION: 0.020 ACCURACY: N/A
	-12-N	LSB: 0.020, MSB: 2.56 FULL SCALE: 5.100
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Fuze Time 1

	CATEGORY: Time(F)
WORD ID: 11T/24	MAX VALUE: 2.3611E+21
SOURCE(s): Store	MIN VALUE: 0
DEST(s): Platform	RESOLUTION: Note 1
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: Scientific	LSB: N/A
UNITS: Microseconds	FULL SCALE: 2.3611E+21

FIELD NAME	BIT NO.	DESCRIPTION
Integer	-00-N	Sign
	-01-N	MSB : 1024---
	-02-N	
	-03-N	SIGNAL TYPE: 2's Complement
	-04-N	MAX VALUE: 2047
	-05-N	MIN VALUE: 0
	-06-N	RESOLUTION: 1
	-07-N	ACCURACY: N/A
	-08-N	FULL SCALE: 2047
	-09-N	
	-10-N	
	-11-N	LSB : 1--
Exponent	-12-N	MSB : 8--
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 15
	-14-N	MIN VALUE: 0, RESOLUTION: 1
	-15-N	LSB : 1--

REMARKS/NOTES:

1. Resolution equals sixteen raised to the exponent value.
2. The value represented by this format is given by: (Integer) x 16^(Exponent)

WORD NAME: Fuze Time 2

WORD ID:	11T/25
SOURCE(s):	Store
DEST(s):	Platform
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	Scientific
UNITS:	Microseconds

CATEGORY:	Time(F)
MAX VALUE:	2.3611E+21
MIN VALUE:	0
RESOLUTION:	Note 1
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	2.3611E+21

FIELD NAME	BIT NO.	DESCRIPTION
Integer	-00-N	Sign
	-01-N	MSB : 1024 ---
	-02-N	
	-03-N	SIGNAL TYPE: 2's Complement
	-04-N	MAX VALUE: 2047
	-05-N	MIN VALUE: 0
	-06-N	RESOLUTION: 1
	-07-N	ACCURACY: N/A
	-08-N	FULL SCALE: 2047
	-09-N	
	-10-N	
	-11-N	LSB : 1 ---
Exponent	-12-N	MSB : 8 ---
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 15
	-14-N	MIN VALUE: 0, RESOLUTION: 1
	-15-N	LSB : 1 ---

REMARKS/NOTES:

1. Resolution equals sixteen raised to the exponent value.
2. The value represented by this format is given by: (Integer) x 16^(Exponent).

WORD NAME: Tether Length

	CATEGORY: Distance(L)
WORD ID: 11T/26	MAX VALUE: 5.1199E+02
SOURCE(s): Store	MIN VALUE: 0
DEST(s): Platform	RESOLUTION: 2^-7
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^8
SIGNAL TYPE: Unsigned	LSB: 2^-7
UNITS: Meters	FULL SCALE: 5.1199E+02

FIELD NAME	BIT NO.	DESCRIPTION
Tether Length	-00-S	MSB
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME:	Interstage Gap Time		
		CATEGORY:	Time(L)
WORD ID:	11T/27	MAX VALUE:	4.194E+6
SOURCE(s):	Store	MIN VALUE:	0
DEST(s):	Platform	RESOLUTION:	64
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^21
SIGNAL TYPE:	Unsigned	LSB:	2^6
UNITS:	Microseconds	FULL SCALE:	4.194E+6

FIELD NAME	BIT NO.	DESCRIPTION
Integer	-00-S	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Reserved

	CATEGORY:	N/A
WORD ID: 11T/28-29	MAX VALUE:	N/A
SOURCE(s): Store	MIN VALUE:	N/A
DEST(s): Platform	RESOLUTION:	N/A
COMP RATE: N/A	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	
	-01-0	
	-02-0	
	-03-0	
	-04-0	
	-05-0	
	-06-0	
	-07-0	
	-08-0	
	-09-0	
	-10-0	
	-11-0	
	-12-0	
	-13-0	
	-14-0	
	-15-0	

REMARKS/NOTES:

WORD NAME: Checksum

WORD ID:	11T/30	
SOURCE(s):	Store	
DEST(s):	Platform	
COMP RATE:	Aperiodic	
XMIT RATE:	Aperiodic	
SIGNAL TYPE:	Unsigned	
UNITS:	N/A	

CATEGORY:	Number(L)
MAX VALUE:	65535
MIN VALUE:	0
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	2^{15}
LSB:	2^0
FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Checksum	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

6.12R GPS Crypto Data [12R]

GPS Crypto Data [12R] is a MIL-STD-1760 standard message from the platform to the store used to supply GPS crypto data for keying the mission store GPS receiver. The platform supplies all GPS crypto data to the store by transmission of one or more GPS Crypto Data messages. Additional requirements for GPS Crypto Data [12R] volatile and non-volatile memory storage times are specified in Section 6.22T.2.5 GPS Keys Received [22T/03/06].

Platform Requirements

The platform shall **{ps_6134}** transmit GPS Crypto 1 [12R/02-09] and GPS Crypto 2 [12R/10-17] data to a GPS Capable [22T/05/13 = 1] store using one of the sequences defined in Table 6.12R-1.

The platform may **{pm_6029}** set GPS Crypto 2 [12R/10-17] to zeroes or to a duplicate of GPS Crypto 1 when transmitting one RCVw or RGUV to the store in sequences 1 and 2.

The platform shall **{ps_6135}** use sequence numbers 3 through 8 only if the store indicates it is SAASM capable via GPS Configuration [22T/16/00…02].

The platform shall **{ps_6136}** reduce the number of GPS Crypto Data [12R] messages identified in sequences 3 through 8 by 1 when only transmitting one Black Crypto Variable monthly (BCVm) or Black Group Unique Variable (BGUV) to the store, (i.e. transmitting duplicate BCVm or BGUV or transmitting zeroes is not allowed for sequences 3 through 8).

The platform shall **{ps_6137}** set Total Messages [12R/18/03…04] to the total number of GPS Crypto Data [12R] messages to be sent to the store, minus 1, per Table 6.12R-2.

The platform shall **{ps_6138}** set Message Numerator [12R/18/01…02 = 0], per Table 6.12R-2, for the first GPS Crypto Data [12R] transmitted and shall increment Message Numerator by one for each subsequent GPS Crypto Data transmitted until Message Numerator = Total Messages [12R/18/03…04] in the final GPS Crypto Data.

Table 6.12R-1 GPS Crypto Data Loading Sequences

Message Numerator [12R/18/01…02]	GPS Crypto Data [12R]	Sequence Number							
		1	2	3	4	5	6	7	8
00 (B)	GPS Crypto 1 [12R/02-09]	RCVw #1	RGUV #1	BKAUPD #1		USSPACECOM BKAUPD			
	GPS Crypto 2 [12R/10-17]	RCVw #2 or RCVw #1 or 0's (zeroes)	RGUV #2 or RGUV #1 or 0's (zeroes)	BCVm #1	BGUV #1	BIP #1			
01 (B)	GPS Crypto 1 [12R/02-09]			BKAUPD #2 or BKAUPD #1		BKAUPD #1		USSPACECOM BKAUPD	
	GPS Crypto 2 [12R/10-17]			BCVm #2	BGUV #2	BCVm #1	BGUV #1	BIP #2	
10 (B)	GPS Crypto 1 [12R/02-09]					BKAUPD #1 or BKAUPD #2		BKAUPD #1	
	GPS Crypto 2 [12R/10-17]					BCVm #2	BGUV #2	BCVm #1	BGUV #1
11 (B)	GPS Crypto 1 [12R/02-09]							BKAUPD #1 or BKAUPD #2	
	GPS Crypto 2 [12R/10-17]							BCVm #2	BGUV #2

Table 6.12R-2 Valid <u>Message Numerator</u> and <u>Total Message</u> Values

Binary Value	Message Numerator	Total Messages
00	1	1
01	2	2
10	3	3
11	4	4

Example: Message Numerator = '01' (B), Total Messages = '11' (B) means this is the second of four [12R] messages to be transmitted.

FOR OFFICIAL USE ONLY

MESSAGE NAME: GPS Crypto Data
MESSAGE ID: 12R   TRANSFER TYPE: BC-RT
SOURCE: Platform   WORD COUNT: 19
DESTINATION: Store   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01100 (B)
Header	01	Message Descriptor
GPS Crypto 1	02-09	GPS Crypto Data
GPS Crypto 2	10-17	GPS Crypto Data
Control Word	18	Controls message transfer
Checksum	19	Checksum of Message Data
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Header

WORD ID:	12R/01
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	Hexadecimal
UNITS:	N/A

CATEGORY:	Header
MAX VALUE:	0004 (H)
MIN VALUE:	0004 (H)
RESOLUTION:	1
ACCURACY:	N/A
MSB:	2^{15}
LSB:	2^0
FULL SCALE:	FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB ---
	-01-B	
	-02-B	Hex digit #1 value = 0 (H)
	-03-B	LSB ---
Hex Digit #2	-04-B	MSB ---
	-05-B	
	-06-B	Hex digit #2 value = 0 (H)
	-07-B	LSB ---
Hex Digit #3	-08-B	MSB ---
	-09-B	
	-10-B	Hex digit #3 value = 0 (H)
	-11-B	LSB ---
Hex Digit #4	-12-B	MSB ---
	-13-B	
	-14-B	Hex digit #4 value = 4 (H)
	-15-B	LSB ---

REMARKS/NOTES:

WORD NAME: GPS Crypto 1

	CATEGORY: Special
WORD ID: 12R/02-09	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: Binary	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
GPS Crypto 1	-00-B	
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	See Note 1
	-07-B	
	-08-B	
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	

REMARKS/NOTES:

1. 128-bits of binary crypto data.

WORD NAME: GPS Crypto 2

		CATEGORY:	Special
WORD ID:	12R/10-17	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	Binary	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
GPS Crypto 2	-00-B	
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	
	-07-B	See note 1
	-08-B	
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	

REMARKS/NOTES:

1. 128-bits of binary crypto data.

WORD NAME: Control Word

		CATEGORY:	N/A
WORD ID:	12R/18	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	Unsigned	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-D	Set to logic 0
Message Numerator	-01-N	MSB Numerical designator of this [12R] message.---------------------
	-02-N	LSB Note 1 --
Total Messages	-03-N	MSB Number of [12R] messages to be sent. ----------------------------
	-04-N	LSB Note 1 --
Reserved	-05-0	Set to logic 0
Reserved	-06-0	Set to logic 0
Reserved	-07-0	Set to logic 0
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

1. See preceding text.

WORD NAME: Checksum

		CATEGORY:	Number(L)
WORD ID:	12R/19	MAX VALUE:	65535
SOURCE(s):	Platform	MIN VALUE:	0
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^15
SIGNAL TYPE:	Unsigned	LSB:	2^0
UNITS:	N/A	FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Checksum	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

6.13R MDT DATA

6.13R-005 ALMANAC [13R-005]

Almanac [13R-005] allows the platform to provide up to thirty-two (32) satellite almanac (coarse orbital) records to the store. A GPS satellite's Almanac defines the satellite's approximate orbit and can be valid for long time periods (up to 180 days). However, most stores consider a satellite's Almanac data to be valid only if it is less than two (2) weeks old. The store uses Almanac data to predict each satellite's orbital position, in order to compute an estimated line-of-sight to the visible satellites, allowing the store to narrow its search window and reduce search time for GPS satellite acquisition. Almanac is compliant with ICD-GPS-169, GPS-05 Data Loader Message, Format III, as output by the platform GPS receiver.

The platform provides Almanac [13R-005] to the store at least once per mission. The platform is also required to provide this Almanac data to the store a minimum of 15 seconds prior to commanding CTS [11R/04/02 = 1]. Once the store has received satellite Almanac data and stored this data in non-volatile memory, the store updates its Almanac Received [22T/03/03] status. Section 3.5.6.2.3, Almanac Data, provides further information and requirements.

Platform Requirements

The platform shall **{ps_6139}** provide up to thirty-two (32) Satellite Vehicle Almanac [13R-005] records (if available) to a GPS Capable [22T/05/13 = 1] store as MDT File #4 of a Platform-To-Store MDT, if CDS MDT Files **{cds_4002}**.

The platform may **{pm_6030}** zero fill almanac data records.

Mission Store Requirements

The mission store shall **{ss_6151}** be capable of receiving and storing a minimum of thirty-two (32) satellite vehicle Almanac [13R-005] records in non-volatile memory.

The mission store shall **{ss_6152}** consider Almanac [13R-005] data that is less than two weeks old as valid.

The mission store shall **{ss_6153}** be capable of accepting zero filled records of Almanac [13R-005] data

The mission store shall **{ss_6154}** accept and store valid almanac data with both the reset and non-reset values of Almanac Reference Week [13R-005/15] in non-volatile memory.

6.13R-005.1 Almanac Word 1 [13R-005/02]

Almanac Word 1 [13R-005/02] contains the GPS ID Label [13R-005/02]. When set to 8000 (H), Almanac MDT contains valid satellite almanac data. See ICD-GPS-169, GPS-05 Data Loader Message, Format III, page 4.1-112.

6.13R-005.2 Almanac Word 2 [13R-005/03/00…07]

Data ID [13R-005/03/00…01] defines the applicable GPS navigation data structure. See ICD-GPS-200, Section 20.3.3.5.1.1 and Table 20-V.

Satellite ID [13R-005/03/02…07] defines the space vehicle identification number. See ICD-GPS-200, Section 20.3.3.5.1.1 and Table 20-V.

6.13R-005.3 Eccentricity (e) [13R-005/03/08…15] and [13R-005/04/00…07]

Eccentricity (e) [13R-005/03/08…15] and [13R-005/04/00…07] defines the satellite's orbital shape. The most significant part (8-bits) is contained in Almanac Word 02. The least significant part (8-bits) is contained in Almanac Word 03. See ICD-GPS-200, Section 20.3.3.5.1.2 and Table 20-VI.

6.13R-005.4 Reference Time (Toa) [13R-005/04/08…15]

Reference Time (Toa) [13R-005/04/08…15] is defined as a multiple of 2^{12} seconds occurring approximately 70 hours after the first valid transmission time for the almanac data set. See ICD-GPS-200, Section 20.3.3.5.2.2 and Table 20-VI.

6.13R-005.5 Delta i (δi) [13R-005/05]

Delta i (δi) [13R-005/05] is the inclination correction factor that is applied to the nominal orbital inclination angle (i_0) of 0.30 semicircles. Inclination is the angle between the orbital plane and the equatorial plane. See ICD-GPS-200, Section 20.3.3.5.1.2 and Table 20-VI.

6.13R-005.6 Omega Dot [13R-005/06]

Omega dot [13R-005/06] is the rate of change of the satellite's Longitude of Ascending Node of the Orbit Plane at Weekly Epoch, Omega o [13R-005/09/00…15] and [13R-005/10/00…07]. See ICD-GPS-200, Section 20.3.3.5.1.2 and Table 20-VI.

6.13R-005.7 Nav Data Health/Satellite Health [13R-005/07/00…07]

Nav Data Health/Satellite Health [13R-005/07/00…07] is composed of two parts: The three (3) MSBs are defined as a Nav Data Health [13R-005/07/00…02] code and the five (5) LSBs are defined as a Satellite Health [13R-011/07/03…07] code.

Nav Data Health [13R-005/07/00…02] codes are defined in ICD-GPS-200, Section 20.3.3.5.1.3 and Table 20-VII. Logic 0 in all three bits in Nav Data Health indicates that all satellite navigation data is suitable for use. Logic 1 in any of the bits for Nav Data Health indicates some or all of the satellite navigation data is bad.

Satellite Health [13R-005/07/03…07] codes are defined in ICD-GPS-200, Section 20.3.3.5.1.3 and Table 20-VIII. Logic 0 in all five bits in Satellite Health indicates that all satellite's signals are suitable for use. Logic 1 in any of the bits for Satellite Health indicates some or all of the satellite's signals are weak or bad.

6.13R-005.8 SQRT(A) [13R-005/07/08…15] and [13R-005/08/00…15]

SQRT (A) is the square root of the satellite's orbital semi-major axis (orbital size). See ICD-GPS-200, Section 20.3.3.5.1.2 and Table 20-VI. The most significant part (8-bits) is contained in Almanac Word 07. The least significant part (16-bits) is contained in Almanac Word 08.

6.13R-005.9 Omega o [13R-005/09/00…15] and [13R-005/10/00…07]

Omega o [13R-005/09/00…15] and [13R-005/10/00…07] is the satellite's Longitude of the Ascending Node of the Orbital Plane at Weekly Epoch and is defined as the celestial longitude of the point where the satellite crosses the equator in a northerly (ascending) direction. The most significant part (16-bits) is contained in Almanac Word 09. The least significant part (8-bits) is contained in Almanac Word 10. See ICD-GPS-200, Section 20.3.3.5.1.2 and Table 20-VI.

6.13R-005.10 Argument of Perigee (ω) [13R-005/10/08…15] and [13R-005/11/00…15]

Argument of Perigee (ω) [13R-005/10/08…15] and [13R-005/11/00…15] is defined as the angle measured along the orbital plane from the equator to satellite's orbital perigee (lowest altitude point of the orbit). The most significant part (8-bits) is contained in Almanac Word 10. The least significant part (16-bits) is contained in Almanac Word 11. See ICD-GPS-200, Section 20.3.3.5.1.2 and Table 20-VI.

6.13R-005.11 Mo [13R-005/12/00…15] and [13R-005/13/00…07]

Mo [13R-005/12/00…15] and [13R-005/13/00…07] is the Mean Anomaly at Reference Time and is defined as the angle measured from the perigee along the satellite's orbit to satellite's location at the almanac's reference time. The most significant part (8-bits) is contained in Almanac Word 11. The least significant part (8-bits) is contained in Almanac Word 12. See ICD-GPS-200, Section 20.3.3.5.1.2 and Table 20-VI.

6.13R-005.12 af0 [13R-005/13/08…15] and [13R-005/14/11…13]

af0 [13R-005/13/08…15] and [13R-005/14/11…13] is the first of two constants used in calculating GPS time. The most significant part (8-bits) is contained in Almanac Word 12. The least significant part (3-bits) is contained in Almanac Word 13. See ICD-GPS-200, Section 20.3.3.5.2.3 and Table 20-VI.

6.13R-005.13 af1 [13R-005/14/00…10]

af1 [13R-005/14/00…10] is second of two constants used in calculating GPS time. See ICD-GPS-200, Section 20.3.3.5.2.3 and Table 20-VI.

6.13R-005.14 Almanac Reference Week [13R-005/15]

Almanac Reference Week [13R-005/15] contains the full GPS week number value (not the eight-bit truncated value) corresponding to the almanac's Reference Time (Toa) [13R-005/04/08…15]. GPS week is defined in ICD-GPS-200, Section 3.3.4, paragraph

1. Almanac Reference Week is defined in ICD-GPS-200, Section 20.3.3.5.1.7 and Table 20-IX.

Due to varying sources of Almanac data, the store needs to be compatible with both the reset and non-reset mechanization of the GPS Almanac Reference Week [13R-005/15]. In the reset mechanization, the Almanac Reference Week is reset to zero after achieving a maximum value of 1023 (last occurred on 22 August 1999), similar to the Ephemeris #1 [13R-010] Transmission Week Number [13R-010/12/00…09] rollover. The non-reset mechanization continues to increment Almanac Reference Week beyond a value of 1023 (1024, 1025, etc.) until the maximum value of the 16-bit word is reached.

6.13R-005.15 Reserved for GPS [13R-005/16-18]

Reserved for GPS [13R-005/16-18] data words are reserved for future GPS data. These three GPS data words are sent from the platform GPS receiver to the store, as pass-through data.

MESSAGE NAME: Almanac
MESSAGE ID: 13R-005   TRANSFER TYPE: BC-RT
SOURCE: Platform   WORD COUNT: 30
DESTINATION: Store   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01101 (B)
Rec/Blk ID	01	Mass Data Transfer Record #/Block #
Almanac Word 1	02	ID Label
Almanac Word 2	03	Data ID/SV ID/Eccentricity (e) (8 MSB)
Almanac Word 3	04	Eccentricity (e) (8 LSB)/Reference Time (Toa)
Almanac Word 4	05	Delta i (δi): Inclination Correction
Almanac Word 5	06	Omega dot: Rate of Right Ascension
Almanac Word 6	07	Satellite Health/SQRT (A) (8 MSB)
Almanac Word 7	08	SQRT(A) (16 LSB)
Almanac Word 8	09	Omega o (16 MSB)
Almanac Word 9	10	Omega o (8 LSB)/Argument of Perigee (8 MSB)
Almanac Word 10	11	Argument of Perigee (ω) (16 LSB)
Almanac Word 11	12	Mo (16 MSB)
Almanac Word 12	13	Mo (8 LSB)/af0 (8 MSB)
Almanac Word 13	14	af1 (11 MSB)/af0 (3 LSB)
Almanac Word 14	15	Almanac Reference Week
Almanac Word 15	16	Reserved for GPS
Almanac Word 16	17	Reserved for GPS
Almanac Word 17	18	Reserved for GPS
Reserved	19	Reserved
Reserved	20	Reserved
Reserved	21	Reserved
Reserved	22	Reserved
Reserved	23	Reserved
Reserved	24	Reserved
Reserved	25	Reserved
Reserved	26	Reserved
Reserved	27	Reserved
Reserved	28	Reserved
Reserved	29	Reserved
Reserved	30	Reserved
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Rec/Blk ID

	CATEGORY: Special
WORD ID: 13R-005/01	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Record Number	-00-N	MSB : 2^7---
	-01-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-02-N	MAX VALUE: 32 MIN VALUE: 1
	-03-N	RESOLUTION: 1 ACCURACY: 1
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0---
Block Number	-08-N	MSB : 2^7---
	-09-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-10-N	MAX VALUE: 1 MIN VALUE: 1
	-11-N	RESOLUTION: 1 ACCURACY: 1
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0---

REMARKS/NOTES:

WORD NAME: Almanac Word 1 ID Label

	CATEGORY: Header
WORD ID: 13R-005/02	MAX VALUE: 8000 (H)
SOURCE(s): Platform	MIN VALUE: 8000 (H)
DEST(s): Store	RESOLUTION: 1
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^15
SIGNAL TYPE: Hexadecimal	LSB: 2^0
UNITS: N/A	FULL SCALE: FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
ID Label Hex Digit #1	-00-B	MSB --
	-01-B	
	-02-B	Hex digit #1 value = 8 (H)
	-03-B	LSB ---
ID Label Hex Digit #2	-04-B	MSB --
	-05-B	
	-06-B	Hex digit #2 value = 0 (H)
	-07-B	LSB ---
ID Label Hex Digit #3	-08-B	MSB --
	-09-B	
	-10-B	Hex digit #3 value = 0 (H)
	-11-B	LSB ---
ID Label Hex Digit #4	-12-B	MSB --
	-13-B	
	-14-B	Hex digit #4 value = 0 (H)
	-15-B	LSB ---

REMARKS/NOTES:

WORD NAME: Almanac Word 2 Data ID/SV ID/Eccentricity (e) (8 MSB)

		CATEGORY:	Special
WORD ID:	13R-005/03	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Data ID	-00-C	MSB : 2^1--
	-01-C	LSB : 2^0---
Satellite ID	-02-C	MSB : 2^5---
	-03-C	SIGNAL TYPE: Coded, UNITS: N/A MAX VALUE: 32, MIN VALUE: 1
	-04-C	RESOLUTION: 1, ACCURACY: N/A FULL SCALE: 63
	-05-C	
	-06-C	
	-07-C	LSB : 2^0---
Eccentricity (e) (8 MSB)	-08-N	MSB : 2^{-6}---
	-09-N	SIGNAL TYPE: Unsigned UNITS: Dimensionless
	-10-N	MAX VALUE: 3.1250E-02 MIN VALUE: 0.0000E+00
	-11-N	RESOLUTION: 4.7684E-07 ACCURACY: See ICD-GPS-200
	-12-N	FULL SCALE: 3.1250E-02
	-13-N	
	-14-N	
	-15-N	Least Significant Part in Almanac Word 3

REMARKS/NOTES:

WORD NAME: Almanac Word 3 Eccentricity (e) (8 LSB)/Reference Time (Toa)

	CATEGORY:	Special
WORD ID: 13R-005/04	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Eccentricity (e) (8 LSB)	-00-N	Most Significant Part in Almanac Word 2
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	LSB : 2^{-21} --
Reference Time (Toa)	-08-N	MSB : 2^{19} --
	-09-N	SIGNAL TYPE: Unsigned UNITS: Seconds
	-10-N	MAX VALUE: N/A MIN VALUE: N/A
	-11-N	RESOLUTION: 4.0960E+03 ACCURACY: See ICD-GPS-200
	-12-N	FULL SCALE: 1.0445E+06
	-13-N	
	-14-N	
	-15-N	LSB : 2^{12} --

REMARKS/NOTES:

WORD NAME: Almanac Word 4 Delta i (δi): Inclination Correction
                                        CATEGORY: Special
WORD ID: 13R-005/05   MAX VALUE: 6.2498E-02
SOURCE(s):   Platform   MIN VALUE: -6.2500E-02
DEST(s):   Store   RESOLUTION: 1.9073E-06
COMP RATE: Aperiodic   ACCURACY: See ICD-GPS-200
XMIT RATE: Aperiodic   MSB: 2^-5
SIGNAL TYPE: 2's Complement   LSB: 2^-19
UNITS: Semicircles   FULL SCALE: 6.2498E-02

FIELD NAME	BIT NO.	DESCRIPTION
Delta i (δi)	-00-S	Sign
	-01-N	MSB 2^-5 --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB 2^-19--

REMARKS/NOTES:

WORD NAME: Almanac Word 5 Omega dot: Rate of Right Ascension

	CATEGORY:	Special
WORD ID: 13R-005/06	MAX VALUE:	1.1921E-07
SOURCE(s): Platform	MIN VALUE:	-1.1921E-07
DEST(s): Store	RESOLUTION:	3.6380E-12
COMP RATE: 4 - 25 Hz	ACCURACY:	See ICD-GPS-200
XMIT RATE: Aperiodic	MSB:	2^{-24}
SIGNAL TYPE: 2's Complement	LSB:	2^{-38}
UNITS: Semicircles/second	FULL SCALE:	1.1921E-07

FIELD NAME	BIT NO.	DESCRIPTION
Omega dot	-00-S	Sign
	-01-N	MSB 2^{-24}---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB 2^{-38}---

REMARKS/NOTES:

WORD NAME: Almanac Word 6 Satellite Health/SQRT (A) (8 MSB)

		CATEGORY:	Special
WORD ID:	13R-005/07	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Nav Data Health	-00-C	MSB 2^2 ---
	-01-C	Nav Data Health.
	-02-C	LSB 2^0 ---
SV Health	-03-C	MSB 2^4 ---
	-04-C	
	-05-C	Satellite Health.
	-06-C	
	-07-C	LSB : 2^0---
SQRT (A) (8 MSB)	-08-N	MSB : 2^{12} ---
	-09-N	SIGNAL TYPE: Unsigned UNITS: Meters$^{.5}$
	-10-N	MAX VALUE: 8.1920E+03 MIN VALUE: 0.0000E+00
	-11-N	RESOLUTION: 4.8828E-04 ACCURACY: See ICD-GPS-200
	-12-N	FULL SCALE: 8.1920E+03
	-13-N	
	-14-N	
	-15-N	Least Significant Part in Almanac Word 7

REMARKS/NOTES:

WORD NAME: Almanac Word 7 SQRT(A) (16 LSB)

	CATEGORY: N/A
WORD ID: 13R-005/08	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: Unsigned	LSB: N/A
UNITS: Meters^.5	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
SQRT (A) (16 LSB)	-00-N	Most Significant Part in Almanac Word 6
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^{-11} ---

REMARKS/NOTES:

WORD NAME: Almanac Word 8 Omega o (16 MSB)

	CATEGORY:	Special
WORD ID: 13R-005/09	MAX VALUE:	1.0000E+00
SOURCE(s): Platform	MIN VALUE:	-1.0000E+00
DEST(s): Store	RESOLUTION:	3.0518E-05
COMP RATE: Aperiodic	ACCURACY:	See ICD-GPS-200
XMIT RATE: Aperiodic	MSB:	2^-1
SIGNAL TYPE: 2's Complement	LSB:	2^-23
UNITS: Semicircles	FULL SCALE:	1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Omega o (16 MSB)	-00-S	Sign
	-01-N	MSB : 2^-1---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	Least Significant Part in Almanac Word 9

REMARKS/NOTES:

WORD NAME: Almanac Word 9 Omega o (8 LSB)/Argument of Perigee (8 MSB)

	CATEGORY:	Special
WORD ID: 13R-005/10	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Omega o (8 LSB)	-00-N	Most Significant Part in Almanac Word 8
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	LSB : 2^{-23} --
Argument of Perigee (ω) (8 LSB)	-08-S	Sign
	-09-N	MSB : 2^{-1}---
	-10-N	SIGNAL TYPE: 2's Complement UNITS: Semicircles
	-11-N	MAX VALUE: 1.0000E+00 MIN VALUE: -1.0000E+00
	-12-N	RESOLUTION: 1.1921E-07 ACCURACY: See ICD-GPS-200
	-13-N	FULL SCALE: 1.0000E+00
	-14-N	
	-15-N	Least Significant Part in Almanac Word 10

REMARKS/NOTES:

WORD NAME: Almanac Word 10 Argument of Perigee (ω) (16 LSB)

	CATEGORY: Special
WORD ID: 13R-005/11	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: 2's Complement	LSB: N/A
UNITS: Semicircles	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Argument of Perigee (ω) (16 LSB)	-00-N	Most Significant Part in Almanac Word 9
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^{-23} ---

REMARKS/NOTES:

WORD NAME: Almanac Word 11 Mo (16 MSB)

	CATEGORY: Special
WORD ID: 13R-005/12	MAX VALUE: 1.0000E+00
SOURCE(s): Platform	MIN VALUE: -1.0000E+00
DEST(s): Store	RESOLUTION: 1.1920E-07
COMP RATE: Aperiodic	ACCURACY: See ICD-GPS-200
XMIT RATE: Aperiodic	MSB: 2^-1
SIGNAL TYPE: 2's Complement	LSB: 2^-23
UNITS: Semicircles	FULL SCALE: 1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Mo (16 MSB)	-00-S	Sign
	-01-N	MSB : 2^{-1}--
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	Least Significant Part in Almanac Word 12

REMARKS/NOTES:

WORD NAME:　Almanac Word 12 Mo (8 LSB)/af0 (8 MSB)

	CATEGORY:　Special
WORD ID:　13R-005/13	MAX VALUE:　N/A
SOURCE(s):　Platform	MIN VALUE:　N/A
DEST(s):　Store	RESOLUTION:　N/A
COMP RATE:　Aperiodic	ACCURACY:　N/A
XMIT RATE:　Aperiodic	MSB:　N/A
SIGNAL TYPE:　N/A	LSB:　N/A
UNITS:　N/A	FULL SCALE:　N/A

FIELD NAME	BIT NO.	DESCRIPTION
Mo (8 LSB)	-00-N	Most Significant Part in Almanac Word 11
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	LSB : 2^{-23} --
af0 (8 MSB)	-08-S	Sign
	-09-N	MSB : 2^{-11} --
	-10-N	SIGNAL TYPE: 2's Complement UNITS: Seconds
	-11-N	MAX VALUE: N/A MIN VALUE: N/A
	-12-N	RESOLUTION: 9.536743E-07 ACCURACY: See ICD-GPS-200
	-13-N	FULL SCALE: 3.905296E-03
	-14-N	
	-15-N	Least Significant Part in Almanac Word 13

REMARKS/NOTES:

WORD NAME: Almanac Word 13 af1 (11 MSB)/af0 (3 LSB)

		CATEGORY:	Special
WORD ID:	13R-005/14	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
af1	-00-S	Sign
	-01-N	MSB : 2^{-29} ---
	-02-N	
	-03-N	SIGNAL TYPE: 2's Complement UNITS: Sec/sec
	-04-N	MAX VALUE: 3.7216523196E-09 MIN VALUE: -3.7252902984E-09 RESOLUTION: 3.637979E-12
	-05-N	ACCURACY: See ICD-GPS-200 FULL SCALE: 3.7216523196E-09
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	LSB : 2^{-38} ---
af0 (3 LSB)	-11-N	Most Significant Part in Almanac Word 12
	-12-N	
	-13-N	LSB : 2^{-20} ---
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Almanac Word 14 Almanac Reference Week

		CATEGORY:	Special
WORD ID:	13R-005/15	MAX VALUE:	65535
SOURCE(s):	Platform	MIN VALUE:	0
DEST(s):	Store	RESOLUTION:	1
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^{15}
SIGNAL TYPE:	N/A	LSB:	2^0
UNITS:	N/A	FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Almanac Reference Week	-00-N	MSB : 2^{15} ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^0 ---

REMARKS/NOTES:

WORD NAME: Almanac Word 15, 16 & 17 Reserved for GPS

		CATEGORY:	N/A
WORD ID:	13R-005/16-18	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved for GPS	-00-X	Reserved for GPS. May be set to logic 0 or 1.
	-01-X	Reserved for GPS. May be set to logic 0 or 1.
	-02-X	Reserved for GPS. May be set to logic 0 or 1.
	-03-X	Reserved for GPS. May be set to logic 0 or 1.
	-04-X	Reserved for GPS. May be set to logic 0 or 1.
	-05-X	Reserved for GPS. May be set to logic 0 or 1.
	-06-X	Reserved for GPS. May be set to logic 0 or 1.
	-07-X	Reserved for GPS. May be set to logic 0 or 1.
	-08-X	Reserved for GPS. May be set to logic 0 or 1.
	-09-X	Reserved for GPS. May be set to logic 0 or 1.
	-10-X	Reserved for GPS. May be set to logic 0 or 1.
	-11-X	Reserved for GPS. May be set to logic 0 or 1.
	-12-X	Reserved for GPS. May be set to logic 0 or 1.
	-13-X	Reserved for GPS. May be set to logic 0 or 1.
	-14-X	Reserved for GPS. May be set to logic 0 or 1.
	-15-X	Reserved for GPS. May be set to logic 0 or 1.

REMARKS/NOTES:

WORD NAME: Reserved

	CATEGORY: Special
WORD ID: 13R-005/19-30	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0
	-01-0	Set to logic 0
	-02-0	Set to logic 0
	-03-0	Set to logic 0
	-04-0	Set to logic 0
	-05-0	Set to logic 0
	-06-0	Set to logic 0
	-07-0	Set to logic 0
	-08-0	Set to logic 0
	-09-0	Set to logic 0
	-10-0	Set to logic 0
	-11-0	Set to logic 0
	-12-0	Set to logic 0
	-13-0	Set to logic 0
	-14-0	Set to logic 0
	-15-0	Set to logic 0

REMARKS/NOTES:

6.13R-007 AS STATUS/SV CONFIGURATION [13R-007]

AS Status/SV Configuration [13R-007] provides the store with data identifying the configuration of the satellites. This data changes infrequently and is normally compiled during mission planning. AS Status/SV Configuration is passed to the store as MDT File #1.

6.13R-007.1 ID Label [13R-007/02]

Data ID [13R-007/02/08…09] and Page ID [13R-007/02/10…15] are used to identify the type of data in the message. For AS Status/SV Configuration [13R-007], Data ID [13R-007/02/08…09] is set to "01" binary and Page ID [13R-007/02/10…15] is set to "11111" binary.

6.13R-007.2 PRN #X (1-32) [13R-007/03-10]

These words identify the Anti-Spoofing (AS) status and Satellite Vehicle (SV) configuration for each satellite. The AS Status PRN #X (1-32) is a one-bit field that is set to logic 1 to indicate that anti-spoofing is active on that satellite. The Configuration PRN #X (1-32) is a three-bit field that is set to indicate the configuration (i.e., Block ID) of that satellite as shown in Table 6.13R-1.

Table 6.13R-1 Satellite Block ID

Field Value (Binary)	Satellite Configuration
000	Block I Satellite
001	Block II Satellite
010	Block III Satellite
All other bit combinations are Reserved	

Platform Requirements

The platform shall **{ps_6140}** provide AS Status/SV Configuration [13R-007] (if available) as MDT File #1 at least once per mission to a GPS Capable [22T/05/13=1] store when it is available, if CDS MDT Files **{cds_4002}**.

Mission Store Requirements

The mission store shall **{ss_6155}** store AS Status/SV Configuration [13R-007] data in non-volatile memory.

MESSAGE NAME: AS Status/SV Configuration
MESSAGE ID: 13R-007 TRANSFER TYPE: BC-RT
SOURCE: Platform WORD COUNT: 30
DESTINATION: Store XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01101 (B)
Rec/Blk ID	01	Mass Data Transfer Record #/Block #
ID Label	02	Data/Page ID
PRN #1-#4	03	Satellite PRN #1-#4 Status/Configuration Data
PRN #5-#8	04	Satellite PRN #5-#8 Status/Configuration Data
PRN #9-#12	05	Satellite PRN #9-#12 Status/Configuration Data
PRN #13-#16	06	Satellite PRN #13-#16Status/Configuration Data
PRN #17-#20	07	Satellite PRN #17-#20 Status/Configuration Data
PRN #21-#24	08	Satellite PRN #21-#24 Status/Configuration Data
PRN #25-#28	09	Satellite PRN #25-#28 Status/Configuration Data
PRN #29-#32	10	Satellite PRN #29-#32 Status/Configuration Data
Reserved	11	Reserved
Reserved	12	Reserved
Reserved	13	Reserved
Reserved	14	Reserved
Reserved	15	Reserved
Reserved	16	Reserved
Reserved	17	Reserved
Reserved	18	Reserved
Reserved	19	Reserved
Reserved	20	Reserved
Reserved	21	Reserved
Reserved	22	Reserved
Reserved	23	Reserved
Reserved	24	Reserved
Reserved	25	Reserved
Reserved	26	Reserved
Reserved	27	Reserved
Reserved	28	Reserved
Reserved	29	Reserved
Reserved	30	Reserved
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Rec/Blk ID

	CATEGORY:	Special
WORD ID: 13R-007/01	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Record Number	-00-N	MSB : 2^7--
	-01-N	SIGNAL TYPE: Unsigned
		UNITS: N/A
	-02-N	MAX VALUE: 1
		MIN VALUE: 1
	-03-N	RESOLUTION: 1
		ACCURACY: 1
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0--
Block Number	-08-N	MSB : 2^7--
	-09-N	SIGNAL TYPE: Unsigned
		UNITS: N/A
	-10-N	MAX VALUE: 1
		MIN VALUE: 1
	-11-N	RESOLUTION: 1
		ACCURACY: 1
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0--

REMARKS/NOTES:

1. The AS Status/SV Configuration data block is contained in Mass Data Transfer File # 1.

WORD NAME: ID Label

WORD ID:	13R-007/02	CATEGORY:	Special
SOURCE(s):	Platform	MAX VALUE:	N/A
DEST(s):	Store	MIN VALUE:	N/A
COMP RATE:	Aperiodic	RESOLUTION:	N/A
XMIT RATE:	Aperiodic	ACCURACY:	N/A
SIGNAL TYPE:	N/A	MSB:	N/A
UNITS:	N/A	LSB:	N/A
		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0
Reserved	-01-0	Set to logic 0
Reserved	-02-0	Set to logic 0
Reserved	-03-0	Set to logic 0
Reserved	-04-0	Set to logic 0
Reserved	-05-0	Set to logic 0
Reserved	-06-0	Set to logic 0
Reserved	-07-0	Set to logic 0
Data ID	-08-B	MSB Set to logic 0---
	-09-B	LSB Set to logic 1---
Page ID	-10-B	MSB --
	-11-B	
	-12-B	This field contains a binary "111111"
	-13-B	
	-14-B	
	-15-B	LSB --

REMARKS/NOTES:

WORD NAME: PRN #1-#4

WORD ID:	13R-007/03
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.		DESCRIPTION
AS Status PRN 1	-00-D		If set to logic 1, Anti-Spoofing is ON on PRN # 1
Configuration PRN 1	-01-C	MSB	--
	-02-C		See note 1
	-03-C	LSB	--
AS Status PRN 2	-04-D		If set to logic 1, Anti-Spoofing is ON on PRN # 2
Configuration PRN 2	-05-C	MSB	--
	-06-C		See note 1
	-07-C	LSB	--
AS Status PRN 3	-08-D		If set to logic 1, Anti-Spoofing is ON on PRN # 3
Configuration PRN 3	-09-C	MSB	--
	-10-C		See note 1
	-11-C	LSB	--
AS Status PRN 4	-12-D		If set to logic 1, Anti-Spoofing is ON on PRN # 4
Configuration PRN 4	-13-C	MSB	--
	-14-C		See note 1
	-15-C	LSB	--

REMARKS/NOTES:

1. This field contains the satellite configuration.
    000 - BLOCK I Satellite
    001 - BLOCK II Satellite
    010 - BLOCK III Satellite
    All other bit combinations are Reserved

WORD NAME: PRN #5-#8

WORD ID:	13R-007/04
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.		DESCRIPTION
AS Status PRN 5	-00-D		If set to logic 1, Anti-Spoofing is ON on PRN # 5
Configuration PRN 5	-01-C	MSB	---
	-02-C		See note 1
	-03-C	LSB	---
AS Status PRN 6	-04-D		If set to logic 1, Anti-Spoofing is ON on PRN # 6
Configuration PRN 6	-05-C	MSB	---
	-06-C		See note 1
	-07-C	LSB	---
AS Status PRN 7	-08-D		If set to logic 1, Anti-Spoofing is ON on PRN # 7
Configuration PRN 7	-09-C	MSB	---
	-10-C		See note 1
	-11-C	LSB	---
AS Status PRN 8	-12-D		If set to logic 1, Anti-Spoofing is ON on PRN # 8
Configuration PRN 8	-13-C	MSB	---
	-14-C		See note 1
	-15-C	LSB	---

REMARKS/NOTES:

1. This field contains the satellite configuration.
    000 - BLOCK I Satellite
    001 - BLOCK II Satellite
    010 - BLOCK III Satellite
    All other bit combinations are Reserved

WORD NAME: PRN #9-#12

		CATEGORY:	Special
WORD ID:	13R-007/05	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.		DESCRIPTION
AS Status PRN 9	-00-D		If set to logic 1, Anti-Spoofing is ON on PRN # 9
Configuration PRN 9	-01-C	MSB	--
	-02-C		See note 1
	-03-C	LSB	--
AS Status PRN 10	-04-D		If set to logic 1, Anti-Spoofing is ON on PRN # 10
Configuration PRN 10	-05-C	MSB	--
	-06-C		See note 1
	-07-C	LSB	--
AS Status PRN 11	-08-D		If set to logic 1, Anti-Spoofing is ON on PRN # 11
Configuration PRN 11	-09-C	MSB	--
	-10-C		See note 1
	-11-C	LSB	--
AS Status PRN 12	-12-D		If set to logic 1, Anti-Spoofing is ON on PRN # 12
Configuration PRN 12	-13-C	MSB	--
	-14-C		See note 1
	-15-C	LSB	--

REMARKS/NOTES:

1. This field contains the satellite configuration.
     000 - BLOCK I Satellite
     001 - BLOCK II Satellite
     010 - BLOCK III Satellite
     All other bit combinations are Reserved

WORD NAME: PRN #13-#16

		CATEGORY:	Special
WORD ID:	13R-007/06	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.		DESCRIPTION
AS Status PRN 13	-00-D		If set to logic 1, Anti-Spoofing is ON on PRN # 13
Configuration PRN 13	-01-C	MSB	---
	-02-C		See note 1
	-03-C	LSB	---
AS Status PRN 14	-04-D		If set to logic 1, Anti-Spoofing is ON on PRN # 14
Configuration PRN 14	-05-C	MSB	---
	-06-C		See note 1
	-07-C	LSB	---
AS Status PRN 15	-08-D		If set to logic 1, Anti-Spoofing is ON on PRN # 15
Configuration PRN 15	-09-C	MSB	---
	-10-C		See note 1
	-11-C	LSB	---
AS Status PRN 16	-12-D		If set to logic 1, Anti-Spoofing is ON on PRN # 16
Configuration PRN 16	-13-C	MSB	---
	-14-C		See note 1
	-15-C	LSB	---

REMARKS/NOTES:

1. This field contains the satellite configuration.
    000 - BLOCK I Satellite
    001 - BLOCK II Satellite
    010 - BLOCK III Satellite
    All other bit combinations are Reserved

WORD NAME: PRN #17-#20

			CATEGORY:	Special
WORD ID:	13R-007/07		MAX VALUE:	N/A
SOURCE(s):	Platform		MIN VALUE:	N/A
DEST(s):	Store		RESOLUTION:	N/A
COMP RATE:	Aperiodic		ACCURACY:	N/A
XMIT RATE:	Aperiodic		MSB:	N/A
SIGNAL TYPE:	N/A		LSB:	N/A
UNITS:	N/A		FULL SCALE:	N/A

FIELD NAME	BIT NO.		DESCRIPTION
AS Status PRN 17	-00-D		If set to logic 1, Anti-Spoofing is ON on PRN # 17
Configuration PRN 17	-01-C	MSB	--
	-02-C		See note 1
	-03-C	LSB	--
AS Status PRN 18	-04-D		If set to logic 1, Anti-Spoofing is ON on PRN # 18
Configuration PRN 18	-05-C	MSB	--
	-06-C		See note 1
	-07-C	LSB	--
AS Status PRN 19	-08-D		If set to logic 1, Anti-Spoofing is ON on PRN # 19
Configuration PRN 19	-09-C	MSB	--
	-10-C		See note 1
	-11-C	LSB	--
AS Status PRN 20	-12-D		If set to logic 1, Anti-Spoofing is ON on PRN # 20
Configuration PRN 20	-13-C	MSB	--
	-14-C		See note 1
	-15-C	LSB	--

REMARKS/NOTES:

1. This field contains the satellite configuration.
   000 - BLOCK I Satellite
   001 - BLOCK II Satellite
   010 - BLOCK III Satellite
   All other bit combinations are Reserved

WORD NAME: PRN #21-#24

		CATEGORY:	Special
WORD ID:	13R-007/08	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
AS Status PRN 21	-00-D	If set to logic 1, Anti-Spoofing is ON on PRN # 21
Configuration PRN 21	-01-C	MSB --
	-02-C	See note 1
	-03-C	LSB --
AS Status PRN 22	-04-D	If set to logic 1, Anti-Spoofing is ON on PRN # 22
Configuration PRN 22	-05-C	MSB --
	-06-C	See note 1
	-07-C	LSB --
AS Status PRN 23	-08-D	If set to logic 1, Anti-Spoofing is ON on PRN # 23
Configuration PRN 23	-09-C	MSB --
	-10-C	See note 1
	-11-C	LSB --
AS Status PRN 24	-12-D	If set to logic 1, Anti-Spoofing is ON on PRN # 24
Configuration PRN 24	-13-C	MSB --
	-14-C	See note 1
	-15-C	LSB --

REMARKS/NOTES:

1. This field contains the satellite configuration.
    000 - BLOCK I Satellite
    001 - BLOCK II Satellite
    010 - BLOCK III Satellite
    All other bit combinations are Reserved

WORD NAME: PRN #25-#28

	CATEGORY:	Special
WORD ID: 13R-007/09	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
AS Status PRN 25	-00-D	If set to logic 1, Anti-Spoofing is ON on PRN # 25
Configuration PRN 25	-01-C	MSB ---
	-02-C	See note 1
	-03-C	LSB ---
AS Status PRN 26	-04-D	If set to logic 1, Anti-Spoofing is ON on PRN # 26
Configuration PRN 26	-05-C	MSB ---
	-06-C	See note 1
	-07-C	LSB ---
AS Status PRN 27	-08-D	If set to logic 1, Anti-Spoofing is ON on PRN # 27
Configuration PRN 27	-09-C	MSB ---
	-10-C	See note 1
	-11-C	LSB ---
AS Status PRN 28	-12-D	If set to logic 1, Anti-Spoofing is ON on PRN # 28
Configuration PRN 28	-13-C	MSB ---
	-14-C	See note 1
	-15-C	LSB ---

REMARKS/NOTES:

1. This field contains the satellite configuration.
    000 - BLOCK I Satellite
    001 - BLOCK II Satellite
    010 - BLOCK III Satellite
    All other bit combinations are Reserved

WORD NAME: PRN #29-#32

		CATEGORY:	Special
WORD ID:	13R-007/10	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
AS Status PRN 29	-00-D	If set to logic 1, Anti-Spoofing is ON on PRN # 29
Configuration PRN 29	-01-C	MSB ---
	-02-C	See note 1
	-03-C	LSB ---
AS Status PRN 30	-04-D	If set to logic 1, Anti-Spoofing is ON on PRN # 30
Configuration PRN 30	-05-C	MSB ---
	-06-C	See note 1
	-07-C	LSB ---
AS Status PRN 31	-08-D	If set to logic 1, Anti-Spoofing is ON on PRN # 31
Configuration PRN 31	-09-C	MSB ---
	-10-C	See note 1
	-11-C	LSB ---
AS Status PRN 32	-12-D	If set to logic 1, Anti-Spoofing is ON on PRN # 32
Configuration PRN 32	-13-C	MSB ---
	-14-C	See note 1
	-15-C	LSB ---

REMARKS/NOTES:

1. This field contains the satellite configuration.
    000 - BLOCK I Satellite
    001 - BLOCK II Satellite
    010 - BLOCK III Satellite
    All other bit combinations are Reserved

WORD NAME: Reserved

	CATEGORY:	N/A
WORD ID: 13R-007/11-30	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0
	-01-0	
	-02-0	
	-03-0	
	-04-0	
	-05-0	
	-06-0	
	-07-0	
	-08-0	
	-09-0	
	-10-0	
	-11-0	
	-12-0	
	-13-0	
	-14-0	
	-15-0	

REMARKS/NOTES:

6.13R-010 <u>EPHEMERIS #1</u> [13R-010]

<u>Ephemeris #1</u> [13R-010] and <u>Ephemeris #2</u> [13R-011] are paired MDT messages that allow the platform to provide up to sixteen (16) satellite ephemeris data sets to the store. A GPS satellite's ephemeris defines the satellite's current orbit. The ephemeris data, if available, is passed from the platform to the store as MDT file #5.

<u>Ephemeris #1</u> and <u>Ephemeris #2</u> MDT data is used by the mission store to predict each satellite's orbital position, in order to compute an estimated line-of-sight to the visible satellites, allowing the mission store to narrow its search window and reduce search time for GPS satellite acquisition. The platform provides the available ephemeris data from the platforms GPS receiver. Ephemeris messages were patterned after the Ephemeris #1 and #2 messages (G-10 and G-11) contained in ICD-GPS-169. In order to support MIL-STD-1760 and MDT formats, words appearing at the end of the ICD-GPS-169 Ephemeris #1 wrap to the top of Ephemeris #2. <u>Ephemeris #1</u> and <u>Ephemeris #2</u> contain the same sequence of information as the messages defined in ICD-GPS-169 with partitioning between messages being the only difference. Ephemeris parameters are further defined in ICD-GPS-200, Subframes 1 through 3.

The platform provides GPS satellite <u>Ephemeris #1</u> and <u>Ephemeris #2</u> MDT data to the store at least once per power cycle. However, it is recommended that the platform provide <u>Ephemeris #1</u> and <u>Ephemeris #2</u> data to the store periodically or whenever new or more current ephemeris is available. It is acceptable for the platform to provide ephemeris for the same satellite more than once in the same ephemeris data set. Additionally, the platform provides <u>Ephemeris</u> data to the store a minimum of 15 seconds prior to the platform commanding <u>CTS</u> [11R/04/02 = 1]. Once the store has received satellite <u>Ephemeris</u> data and stored this data in non-volatile memory, the store updates its <u>Ephemeris Received</u> [22T/03/04] status. Section 3.5.6.2.2 Ephemeris Data provides further information and requirements.

Platform Requirements

The platform shall **{ps_6141}** provide all current <u>Ephemeris #1</u> [13R-010] and <u>Ephemeris #2</u> [13R-011] data sets (if available) from the platform GPS receiver, to a <u>GPS Capable</u> [22T/05/13 = 1] store as MDT File #5, if <u>CDS MDT Files</u> **{cds_4002}**.

The platform shall **{ps_6142}** not zero fill ephemeris data records.

The platform may **{pm_6031}** provide ephemeris data for the same satellite more than once in the ephemeris data set.

Mission Store Requirements

The mission store shall **{ss_6156}** be capable of receiving and storing a minimum of thirty-two (32) satellite vehicle <u>Ephemeris #1</u> [13R-010] and <u>Ephemeris #2</u> [13R-011] data sets in non-volatile memory.

6.13R-010.1 GPS Time [13R-010/02-05]

GPS Time [13R-010/02-05] contains GPS System Time, in seconds of week starting at Sunday 0000 hours, at which the Ephemeris data contained in Ephemeris #1 and #2 were generated. GPS Time is a continuous time count, with no discontinuities, referenced from the GPS epoch. GPS epoch is defined as 0000 hours on 6 January 1980 Coordinated Universal Time (UTC). The largest unit used in stating GPS time is one week, defined as 604,800 seconds. GPS Time differs from UTC because GPS time is a continuous time scale, while UTC is corrected periodically with an integer number of leap seconds. See discussion of GPS Leap Seconds under Time [03R].

GPS Time is a 64-bit floating point value consisting of a signed 9-bit GPS Time Exponent [13R-010/02/00…08] and an unsigned 55-bit GPS Time Mantissa [13R-010/02/09…15] and [13R-010/03-05]. The most significant part of the mantissa (7-bits) is contained in Ephemeris #1 Word 02. The least significant part of the mantissa (48-bits) is contained in Ephemeris #1 Words 3, 4, and 5. Refer to ICD-GPS-200, section 3.3.4 for additional details.

6.13R-010.2 Satellite ID [13R-010/06]

Satellite ID [13R-010/06] contains the Satellite's Pseudo Random Number (PRN), as defined in ICD-GPS-200, for which this ephemeris data is valid. Note: If the Ephemeris #1 Satellite ID [13R-010/06] and Ephemeris #2 Satellite ID [13R-011/27] do not match, the data set is inconsistent and is not considered valid by the mission store.

6.13R-010.3 TLM Preamble #1 [13R-010/09/00…07]

TLM Preamble #1 [13R-010/09/00…07] for Subframe 1 is defined in ICD-GPS-200, section 20.3.3, section 20.3.3.1, and Figure 20-2.

6.13R-010.4 TLM Message #1 [13R-010/09/08…15] and [13R-010/10/00…05]

TLM Message #1 [13R-010/09/08…15] and [13R-010/10/00…05] for Subframe 1 is defined in ICD-GPS-200, section 20.3.3, section 20.3.3.1, and Figure 20-2. TLM Message #1 contains telemetry (TLM) information defined in ICD-GPS-203 and/or ICD-GPS-224 and/or or ICD-GPS-225. The most significant part (8-bits) is contained in Ephemeris #1 Word 09. The least significant part (6-bits) is contained in Ephemeris #1 Word 10.

6.13R-010.5 HOW #1 [13R-010/10/08…15] and [13R-010/11/00…13]

HOW #1 [13R-010/10/08…15] and [13R-010/11/00…13] is the Handover Word (HOW) for Subframe 1 as defined in ICD-GPS-200, Section 20.3.3, Section 20.3.3.2, and Figure 20-2. The most significant part (8-bits) is contained in Ephemeris #1 Word 10. The least significant part (14-bits) is contained in Ephemeris #1 Word 11.

6.13R-010.6 Transmission Week Number [13R-010/12/00…09]

Transmission Week Number [13R-010/12/00…09] is defined in ICD-GPS-200, Section 20.3.3.3.1.1. The Transmission Week Number contains the ten MSBs of the 29-bit Z-

count, that represents the GPS week of the start of the data set transmission interval (see ICD-GPS-200, Section 3.3.4).

6.13R-010.6.1 Code on L2 [13R-010/12/10…11]

Code on L2 [13R-010/12/10…11] is defined in ICD-GPS-200, Section 20.3.3.3.1.2. Code on L2 indicates which Coarse Acquisition (C/A) code or Precision (P) code is commanded on the L2 channel.

6.13R-010.6.2 SV Accuracy [13R-010/12/12…15]

SV Accuracy [13R-010/12/12…15] is defined in ICD-GPS-200, Section 20.3.3.3.1.3. The SV Accuracy is defined as the user range accuracy (URA) index (a statistical indicator of the ranging accuracy) of the satellite vehicle.

6.13R-010.7 SV Health [13R-010/13/00…05]

SV Health [13R-010/13/00…05] is composed of two parts: The MSB is defined as a Nav Data Health [13R-010/13/00] code and the five LSBs are defined as a Satellite Health [13R-010/13/01…05] code.

The Nav Data Health [13R-010/13/00] code is defined in ICD-GPS-200, Section 20.3.3.5.1.4. Logic 0 indicates that all satellite navigation data is good. Logic 1 indicates some or all of the satellite navigation data is bad.

The Satellite Health [13R-010/13/01…05] codes are defined in ICD-GPS-200, Section 20.3.3.5.1.4 and Table 20-VIII. Logic 0 in all five bits in Satellite Health indicates that all satellite's signals are good. Logic 1 in any of the bits for Satellite Health indicates some or all of the satellite's signals are weak or bad.

6.13R-010.8 IODC [13R-010/13/06…07] and [13R-010/19/08…15]

IODC [13R-010/13/06…07] and [13R-010/19/08…15] is defined in ICD-GPS-200, Section 20.3.3.3.1.5. The Issue of Data, Clock (IODC) indicates the issue number of the ephemeris data set and thereby provides the store with a convenient means of detecting any change in the ephemeris correction parameters. Note: If the Ephemeris #1/#2 Subframe 1 IODC [13R-010/13/06…07] and [13R-010/19/08…15], Subframe 2 IODE [13R-010/27/00…07], and Subframe 3 IODE [13R-011/23/08…15] do not match, a data set cutover has occurred and new satellite ephemeris data needs to be collected. The most significant part (2-bits) is contained in Ephemeris #1 Word 13. The least significant part (8-bits) is contained in Ephemeris #1 Word 18.

6.13R-010.9 L2 P Data Flag [13R-010/12/08]

L2 P Data Flag [13R-010/12/08] is defined in ICD-GPS-200, Section 20.3.3.3.1.6. The L2 P Data Flag when set to logic 1 indicates that the NAV data stream was commanded OFF on the P-code of the L2 channel.

6.13R-010.10 Group Delay Time [13R-010/19/00…07]

Group Delay Time [13R-010/19/00…07] is defined in ICD-GPS-200, Section 20.3.3.3.1.8 and Table 20-I. Group Delay Time contains the L1-L2 correction term (T_{GD}) for the benefit of "L1 only" and L2 only" mission stores. The algorithm is given ICD-GPS-200, Section 20.3.3.3.

6.13R-010.11 Toc [13R-010/20]

Toc [13R-010/20] is defined in ICD-GPS-200, Section 20.3.3.3.1.9, Section 20.3.3.3, and Table 20-I. The Clock Date Reference Time (Toc) is the first of the four terms used to compute apparent satellite vehicle clock correction.

6.13R-010.12 af2 [13R-010/21/00…07]

af2 [13R-010/21/00…07] is defined in ICD-GPS-200, Section 20.3.3.3.1.9, Section 20.3.3.3, and Table 20-I. The Second Order Clock Correction Coefficient (af2) is the second of the four terms used to compute apparent satellite vehicle clock correction.

6.13R-010.13 af1 [13R-010/21/08…15] and [13R-010/22/00…07]

af1 [13R-010/21/08…15] and [13R-010/22/00…07] is defined in ICD-GPS-200, Section 20.3.3.3.1.9, Section 20.3.3.3, and Table 20-I. The First Order Clock Correction Coefficient (af1) is the third of the four terms used to compute apparent satellite vehicle clock correction. The most significant part (8-bits) is contained in Ephemeris #1 Word 21. The least significant part (8-bits) is contained in Ephemeris #1 Word 22.

6.13R-010.14 af0 [13R-010/22/08…15] and [13R-010/23/00…13]

af0 [13R-010/22/08…15] and [13R-010/23/00…13] is defined in ICD-GPS-200, Section 20.3.3.3.1.9, Section 20.3.3.3, and Table 20-I. The First Order Clock Correction Coefficient (af0) is the fourth of the four terms used to compute apparent satellite vehicle clock correction. The most significant part (8-bits) is contained in Ephemeris #1 Word 22. The least significant part (14-bits) is contained in Ephemeris #1 Word 23.

6.13R-010.15 TLM Preamble #2 [13R-010/24/00…07]

TLM Preamble #2 [13R-010/24/00…07] for Subframe 2 is defined in ICD-GPS-200, Section 20.3.3, Section 20.3.3.1, and Figure 20-2.

6.13R-010.16 TLM Message #2 [13R-010/24/08…15] and [13R-010/25/00…05]

TLM Message #2 [13R-010/24/08…15] and [13R-010/25/00…05] for Subframe 2 is defined in ICD-GPS-200, Section 20.3.3, Section 20.3.3.1, and Figure 20-2. The TLM Message #2 contains information defined in ICD-GPS-203 and/or ICD-GPS-224 and or ICD-GPS-225. The most significant part (8-bits) is contained in Ephemeris #1 Word 24. The least significant part (6-bits) is contained in Ephemeris #1 Word 25.

6.13R-010.17 HOW #2 [13R-010/25/08…15] and [13R-010/26/00…13]

HOW #2 [13R-010/25/08…15] and [13R-010/26/00…13] or Handover Word (HOW) for Subframe 2 is defined in ICD-GPS-200, Section 20.3.3, Section 20.3.3.2, and Figure

20-2. The most significant part (8-bits) is contained in Ephemeris #1 Word 25. The least significant part (14-bits) is contained in Ephemeris #1 Word 26.

6.13R-010.18 IODE [13R-010/27/00…07]

IODE [13R-010/27/00…07] is defined in ICD-GPS-200, Section 20.3.3.4.1, Table 20-II, and Table 20-III. The Issue of Data, Ephemeris (IODE) provides the mission store with a convenient means of detecting any change in the ephemeris representation parameters. Note: If the Ephemeris #1/#2 Subframe 1 IODC [13R-010/13/06…07] and [13R-010/19/08…15], Subframe 2 IODE [13R-010/27/00…07], and Subframe 3 IODE [13R-011/23/08…15] do not match, a data set cutover has occurred and new satellite ephemeris data needs to be collected.

6.13R-010.19 Crs [13R-010/27/08…15] and [13R-010/28/00…07]

Crs [13R-010/27/08…15] [13R-010/28/00…07] is the Amplitude of the Sine Harmonic Correction term to the Orbit Radius (Crs) and is defined in ICD-GPS-200, Table 20-II, Table 20-III, and Table 20-IV. The most significant part (8-bits) is contained in Ephemeris #1 Word 27. The least significant part (8-bits) is contained in Ephemeris #1 Word 28.

6.13R-010.20 Delta n [13R-010/28/08…15] and [13R-010/29/00…07]

Delta n [13R-010/28/08…15] and [13R-010/29/00…07] is the Mean Motion Difference form Computed Value (Delta n) and is defined in ICD-GPS-200, Table 20-II, Table 20-III, and Table 20-IV. The most significant part (8-bits) is contained in Ephemeris #1 Word 27. The least significant part (8-bits) is contained in Ephemeris #1 Word 28.

6.13R-010.21 Mo [13R-010/28/08…15], [13R-010/29/00…15], and [13R-011/02/00…07]

Mo [13R-010/28/08…15], [13R-010/29/00…15], and [13R-011/02/00…07] is the Mean Anomaly at Reference Time and is defined as the angle measured from the perigee along the satellite's orbit to satellite's location at the Ephemeris' reference time. The most significant parts (8 bits and 16-bits) are contained in Ephemeris #1 Word 28 and Word 29 respectively. The least significant part (8-bits) is contained in Ephemeris #2 Word 2. See ICD-GPS-200, Tables 20-II, 20-III, and 20-IV.

MESSAGE NAME: Ephemeris #1
MESSAGE ID: 13R-010   TRANSFER TYPE: BC-RT
SOURCE: Platform   WORD COUNT: 30
DESTINATION: Store   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01101 (B)
Rec/Blk ID	01	Mass Data Transfer Record #/Block #
G-10 Word 1	02	GPS Time (16 MSB)
G-10 Word 2	03	GPS Time (16 NSB)
G-10 Word 3	04	GPS Time (16 NSB)
G-10 Word 4	05	GPS Time (16 LSB)
G-10 Word 5	06	Satellite PRN Number
G-10 Word 6	07	Reserved
G-10 Word 7	08	Reserved
G-10 Word 8	09	TLM Preamble#1 / TLM Message#1 (8 MSB)
G-10 Word 9	10	TLM Message#1 (6 LSB) / HOW#1 (8 MSB)
G-10 Word 10	11	HOW #1 (14 LSB)
G-10 Word 11	12	Week Number / Satellite Status Data
G-10 Word 12	13	SV Health / IODC (2 MSB) / L2 P Data Flag
G-10 Word 13	14	Bits 99-114 of Subframe 1
G-10 Word 14	15	Bits 121-136 of Subframe 1
G-10 Word 15	16	Bits 137-144/151-158 of Subframe 1
G-10 Word 16	17	Bits 159-174 of Subframe 1
G-10 Word 17	18	Bits 181-196 of Subframe 1
G-10 Word 18	19	Group Delay Time / IODC (8 LSB)
G-10 Word 19	20	Clock Date Reference Time
G-10 Word 20	21	af2 / af1 (8 MSB)
G-10 Word 21	22	af1 (8 LSB) / af0 (8 MSB)
G-10 Word 22	23	af0 (14 LSB)
G-10 Word 23	24	TLM Preamble#2 / TLM Message#2 (8 MSB)
G-10 Word 24	25	TLM Message#2 (6 LSB) / HOW #2 (8 MSB)
G-10 Word 25	26	HOW#2 (14 LSB)
G-10 Word 26	27	IODE / Crs (8 MSB)
G-10 Word 27	28	Crs (8 LSB) / Delta n (8 MSB)
G-10 Word 28	29	Delta n (8 LSB) / Mo (8 MSB)
G-10 Word 29	30	Mean Anomaly (16 NSB)
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Rec/Blk ID

WORD ID:	13R-010/01
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Record Number	-00-N	MSB : 2^7--
	-01-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-02-N	MAX VALUE: 32 MIN VALUE: 1
	-03-N	RESOLUTION: 1 ACCURACY: N/A
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0--
Block Number	-08-N	MSB : 2^7--
	-09-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-10-N	MAX VALUE: 1 MIN VALUE: 1
	-11-N	RESOLUTION: 1 ACCURACY: N/A
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0--

REMARKS/NOTES:

1. Ephemeris data records and blocks are contained in Mass Data Transfer File #5.
2. Ephemeris #1 Message is assigned a block number of 1.

WORD NAME: G-10 Word 1 GPS Time (16 MSB)

		CATEGORY:	Time(FP8)
WORD ID:	13R-010/02	MAX VALUE:	6.0400E+05
SOURCE(s):	Platform	MIN VALUE:	0.0000E+00
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	Floating Point	LSB:	N/A
UNITS:	Seconds	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
GPS Time Exponent	-00-S	Sign
	-01-E	MSB : 2^7--
	-02-E	SIGNAL TYPE: Excess 128 UNITS: N/A
	-03-E	MAX VALUE: 1.2700E+02 MIN VALUE: -1.2800E+02
	-04-E	RESOLUTION: 1.0000E+00 ACCURACY: N/A
	-05-E	FULL SCALE: 1.2700E+02
	-06-E	
	-07-E	
	-08-E	LSB : 2^0--
GPS Time Mantissa (7 MSB)	-09-M	MSB : 2^-2---
	-10-M	SIGNAL TYPE: Unsigned, UNITS: N/A MAX VALUE: 5.0000E-01
	-11-M	MIN VALUE: 1.3878E-17 RESOLUTION: 1.3878E-17, ACCURACY: N/A
	-12-M	FULL SCALE: 5.0000E-01
	-13-M	
	-14-M	
	-15-M	Least Significant Parts contained in Ephemeris #1 Words 03, 04, and 05

REMARKS/NOTES:

WORD NAME:	G-10 Word 2 GPS Time (16 NSB)	

		CATEGORY:	Special
WORD ID:	13R-010/03	MAX VALUE:	5.0000E-01
SOURCE(s):	Platform	MIN VALUE:	1.3878E-17
DEST(s):	Store	RESOLUTION:	1.3878E-17
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^-2
SIGNAL TYPE:	Unsigned	LSB:	2^56
UNITS:	N/A	FULL SCALE:	5.0000E-01

FIELD NAME	BIT NO.	DESCRIPTION
GPS Time Mantissa (16 NSB)	-00-M	Most Significant Part in Ephemeris #1 Word 02
	-01-M	
	-02-M	
	-03-M	
	-04-M	
	-05-M	
	-06-M	
	-07-M	
	-08-M	
	-09-M	
	-10-M	
	-11-M	
	-12-M	
	-13-M	
	-14-M	
	-15-M	Least Significant Parts in Ephemeris #1 Words 04 and 05.

REMARKS/NOTES:

WORD NAME: G-10 Word 3 GPS Time (16 NSB)

		CATEGORY:	Special
WORD ID:	13R-010/04	MAX VALUE:	5.0000E-01
SOURCE(s):	Platform	MIN VALUE:	1.3878E-17
DEST(s):	Store	RESOLUTION:	1.3878E-17
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^-2
SIGNAL TYPE:	Unsigned	LSB:	2^56
UNITS:	N/A	FULL SCALE:	5.0000E-01

FIELD NAME	BIT NO.	DESCRIPTION
GPS Time Mantissa (16 NSB)	-00-M	Most Significant Parts in Ephemeris #1 Words 02 and 03.
	-01-M	
	-02-M	
	-03-M	
	-04-M	
	-05-M	
	-06-M	
	-07-M	
	-08-M	
	-09-M	
	-10-M	
	-11-M	
	-12-M	
	-13-M	
	-14-M	
	-15-M	Least Significant Part in Ephemeris #1 Word 05.

REMARKS/NOTES:

WORD NAME:	G-10 Word 4 GPS Time (16 LSB)		
		CATEGORY:	Special
WORD ID:	13R-010/05	MAX VALUE:	5.0000E-01
SOURCE(s):	Platform	MIN VALUE:	1.3878E-17
DEST(s):	Store	RESOLUTION:	1.3878E-17
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^-2
SIGNAL TYPE:	Unsigned	LSB:	2^56
UNITS:	N/A	FULL SCALE:	5.0000E-01

FIELD NAME	BIT NO.	DESCRIPTION
GPS Time Mantissa (16 LSB)	-00-M	Most Significant Part in Ephemeris #1 Words 02, 03, and 04
	-01-M	
	-02-M	
	-03-M	
	-04-M	
	-05-M	
	-06-M	
	-07-M	
	-08-M	
	-09-M	
	-10-M	
	-11-M	
	-12-M	
	-13-M	
	-14-M	
	-15-M	LSB : 2^-56 --

REMARKS/NOTES:

WORD NAME: G-10 Word 5 Satellite PRN Number

	CATEGORY: Number(L)
WORD ID: 13R-010/06	MAX VALUE: 32
SOURCE(s): Platform	MIN VALUE: 1
DEST(s): Store	RESOLUTION: 1
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^{15}
SIGNAL TYPE: Unsigned	LSB: 2^0
UNITS: N/A	FULL SCALE: 65535

FIELD NAME	BIT NO.	DESCRIPTION
Satellite ID	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: G-10 Word 6 & 7 Reserved

	CATEGORY:	Special
WORD ID: 13R-010/07-08	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-X	Reserved for GPS. May be logic 0 or 1.
	-01-X	Reserved for GPS. May be logic 0 or 1.
	-02-X	Reserved for GPS. May be logic 0 or 1.
	-03-X	Reserved for GPS. May be logic 0 or 1.
	-04-X	Reserved for GPS. May be logic 0 or 1.
	-05-X	Reserved for GPS. May be logic 0 or 1.
	-06-X	Reserved for GPS. May be logic 0 or 1.
	-07-X	Reserved for GPS. May be logic 0 or 1.
	-08-X	Reserved for GPS. May be logic 0 or 1.
	-09-X	Reserved for GPS. May be logic 0 or 1.
	-10-X	Reserved for GPS. May be logic 0 or 1.
	-11-X	Reserved for GPS. May be logic 0 or 1.
	-12-X	Reserved for GPS. May be logic 0 or 1.
	-13-X	Reserved for GPS. May be logic 0 or 1.
	-14-X	Reserved for GPS. May be logic 0 or 1.
	-15-X	Reserved for GPS. May be logic 0 or 1.

REMARKS/NOTES:

WORD NAME: G-10 Word 8 TLM Preamble#1 / TLM Message#1 (8 MSB)

WORD ID:	13R-010/09
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
TLM Preamble #1	-00-C	MSB --
	-01-C	
	-02-C	
	-03-C	
	-04-C	
	-05-C	
	-06-C	
	-07-C	LSB --
TLM Message #1 (8 MSB)	-08-N	MSB --
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	Least Significant Part in Ephemeris #1 Word 10.

REMARKS/NOTES:

WORD NAME: G-10 Word 9 TLM Message#1 (6 LSB) / HOW#1 (8 MSB)

WORD ID:	13R-010/10
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.		DESCRIPTION
TLM Message #1 (6 LSB)	-00-N		Most Significant Part in Ephemeris #1 Word 09.
	-01-N		
	-02-N		
	-03-N		
	-04-N		
	-05-N	LSB	---
Bits 23 & 24 of TLM Word	-06-D		Bit 23
	-07-D		Bit 24
HOW #1 (8 MSB)	-08-N	MSB	---
	-09-N		
	-10-N		
	-11-N		
	-12-N		
	-13-N		
	-14-N		
	-15-N		Least Significant Part in Ephemeris #1 Word 11.

REMARKS/NOTES:

WORD NAME: G-10 Word 10 HOW #1 (14 LSB)

	CATEGORY:	Special
WORD ID: 13R-010/11	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
HOW #1 (14 LSB)	-00-N	Most Significant Part in Ephemeris #1 Word 10.
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	LSB ---
Bits 23 & 24 of HOW word	-14-D	Bit 23
	-15-D	Bit 24

REMARKS/NOTES:

WORD NAME: G-10 Word 11 Week Number / Satellite Status Data

		CATEGORY:	Special
WORD ID:	13R-010/12	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Transmission Week Number	-00-N	MSB : 2^9---
	-01-N	
	-02-N	
	-03-N	SIGNAL TYPE: Unsigned UNITS: Weeks MAX VALUE: 1023
	-04-N	MIN VALUE: 0 RESOLUTION: 1
	-05-N	ACCURACY: N/A FULL SCALE: 1023
	-06-N	
	-07-N	
	-08-N	
	-09-N	LSB : 2^0---
Code on L2	-10-N	MSB : 2^1 See note 1---
	-11-N	LSB : 2^0---
SV Accuracy	-12-N	MSB : 2^3---
	-13-N	SIGNAL TYPE: Unsigned, UNITS: N/A MAX VALUE: 15, MIN VALUE: 0 RESOLUTION: 1, ACCURACY: N/A
	-14-N	FULL SCALE: 15
	-15-N	LSB : 2^0---

REMARKS/NOTES:

1. Code on L2: SIGNAL TYPE: Unsigned, UNITS: N/A, MAX VALUE: 2, MIN VALUE: 0,
    RESOLUTION: 1, ACCURACY: N/A, FULL SCALE: 3

WORD NAME: G-10 Word 12 SV Health / IODC (2 MSB) / L2 P Data Flag

		CATEGORY:	Special
WORD ID:	13R-010/13	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
SV Health	-00-C	MSB : 2^5--
	-01-C	SIGNAL TYPE: Coded, UNITS: N/A
		MAX VALUE: 63, MIN VALUE: 0
	-02-C	RESOLUTION: 1, ACCURACY: N/A
		FULL SCALE: 63
	-03-C	
	-04-C	
	-05-C	LSB : 2^0--
IODC (2 MSB)	-06-N	MSB --
	-07-N	
L2 P Data Flag	-08-D	
Bits 92-98 of Subframe 1	-09-D	Bit 92
	-10-D	
	-11-D	
	-12-D	
	-13-D	
	-14-D	
	-15-D	Bit 98

REMARKS/NOTES:

WORD NAME: G-10 Word 13 Bits 99-114 of Subframe 1

WORD ID:	13R-010/14	CATEGORY:	Special
SOURCE(s):	Platform	MAX VALUE:	N/A
DEST(s):	Store	MIN VALUE:	N/A
COMP RATE:	Aperiodic	RESOLUTION:	N/A
XMIT RATE:	Aperiodic	ACCURACY:	N/A
SIGNAL TYPE:	N/A	MSB:	N/A
UNITS:	N/A	LSB:	N/A
		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Bits 99-114 of Subframe 1	-00-D	Bit 99
	-01-D	
	-02-D	
	-03-D	
	-04-D	
	-05-D	
	-06-D	
	-07-D	
	-08-D	
	-09-D	
	-10-D	
	-11-D	
	-12-D	
	-13-D	
	-14-D	
	-15-D	Bit 114

REMARKS/NOTES:

WORD NAME: G-10 Word 14 Bits 121-136 of Subframe 1

		CATEGORY:	Special
WORD ID:	13R-010/15	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Bits 121-136 of Subframe 1	-00-D	Bit 121
	-01-D	
	-02-D	
	-03-D	
	-04-D	
	-05-D	
	-06-D	
	-07-D	
	-08-D	
	-09-D	
	-10-D	
	-11-D	
	-12-D	
	-13-D	
	-14-D	
	-15-D	Bit 136

REMARKS/NOTES:

WORD NAME:　　G-10 Word 15 Bits 137-144/151-158 of Subframe 1

	CATEGORY:	Special
WORD ID:　　13R-010/16	MAX VALUE:	N/A
SOURCE(s):　　Platform	MIN VALUE:	N/A
DEST(s):　　Store	RESOLUTION:	N/A
COMP RATE:　　Aperiodic	ACCURACY:	N/A
XMIT RATE:　　Aperiodic	MSB:	N/A
SIGNAL TYPE:　　N/A	LSB:	N/A
UNITS:　　N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Bits 137-144 of Subframe 1	-00-D	Bit 137
	-01-D	
	-02-D	
	-03-D	
	-04-D	
	-05-D	
	-06-D	
	-07-D	Bit 144
Bits 151-158 of Subframe 1	-08-D	Bit 151
	-09-D	
	-10-D	
	-11-D	
	-12-D	
	-13-D	
	-14-D	
	-15-D	Bit 158

REMARKS/NOTES:

WORD NAME: G-10 Word 16 Bits 159-174 of Subframe 1

		CATEGORY:	Special
WORD ID:	13R-010/17	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Bits 159-174 of Subframe 1	-00-D	Bit 159
	-01-D	
	-02-D	
	-03-D	
	-04-D	
	-05-D	
	-06-D	
	-07-D	
	-08-D	
	-09-D	
	-10-D	
	-11-D	
	-12-D	
	-13-D	
	-14-D	
	-15-D	Bit 174

REMARKS/NOTES:

WORD NAME: G-10 Word 17 Bits 181-196 of Subframe 1

WORD ID:	13R-010/18
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Bits 181-196 of Subframe 1	-00-D	Bit 181
	-01-D	
	-02-D	
	-03-D	
	-04-D	
	-05-D	
	-06-D	
	-07-D	
	-08-D	
	-09-D	
	-10-D	
	-11-D	
	-12-D	
	-13-D	
	-14-D	
	-15-D	Bit 196

REMARKS/NOTES:

WORD NAME: G-10 Word 18 Group Delay Time / IODC (8 LSB)

		CATEGORY:	Special
WORD ID:	13R-010/19	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Group Delay Time	-00-S	
	-01-N	MSB : 2^-25 ---
	-02-N	SIGNAL TYPE: 2's Complement UNITS: Seconds
	-03-N	MAX VALUE: 5.9139E-08 MIN VALUE: -5.9605E-08
	-04-N	RESOLUTION: 4.65661E-10, ACCURACY: N/A FULL SCALE: 5.9139E-08
	-05-N	
	-06-N	
	-07-N	MSB : 2^-31 ---
IODC (8 LSB)	-08-N	Most Significant Part in Ephemeris #1 Word 13.
	-09-N	SIGNAL TYPE: Unsigned, UNITS: N/A
	-10-N	MAX VALUE: 1023 MIN VALUE: 0
	-11-N	RESOLUTION: 1, ACCURACY: N/A FULL SCALE: 1023
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^0---

REMARKS/NOTES:

WORD NAME: G-10 Word 19 Clock Date Reference Time

	CATEGORY:	Special
WORD ID: 13R-010/20	MAX VALUE:	604784
SOURCE(s): Platform	MIN VALUE:	0
DEST(s): Store	RESOLUTION:	16
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^19
SIGNAL TYPE: Unsigned	LSB:	2^4
UNITS: Seconds	FULL SCALE:	1048560

FIELD NAME	BIT NO.	DESCRIPTION
Toc	-00-N	MSB : 2^{19} --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^4 --

REMARKS/NOTES:

WORD NAME: G-10 Word 20 af2 / af1 (8 MSB)

	CATEGORY: Special
WORD ID: 13R-010/21	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
af2	-00-S	
	-01-N	MSB : 2^{-49} ---
	-02-N	SIGNAL TYPE: 2's Complement UNITS: Sec/Sec^2
	-03-N	MAX VALUE: 3.5250E-15 MIN VALUE: -3.5527E-15
	-04-N	RESOLUTION: 2.77556E-17, ACCURACY: N/A FULL SCALE: 3.5250E-15
	-05-N	
	-06-N	
	-07-N	LSB : 2^{-55} ---
af1 (8 MSB)	-08-S	
	-09-N	MSB : 2^{-29} ---
	-10-N	SIGNAL TYPE: 2's Complement UNITS: Sec/Sec
	-11-N	MAX VALUE: 3.7252E-09 MIN VALUE: -3.7253E-09
	-12-N	RESOLUTION: 1.1369E-13, ACCURACY: N/A FULL SCALE: 3.7252E-09
	-13-N	
	-14-N	
	-15-N	Least Significant Part in Ephemeris #1 Word 22.

REMARKS/NOTES:

WORD NAME: G-10 Word 21 af1 (8 LSB) / af0 (8 MSB)

	CATEGORY: Special
WORD ID: 13R-010/22	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
af1 (8 LSB)	-00-N	Most Significant Part in Ephemeris #1 Word 21.
	-01-N	SIGNAL TYPE: 2's Complement UNITS: Sec/Sec
	-02-N	MAX VALUE: 3.7252E-09 MIN VALUE: -3.7253E-09
	-03-N	RESOLUTION: 1.1369E-13, ACCURACY: N/A FULL SCALE: 3.7252E-09
	-04-N	
	-05-N	
	-06-N	
	-07-N	LSB : 2^{-43} --
af0 (8 MSB)	-08-S	
	-09-N	MSB : 2^{-11} --
	-10-N	SIGNAL TYPE: 2's Complement UNITS: Sec/Sec
	-11-N	MAX VALUE: 9.7656E-04 MIN VALUE: -9.7656E-04
	-12-N	RESOLUTION: 4.65661E-10, ACCURACY: N/A FULL SCALE: 9.7656E-04
	-13-N	
	-14-N	
	-15-N	Least Significant Part in Ephemeris #1 Word 23.

REMARKS/NOTES:

WORD NAME: G-10 Word 22 af0 (14 LSB)

WORD ID:	13R-010/23
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
af0 (14 LSB)	-00-N	Most Significant Part in Ephemeris #1 Word 22.
	-01-N	
	-02-N	SIGNAL TYPE: 2's Complement UNITS: Seconds
	-03-N	MAX VALUE: 9.7656E-04 MIN VALUE: -9.7656E-04
	-04-N	RESOLUTION: 4.65661E-10 ACCURACY: N/A
	-05-N	FULL SCALE: 9.7656E-04
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	LSB : 2^{-31} ---
Bits 293 & 294 of Subframe 1	-14-D	Bit 293
	-15-D	Bit 294

REMARKS/NOTES:

WORD NAME: G-10 Word 23 TLM Preamble#2 / TLM Message#2 (8 MSB)

		CATEGORY:	Special
WORD ID:	13R-010/24	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
TLM Preamble #2	-00-C	MSB --
	-01-C	
	-02-C	
	-03-C	
	-04-C	
	-05-C	
	-06-C	
	-07-C	LSB --
TLM Message #2 (8 MSB)	-08-N	MSB --
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	Least Significant Part in Ephemeris #1 Word 25.

REMARKS/NOTES:

WORD NAME: G-10 Word 24 TLM Message#2 (6 LSB) / HOW #2 (8 MSB)

	CATEGORY: Special
WORD ID: 13R-010/25	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.		DESCRIPTION
TLM Message #2 (6 LSB)	-00-N		Most Significant Part in Ephemeris #1 Word 24.
	-01-N		
	-02-N		
	-03-N		
	-04-N		
	-05-N	LSB	---
Bits 23 & 24 of TLM Word	-06-D		Bit 23
	-07-D		Bit 24
HOW #2 (8 MSB)	-08-N	MSB	---
	-09-N		
	-10-N		
	-11-N		
	-12-N		
	-13-N		
	-14-N		
	-15-N		Least Significant Part in Ephemeris #1 Word 26.

REMARKS/NOTES:

WORD NAME: G-10 Word 25 HOW#2 (14 LSB)

WORD ID:	13R-010/26	CATEGORY:	Special
SOURCE(s):	Platform	MAX VALUE:	N/A
DEST(s):	Store	MIN VALUE:	N/A
COMP RATE:	Aperiodic	RESOLUTION:	N/A
XMIT RATE:	Aperiodic	ACCURACY:	N/A
SIGNAL TYPE:	N/A	MSB:	N/A
UNITS:	N/A	LSB:	N/A
		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
HOW #2 (14 LSB)	-00-N	Most Significant Part in Ephemeris #1 Word 25.
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	LSB ---
Bits 23 & 24 of HOW Word	-14-D	Bit 23
	-15-D	Bit 24

REMARKS/NOTES:

WORD NAME: G-10 Word 26 IODE / Crs (8 MSB)

	CATEGORY:	Special
WORD ID: 13R-010/27	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
IODE	-00-N	MSB : 2^7--
	-01-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-02-N	MAX VALUE: 255 MIN VALUE: 0
	-03-N	RESOLUTION: 1 ACCURACY: N/A
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0---
Crs (8 MSB)	-08-S	
	-09-N	MSB : 2^9--
	-10-N	SIGNAL TYPE: 2's Complement UNITS: Meters
	-11-N	MAX VALUE: 1.0240E+03 MIN VALUE: -1.0240E+03
	-12-N	RESOLUTION: 3.1250E-02 ACCURACY: N/A
	-13-N	FULL SCALE: 1.0240E+03
	-14-N	
	-15-N	

REMARKS/NOTES:

WORD NAME: G-10 Word 27 Crs (8 LSB) / Delta n (8 MSB)

	CATEGORY:	Special
WORD ID: 13R-010/28	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Crs (8 LSB)	-00-N	Most Significant Part in Ephemeris #1 Word 27.
	-01-N	SIGNAL TYPE: 2's Complement UNITS: Meters
	-02-N	MAX VALUE: 1.0240E+03 MIN VALUE: -1.0240E+03
	-03-N	RESOLUTION: 3.1250E-02, ACCURACY: N/A
	-04-N	FULL SCALE: 1.0240E+03
	-05-N	
	-06-N	
	-07-N	LSB : 2^{-5} ---
Delta n (8 MSB)	-08-S	
	-09-N	MSB : 2^{-29} ---
	-10-N	SIGNAL TYPE: 2's Complement UNITS: Semicircles/sec
	-11-N	MAX VALUE: 3.7252E-09 MIN VALUE: -3.7253E-09
	-12-N	RESOLUTION: 1.1369E-13, ACCURACY: N/A FULL SCALE: 3.7252E-09
	-13-N	
	-14-N	
	-15-N	Least Significant Part in Ephemeris #1 Word 29.

REMARKS/NOTES:

WORD NAME: G-10 Word 28 Delta n (8 LSB) / Mo (8 MSB)

		CATEGORY:	Special
WORD ID:	13R-010/29	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Delta n (8 LSB)	-00-N	Most Significant Part in Ephemeris #1 Word 28.
	-01-N	SIGNAL TYPE: 2's Complement UNITS: Semicircles/sec
	-02-N	MAX VALUE: 3.7252E-09 MIN VALUE: -3.7253E-09
	-03-N	RESOLUTION: 1.1369E-13, ACCURACY: N/A
	-04-N	FULL SCALE: 3.7252E-09
	-05-N	
	-06-N	
	-07-N	LSB : 2^-43 ---
Mo (8 MSB)	-08-S	
	-09-N	MSB : 2^-1---
	-10-N	SIGNAL TYPE: 2's Complement UNITS: Semicircles
	-11-N	MAX VALUE: 1.0000E+00 MIN VALUE: -1.0000E+00
	-12-N	RESOLUTION: 4.6566E-10 ACCURACY: N/A
	-13-N	FULL SCALE: 1.0000E+00
	-14-N	
	-15-N	

REMARKS/NOTES:

WORD NAME: G-10 Word 29 Mean Anomaly (16 NSB)12

	CATEGORY: Special
WORD ID: 13R-010/30	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Mo (16 NSB)	-00-N	Most Significant Part in Ephemeris #1 Word 28.
	-01-N	
	-02-N	SIGNAL TYPE: 2's Complement UNITS: Semicircle
	-03-N	MAX VALUE: 1.0000E+00 MIN VALUE: -1.0000E+00
	-04-N	RESOLUTION: 4.6566E-10 ACCURACY: N/A
	-05-N	FULL SCALE: 1.0000E+00
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	Least Significant Part in Ephemeris #2 Word 02.

REMARKS/NOTES:

6.13R-011 <u>EPHEMERIS #2</u> [13R-011]

<u>Ephemeris #2</u> [13R-011] is the second half a pair of MDT messages that allow the platform to provide satellite Ephemeris data sets to the store. The platform is required to transmit both of the paired <u>Ephemeris #1</u> [13R-010] and <u>Ephemeris #2</u> [13R-011] MDT messages in order to pass a complete satellite ephemeris to the mission store. Section 6.13R-010 <u>Ephemeris #1</u> provides additional information.

6.13R-011.1 <u>Mo</u> [13R-011/02/00…07]

<u>Mo</u> [13R-011/02/00…07] is the least significant part (8-bits) of the Mean Anomaly at Reference Time. The most significant parts (8 bits and 16-bits) are contained in <u>Ephemeris #1</u> word 28 and word 29 respectively.

6.13R-011.2 <u>Cuc</u> [13R-011/02/08…15] and [13R-011/03/00…07]

<u>Cuc</u> [13R-011/02/08…15] and [13R-011/03/00…07] is the Amplitude of the Cosine Harmonic Correction term to the Argument of Latitude (<u>Cuc</u>) and is defined in ICD-GPS-200, Table 20-II, Table 20-III, and Table 20-IV. The most significant part (8-bits) is contained in <u>Ephemeris #2</u> word 02. The least significant part (8-bits) is contained in <u>Ephemeris #2</u> word 03.

6.13R-011.3 <u>Eccentricity (e)</u> [13R-011/03/08…15], [13R-011/04/00…15], and [13R-011/05/00…07]

<u>Eccentricity (e)</u> [13R-011/03/08…15], [13R-011/04/00…15], and [13R-011/05/00…07] defines the satellite's orbital shape. The most significant part (8-bits) is contained in <u>Ephemeris #2</u> word 03. The least significant parts (16-bits and 8-bits) are contained in <u>Ephemeris #2</u> word 04 and word 05 respectively. See ICD-GPS-200, Table 20-II, Table 20-III, and Table 20-IV.

6.13R-011.4 <u>Cus</u> [13R-011/05/08…15] and [13R-011/06/00…07]

<u>Cus</u> [13R-011/05/08…15] and [13R-011/06/00…07] is the Amplitude of the Sine Harmonic Correction term to the Argument of Latitude (<u>Cus</u>) and is defined in ICD-GPS-200, Table 20-II, Table 20-III, and Table 20-IV. The most significant part (8-bits) is contained in <u>Ephemeris #2</u> word 05. The least significant part (8-bits) is contained in <u>Ephemeris #2</u> word 06.

6.13R-011.5 <u>SQRT(A)</u> [13R-011/06/08…15], [13R-011/07/00…15] and [13R-011/08/00…07]

<u>SQRT(A)</u> [13R-011/06/08…15], [13R-011/07/00…15] and [13R-011/08/00…07] is the square root of the satellite's orbital semi-major axis (orbital size). See ICD-GPS-200, Tables 20-II, 20-III, and 20-IV. The most significant part (8-bits) is contained in <u>Ephemeris #2</u> word 06. The least significant parts (16-bits and 8-bits) are contained in <u>Ephemeris #2</u> word 07 and word 08 respectively.

6.13R-011.6 Reference Time Ephemeris (Toe) [13R-011/08/08…15] and [13R-011/09/00…07]

Reference Time Ephemeris (Toe) [13R-011/08/08…15] and [13R-011/09/00…07] is defined as reference time in seconds starting at Sunday 0000 hours for the Ephemeris #2 data set. See ICD-GPS-200, Section 20.3.4.5 Tables 20-II, 20-III, and 20-IV. The most significant part (8-bits) is contained in Ephemeris #2 word 08. The least significant part (8-bits) is contained in Ephemeris #2 word 09.

6.13R-011.7 Fit Interval Flag [13R-011/09/08]

Fit Interval Flag [13R-011/09/08] indicates the length of the fit interval. When set to logic 0, the Ephemeris #1/#2 data is based on a four (4) hour fit interval. When set to logic 1, the Ephemeris #1/#2 data is based on a six (6) hour fit interval. See ICD-GPS-200, Section 20.3.3.4.3.1.

6.13R-011.8 TLM Preamble #3 [13R-011/10/00…07]

TLM Preamble #3 [13R-011/10/00…07] for Subframe 3 is defined in ICD-GPS-200, Section 20.3.3, Section 20.3.3.1, and Figure 20-2.

6.13R-011.9 TLM Message #3 [13R-011/10/08…15] and [13R-011/11/00…05]

TLM Message #3 [13R-011/10/08…15] and [13R-011/11/00…05] for Subframe 3 is defined in ICD-GPS-200, Section 20.3.3, Section 20.3.3.1, and Figure 20-2. The TLM Message #3 contains information as defined in ICD-GPS-203 and/or ICD-GPS-224 and or ICD-GPS-225. The most significant part (8-bits) is contained in Ephemeris #2 word 10. The least significant part (6-bits) is contained in Ephemeris #2 word 11.

6.13R-011.10 HOW #3 [13R-011/11/08…15] and [13R-011/12/00…13]

HOW #3 [13R-011/11/08…15] and [13R-011/12/00…13] or Handover Word (HOW) for Subframe 3 is defined in ICD-GPS-200, Section 20.3.3, Section 20.3.3.2, and Figure 20-2. The most significant part (8-bits) is contained in Ephemeris #2 word 11. The least significant part (14-bits) is contained in Ephemeris #2 word 12.

6.13R-011.11 Cic [13R-011/13]

Ephemeris #2 Cic [13R-011/13] is the Amplitude of the Cosine Harmonic Correction term to the Angle of Inclination (Cic) and is defined in ICD-GPS-200, Table 20-II, Table 20-III, and Table 20-IV.

6.13R-011.12 Omega o [13R-011/14…15]

Omega o [13R-011/14…15] is the satellite Longitude of the Ascending Node of the Orbital Plane at Weekly Epoch and is defined as the celestial longitude of the point where the satellite crosses the equator in a northerly (ascending) direction. The most significant part (16-bits) is contained in Ephemeris #2 word 14. The least significant part (16-bits) is contained in Ephemeris #2 word 15. See ICD-GPS-200, ICD-GPS-200, Table 20-II, Table 20-III, and Table 20-IV.

6.13R-011.13 Cis [13R-011/16]

Cis [13R-011/16] is the Amplitude of the Sine Harmonic Correction term to the Angle of Inclination (Cis) and is defined in ICD-GPS-200, Table 20-II, Table 20-III, and Table 20-IV.

6.13R-011.14 Inclination Angle (io) [13R-011/17-18]

Inclination Angle (i_o) [13R-011/17-18] is the Orbital Inclination Angle (i_0) at Reference Time and is defined as the angle between the orbital plane and the equatorial plane. The most significant part (16-bits) is contained in Ephemeris #2 word 17. The least significant part (16-bits) is contained in Ephemeris #2 word 18. See ICD-GPS-200, Table 20-II, Table 20-III, and Table 20-IV.

6.13R-011.15 Crc [13R-011/19]

Crc [13R-011/19] is the Amplitude of the Cosine Harmonic Correction term to the Orbit Radius (Crc) and is defined in ICD-GPS-200, Table 20-II, Table 20-III, and Table 20-IV.

6.13R-011.16 Argument of Perigee (ω) [13R-011/20-21]

Argument of Perigee (ω) [13R-011/20-21] is defined as the angle measured along the orbital plane from the equator to satellite's orbital perigee (lowest altitude point of the orbit). The most significant part (16-bits) is contained in Ephemeris #2 word 20. The least significant part (16-bits) is contained in Ephemeris #2 word 21. See ICD-GPS-200, Table 20-II, Table 20-III, and Table 20-IV.

6.13R-011.17 Omega dot [13R-011/22/00…15] and [13R-011/23/00…07]

Omega dot [13R-011/22/00…15] and [13R-011/23/00…07] is the rate of change of the satellite's Longitude of Ascending Node of the Orbit Plane at Weekly Epoch, Omega o [13R-011/14…15]. The most significant part (16-bits) is contained in Ephemeris #2 word 22. The least significant part (8-bits) is contained in Ephemeris #2 word 23. See ICD-GPS-200, Table 20-II, Table 20-III, and Table 20-IV.

6.13R-011.18 IODE [13R-011/23/08…15]

IODE [13R-011/23/08…15] is defined in ICD-GPS-200, Section 20.3.3.4.1, Table 20-II, and Table 20-III. The Issue of Data, Ephemeris (IODE) provides the mission store with a convenient means of detecting any change in the ephemeris representation parameters. Note: If the Ephemeris #1/#2 Subframe 1 IODC [13R-010/13/06…07] and [13R-010/19/08…15], Subframe 2 IODE [13R-010/27/00…07], and Subframe 3 IODE [13R-011/23/08…15] do not match, a data set cutover has occurred and new satellite ephemeris data needs to be collected.

6.13R-011.19 IDOT [13R-011/24/00…13]

IDOT [13R-011/24/00…13] is the rate of change of the nominal orbital Inclination Angle (i_0) [13R-011/17-18]. See ICD-GPS-200, Section 20.3.3.5.1.2 and Table 20-VI.

6.13R-011.20 Reserved for GPS [13R-011/25-26]

Reserved for GPS [13R-011/25-26] data words are reserved for GPS satellite vehicle's future use.

6.13R-011.21 Satellite ID [13R-011/27]

Satellite ID [13R-011/27] contains the Satellite's Pseudo Random Number (PRN), as defined in ICD-GPS-200, for which this ephemeris data is valid. Note: If the Ephemeris #1 Satellite ID [13R-010/06] and Ephemeris #2 Satellite ID [13R-011/27] do not match, the data set is inconsistent and new satellite ephemeris data needs to be collected.

6.13R-011.22 Iono Range Difference [13R-011/28]

Iono Range Difference [13R-011/28] is the Ionosphere Range Difference correction term provided by the satellite vehicle. The accuracy of the Iono Range Difference depends on the platform mechanization. The mission store uses this data to compensate its pseudo range measurements in Enhanced GPS Handoff.

Iono Range Difference is the filtered estimate of the ionospheric range difference between pseudo range measurements at the L1 and L2 frequencies. The mission store scales Iono Range Difference to provide the ionospheric correction for each frequency. Specifically, Iono Range Difference is multiplied by 1.54572778 and 2.54572778 to obtain the ionospheric correction for the L1 and L2 frequencies respectively. The result is then subtracted from the uncorrected pseudo range measurement to obtain a corrected pseudo range measurement. See ICD-GPS-200, Section 20.3.3.5.1.2 and Table 20-VI.

MESSAGE NAME: Ephemeris #2
MESSAGE ID: 13R-011 TRANSFER TYPE: BC-RT
SOURCE: Platform WORD COUNT: 30
DESTINATION: Store XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01101 (B)
Rec/Blk ID	01	Mass Data Transfer Record #/Block #
G-10 Word 30	02	Mean Anomaly (8 LSB) / Cuc (8 MSB)
G-10 Word 31	03	Cuc (8 LSB) / Eccentricity (8 MSB)
G-10 Word 32	04	Eccentricity (16 NSB)
G-11 Word 1	05	Eccentricity (8 LSB) / Cus (8 MSB)
G-11 Word 2	06	Cus (8 LSB) / SQRT (A) (8 MSB)
G-11 Word 3	07	SQRT (A) (16 NSB)
G-11 Word 4	08	SQRT (A) (8 LSB) / Toe (8 MSB)
G-11 Word 5	09	Toe (8 LSB) / Fit Interval Flag
G-11 Word 6	10	TLM Preamble #3 / TLM Message #3 (8 MSB)
G-11 Word 7	11	TLM Message #3 (6 LSB) / HOW #3 (8 MSB)
G-11 Word 8	12	HOW #3 (14 LSB)
G-11 Word 9	13	Cosine Harmonic Correction Term
G-11 Word 10	14	Longitude Ascending Node-Orbit Plane (16 MSB)
G-11 Word 11	15	Longitude Ascending Node-Orbit Plane (16 LSB)
G-11 Word 12	16	Sine Harmonic Correction Term
G-11 Word 13	17	Inclination Angle (io) (16 MSB)
G-11 Word 14	18	Inclination Angle (io) (16 LSB)
G-11 Word 15	19	Cosine Harmonic Correction Term
G-11 Word 16	20	Argument of Perigee (ω) (16 MSB)
G-11 Word 17	21	Argument of Perigee (ω) (16 LSB)
G-11 Word 18	22	Rate of Right Ascension (16 MSB)
G-11 Word 19	23	Rate of Right Ascension (8 LSB) / IODE
G-11 Word 20	24	Rate of Inclination Angle (IDOT)
G-11 Word 21	25	Reserved for GPS
G-11 Word 22	26	Reserved for GPS
G-11 Word 23	27	Satellite PRN Number
G-11 Word 24	28	Iono Range Difference
Reserved	29	Reserved
Reserved	30	Reserved
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Rec/Blk ID

	CATEGORY:	Special
WORD ID: 13R-011/01	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Record Number	-00-N	MSB : 2^7--
	-01-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-02-N	MAX VALUE: 32 MIN VALUE: 1
	-03-N	RESOLUTION: 1 ACCURACY: N/A
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0--
Block Number	-08-N	MSB : 2^7--
	-09-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-10-N	MAX VALUE: 2 MIN VALUE: 2
	-11-N	RESOLUTION: 1 ACCURACY: N/A
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0--

REMARKS/NOTES:

1. Ephemeris data records and blocks are contained in Mass Data Transfer File #5.
2. Ephemeris #2 Message is assigned a block number of 2.

WORD NAME: G-10 Word 30 Mean Anomaly (8 LSB) / Cuc (8 MSB)

	CATEGORY: Special
WORD ID: 13R-011/02	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Mo (8 LSB)	-00-N	Most Significant Part in Ephemeris #1 Words 28 and 29. SIGNAL TYPE: 2's Complement
	-01-N	UNITS: Semicircles/sec MAX VALUE: 1.0000E+00
	-02-N	MIN VALUE: -1.0000E+00 RESOLUTION: 4.6566E-10
	-03-N	ACCURACY: N/A FULL SCALE: 1.0000E+00
	-04-N	
	-05-N	
	-06-N	
	-07-N	LSB : 2^-31 ---
Cuc (8 MSB)	-08-S	
	-09-N	MSB : 2^-15 ---
	-10-N	SIGNAL TYPE: 2's Complement UNITS: Radians
	-11-N	MAX VALUE: 6.1033E-05 MIN VALUE: -6.1035E-05
	-12-N	RESOLUTION: 1.8626E-09, ACCURACY: N/A FULL SCALE: 6.1033E-05
	-13-N	
	-14-N	
	-15-N	Least Significant Part in Ephemeris #2 Word 03.

REMARKS/NOTES:

WORD NAME: G-10 Word 31 Cuc (8 LSB) / Eccentricity (8 MSB)

	CATEGORY: Special
WORD ID: 13R-011/03	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Cuc (8 LSB)	-00-N	Most Significant Part in Ephemeris #2 Word 02.
	-01-N	SIGNAL TYPE: 2's Complement UNITS: Radians
	-02-N	MAX VALUE: 6.1033E-05 MIN VALUE: -6.1035E-05
	-03-N	RESOLUTION: 1.8626E-09 ACCURACY: N/A
	-04-N	FULL SCALE: 6.1033E-05
	-05-N	
	-06-N	
	-07-N	LSB : 2^{-29} --
Eccentricity (e) (8 MSB)	-08-N	MSB : 2^{-2}--
	-09-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-10-N	MAX VALUE: 3.0000E-02 MIN VALUE: 0.0000E+00
	-11-N	RESOLUTION: 1.1642E-10 ACCURACY: N/A
	-12-N	FULL SCALE: 5.0000E-01
	-13-N	
	-14-N	
	-15-N	Least Significant Part in Ephemeris #2 Words 04 and 5.

REMARKS/NOTES:

WORD NAME: G-10 Word 32 Eccentricity (16 NSB)

		CATEGORY:	Special
WORD ID:	13R-011/04	MAX VALUE:	3.0000E-02
SOURCE(s):	Platform	MIN VALUE:	0.0000E+00
DEST(s):	Store	RESOLUTION:	1.1642E-10
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^-2
SIGNAL TYPE:	N/A	LSB:	2^-33
UNITS:	N/A	FULL SCALE:	5.0000E-01

FIELD NAME	BIT NO.	DESCRIPTION
Eccentricity (e) (16 NSB)	-00-N	Most Significant Part in Ephemeris #2 Word 03.
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	Least Significant Part in Ephemeris #2 Word 05.

REMARKS/NOTES:

WORD NAME: G-11 Word 1 Eccentricity (8 LSB) / Cus (8 MSB)

	CATEGORY:	Special
WORD ID: 13R-011/05	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Eccentricity (e) (8 LSB)	-00-N	Most Significant Part in Ephemeris #2 Words 02 and 03.
	-01-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-02-N	MAX VALUE: 3.0000E-02 MIN VALUE: 0.0000E+00
	-03-N	RESOLUTION: 1.1642E-10 ACCURACY: N/A
	-04-N	FULL SCALE: 5.0000E-01
	-05-N	
	-06-N	
	-07-N	LSB : 2^{-33} ---
Cus (8 MSB)	-08-S	
	-09-N	MSB : 2^{-15} ---
	-10-N	SIGNAL TYPE: 2's Complement UNITS: Radians
	-11-N	MAX VALUE: 6.1033E-05 MIN VALUE: -6.1035E-05
	-12-N	RESOLUTION: 1.8626E-09, ACCURACY: N/A FULL SCALE: 6.1033E-05
	-13-N	
	-14-N	
	-15-N	Least Significant Part in Ephemeris #2 Word 06.

REMARKS/NOTES:

WORD NAME: G-11 Word 2 Cus (8 LSB) / SQRT (A) (8 MSB)

	CATEGORY:	Special
WORD ID: 13R-011/06	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Cus (8 LSB)	-00-N	Most Significant Part in Ephemeris #2 Word 05.
	-01-N	SIGNAL TYPE: 2's Complement UNITS: Radians
	-02-N	MAX VALUE: 6.1033E-05 MIN VALUE: -6.1035E-05
	-03-N	RESOLUTION: 1.8626E-09 ACCURACY: N/A
	-04-N	FULL SCALE: 6.1033E-05
	-05-N	
	-06-N	
	-07-N	LSB : 2^{-29} ---
SQRT(A) (8 MSB)	-08-N	MSB : 2^{12} ---
	-09-N	SIGNAL TYPE: Unsigned UNITS: Meters^.5
	-10-N	MAX VALUE: 8.1920E+03 MIN VALUE: 0.0000E+00
	-11-N	RESOLUTION: 1.9073E-06 ACCURACY: N/A
	-12-N	FULL SCALE: 8.1920E+03
	-13-N	
	-14-N	
	-15-N	Least Significant Part in Ephemeris #2 Word 07 and 08.

REMARKS/NOTES:

WORD NAME: G-11 Word 3 SQRT (A) (16 NSB)

		CATEGORY:	Special
WORD ID:	13R-011/07	MAX VALUE:	8.1920E+03
SOURCE(s):	Platform	MIN VALUE:	0.0000E+00
DEST(s):	Store	RESOLUTION:	1.9073E-06
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^12
SIGNAL TYPE:	Unsigned	LSB:	2^-19
UNITS:	Meters^.5	FULL SCALE:	8.1920E+03

FIELD NAME	BIT NO.	DESCRIPTION
SQRT(A) (16 NSB)	-00-N	Most Significant Part in Ephemeris #2 Word 06.
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	Least Significant Part in Ephemeris #2 Word 08.

REMARKS/NOTES:

WORD NAME: G-11 Word 4 SQRT (A) (8 LSB) / Toe (8 MSB)
                                                  CATEGORY: Special
WORD ID: 13R-011/08   MAX VALUE: N/A
SOURCE(s):   Platform   MIN VALUE: N/A
DEST(s):   Store   RESOLUTION: N/A
COMP RATE: Aperiodic   ACCURACY: N/A
XMIT RATE: Aperiodic   MSB: N/A
SIGNAL TYPE: N/A   LSB: N/A
UNITS: N/A   FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
SQRT(A) (8 LSB)	-00-N	Most Significant Parts in Ephemeris #2 Words 05 and 06.
	-01-N	SIGNAL TYPE: Unsigned UNITS: Meters^.5
	-02-N	MAX VALUE: 8.1920E+03 MIN VALUE: 0.0000E+00
	-03-N	RESOLUTION: 1.9073E-06 ACCURACY: N/A
	-04-N	FULL SCALE: 8.1920E+03
	-05-N	
	-06-N	
	-07-N	LSB : 2^-19 --
Reference Time Ephemeris (Toe) (8 MSB)	-08-N	MSB : 2^19 --
	-09-N	SIGNAL TYPE: Unsigned UNITS: Seconds
	-10-N	MAX VALUE: 604768 MIN VALUE: 0
	-11-N	RESOLUTION: 16 ACCURACY: N/A
	-12-N	FULL SCALE: 1048560
	-13-N	
	-14-N	
	-15-N	Least Significant Part in Ephemeris #2 Word 09.

REMARKS/NOTES:

WORD NAME: G-11 Word 5 Toe (8 LSB) / Fit Interval Flag

		CATEGORY:	Special
WORD ID:	13R-011/09	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Toe (8 LSB)	-00-N	Most Significant Parts in Ephemeris #2 Word 08.
	-01-N	SIGNAL TYPE: Unsigned UNITS: Seconds
	-02-N	MAX VALUE: 604768 MIN VALUE: 0
	-03-N	RESOLUTION: 16 ACCURACY: N/A
	-04-N	FULL SCALE: 1048560
	-05-N	
	-06-N	
	-07-N	LSB : 2^4--
Fit Interval Flag	-08-D	0 = 4 hours, 1 = 6 hours
Reserved	-09-0	
	-10-0	
	-11-0	
	-12-0	
	-13-0	
Bits 293 & 294 of Subframe 2	-14-D	Bit 293
	-15-D	Bit 294

REMARKS/NOTES:

WORD NAME: G-11 Word 6 TLM Preamble #3 / TLM Message #3 (8 MSB)

	CATEGORY:	Special
WORD ID: 13R-011/10	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
TLM Preamble #3	-00-C	MSB --
	-01-C	
	-02-C	
	-03-C	
	-04-C	
	-05-C	
	-06-C	
	-07-C	LSB --
TLM Message #3 (8 MSB)	-08-N	MSB --
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	Least Significant Part in Ephemeris #2 Word 11.

REMARKS/NOTES:

WORD NAME: G-11 Word 7 TLM Message #3 (6 LSB) / HOW #3 (8 MSB)

		CATEGORY:	Special
WORD ID:	13R-011/11	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
TLM Message #3 (6 LSB)	-00-N	Most Significant Part in Ephemeris #2 Word 10.
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	LSB ---
Bits 23 & 24 of TLM Word	-06-D	Bit 23
	-07-D	Bit 24
HOW #3 (8 MSB)	-08-N	MSB ---
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	Least Significant Part in Ephemeris #2 Word 12.

REMARKS/NOTES:

WORD NAME: G-11 Word 8 HOW #3 (14 LSB)

	CATEGORY: Special
WORD ID: 13R-011/12	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
HOW #3 (14 LSB)	-00-N	Most Significant Part in Ephemeris #2 Word 11.
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	LSB ---
Bits 23 & 24 of HOW Word	-14-D	Bit 23
	-15-D	Bit 24

REMARKS/NOTES:

WORD NAME: G-11 Word 9 Cosine Harmonic Correction Term

	CATEGORY:	Special
WORD ID: 13R-011/13	MAX VALUE:	6.1033E-05
SOURCE(s): Platform	MIN VALUE:	-6.1035E-05
DEST(s): Store	RESOLUTION:	1.8626E-09
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^-15
SIGNAL TYPE: 2's Complement	LSB:	2^-29
UNITS: Radians	FULL SCALE:	6.1033E-05

FIELD NAME	BIT NO.	DESCRIPTION
Cic	-00-S	
	-01-N	MSB : 2^-15 --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^-29 --

REMARKS/NOTES:

WORD NAME: G-11 Word 10 & 11 Longitude Ascending Node-Orbit Plane
                                      CATEGORY: Special
WORD ID: 13R-011/14-15   MAX VALUE: 1.0000E+00
SOURCE(s):   Platform   MIN VALUE: -1.0000E+00
DEST(s):   Store   RESOLUTION: 2^-31
COMP RATE: Aperiodic   ACCURACY: N/A
XMIT RATE: Aperiodic   MSB: 2^-1
SIGNAL TYPE: 2's Complement   LSB: 2^-31
UNITS: Semicircles   FULL SCALE: 1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Omega o	(MSW) -00-S	
	-01-N	MSB : 2^-1--
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	(LSW) -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^-31 --

REMARKS/NOTES:

WORD NAME: G-11 Word 12 Sine Harmonic Correction Term

	CATEGORY:	Special
WORD ID: 13R-011/16	MAX VALUE:	6.1033E-05
SOURCE(s): Platform	MIN VALUE:	-6.1033E-05
DEST(s): Store	RESOLUTION:	1.8626E-09
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^-15
SIGNAL TYPE: 2's Complement	LSB:	2^-29
UNITS: Radians	FULL SCALE:	6.1033E-05

FIELD NAME	BIT NO.	DESCRIPTION
Cis	-00-S	
	-01-N	MSB : 2^{-15} ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^{-29} ---

REMARKS/NOTES:

WORD NAME: G-11 Word 13 & 14 Inclination Angle (io)

	CATEGORY:	Special
WORD ID: 13R-011/17-18	MAX VALUE:	1.0000E+00
SOURCE(s): Platform	MIN VALUE:	-1.0000E+00
DEST(s): Store	RESOLUTION:	2^-31
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^-1
SIGNAL TYPE: 2's Complement	LSB:	2^-31
UNITS: Semicircles	FULL SCALE:	1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Inclination Angle (io) (MSW)	-00-S	
	-01-N	MSB : 2^-1--
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
(LSW)	-00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^-31 --

REMARKS/NOTES:

WORD NAME: G-11 Word 15 Cosine Harmonic Correction Term

	CATEGORY: Special
WORD ID: 13R-011/19	MAX VALUE: 1.0240E+3
SOURCE(s): Platform	MIN VALUE: -1.024E+03
DEST(s): Store	RESOLUTION: 3.1250E-02
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^9
SIGNAL TYPE: 2's Complement	LSB: 2^-5
UNITS: Meters	FULL SCALE: 1.0240E+03

FIELD NAME	BIT NO.	DESCRIPTION
Crc	-00-S	
	-01-N	MSB : 2^9---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^-5--

REMARKS/NOTES:

WORD NAME: G-11 Word 16 & 17 Argument of Perigee (ω)

	CATEGORY: Special
WORD ID: 13R-011/20-21	MAX VALUE: 1.0000E+00
SOURCE(s): Platform	MIN VALUE: -1.0000E+00
DEST(s): Store	RESOLUTION: 2^-31
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^-1
SIGNAL TYPE: 2's Complement	LSB: 2^-31
UNITS: Semicircles	FULL SCALE: 1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Argument of Perigee (MSW)	-00-S	
	-01-N	MSB : 2^-1---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
(LSW)	-00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^-31 ---

REMARKS/NOTES:

WORD NAME: G-11 Word 18 Rate of Right Ascension (16 MSB)

	CATEGORY: Special
WORD ID: 13R-011/22	MAX VALUE: 9.5367E-07
SOURCE(s): Platform	MIN VALUE: -9.5367E-07
DEST(s): Store	RESOLUTION: 1.1369E-13
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^-21
SIGNAL TYPE: 2's Complement	LSB: 2^-43
UNITS: Semicircles/second	FULL SCALE: 9.5367E-07

FIELD NAME	BIT NO.	DESCRIPTION
Omegadot (16 MSB)	-00-S	
	-01-N	MSB : 2^-21 ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	Least Significant Part in Ephemeris #2 Word 23.

REMARKS/NOTES:

WORD NAME: G-11 Word 19 Rate of Right Ascension (8 LSB) / IODE

		CATEGORY:	Special
WORD ID:	13R-011/23	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Omegadot (8 LSB)	-00-N	Most Significant Part in Ephemeris #2 Word 22.
	-01-N	SIGNAL TYPE: 2's Complement UNITS: Semicircles/sec
	-02-N	MAX VALUE: 9.5367E-07 MIN VALUE: -9.5367E-07
	-03-N	RESOLUTION: 1.1369E-13 ACCURACY: N/A
	-04-N	FULL SCALE: 9.5367E-07
	-05-N	
	-06-N	
	-07-N	LSB : 2^{-43} --
IODE	-08-N	MSB : 2^7 --
	-09-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-10-N	MAX VALUE: 255 MIN VALUE: 0
	-11-N	RESOLUTION: 1 ACCURACY: N/A
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0 --

REMARKS/NOTES:

WORD NAME: G-11 Word 20 Rate of Inclination Angle

		CATEGORY:	Special
WORD ID:	13R-011/24	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
IDOT	-00-S	
	-01-N	MSB : 2^{-31} ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	SIGNAL TYPE: 2's Complement UNITS: Semicircles/sec
	-06-N	MAX VALUE: 9.3121E-10 MIN VALUE: -9.3132E-10
	-07-N	RESOLUTION: 1.1369E-13 ACCURACY: N/A
	-08-N	FULL SCALE: 9.3121E-10
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	: 2^{-43} ---
Bits 293 & 294 of Subframe 3	-14-D	Bit 293
	-15-D	Bit 294

REMARKS/NOTES:

WORD NAME: G-11 Word 21 & 22 Reserved for GPS

	CATEGORY: N/A
WORD ID: 13R-011/25-26	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved for GPS	-00-X	Reserved for GPS. May be logic 0 or 1.
	-01-X	Reserved for GPS. May be logic 0 or 1.
	-02-X	Reserved for GPS. May be logic 0 or 1.
	-03-X	Reserved for GPS. May be logic 0 or 1.
	-04-X	Reserved for GPS. May be logic 0 or 1.
	-05-X	Reserved for GPS. May be logic 0 or 1.
	-06-X	Reserved for GPS. May be logic 0 or 1.
	-07-X	Reserved for GPS. May be logic 0 or 1.
	-08-X	Reserved for GPS. May be logic 0 or 1.
	-09-X	Reserved for GPS. May be logic 0 or 1.
	-10-X	Reserved for GPS. May be logic 0 or 1.
	-11-X	Reserved for GPS. May be logic 0 or 1.
	-12-X	Reserved for GPS. May be logic 0 or 1.
	-13-X	Reserved for GPS. May be logic 0 or 1.
	-14-X	Reserved for GPS. May be logic 0 or 1.
	-15-X	Reserved for GPS. May be logic 0 or 1.

REMARKS/NOTES:

WORD NAME: G-11 Word 23 Satellite PRN Number

		CATEGORY:	Integer
WORD ID:	13R-011/27	MAX VALUE:	32
SOURCE(s):	Platform	MIN VALUE:	1
DEST(s):	Store	RESOLUTION:	1
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^{15}
SIGNAL TYPE:	Unsigned	LSB:	2^0
UNITS:	N/A	FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Satellite ID	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

FOR OFFICIAL USE ONLY

WORD NAME: G-11 Word 24 Iono Range Difference

		CATEGORY:	Special
WORD ID:	13R-011/28	MAX VALUE:	100
SOURCE(s):	Platform	MIN VALUE:	-30
DEST(s):	Store	RESOLUTION:	2^-8
COMP RATE:	Aperiodic	ACCURACY:	See Note 1
XMIT RATE:	Aperiodic	MSB:	2^6
SIGNAL TYPE:	2's Complement	LSB:	2^-8
UNITS:	Meters	FULL SCALE:	1.2800E+02

FIELD NAME	BIT NO.	DESCRIPTION
Iono Range Difference	-00-S	
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. A zero value for <u>Iono Range Difference</u> indicates this word is not available.

WORD NAME: Reserved

	CATEGORY: Special
WORD ID: 13R-011/29-30	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0.
	-01-0	Set to logic 0.
	-02-0	Set to logic 0.
	-03-0	Set to logic 0.
	-04-0	Set to logic 0.
	-05-0	Set to logic 0.
	-06-0	Set to logic 0.
	-07-0	Set to logic 0.
	-08-0	Set to logic 0.
	-09-0	Set to logic 0.
	-10-0	Set to logic 0.
	-11-0	Set to logic 0.
	-12-0	Set to logic 0.
	-13-0	Set to logic 0.
	-14-0	Set to logic 0.
	-15-0	Set to logic 0.

REMARKS/NOTES:

6.13R-015 Complementary Navigation Message (CNM) [13R-015]

The Complementary Navigation Message (CNM) [13R-015] provides the store with GPS complementary nav message data. CNM is passed to the store as MDT File #19.

CNM [13R-015] data complements the almanac and ephemeris data by providing remaining satellite downlink data. A complete set of complementary navigation data is comprised of all pages of subframes 4 & 5 data of the satellite navigation downlink message containing a value greater than 50 in the SV ID field as defined in ICD-GPS-200. The platform GPS receiver collects this subframe data from the satellite navigation downlink message and outputs it to the platform one subframe at a time in the G-22C Complementary Nav Message as defined in ICD-GPS-169. Each subframe from the satellite downlink message is comprised of ten 30-bit words, referred to as SubFrame Word 1 (SFW1), SFW2, …, SFW10. In the G-22C output message, each subframe word is ordered left to right from MSB to LSB. The 6 lower order bits are parity bits. The 24 higher order bits of the 10 subframe words (with parity excluded) are packed into 15 16-bit words. These 15 words are preceded by two words: The first being a label which identifies the message as being in the G-22C format, and the second containing the SV ID and the Page ID. The Page ID of each SV ID of subframes 4 and 5 is defined in ICD-GPS-200 Table 20-V. The packed subframe data is followed by two words related to its collection: one containing the 16-bit GPS week of collection, and the other containing the SV ID and code type on which it was collected, as well as the validity for the subframe data.

CNM [13R-015] is an MDT file containing 18 records that correspond to the 18 unique subframes of complementary nav message data. The file consists of one record each for Page ID [13R-015/02/05…09 = 1, 6, 11 through 24] where SV ID [13R-015/02/10…15 = > 50] and two records for Page ID [13R-015/02/05…09 = 25] (one each for SV ID [13R-015/02/10…15 = 51 and 63]). In each record, words 02-19 are a pass through of words 02-19 in the G-22C Complementary Nav Message output message.

6.13R-015.1 Subframe Data ID [13R-015/02]

Page ID [13R-015/02/05…09] and SV ID [13R-015/02/10…15] are defined in ICD-GPS-200. The combination of Page ID and SV ID identify the unique complementary nav message data contained in the record.

6.13R-015.2 Subframe Words 1-10 [13R-015/03-17]

These words contain the packed subframe data from the satellite navigation downlink message.

Platform Requirements

The platform shall **{ps_6143}** provide one record each for Page ID [13R-015/02/05…09 = 1, 6, 11 through 24] where SV ID [13R-015/02/10…15 = > 50] and two records for Page ID [13R-015/02/05…09 = 25] (one each for SV ID [13R-015/02/10…15 = 51 and 63]) for a total of 18 records.

6.13R-015.3 <u>GPS Week</u> [13R-015/18]

<u>GPS Week</u> [13R-015/18] contains the 16-bit GPS week of collection.

6.13R-015.4 <u>Collection SV Data</u> [13R-015/19]

<u>ID of Collection SV</u> [13R-015/19/02…07] contains the SV ID from which the subframe data was collected, and <u>Code of Collection</u> [13R-015/19/10…11] contains the code type on which it was collected. <u>Page Data Validity</u> [13R-015/19/15 = 1] indicates that the subframe data in [13R-015/03-17] is valid.

Platform Requirements

The platform shall **{ps_6144}** provide <u>Complementary Navigation Message</u> [13R-015] (if available) as MDT File #19, to a <u>GPS Capable</u> [22T/05/13 = 1] and <u>GPS Configuration</u> [22T/16/00…02 > 000 (B)] store, if the platform is SAASM capable and <u>CDS MDT Files</u> **{cds_4002}**.

The platform shall **{ps_6145}** provide <u>CNM</u> [13R-015] containing the most current available data at least once not less that 15 seconds prior to sending a valid <u>CTS</u> [11R/04/02 = 1].

Mission Store Requirements

The mission store shall **{ss_6157}** accept and store <u>Complementary Navigation Message</u> [13R-015] data in non-volatile memory.

MESSAGE NAME: Complementary Navigation Message (CNM)
MESSAGE ID: 13R-015   TRANSFER TYPE: BC-RT
SOURCE: Rec/Blk ID   WORD COUNT: 30
DESTINATION: Store   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01101 (B)
Rec/Blk ID	01	Mass Data Transfer Record #/Block #
Subframe Data ID	02	SV ID/Page ID
Subframe Word 1	03	Subframe Word 1 (16 MSB)
Subframe Words 1 & 2	04	Subframe Word 1 (8 LSB) & 2 (8 MSB)
Subframe Word 2	05	Subframe Word 2 (16 LSB)
Subframe Word 3	06	Subframe Word 3 (16 MSB)
Subframe Words 3 & 4	07	Subframe Word 3 (8 LSB) & 4 (8 MSB)
Subframe Word 4	08	Subframe Word 4 (16 LSB)
Subframe Word 5	09	Subframe Word 5 (16 MSB)
Subframe Words 5 & 6	10	Subframe Word 5 (8 LSB) & 6 (8 MSB)
Subframe Word 6	11	Subframe Word 6 (16 LSB)
Subframe Word 7	12	Subframe Word 7 (16 MSB)
Subframe Words 7 & 8	13	Subframe Word 7 (8 LSB) & 8 (8 MSB)
Subframe Word 8	14	Subframe Word 8 (16 LSB)
Subframe Word 9	15	Subframe Word 9 (16 MSB)
Subframe Words 9 & 10	16	Subframe Word 9 (8 LSB) & 10 (8 MSB)
Subframe Word 10	17	Subframe Word 10 (16 LSB)
GPS Week	18	GPS Week
Collection SV Data	19	Satellite Data
Reserved	20-30	Reserved
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Rec/Blk ID

		CATEGORY:	Special
WORD ID:	13R-015/01	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Record Number	-00-N	MSB : 2^7---
	-01-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-02-N	MAX VALUE: 18 MIN VALUE: 1
	-03-N	RESOLUTION: 1 ACCURACY: 1
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0---
Block Number	-08-N	MSB : 2^7---
	-09-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-10-N	MAX VALUE: 8 MIN VALUE: 1
	-11-N	RESOLUTION: 1 ACCURACY: 1
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0---

REMARKS/NOTES:

1. CNM data records and blocks are contained in MDT File #19.

WORD NAME: Subframe Data ID

	CATEGORY: Special
WORD ID: 13R-015/02	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-X	Reserved for GPS. May be logic 0 or 1
Reserved	-01-X	Reserved for GPS. May be logic 0 or 1
Reserved	-02-X	Reserved for GPS. May be logic 0 or 1
Reserved	-03-X	Reserved for GPS. May be logic 0 or 1
Reserved	-04-X	Reserved for GPS. May be logic 0 or 1
Page ID	-05-B	MSB : 2^4 --
	-06-B	SIGNAL TYPE: Unsigned, MAX VALUE: 31
	-07-B	MIN VALUE: 1, RESOLUTION: 1
	-08-B	ACCURACY: 1, FULL SCALE: 31
	-09-B	LSB : 2^0 --
SV ID	-10-B	MSB : 2^5 --
	-11-B	SIGNAL TYPE: Unsigned, MAX VALUE: 63
	-12-B	MIN VALUE: 51, RESOLUTION: 1 (Note 1, 2)
	-13-B	ACCURACY: 1, FULL SCALE: 63
	-14-B	
	-15-B	LSB : 2^0 --

REMARKS/NOTES:

WORD NAME: Subframe Word 1

	CATEGORY: Special
WORD ID: 13R-015/03	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Subframe Word 1 (16 MSB)	-00-B	MSB --
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	
	-07-B	
	-08-B	
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	Least Significant Part in Subframe Word 2

REMARKS/NOTES:

WORD NAME: Subframe Words 1 & 2

	CATEGORY: Special
WORD ID: 13R-015/04	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Subframe Word 1 (8 LSB)	-00-B	Most Significant Part in Subframe Word 1
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	
	-07-B	LSB ---
Subframe Word 2 (8 MSB)	-08-B	MSB ---
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	Least Significant Part in Subframe Word 2

REMARKS/NOTES:

WORD NAME: Subframe Word 2

	CATEGORY:	Special
WORD ID: 13R-015/05	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Subframe Word 2 (16 LSB)	-00-B	Most Significant Part in Subframe Words 2
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	
	-07-B	
	-08-B	
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	LSB ---

REMARKS/NOTES:

WORD NAME: Subframe Word 3

	CATEGORY: Special
WORD ID: 13R-015/06	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Subframe Word 3 (16 MSB)	-00-B	MSB ---
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	
	-07-B	
	-08-B	
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	Least Significant Part in Subframe Word 4

REMARKS/NOTES:

WORD NAME: Subframe Words 3 & 4

	CATEGORY:	Special
WORD ID: 13R-015/07	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Subframe Word 3 (8 LSB)	-00-B	Most Significant Part in Subframe Word 3
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	
	-07-B	LSB ---
Subframe Word 4 (8 MSB)	-08-B	MSB ---
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	Least Significant Part in Subframe Word 4

REMARKS/NOTES:

WORD NAME: Subframe Word 4

	CATEGORY:	Special
WORD ID: 13R-015/08	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Subframe Word 4 (16 LSB)	-00-B	Most Significant Part in Subframe Words 4
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	
	-07-B	
	-08-B	
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	LSB ---

REMARKS/NOTES:

WORD NAME: Subframe Word 5

	CATEGORY:	Special
WORD ID: 13R-015/09	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Subframe Word 5 (16 MSB)	-00-B	MSB ---
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	
	-07-B	
	-08-B	
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	Least Significant Part in Subframe Word 6

REMARKS/NOTES:

WORD NAME:	Subframe Words 5 & 6	

			CATEGORY:	Special
WORD ID:	13R-015/10		MAX VALUE:	N/A
SOURCE(s):	Platform		MIN VALUE:	N/A
DEST(s):	Store		RESOLUTION:	N/A
COMP RATE:	Aperiodic		ACCURACY:	N/A
XMIT RATE:	Aperiodic		MSB:	N/A
SIGNAL TYPE:	N/A		LSB:	N/A
UNITS:	N/A		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Subframe Word 5 (8 LSB)	-00-B	Most Significant Part in Subframe Word 5
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	
	-07-B	LSB --
Subframe Word 6 (8 MSB)	-08-B	MSB --
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	Least Significant Part in Subframe Word 6

REMARKS/NOTES:

FOR OFFICIAL USE ONLY

WORD NAME: Subframe Word 6

	CATEGORY: Special
WORD ID: 13R-015/11	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Subframe Word 6 (16 LSB)	-00-B	Most Significant Part in Subframe Words 6
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	
	-07-B	
	-08-B	
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	LSB --

REMARKS/NOTES:

WORD NAME: Subframe Word 7

WORD ID:	13R-015/12
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Subframe Word 7 (16 MSB)	-00-B	MSB ---
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	
	-07-B	
	-08-B	
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	Least Significant Part in Subframe Word 8

REMARKS/NOTES:

WORD NAME: Subframe Words 7 & 8

	CATEGORY: Special
WORD ID: 13R-015/13	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Subframe Word 7 (8 LSB)	-00-B	Most Significant Part in Subframe Word 7
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	
	-07-B	LSB ---
Subframe Word 8 (8 MSB)	-08-B	MSB ---
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	Least Significant Part in Subframe Word 8

REMARKS/NOTES:

WORD NAME: Subframe Word 8

	CATEGORY:	Special
WORD ID: 13R-015/14	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Subframe Word 8 (16 LSB)	-00-B	Most Significant Part in Subframe Words 8
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	
	-07-B	
	-08-B	
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	LSB ---

REMARKS/NOTES:

WORD NAME: Subframe Word 9

	CATEGORY: Special
WORD ID: 13R-015/15	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Subframe Word 9 (16 MSB)	-00-B	MSB --
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	
	-07-B	
	-08-B	
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	Least Significant Part in Subframe Word 10

REMARKS/NOTES:

WORD NAME: Subframe Words 9 & 10

	CATEGORY: Special
WORD ID: 13R-015/16	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION	
Subframe Word 9 (8 LSB)	-00-B		Most Significant Part in Subframe Word 9
	-01-B		
	-02-B		
	-03-B		
	-04-B		
	-05-B		
	-06-B		
	-07-B	LSB	--
Subframe Word 10 (8 MSB)	-08-B	MSB	--
	-09-B		
	-10-B		
	-11-B		
	-12-B		
	-13-B		
	-14-B		
	-15-B		Least Significant Part in Subframe Word 10

REMARKS/NOTES:

WORD NAME: Subframe Word 10

WORD ID:	13R-015/17
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Subframe Word 10 (16 LSB)	-00-B	Most Significant Part in Subframe Words 10
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	
	-07-B	
	-08-B	
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	LSB ---

REMARKS/NOTES:

WORD NAME: GPS Week

	CATEGORY: Number(L)
WORD ID: 13R-015/18	MAX VALUE: 65535
SOURCE(s): Platform	MIN VALUE: 0
DEST(s): Store	RESOLUTION: 1
COMP RATE: Aperiodic	ACCURACY: 1
XMIT RATE: Aperiodic	MSB: 2^15
SIGNAL TYPE: Unsigned	LSB: 2^0
UNITS: N/A	FULL SCALE: 65535

FIELD NAME	BIT NO.	DESCRIPTION
GPS Week	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Collection SV Data

	CATEGORY:	Special
WORD ID: 13R-015/19	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-X	Reserved for GPS. May be logic 0 or 1.
Reserved	-01-X	Reserved for GPS. May be logic 0 or 1.
ID of Collection SV	-02-N	MSB : 2^5--
	-03-N	SIGNAL TYPE: Unsigned, UNITS: N/A
	-04-N	MAX VALUE: 63, MIN VALUE: 1
	-05-N	RESOLUTION: 1, ACCURACY: 1
	-06-N	FULL SCALE: 63
	-07-N	LSB : 2^0--
Reserved	-08-X	Reserved for GPS. May be logic 0 or 1.
Reserved	-09-X	Reserved for GPS. May be logic 0 or 1.
Code of Collection	-10-C	MSB See note 1---
	-11-C	LSB ---
Reserved	-12-X	Reserved for GPS. May be logic 0 or 1.
Reserved	-13-X	Reserved for GPS. May be logic 0 or 1.
Reserved	-14-X	Reserved for GPS. May be logic 0 or 1.
Page Data Validity	-15-V	Set to Logic 1 when page data valid

REMARKS/NOTES:

1. Code of Collection is defined as follows:
    00 - C/A
    01 - P
    10 - Y
    11 - Reserved

WORD NAME: Reserved

	CATEGORY:	N/A
WORD ID: 13R-015/20-30	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0
	-01-0	
	-02-0	
	-03-0	
	-04-0	
	-05-0	
	-06-0	
	-07-0	
	-08-0	
	-09-0	
	-10-0	
	-11-0	
	-12-0	
	-13-0	
	-14-0	
	-15-0	

REMARKS/NOTES:

6.13R-020 <u>MDT-MISSION</u> [13R-020]

Preplanned missions are passed to the store in MiDEF format per MIL-STD-3014 and IAW the data element definition in the MiDEF registry as MDT File #20.

The MiDEF file can consist of multiple or a single Mission Data Set (MDS). Although a MiDEF file can contain any number of MDSs, the platform/store interface is required to support a minimum of eight (8) preplanned MDSs. There is a desire for the store to support up to eighty (80) or more MDSs. For example, a single MiDEF file containing the MDS for all stores carried on the platform would simplify platform store management mechanization and increase store management flexibility. Section 4.12 Mission Data Exchange Format (MiDEF) Data File provides additional information and requirements.

The contents of a mission store MDS can include (but is not limited to) target data, mission enroute data, programmable fuzing data, waypoint data, preplanned LAR data, seeker/sensor initialization data, target priority lists, and/or mission store WDL network ID data and network participant indices associated with the mission. The details of a mission store MDS is documented in the mission store supplement. Sections 3.5.21 Weapon Data Link and 4.11.2 UAI File/Record/Block Assignments for MDT provide additional information and requirements on the types of WDL data and MDT files in which these data can be included.

Platform Requirements

The platform shall **{ps_6146}** pass <u>MDT-Mission</u> [13R-020] (the mission planning provided MiDEF file) (if available) to the store as MDT File #20 for up to the number of MDSs equal to <u>CDS Max MDS Storage Locations</u> **{cds_6069}**, if <u>CDS MDT Files</u> **{cds_4002}**.

The platform may **{pm_6032}** parse the mission planning provided data in the MiDEF files to display the data elements per the CDS.

The platform may **{pm_6033}** modify MDS parameters and reconstruct the MiDEF file and retransmit the modified MiDEF file to store per the CDS.

The platform annex **{ann_6015}** documents the maximum number of MDS Storage Locations (i.e., the maximum number of MDSs) the platform uses.

Mission Store Requirements

The mission store shall **{ss_6158}** receive, store in non-volatile memory, and process a minimum of eight (8) MDS contained in <u>MDT-Mission</u> [13R-020] (a MiDEF file composed of the data elements listed in the store supplement **{sup_6075}**).

The store supplement **{sup_6076}** documents the Max MDS Storage Locations that the store supports and the file number, record number, and block number structure used with <u>MDT-Mission</u> [13R-020].

MESSAGE NAME:	MDT-Mission	
MESSAGE ID:	13R-020	TRANSFER TYPE: BC-RT
SOURCE:	Platform	WORD COUNT: 30
DESTINATION:	Store	XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01101 (B)
Rec/Blk ID	01	Mass Data Transfer Record #/Block #
MiDEF Data Element Word	02	
MiDEF Data Element Word	03	
MiDEF Data Element Word	04	
MiDEF Data Element Word	05	
MiDEF Data Element Word	06	
MiDEF Data Element Word	07	
MiDEF Data Element Word	08	
MiDEF Data Element Word	09	
MiDEF Data Element Word	10	
MiDEF Data Element Word	11	
MiDEF Data Element Word	12	
MiDEF Data Element Word	13	
MiDEF Data Element Word	14	
MiDEF Data Element Word	15	
MiDEF Data Element Word	16	
MiDEF Data Element Word	17	
MiDEF Data Element Word	18	
MiDEF Data Element Word	19	
MiDEF Data Element Word	20	
MiDEF Data Element Word	21	
MiDEF Data Element Word	22	
MiDEF Data Element Word	23	
MiDEF Data Element Word	24	
MiDEF Data Element Word	25	
MiDEF Data Element Word	26	
MiDEF Data Element Word	27	
MiDEF Data Element Word	28	
MiDEF Data Element Word	29	
MiDEF Data Element Word	30	
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

1. Carriage system/store Mission Data Exchange Format (MiDEF) defines contents.

WORD NAME: Rec/Blk ID

	CATEGORY: Special
WORD ID: 13R-020/01	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Record Number	-00-N	MSB : 2^7---
	-01-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-02-N	MAX VALUE: 255 MIN VALUE: 1
	-03-N	RESOLUTION: 1 ACCURACY: 1
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0--
Block Number	-08-N	MSB : 2^7---
	-09-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-10-N	MAX VALUE: 1 MIN VALUE: 1
	-11-N	RESOLUTION: 1 ACCURACY: 1
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0--

REMARKS/NOTES:

1. <u>MDT-Mission</u> [13R-020] data is passed to the store as MDT File #20.

WORD NAME: MiDEF Data Element Word

	CATEGORY: Note 1
WORD ID: 13R-020/02-30	MAX VALUE: Note 1
SOURCE(s): Platform	MIN VALUE: Note 1
DEST(s): Store	RESOLUTION: Note 1
COMP RATE: Aperiodic	ACCURACY: Note 1
XMIT RATE: Aperiodic	MSB: Note 1
SIGNAL TYPE: Note 1	LSB: Note 1
UNITS: Note 1	FULL SCALE: Note 1

FIELD NAME	BIT NO.	DESCRIPTION
Data Element Word	-00-N	Note 1
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	

REMARKS/NOTES:

1. Carriage system/store Mission Data Exchange Format (MiDEF) defines contents.

6.13R-021 MDT-GEOZONE DATA [13R-021]

Preplanned GeoZone information is passed to the store in MDT-GeoZone Data [13R-021] MiDEF format per MIL-STD-3014 and IAW the data element definition in the MiDEF registry as MDT File #21. Preplanned GeoZone information is extracted from the Air Tasking Order (ATO), Airspace Control Plan (ACP), Airspace Control Order (ACO), and/or Special Instructions (SPINS) by a mission planning system.

The MDT-GeoZone Data [13R-021] MiDEF file can consist of any number of GeoZone data points. Although a MDT-GeoZone Data file can contain any number of GeoZone points, the platform/store MDT interface is required to support a minimum of 1020 GeoZone points (assuming each MDT GeoZone point requires a 30-word MDT data block to define the point, similar to GeoZone Control/Monitor [16R/T] point/line/area definitions). Section 6.16R/T GeoZone Control/Monitor [16R/T] provides additional information and requirements on GeoZone data.

Platform Requirements

The platform shall **{ps_6353}** pass MDT-GeoZone Data [13R-021] (the mission planning provided GeoZone MiDEF file) (if available) to the store as MDT File #21, if CDS MDT Files **{cds_4002}** and CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6422}** be capable of receiving, storing in non-volatile memory, and processing MDT-GeoZone Data [13R-021] a minimum of 1020 MDT GeoZone points, if the mission store is GeoZone Enabled.

The mission store supplement **{sup_6202}** documents the maximum number of MDT GeoZone data point/line/area data blocks that the store supports, if the mission store is GeoZone Enabled.

MESSAGE NAME: MDT-GeoZone Data
MESSAGE ID: 13R-021   TRANSFER TYPE: BC-RT
SOURCE: Platform   WORD COUNT: 30
DESTINATION: Store   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01101 (B)
Rec/Blk ID	01	Mass Data Transfer Record #/Block #
MiDEF Data Element Word	02	
MiDEF Data Element Word	03	
MiDEF Data Element Word	04	
MiDEF Data Element Word	05	
MiDEF Data Element Word	06	
MiDEF Data Element Word	07	
MiDEF Data Element Word	08	
MiDEF Data Element Word	09	
MiDEF Data Element Word	10	
MiDEF Data Element Word	11	
MiDEF Data Element Word	12	
MiDEF Data Element Word	13	
MiDEF Data Element Word	14	
MiDEF Data Element Word	15	
MiDEF Data Element Word	16	
MiDEF Data Element Word	17	
MiDEF Data Element Word	18	
MiDEF Data Element Word	19	
MiDEF Data Element Word	20	
MiDEF Data Element Word	21	
MiDEF Data Element Word	22	
MiDEF Data Element Word	23	
MiDEF Data Element Word	24	
MiDEF Data Element Word	25	
MiDEF Data Element Word	26	
MiDEF Data Element Word	27	
MiDEF Data Element Word	28	
MiDEF Data Element Word	29	
MiDEF Data Element Word	30	
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

1. Carriage system/store Mission Data Exchange Format (MiDEF) defines contents.

WORD NAME: Rec/Blk ID

		CATEGORY:	Special
WORD ID:	13R-021/01	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Record Number	-00-N	MSB : 2^7--
	-01-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-02-N	MAX VALUE: 255 MIN VALUE: 1
	-03-N	RESOLUTION: 1 ACCURACY: 1
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0--
Block Number	-08-N	MSB : 2^7--
	-09-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-10-N	MAX VALUE: 255 MIN VALUE: 1
	-11-N	RESOLUTION: 1 ACCURACY: 1
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0--

REMARKS/NOTES:

1. MDT-GeoZone Data [13R-021] data is passed to the store as MDT File #21.

WORD NAME: MiDEF Data Element Word

WORD ID: 13R-021/02-30	CATEGORY: Note 1
SOURCE(s): Platform	MAX VALUE: Note 1
DEST(s): Store	MIN VALUE: Note 1
COMP RATE: Aperiodic	RESOLUTION: Note 1
XMIT RATE: Aperiodic	ACCURACY: Note 1
SIGNAL TYPE: Note 1	MSB: Note 1
UNITS: Note 1	LSB: Note 1
	FULL SCALE: Note 1

FIELD NAME	BIT NO.	DESCRIPTION
Data Element Word	-00-N	Note 1
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	

REMARKS/NOTES:

1.   Store supplement defines Mission Data Exchange Format (MiDEF) contents.

6.13R-022 MDT-GROWTH CRYPTO [13R-022]

MDT-Growth Crypto [13R-022] is used to pass crypto data to mission store sub-system(s) that require crypto keys other than the GPS crypto data provide by GPS Crypto Data [12R].

Platform Requirements

The platform shall **{ps_6419}** pass MDT-Growth Crypto [13R-022] (a mission planning system generated Crypto Data MiDEF file) (if available) as MDT File #22, if CDS MDT Files **{cds_4002}**.

Mission Store Requirements

The mission store shall **{ss_6486}** receive, store, and process MDT-Growth Crypto [13R-022] (a mission planning system generated Crypto Data MiDEF file), as documented in the store supplement **{sup_6244}**).

MESSAGE NAME: MDT-Growth Crypto
MESSAGE ID: 13R-022   TRANSFER TYPE: BC-RT
SOURCE: Platform   WORD COUNT: 30
DESTINATION: Store   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01101 (B)
Rec/Blk ID	01	Mass Data Transfer Record #/Block #
Crypto Data Element Word	02	
Crypto Data Element Word	03	
Crypto Data Element Word	04	
Crypto Data Element Word	05	
Crypto Data Element Word	06	
Crypto Data Element Word	07	
Crypto Data Element Word	08	
Crypto Data Element Word	09	
Crypto Data Element Word	10	
Crypto Data Element Word	11	
Crypto Data Element Word	12	
Crypto Data Element Word	13	
Crypto Data Element Word	14	
Crypto Data Element Word	15	
Crypto Data Element Word	16	
Crypto Data Element Word	17	
Crypto Data Element Word	18	
Crypto Data Element Word	19	
Crypto Data Element Word	20	
Crypto Data Element Word	21	
Crypto Data Element Word	22	
Crypto Data Element Word	23	
Crypto Data Element Word	24	
Crypto Data Element Word	25	
Crypto Data Element Word	26	
Crypto Data Element Word	27	
Crypto Data Element Word	28	
Crypto Data Element Word	29	
Crypto Data Element Word	30	
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Rec/Blk ID

	CATEGORY:	Special
WORD ID:	13R-022/01	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Record Number	-00-N	MSB : 2^7---
	-01-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-02-N	MAX VALUE: 255 MIN VALUE: 1
	-03-N	RESOLUTION: 1 ACCURACY: 1
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0---
Block Number	-08-N	MSB : 2^7---
	-09-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-10-N	MAX VALUE: 255 MIN VALUE: 1
	-11-N	RESOLUTION: 1 ACCURACY: 1
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0---

REMARKS/NOTES:

1. MDT-Growth Crypto [13R-022] data is passed to the store as MDT File #22.

WORD NAME: Crypto Data

	CATEGORY:	Special
WORD ID: 13R-022/02-30	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: Binary	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Data Element Word	-00-B	
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	See Note 1
	-07-B	
	-08-B	
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	

REMARKS/NOTES:

1. See mission store supplement for additional information.

6.13R-023 MDT-WDL TERMINAL INITIALIZATION [13R-023]

The platform provides preplanned WDL terminal specific initialization data (not associated with specific MDS(s)) to the mission store via one or more MDT-WDL Terminal Initialization [13R-023] messages(s). Note: Mission specific preplanned WDL Controller/Mission Store/Waveform configuration data is provided to the mission store via MDT-Mission [13R-020]. MDT-WDL Terminal Initialization data is passed to the mission store as MiDEF MDT File #23.

Stringent coordination is required to ensure all participants in a WDL network initialize their WDL terminals with compatible settings. Some WDL terminal types require an Initialization Data Load (IDL) that is generated by the mission planning system and transferred to the platform via a Data Transfer Device (DTD). The platform then transfers the IDL configuration file to the mission store via MDT-WDL Terminal Initialization [13R-023] messages.

The detailed IDL requirements depend on WDL terminal type, role and mission assignment within the WDL network, and includes the communications structure of the WDL network and WDL terminal specific configuration data.

(Link-16) Mission stores that incorporate a Link-16 Tactical Data Link (TDL) require WDL terminal initialization data, that is provided to the mission store via MDT-WDL Terminal Initialization [13R-023] messages. For more information on Link-16 terminal initialization, refer to MIL-STD-6016C, Appendix V, JTIDS Unit Terminal Initialization.

(UHF) Mission stores that incorporate a UHF digital data link also require WDL terminal initialization data, that is provided to the mission store via MDT-WDL Terminal Initialization [13R-023] messages. For more information on UHF terminal initialization, refer to MIL-STD-188-220C, Data Link Initialization.

Some WDL terminals can support multiple types of WDL networks. These terminals can require multiple WDL terminal Initialization Data Loads (IDLs), where each IDL incorporates unique settings to ensure WDL network compatibility with legacy WDL controller terminal(s). The MDT-WDL Terminal Initialization [13R-023] message can be used to pass multiple mission store WDL terminal IDLs to the mission store, if required by the mission store. Multiple WDL IDLs are numbered sequentially starting with 1 and are stored in sequential order in mission store memory. Section 6.21R/T.5.8 WDL Terminal IDL Select [21R/T/08/05…07] provides additional information and requirements.

Platform Requirements

The platform shall **{ps_6546}** pass MDT-WDL Terminal Initialization [13R-023] (a mission planning system generated MiDEF file) (if available) as MDT File #23, if CDS MDT Files **{cds_4002}** and WDL Onboard [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6608}** receive, store in non-volatile memory, and process <u>MDT-WDL Terminal Initialization</u> [13R-023] (a mission planning system generated MiDEF file), if <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store shall **{ss_6876}** be capable of accepting at least three IDLs for each supported waveform up to a maximum of seven total IDLs in <u>MDT-WDL Terminal Initialization</u> [13R-023] and as documented in the store supplement **{sup_6247}**.

MESSAGE NAME: MDT-WDL Terminal Initialization
MESSAGE ID: 13R-023 TRANSFER TYPE: BC-RT
SOURCE: Platform WORD COUNT: 30
DESTINATION: Store XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01101 (B)
Rec/Blk ID	01	Mass Data Transfer Record #/Block #
WDLTerminal Initialization Data Word	02	
WDLTerminal Initialization Data Word	03	
WDLTerminal Initialization Data Word	04	
WDLTerminal Initialization Data Word	05	
WDLTerminal Initialization Data Word	06	
WDLTerminal Initialization Data Word	07	
WDLTerminal Initialization Data Word	08	
WDLTerminal Initialization Data Word	09	
WDLTerminal Initialization Data Word	10	
WDLTerminal Initialization Data Word	11	
WDLTerminal Initialization Data Word	12	
WDLTerminal Initialization Data Word	13	
WDLTerminal Initialization Data Word	14	
WDLTerminal Initialization Data Word	15	
WDLTerminal Initialization Data Word	16	
WDLTerminal Initialization Data Word	17	
WDLTerminal Initialization Data Word	18	
WDLTerminal Initialization Data Word	19	
WDLTerminal Initialization Data Word	20	
WDLTerminal Initialization Data Word	21	
WDLTerminal Initialization Data Word	22	
WDLTerminal Initialization Data Word	23	
WDLTerminal Initialization Data Word	24	
WDLTerminal Initialization Data Word	25	
WDLTerminal Initialization Data Word	26	
WDLTerminal Initialization Data Word	27	
WDLTerminal Initialization Data Word	28	
WDLTerminal Initialization Data Word	29	
WDLTerminal Initialization Data Word	30	
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Rec/Blk ID

	CATEGORY: Special
WORD ID: 13R-023/01	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Record Number	-00-N	MSB : 2^7---
	-01-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-02-N	MAX VALUE: 255 MIN VALUE: 1
	-03-N	RESOLUTION: 1 ACCURACY: 1
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0---
Block Number	-08-N	MSB : 2^7---
	-09-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-10-N	MAX VALUE: 255 MIN VALUE: 1
	-11-N	RESOLUTION: 1 ACCURACY: 1
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0---

REMARKS/NOTES:

1. MDT-WDL Terminal Initialization [13R-023] data is passed to the store as MDT File #23.

WORD NAME: WDL Terminal Initialization Data

		CATEGORY:	Special
WORD ID:	13R-023/02-30	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	Binary	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Data Element Word	-00-B	
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	See Note 1
	-07-B	
	-08-B	
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	

REMARKS/NOTES:

1. See mission store supplement for additional information.

6.13R-024 MDT-CS CDS [13R-024]

MDT-CS CS CDS [13R-024] provides preplanned configuration data for use by a Type 2 carriage system or mission store relative to the platform/carriage system/mission store integrated system.

Carriage System Requirement

A Type 2 carriage system store shall **{css_6218}** receive, store, validate, and process MDT-CS CS CDS [13R-024].

The carriage system supplement **{sup_3073}** documents the definition of the MDT-CS CDS [13R-024] MiDEF file, including CS CDS variables used and the ranges of values for each.

MESSAGE NAME: MDT-CS CDS
MESSAGE ID: 13R-024 TRANSFER TYPE: BC-RT
SOURCE: Platform WORD COUNT: 30
DESTINATION: Store XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01101 (B)
Rec/Blk ID	01	Mass Data Transfer Record #/Block #
CDS Element Word	02	
CDS Element Word	03	
CDS Element Word	04	
CDS Element Word	05	
CDS Element Word	06	
CDS Element Word	07	
CDS Element Word	08	
CDS Element Word	09	
CDS Element Word	10	
CDS Element Word	11	
CDS Element Word	12	
CDS Element Word	13	
CDS Element Word	14	
CDS Element Word	15	
CDS Element Word	16	
CDS Element Word	17	
CDS Element Word	18	
CDS Element Word	19	
CDS Element Word	20	
CDS Element Word	21	
CDS Element Word	22	
CDS Element Word	23	
CDS Element Word	24	
CDS Element Word	25	
CDS Element Word	26	
CDS Element Word	27	
CDS Element Word	28	
CDS Element Word	29	
CDS Element Word	30	
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Rec/Blk ID

	CATEGORY: Special
WORD ID: 13R-024/01	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Record Number	-00-N	MSB : 2^7---
	-01-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-02-N	MAX VALUE: 255 MIN VALUE: 1
	-03-N	RESOLUTION: 1 ACCURACY: 1
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0---
Block Number	-08-N	MSB : 2^7---
	-09-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-10-N	MAX VALUE: 255 MIN VALUE: 1
	-11-N	RESOLUTION: 1 ACCURACY: 1
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0---

REMARKS/NOTES:

1. MDT-CS CDS [13R-024] data is passed to the store as MDT File #24.

WORD NAME: CDS Data

	CATEGORY:	Special
WORD ID: 13R-024/02-30	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: Binary	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Data Element Word	-00-B	
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	See Note 1
	-07-B	
	-08-B	
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	

REMARKS/NOTES:

1. See store supplement for additional information.

6.13R-025 <u>MDT-WDL KEY 1-3</u> [13R-025-027]

Preplanned weapon data link keys are passed from the platform to the mission store using MiDEF <u>MDT-WDL Key 1</u> [13R-025], <u>MDT-WDL Key 2</u> [13R-026], and/or <u>MDT-WDL Key 3</u> [13R-027] for keying the mission store WDL transceiver. The platform supplies all WDL key data to the store by transmission of <u>MDT-WDL Key 1-3</u> messages. <u>MDT-WDL Key 1</u>, <u>MDT-WDL Key 2</u>, and <u>MDT-WDL Key 3</u> are passed to the mission store as MiDEF MDT File #25, 26, and 27 respectively. Note: UAI partitions <u>MDT-WDL Key 1-3</u> [13R-025-027] as three MDT data files separate from the WDL data in <u>MDT-Mission</u> [13R-020] and <u>MDT-WDL Terminal Initialization</u> [13R-023] data files to minimize the impact of the NSA approval process for incorporating new keys into the UAI mission planning, platform, and mission store infrastructure(s).

The crypto concept for Network Enabled Weapons (NEW) uses a split key where half of the key is hard-coded into the mission store when it is built and the other half is sent to the mission store via MDT File #25, 26, or 27 prior to release. The key half that is sent to the store will be a classified data file but it is not crypto data. Each type of weapon will have a different key and each different network will require a different key for each type of weapon. Additionally, the key for a particular network and mission store type combination may be different in a different operating area.

Platform Requirements

The platform shall **{ps_6582}** pass <u>MDT-WDL Key 1</u> [13R-025], <u>MDT-WDL Key 2</u> [13R-026], and <u>MDT-WDL Key 3</u> [13R-027] (mission planning system generated key data MiDEF files) as MDT File #25, MDT File #26, and MDT File #27, respectively, as needed if <u>CDS MDT Files</u> **{cds_4002}** and <u>WDL Onboard</u> [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6772}** receive, store in non-volatile memory, and process <u>MDT-WDL Key 1-3</u> [13R-025-027] (mission planning system generated key data MiDEF files), if <u>WDL Onboard</u> [22T/05/11 = 1] and as documented in the store supplement **{sup_6293}**.

MESSAGE NAME: MDT-WDL Key 1
MESSAGE ID: 13R-025   TRANSFER TYPE: BC-RT
SOURCE: Platform   WORD COUNT: 30
DESTINATION: Store   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01101 (B)
Rec/Blk ID	01	Mass Data Transfer Record #/Block #
Key Data Element Word	02	
Key Data Element Word	03	
Key Data Element Word	04	
Key Data Element Word	05	
Key Data Element Word	06	
Key Data Element Word	07	
Key Data Element Word	08	
Key Data Element Word	09	
Key Data Element Word	10	
Key Data Element Word	11	
Key Data Element Word	12	
Key Data Element Word	13	
Key Data Element Word	14	
Key Data Element Word	15	
Key Data Element Word	16	
Key Data Element Word	17	
Key Data Element Word	18	
Key Data Element Word	19	
Key Data Element Word	20	
Key Data Element Word	21	
Key Data Element Word	22	
Key Data Element Word	23	
Key Data Element Word	24	
Key Data Element Word	25	
Key Data Element Word	26	
Key Data Element Word	27	
Key Data Element Word	28	
Key Data Element Word	29	
Key Data Element Word	30	
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Rec/Blk ID

	CATEGORY:	Special
WORD ID: 13R-025/01	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Record Number	-00-N	MSB : 2^7--
	-01-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-02-N	MAX VALUE: 255 MIN VALUE: 1
	-03-N	RESOLUTION: 1 ACCURACY: 1
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0--
Block Number	-08-N	MSB : 2^7--
	-09-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-10-N	MAX VALUE: 255 MIN VALUE: 1
	-11-N	RESOLUTION: 1 ACCURACY: 1
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0--

REMARKS/NOTES:

1. MDT-WDL Key 1 [13R-025] data is passed to the store as MDT File #25.

WORD NAME: Key Data

		CATEGORY:	Special
WORD ID:	13R-025/02-30	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	Binary	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Key Data Element Word	-00-B	
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	See Note 1
	-07-B	
	-08-B	
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	

REMARKS/NOTES:

1. See mission store supplement for additional information.

MESSAGE NAME: MDT-WDL Key 2
MESSAGE ID: 13R-026   TRANSFER TYPE: BC-RT
SOURCE: Platform   WORD COUNT: 30
DESTINATION: Store   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01101 (B)
Rec/Blk ID	01	Mass Data Transfer Record #/Block #
Key Data Element Word	02	
Key Data Element Word	03	
Key Data Element Word	04	
Key Data Element Word	05	
Key Data Element Word	06	
Key Data Element Word	07	
Key Data Element Word	08	
Key Data Element Word	09	
Key Data Element Word	10	
Key Data Element Word	11	
Key Data Element Word	12	
Key Data Element Word	13	
Key Data Element Word	14	
Key Data Element Word	15	
Key Data Element Word	16	
Key Data Element Word	17	
Key Data Element Word	18	
Key Data Element Word	19	
Key Data Element Word	20	
Key Data Element Word	21	
Key Data Element Word	22	
Key Data Element Word	23	
Key Data Element Word	24	
Key Data Element Word	25	
Key Data Element Word	26	
Key Data Element Word	27	
Key Data Element Word	28	
Key Data Element Word	29	
Key Data Element Word	30	
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Rec/Blk ID

		CATEGORY:	Special
WORD ID:	13R-026/01	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Record Number	-00-N	MSB : 2^7---
	-01-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-02-N	MAX VALUE: 255 MIN VALUE: 1
	-03-N	RESOLUTION: 1 ACCURACY: 1
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0---
Block Number	-08-N	MSB : 2^7---
	-09-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-10-N	MAX VALUE: 255 MIN VALUE: 1
	-11-N	RESOLUTION: 1 ACCURACY: 1
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0---

REMARKS/NOTES:

1. <u>MDT-WDL Key 2</u> [13R-026] data is passed to the store as MDT File #26.

WORD NAME: Key Data

WORD ID:	13R-026/02-30
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	Binary
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Key Data Element Word	-00-B	
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	See Note 1
	-07-B	
	-08-B	
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	

REMARKS/NOTES:

1. See mission store supplement for additional information.

MESSAGE NAME: MDT-WDL Key 3
MESSAGE ID: 13R-027   TRANSFER TYPE: BC-RT
SOURCE: Platform   WORD COUNT: 30
DESTINATION: Store   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01101 (B)
Rec/Blk ID	01	Mass Data Transfer Record #/Block #
Key Data Element Word	02	
Key Data Element Word	03	
Key Data Element Word	04	
Key Data Element Word	05	
Key Data Element Word	06	
Key Data Element Word	07	
Key Data Element Word	08	
Key Data Element Word	09	
Key Data Element Word	10	
Key Data Element Word	11	
Key Data Element Word	12	
Key Data Element Word	13	
Key Data Element Word	14	
Key Data Element Word	15	
Key Data Element Word	16	
Key Data Element Word	17	
Key Data Element Word	18	
Key Data Element Word	19	
Key Data Element Word	20	
Key Data Element Word	21	
Key Data Element Word	22	
Key Data Element Word	23	
Key Data Element Word	24	
Key Data Element Word	25	
Key Data Element Word	26	
Key Data Element Word	27	
Key Data Element Word	28	
Key Data Element Word	29	
Key Data Element Word	30	
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Rec/Blk ID

	CATEGORY: Special
WORD ID: 13R-027/01	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Record Number	-00-N	MSB : 2^7---
	-01-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-02-N	MAX VALUE: 255 MIN VALUE: 1
	-03-N	RESOLUTION: 1 ACCURACY: 1
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0---
Block Number	-08-N	MSB : 2^7---
	-09-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-10-N	MAX VALUE: 255 MIN VALUE: 1
	-11-N	RESOLUTION: 1 ACCURACY: 1
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0---

REMARKS/NOTES:

1. <u>MDT-WDL Key 3</u> [13R-027] data is passed to the store as MDT File #27.

WORD NAME: Key Data

		CATEGORY:	Special
WORD ID:	13R-027/02-30	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	Binary	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Key Data Element Word	-00-B	
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	See Note 1
	-07-B	
	-08-B	
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	

REMARKS/NOTES:

1. See mission store supplement for additional information.

6.13R-028 <u>MDT-OTHER STORE KEYS</u> [13R-028]

A mission store could require one or more other keys in addition to WDL keys. A seeker algorithm key is an example of this type of key. These other keys are passed from the platform to the mission store using MiDEF <u>MDT-Other Store Keys</u> [13R-028] as MDT File #28. This file contains all non-crypto key data needed by the mission store other than the WDL keys provided in <u>MDT-WDL Key 1-3</u> [13R-025-027].

Similar to the WDL keys, these keys use a split key concept where half of the key is preloaded into the mission store and the other half is sent to the mission store via MDT File #28 prior to release. The key half that is sent to the store will be a classified data file but it is not crypto data. Note: For erasure purposes, these data are considered part of mission data and are statused as part of <u>Mission Data Erased</u> [22T/04/12].

Platform Requirements

The platform shall **{ps_6629}** pass <u>MDT-Other Store Keys</u> [13R-028] (mission planning system generated key data MiDEF file) as MDT File #28 if <u>CDS MDT Files</u> **{cds_4002}**.

Mission Store Requirements

The mission store shall **{ss_6831}** receive, store in non-volatile memory, and process <u>MDT-Other Store Keys</u> [13R-028] (mission planning system generated key data MiDEF file), as documented in the store supplement **{sup_6326}**.

MESSAGE NAME: MDT-Other Store Keys
MESSAGE ID: 13R-028   TRANSFER TYPE: BC-RT
SOURCE: Platform   WORD COUNT: 30
DESTINATION: Store   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01101 (B)
Rec/Blk ID	01	Mass Data Transfer Record #/Block #
Key Data Element Word	02	
Key Data Element Word	03	
Key Data Element Word	04	
Key Data Element Word	05	
Key Data Element Word	06	
Key Data Element Word	07	
Key Data Element Word	08	
Key Data Element Word	09	
Key Data Element Word	10	
Key Data Element Word	11	
Key Data Element Word	12	
Key Data Element Word	13	
Key Data Element Word	14	
Key Data Element Word	15	
Key Data Element Word	16	
Key Data Element Word	17	
Key Data Element Word	18	
Key Data Element Word	19	
Key Data Element Word	20	
Key Data Element Word	21	
Key Data Element Word	22	
Key Data Element Word	23	
Key Data Element Word	24	
Key Data Element Word	25	
Key Data Element Word	26	
Key Data Element Word	27	
Key Data Element Word	28	
Key Data Element Word	29	
Key Data Element Word	30	
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Rec/Blk ID

		CATEGORY:	Special
WORD ID:	13R-028/01	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Record Number	-00-N	MSB : 2^7---
	-01-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-02-N	MAX VALUE: 255 MIN VALUE: 1
	-03-N	RESOLUTION: 1 ACCURACY: 1
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0---
Block Number	-08-N	MSB : 2^7---
	-09-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-10-N	MAX VALUE: 255 MIN VALUE: 1
	-11-N	RESOLUTION: 1 ACCURACY: 1
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0---

REMARKS/NOTES:

1. MDT-Other Store Keys [13R-028] data is passed to the store as MDT File #28.

WORD NAME: Key Data

	CATEGORY: Special
WORD ID: 13R-028/02-30	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: Binary	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Key Data Element Word	-00-B	
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	See Note 1
	-07-B	
	-08-B	
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	

REMARKS/NOTES:

1. See mission store supplement for additional information.

6.13R-029 MDT-NET PARTICIPANTS [13R-029]

Preplanned network participant data, store DL settings, and IDL DL settings are transferred to the mission store via MDT-Net Participants [13R-029]. Sections 3.5.21 Weapon Data Link and 4.11.2 UAI File/Record/Block Assignments for MDT provide additional information and requirements on the types of WDL data and MDT files in which these data can be included.

Platform Requirements

The platform shall **{ps_6647}** pass MDT-Net Participants [13R-029] (a mission planning system generated MiDEF file) (if available) as MDT File #29 if CDS MDT Files **{cds_4002}** and WDL Onboard [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6877}** receive, store in non-volatile memory, and process MDT-Net Participants [13R-029] for network participant data for up to 31 network participants, for store DL settings, and for IDL DL settings for up to the maximum number of IDLs the store is required to support, if WDL Onboard [22T/05/11 = 1].

FOR OFFICIAL USE ONLY

MESSAGE NAME:	MDT-Net Participants	
MESSAGE ID:	13R-029	TRANSFER TYPE: BC-RT
SOURCE:	Platform	WORD COUNT: 30
DESTINATION:	Store	XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01101 (B)
Rec/Blk ID	01	Mass Data Transfer Record #/Block #
Data Element Word	02	
Data Element Word	03	
Data Element Word	04	
Data Element Word	05	
Data Element Word	06	
Data Element Word	07	
Data Element Word	08	
Data Element Word	09	
Data Element Word	10	
Data Element Word	11	
Data Element Word	12	
Data Element Word	13	
Data Element Word	14	
Data Element Word	15	
Data Element Word	16	
Data Element Word	17	
Data Element Word	18	
Data Element Word	19	
Data Element Word	20	
Data Element Word	21	
Data Element Word	22	
Data Element Word	23	
Data Element Word	24	
Data Element Word	25	
Data Element Word	26	
Data Element Word	27	
Data Element Word	28	
Data Element Word	29	
Data Element Word	30	
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Rec/Blk ID

	CATEGORY: Special
WORD ID: 13R-029/01	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Record Number	-00-N	MSB : 2^7--
	-01-N	SIGNAL TYPE: Unsigned
		UNITS: N/A
	-02-N	MAX VALUE: 255
		MIN VALUE: 1
	-03-N	RESOLUTION: 1
		ACCURACY: 1
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0--
Block Number	-08-N	MSB : 2^7--
	-09-N	SIGNAL TYPE: Unsigned
		UNITS: N/A
	-10-N	MAX VALUE: 255
		MIN VALUE: 1
	-11-N	RESOLUTION: 1
		ACCURACY: 1
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0--

REMARKS/NOTES:

1. MDT-Net Participants [13R-029] data is passed to the store as MDT File #29.

WORD NAME:	Net Participant Data	

			CATEGORY:	Special
WORD ID:	13R-029/02-30		MAX VALUE:	N/A
SOURCE(s):	Platform		MIN VALUE:	N/A
DEST(s):	Store		RESOLUTION:	N/A
COMP RATE:	Aperiodic		ACCURACY:	N/A
XMIT RATE:	Aperiodic		MSB:	N/A
SIGNAL TYPE:	Binary		LSB:	N/A
UNITS:	N/A		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Data Element Word	-00-B	
	-01-B	
	-02-B	
	-03-B	
	-04-B	
	-05-B	
	-06-B	See Note 1
	-07-B	
	-08-B	
	-09-B	
	-10-B	
	-11-B	
	-12-B	
	-13-B	
	-14-B	
	-15-B	

REMARKS/NOTES:

1. See mission store supplement for additional information.

6.14R TRANSFER CONTROL [14R]

Transfer Control [14R] is a MIL-STD-1760 standard message format that provides platforms with the capability to command and control Mass Data Transfer (MDT) to the store. Section 4 describes the UAI MDT protocol and MDT functional sequencing.

6.14R.1 Instruction [14R/02]

Instruction [14R/02] contains the platform command(s) to the store to control MDT messaging as described in Table 6.14R-1. Exclusive of the commands required for UAI, not all Instruction word commands are used by every platform or store. Instruction word command usage is documented in each platform annex and each store supplement. Allowable bit combinations for UAI required commands are presented in Table 6.14R-2.

Table 6.14R-1 UAI Instruction [14R/02] Bit Descriptions

Bit No.	Title	Description	Required By UAI
00	No Operation	Commands the store to update Transfer Monitor [14T] with the current MDT transaction status for either the transmit data designated Subaddress Select [14R/03] or the erasure of the File/Record/Block designated data	Yes
01	Select Download Mode	Commands the store to enter or remain in the download mode. Logic zero does not indicate exit from the mode, which is caused by bit 11, but rather that download mode is not commanded.	Yes
02	Select Upload Mode	Commands the store to enter or remain in the upload mode. Logic zero does not indicate exit from the mode, which is caused by bit 11, but rather that upload mode is not commanded.	No
03	Start New File/Record	Commands the store to prepare to receive data into the designated File/Record in the Subaddress Select [14R/03].	Yes
04	Erase All Files	Commands the store to erase all memory whose addresses are allocated to Mass Data Transfer.	Yes
05	Erase Designated File	Commands the store to erase the designated File Number [14R/04] memory addresses.	Yes
06	Erase Designated Record	Commands the store to erase the designated Record Number [14R/05] memory addresses.	No
07	Select Echo Mode	Applicable to download mode. Commands the store to load the data received in the designated Subaddress Select [14R/03] into the corresponding transmit subaddress.	No
08	Calculate File Checksum	Commands the store to run the File checksum test on the Designated File Number [14R/04].	Yes
09	Calculate Record Checksum	Commands the store to run the Record checksum test on the designated Record Number [14R/05].	No
10	System Start	Used in download mode to command the store to initiate program execution at the designated memory location [14R/04-06].	No
11	Exit Transfer Mode	Commands the store to exit the MDT mode. Re-entry can only be achieved via the download or upload bits.	Yes

Table 6.14R-1 UAI Instruction [14R/02] Bit Descriptions

Bit No.	Title	Description	Required By UAI
12	Reserved	Reserved for MIL-STD-1760	No
13	Reserved	Reserved for MIL-STD-1760	No
14	Reserved	Reserved for MIL-STD-1760	No
15	Reserved	Reserved for MIL-STD-1760	No

Notes:

1. This table derived from MIL-STD-1760, Table B-XVIII.

Table 6.14R-2 UAI Instruction [14R/02] Allowable Bit Combinations

Instruction Word Bit Number	UAI Bit Name	Allowable Bit Combinations						
		1	2	3	4	5	6	7
00	No Operation	1	0	0	0	0	0	0
01	Select Download Mode	X	1	1	1	1	1	0
03	Start New File/Record	X	0	1	0	0	0	0
04	Erase All Files	X	0	0	1	0	0	0
05	Erase Designated File	X	0	0	0	1	0	0
08	Calculate File Checksum	X	0	0	0	0	1	0
11	Exit Transfer	X	0	0	0	0	0	1

Notes:

1. This table derived from MIL-STD-1760, Table B-XIX
2. X = Don't Care, 0 = False, 1 = True
3. UAI non required and non used bits are considered "Don't Care"

Platform Requirements

The platform shall **{ps_6147}** set the Instruction [14R/02] commands IAW Tables 6.14R-1 and 6.14R-2.

The platform annex **{ann_6008}** documents Instruction [14R/02] command usage.

Store Requirements

The store shall **{ss_6159}** respond to the received Instruction [14R/02] commands IAW Table 6.14R-1.

The store supplement **{sup_6077}** documents Instruction [14R/02] command usage.

6.14R.2 Subaddress Select [14R/03]

Subaddress Select [14R/03/00…04] allows the platform to specify the subaddress (for UAI MDT subaddress is restricted to 13) for the transfer of the data designated file, record and block.

Platform Requirements

The platform shall **{ps_6148}** set Subaddress Select [14R/03/00…04 = 13].

Store Requirements

The store shall **{ss_6160}** prepare to receive MDT when Subaddress Select [14R/03/00…04 = 13].

6.14R.3 File, Record, Block Number [14R/04-06]

File, Record, Block Number [14R/04-06] words collectively identify the MDT data structures as defined in the store supplement. This word is compatible with the File Number word in the MIL-STD-1760 Transfer Control message. Refer to MIL-STD-1760, Tables B-XVII and B-XXII for additional information.

Platform Requirements

The platform shall **{ps_6149}** set File Number [14R/04], Record Number [14R/05], and Block Number [14R/06] as required for the MDT data being transferred.

Store Requirements

The store shall **{ss_6161}** read File Number [14R/04], Record Number [14R/05], and Block Number [14R/06] and execute the MDT operation as commanded in the Instruction [14R/02].

6.14R.4 File Number [14R/04]

Number of Files [14R/04/00…07] denotes the total number of files to be sent by the platform during the MDT current operation. Selected File [14R/04/08…15] contains the identification number for the selected file on which to begin operation of the command in Instruction [14R/02]. Files do not have to be transferred in numerical order.

6.14R.5 Record Number [14R/05]

Number of Records [14R/05/00…07] denotes the total number of records to be transferred for the Selected File [14R/04/08…15] during the MDT operation. Selected Record [14R/05/08…15] contains the identity of the selected record on which to begin operation of the command in Instruction [14R/02]. Records being transmitted to the store are always transferred in numerical order.

6.14R.6 Block Number [14R/06]

Number of Blocks [14R/06/00…07] denotes the total number of blocks to be transferred for the Selected Record [14R/05/08…15] during the MDT operation. Selected Block [14R/06/08…15] contains the identity of the selected block on which to begin operation of the command in Instruction [14R/02]. Blocks being transmitted to the store are always transferred in numerical order.

6.14R.7 File Checksum [14R/07]

File Checksum [14R/07] is used to validate the MDT file. This checksum is computed in accordance with the MDT file checksum algorithm defined in MIL-STD-1760, Section B.4.2.3.3.

Platform Requirements

The platform shall **{ps_6150}** set File Checksum [14R/07] to the checksum of the MDT file when Calculate File Checksum [14R/02/08 = 1].

Store Requirements

The store shall **{ss_6162}** use File Checksum [14R/07] for MDT file checksum validation when Calculate File Checksum [14R/02/08 = 1].

MESSAGE NAME: Transfer Control
MESSAGE ID: 14R   TRANSFER TYPE: BC-RT
SOURCE: Platform   WORD COUNT: 8
DESTINATION Store   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01110 (B)
Header	01	Message Descriptor
Instruction	02	Mass Data Transfer Instruction Word
Subaddress Select	03	Subaddress for Transfer Data (TD) Message
File Number	04	Total Number of Files and File Number
Record Number	05	Number of Records and Record Number
Block Number	06	Number of Blocks and Block Number
File Checksum	07	MDT File Checksum
Checksum Word	08	Checksum of 14R Message Data
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

1. This message is compatible with the MIL-STD-1760 Transfer Control message. This message provides the platform with control of file, record, or block transfer between the store and the platform.

2. This message is the first message sent in a mass data transfer.

WORD NAME: Header

WORD ID:	14R/01	CATEGORY: Header
SOURCE(s):	Platform	MAX VALUE: 0422 (H)
DEST(s):	Store	MIN VALUE: 0422 (H)
COMP RATE:	Aperiodic	RESOLUTION: N/A
XMIT RATE:	Aperiodic	ACCURACY: N/A
SIGNAL TYPE:	Hexadecimal	MSB: N/A
UNITS:	N/A	LSB: N/A
		FULL SCALE: FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB ---
	-01-B	
	-02-B	Hex digit # 1 value = 0 (H)
	-03-B	LSB ---
Hex Digit #2	-04-B	MSB ---
	-05-B	
	-06-B	Hex digit # 2 value = 4 (H)
	-07-B	LSB ---
Hex Digit #3	-08-B	MSB ---
	-09-B	
	-10-B	Hex digit # 3 value = 2 (H)
	-11-B	LSB ---
Hex Digit #4	-12-B	MSB ---
	-13-B	
	-14-B	Hex digit # 4 value = 2 (H)
	-15-B	LSB ---

REMARKS/NOTES:

WORD NAME: Instruction

			CATEGORY:	Special	
WORD ID:	14R/02		MAX VALUE:	N/A	
SOURCE(s):	Platform		MIN VALUE:	N/A	
DEST(s):	Store		RESOLUTION:	N/A	
COMP RATE:	Aperiodic		ACCURACY:	N/A	
XMIT RATE:	Aperiodic		MSB:	N/A	
SIGNAL TYPE:	N/A		LSB:	N/A	
UNITS:	N/A		FULL SCALE:	N/A	

FIELD NAME	BIT NO.	DESCRIPTION
Instruction Type	-00-D	MSB Logic 1 = No operation
	-01-D	Logic 1 = Select download mode. Note 1
	-02-D	Logic 1 = Select upload mode. Note 2
	-03-D	Logic 1 = Start new file.
	-04-D	Logic 1 = Erase all files.
	-05-D	Logic 1 = Erase designated file.
	-06-D	Logic 1 = Erase designated record. Note 2
	-07-D	Logic 1 = Select echo mode. Note 2
	-08-D	Logic 1 = Calculate file checksum.
	-09-D	Logic 1 = Calculate record checksum. Note 2
	-10-D	Logic 1 = System start. Note 2
	-11-D	Logic 1 = Exit transfer mode.
Reserved	-12-0	Set to logic 0.
Reserved	-13-0	Set to logic 0.
Reserved	-14-0	Set to logic 0.
Reserved	-15-0	LSB Set to logic 0.

REMARKS/NOTES:

1. Download of a specific record in a file is not required. Reference store supplement for implementation.
2. This MIL-STD-1760 MDT operation is not required for UAI compatibility.

WORD NAME: Subaddress Select

WORD ID:	14R/03
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Subaddress	-00-N	MSB : 2^4---
		SIGNAL TYPE: Unsigned
	-01-N	ACCURACY: N/A
		UNITS: N/A
	-02-N	MAX VALUE: 31
		MIN VALUE: 1
	-03-N	FULL SCALE: 31
		RESOLUTION: 1
	-04-N	LSB : 2^0---
Reserved	-05-0	Set to logic 0
Reserved	-06-0	Set to logic 0
Reserved	-07-0	Set to logic 0
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: File Number

	CATEGORY: Special
WORD ID: 14R/04	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Number of Files	-00-N	MSB : 2^7--
	-01-N	SIGNAL TYPE: Unsigned
		UNITS: N/A
	-02-N	MAX VALUE: 255
		MIN VALUE: 0
	-03-N	RESOLUTION: 1
		ACCURACY: N/A
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0--
Selected File	-08-N	MSB : 2^7--
	-09-N	SIGNAL TYPE: Unsigned
		UNITS: N/A
	-10-N	MAX VALUE: 255
		MIN VALUE: 0
	-11-N	RESOLUTION: 1
		ACCURACY: N/A
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0--

REMARKS/NOTES:

WORD NAME: Record Number

	CATEGORY: Special
WORD ID: 14R/05	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Number of Records	-00-N	MSB : 2^7--
	-01-N	SIGNAL TYPE: Unsigned
		UNITS: N/A
	-02-N	MAX VALUE: 255
		MIN VALUE: 0
	-03-N	RESOLUTION: 1
		ACCURACY: N/A
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0--
Selected Record	-08-N	MSB : 2^7--
	-09-N	SIGNAL TYPE: Unsigned
		UNITS: N/A
	-10-N	MAX VALUE: 255
		MIN VALUE: 0
	-11-N	RESOLUTION: 1
		ACCURACY: N/A
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0--

REMARKS/NOTES:

WORD NAME: Block Number

		CATEGORY:	Special
WORD ID:	14R/06	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Number of Blocks	-00-N	MSB : 2^7---
	-01-N	SIGNAL TYPE: Unsigned
		UNITS: N/A
	-02-N	MAX VALUE: 255
		MIN VALUE: 0
	-03-N	RESOLUTION: 1
		ACCURACY: N/A
	-04-N	FULL SCALE: 255
	-05-N	
	-06-N	
	-07-N	LSB : 2^0---
Selected Block	-08-N	MSB : 2^7---
	-09-N	SIGNAL TYPE: Unsigned
		UNITS: N/A
	-10-N	MAX VALUE: 255
		MIN VALUE: 0
	-11-N	RESOLUTION: 1
		ACCURACY: N/A
	-12-N	FULL SCALE: 255
	-13-N	
	-14-N	
	-15-N	LSB : 2^0---

REMARKS/NOTES:

WORD NAME: File Checksum

WORD ID:	14R/07	CATEGORY:	Number(L)
SOURCE(s):	Platform	MAX VALUE:	65535
DEST(s):	Store	MIN VALUE:	0
COMP RATE:	Aperiodic	RESOLUTION:	1
XMIT RATE:	Aperiodic	ACCURACY:	N/A
SIGNAL TYPE:	Unsigned	MSB:	2^{15}
UNITS:	N/A	LSB:	2^0
		FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
File Checksum	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Checksum Word

	CATEGORY: Number(L)
WORD ID: 14R/08	MAX VALUE: 65535
SOURCE(s): Platform	MIN VALUE: 0
DEST(s): Store	RESOLUTION: 1
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^{15}
SIGNAL TYPE: Unsigned	LSB: 2^0
UNITS: N/A	FULL SCALE: 65535

FIELD NAME	BIT NO.	DESCRIPTION
Checksum	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

6.14T TRANSFER MONITOR [14T]

Transfer Monitor [14T] is a MIL-STD-1760 standard message format that provides platforms with the capability to monitor Mass Data Transfer (MDT) operations in the store. Section 4 describes the UAI MDT protocol and MDT functional sequencing.

Platform Requirements

The platform shall **{ps_6151}** request Transfer Monitor [14T] to monitor the progress of the MDT.

The platform annex **{ann_6011}** documents processing for all Transfer Monitor [14T] status, including identification of CDS parameters used in fault processing.

6.14T.1 Last Received Instr [14T/02]

Last Received Instr [14T/02] directly mirrors the most recently received valid Transfer Control Instruction [14R/02] of the current MDT operation. The description of the originating Instruction word is presented in the Transfer Control [14R] section and in Tables 6.14R-1 and 6.14R-2.

Store Requirements

The store shall **{ss_6163}** set Last Received Instr [14T/02] to the most recently received MDT commands sent in Instruction [14R/02].

6.14T.2 Transfer Mode Status [14T/03]

Transfer Mode Status [14T/03] provides the platform with status of the store operations during execution of the MDT message protocol. The UAI Transfer Mode Status bits are defined in Table 6.14T-1. Allowable bit combinations for UAI required operations are presented in Table 6.14T-2.

Table 6.14T-1 UAI Transfer Mode Status [14T/03] Bit Descriptions

Bit No.	Title	Description	Required By UAI
00	In Download Mode	Set to 1 when the store is actively in download mode. This bit is mutually exclusive with bit 01.	Yes
01	In Upload Mode	Set to 1 when the store is actively in upload mode. This bit is mutually exclusive with bit 00.	No
02	Transfer Enabled	Following a "Start New File/Record" command, this bit is set to Logic 1 to indicate that the store is ready for the MDT transfer.	Yes
03	Erase In Progress	Set to 1 when the store is in the process of erasing all MDT files or the file(s) or record(s) corresponding to [14T/05] or [14T/06]. Set to 0 when not erasing data, but this does not necessarily indicate erasure is complete.	Yes
04	Erase Completed	Set to 1 when the store has completed erasure of all MDT files or file(s) or record(s) corresponding to [14T/05] or [14T/06].	Yes
05	Echo Mode Selected	Indicates that the echo mode is active for the designated Transfer Data message subaddress.	No

Table 6.14T-1 UAI Transfer Mode Status [14T/03] Bit Descriptions

Bit No.	Title	Description	Required By UAI
06	Checksum Calculation In Progress	Set to 1 when the store is in the process of calculating the file or record checksum for the file or record corresponding to [14T/05] or [14T/06]. Set to 0 when not doing this calculation, but this does not necessarily indicate that the calculation is complete.	Yes
07	Checksum Calculation Completed	Set to 1 when the store has completed the designated File checksum calculation and populated File Checksum [14T/08].	Yes
08	Checksum Failed	Set to 1 when the store computed checksum indicates a checksum failure corresponding to [14T/05] or [14T/06].	Yes
09	Execution Started	This bit is set to 1 when the store commences "Execute Program", as commanded in an associated Transfer Control [14R]. The bit is reset to Logic 0 when a new Transfer Control message is received commanding any new operation.	No
10	Exit In Progress	This bit is RESET to Logic 0, when the exit process is complete and, in addition, bits 00 and 01 (Download And Upload Mode) are also RESET to Logic 0 as required.	Yes
11	Retransmission Request	Set to 1 to request re-transmission if the store detects any missing blocks and/or records.	No

Notes:

1. This table derived from MIL-STD-1760, Table B-XXIII.

Table 6.14T-2 UAI Required Transfer Mode Status [14T/03] Allowable Bit Combinations

Transfer Mode Status Word Bit Number	UAI Bit Name	Allowable Bit Combinations							
		1	2	3	4	5	6	7	8
00	In Download Mode	1	1	1	1	1	1	1	1
02	Transfer Enabled	0	1	0	0	0	0	0	0
03	Erase In Progress	0	0	1	0	0	0	0	0
04	Erase Completed	0	0	0	1	0	0	0	0
06	Checksum Calculation In Progress	0	0	0	0	1	0	0	0
07	Checksum Calculation Completed	0	0	0	0	0	1	1	0
08	Checksum Failed	0	0	0	0	0	0	1	0
10	Exit In Progress	0	0	0	0	0	0	0	1

Notes:

1. This table derived from MIL-STD-1760, Table B-XXV
2. UAI not required and non used bits are set = 0

Store Requirements

The store shall **{ss_6164}** set Transfer Mode Status [14T/03] to reflect the current status of the MDT operation and IAW Tables 6.14T-1 and 6.14T-2.

The store shall **{ss_6165}** set Checksum Calculation Completed [14T/03/07 = 1] following completion of a checksum calculation, any validity checks, and all mission data storage processes for Mission Data File transfer.

6.14T.3 Subaddress [14T/04]

Subaddress [14T/04] is an echo of the last received subaddress from either Transfer Control [14R] or a Transfer Data message.

Store Requirements

The store shall **{ss_6166}** set Subaddress [14T/04] to reflect the most recently received subaddress designated in the Subaddress Select [14R/03].

6.14T.4 File, Record, Block Number [14T/05-07]

File, Record, Block Number [14T/05-07] collectively identify the MDT data structures. These words are compatible with the MIL-STD-1760 Transfer Control message MDT identification words. The words are used to identify either the data on which the store is performing the platform commanded operation, or the last received MDT data block. Refer to MIL-STD-1760, Tables B-XVII and B-XXII for additional information.

Store Requirements

The store shall **{ss_6167}** set File Number [14T/05], Record Number [14T/06], and Block Number [14T/07] as appropriate for the MDT in progress.

6.14T.5 File Number [14T/05]

File Number [14T/05] either reflects the last received file information from the MDT's Transfer Control [14R/04] message word of the same name, or the last received MDT data block. Number of Files [14T/05/00…07] contains the total number of files being received as defined in Number of Files [14R/04/00…07]. Selected File [14T/05/08…15] contains the last received file information from the MDT's Transfer Control [14R/04] message word Selected File [14R/04/08…15], or the file number of the last received MDT data block, whichever occurred last.

6.14T.6 Record Number [14T/06]

Record Number [14T/06] either reflects the last received record information designated from the MDT's Transfer Control [14R/05] message word of the same name, or the last received MDT data block. Number of Records [14T/06/00…07] denotes the total number received as defined in Number of Records [14R/05/00…07]. Selected Record [14T/06/08…15] denotes the last received record information from the MDT's Transfer Control [14R/04] message word Selected Record [14R/05/08…15], or the record number of the last received MDT data block, whichever occurred last.

6.14T.7 Block Number [14T/07]

Block Number [14T/07] either reflects the last received block information designated from the MDT's Transfer Control [14R/06] message word of the same name, or the last

received MDT data block. <u>Number of Blocks</u> [14T/07/00…07] denotes the total number received as defined in <u>Number of Blocks</u> [14R/06/00…07]. <u>Selected Block</u> [14T/07/08…15] denotes the last received block information from the MDT's <u>Transfer Control</u> [14R/04] message word <u>Selected Block</u> [14R/05/08…15], or the block number of the last received MDT data block, whichever occurred last.

6.14T.8 <u>File Checksum</u> [14T/08]

<u>File Checksum</u> [14T/08] contains the store computed checksum of the MDT file. The checksum calculation is commanded by the platform by setting the appropriate bit in <u>Instruction</u> [14R/02].

Store Requirements

The store shall **{ss_6168}** set <u>File Checksum</u> [14T/08] to 0000 (H) when <u>Transfer Mode Status</u> [14T/03/06 = 1] indicating the checksum calculation is in progress.

The store shall **{ss_6169}** set <u>File Checksum</u> [14T/08] to 0000 (H) when <u>Instruction</u> [14R/02/08 = 0] indicating that checksum calculations are not commanded.

The store shall **{ss_6170}** set <u>File Checksum</u> [14T/08] to 0000 (H) when the <u>Instruction</u> [14R/02] command changes and indicates the start of a new MDT operation.

The store shall **{ss_6171}** set <u>File Checksum</u> [14T/08] to the store computed MDT File checksum when <u>Transfer Mode Status</u> [14T/03/07 = 1] indicating checksum calculation is complete.

MESSAGE NAME: Transfer Monitor
MESSAGE ID: 14T   TRANSFER TYPE: RT-BC
SOURCE: Store   WORD COUNT: 9
DESTINATION: Platform   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01110 (B)
Status Word	SW	MIL-STD-1553 Status Word
Header	01	Message Descriptor
Last Received Instr	02	Mass Data Transfer Instruction Word
Transfer Mode Status	03	Mass Data Transfer Status
Subaddress	04	Subaddress for Last TC or TD Message
File Number	05	Total Number of Files and File Number
Record Number	06	Total Number of Records and Record Number
Block Number	07	Total Number of Blocks and Block Number
File Checksum	08	Store Computed MDT File Checksum
Checksum Word	09	Checksum of 14T Message Data

REMARKS/NOTES:

1. This message is compatible with the MIL-STD-1760 Transfer Monitor message. The transfer monitor message provides the platform with information from the store regarding file manipulation and traffic in a mass data transfer.

WORD NAME: Header

	CATEGORY: Header
WORD ID: 14T/01	MAX VALUE: 0423 (H)
SOURCE(s): Store	MIN VALUE: 0423 (H)
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: Once	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: Hexadecimal	LSB: N/A
UNITS: N/A	FULL SCALE: FFFF (H)

FIELD NAME	BIT NO	DESCRIPTION
Hex Digit #1	-00-B	MSB --
	-01-B	Hex digit # 1 value = 0 (H)
	-02-B	
	-03-B	LSB --
Hex Digit #2	-04-B	MSB --
	-05-B	Hex digit # 2 value = 4 (H)
	-06-B	
	-07-B	LSB --
Hex Digit #3	-08-B	MSB --
	-09-B	Hex digit # 3 value = 2 (H)
	-10-B	
	-11-B	LSB --
Hex Digit #4	-12-B	MSB --
	-13-B	Hex digit # 4 value = 3 (H)
	-14-B	
	-15-B	LSB --

REMARKS/NOTES:

WORD NAME: Last Received Instr

			CATEGORY:	Special
WORD ID:	14T/02		MAX VALUE:	N/A
SOURCE(s):	Store		MIN VALUE:	N/A
DEST(s):	Platform		RESOLUTION:	N/A
COMP RATE:	Aperiodic		ACCURACY:	N/A
XMIT RATE:	Aperiodic		MSB:	N/A
SIGNAL TYPE:	N/A		LSB:	N/A
UNITS:	N/A		FULL SCALE:	N/A

FIELD NAME	BIT NO	DESCRIPTION
Instruction Type	-00-D	No operation.
	-01-D	Select download mode. Note 2
	-02-D	Select upload mode. Note 1,2
	-03-D	Start new file/record. Note 2
	-04-D	Erase all files.
	-05-D	Erase designated file.
	-06-D	Erase designated record. Note 1
	-07-D	Select echo mode. Note 1
	-08-D	Calculate file checksum.
	-09-D	Calculate record checksum. Note 1
	-10-D	System start. Note 1
	-11-D	Exit transfer mode.
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

1. This command is not required to be implemented. Reference the store supplement for implementation.
2. Download/Upload of a specific Record in a file is not required.

WORD NAME: Transfer Mode Status

	CATEGORY: Special
WORD ID: 14T/03	MAX VALUE: N/A
SOURCE(s): Store	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Mode Status	-00-D	In Download Mode.
	-01-D	In Upload Mode
	-02-D	Transfer Enabled
	-03-D	Erase in Progress
	-04-D	Erase Completed
	-05-D	Echo Mode Selected.
	-06-D	Checksum Calculation in Progress
	-07-D	Checksum Calculation Completed
	-08-D	Checksum Failed
	-09-D	Execution Started
	-10-D	Exit in Progress
Reserved	-11-0	Set to Logic 0
Reserved	-12-0	Set to Logic 0
Reserved	-13-0	Set to Logic 0
Reserved	-14-0	Set to Logic 0
Reserved	-15-0	Set to Logic 0

REMARKS/NOTES:

WORD NAME: Subaddress

	CATEGORY: Special
WORD ID: 14T/04	MAX VALUE: N/A
SOURCE(s): Store	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION			
Subaddress	-00-N	MSB	--		
	-01-N	SIGNAL TYPE:	Unsigned	ACCURACY:	N/A
		UNITS:	N/A	MSB:	2^4
	-02-N	MAX VALUE:	31	LSB:	2^0
		MIN VALUE:	0	RESOLUTION:	1
	-03-N				
	-04-N	LSB	--		
Reserved	-05-0	Set to logic 0			
Reserved	-06-0	Set to logic 0			
Reserved	-07-0	Set to logic 0			
Reserved	-08-0	Set to logic 0			
Reserved	-09-0	Set to logic 0			
Reserved	-10-0	Set to logic 0			
Reserved	-11-0	Set to logic 0			
Reserved	-12-0	Set to logic 0			
Reserved	-13-0	Set to logic 0			
Reserved	-14-0	Set to logic 0			
Reserved	-15-0	Set to logic 0			

REMARKS/NOTES:

WORD NAME: File Number

		CATEGORY:	Special
WORD ID:	14T/05	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Number of Files	-00-N	MSB --
	-01-N	SIGNAL TYPE: Unsigned
		UNITS: N/A
	-02-N	MAX VALUE: 255
		MIN VALUE: 0
	-03-N	RESOLUTION: 1
		ACCURACY: N/A
	-04-N	MSB: 2^7
		LSB: 2^0
	-05-N	FULL SCALE: 255
	-06-N	
	-07-N	LSB --
Selected File	-08-N	MSB --
	-09-N	
	-10-N	SIGNAL TYPE: Unsigned
		UNITS: N/A
	-11-N	MAX VALUE: 255
		MIN VALUE: 0
	-12-N	RESOLUTION: 1
		ACCURACY: N/A
	-13-N	MSB: 2^7
		LSB: 2^0
	-14-N	FULL SCALE: 255
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Record Number

	CATEGORY: Special
WORD ID: 14T/06	MAX VALUE: N/A
SOURCE(s): Store	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Number of Records	-00-N	MSB ---
	-01-N	SIGNAL TYPE: Unsigned
		UNITS: N/A
	-02-N	MAX VALUE: 255
		MIN VALUE: 0
	-03-N	RESOLUTION: 1
		ACCURACY: N/A
	-04-N	MSB: 2^7
		LSB: 2^0
	-05-N	FULL SCALE: 255
	-06-N	
	-07-N	LSB ---
Selected Record	-08-N	MSB ---
	-09-N	SIGNAL TYPE: Unsigned
		UNITS: N/A
	-10-N	MAX VALUE: 255
		MIN VALUE: 0
	-11-N	RESOLUTION: 1
		ACCURACY: N/A
	-12-N	MSB: 2^7
		LSB: 2^0
	-13-N	FULL SCALE: 255
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Block Number

	CATEGORY: Special
WORD ID: 14T/07	MAX VALUE: N/A
SOURCE(s): Store	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Number of Blocks	-00-N	MSB ---
	-01-N	SIGNAL TYPE: Unsigned
		UNITS: N/A
	-02-N	MAX VALUE: 255
		MIN VALUE: 0
	-03-N	RESOLUTION: 1
		ACCURACY: N/A
	-04-N	MSB: 2^7
		LSB: 2^0
	-05-N	FULL SCALE: 255
	-06-N	
	-07-N	LSB ---
Selected Block	-08-N	MSB ---
	-09-N	SIGNAL TYPE: Unsigned
		UNITS: N/A
	-10-N	MAX VALUE: 255
		MIN VALUE: 0
	-11-N	RESOLUTION: 1
		ACCURACY: N/A
	-12-N	MSB: 2^7
		LSB: 2^0
	-13-N	FULL SCALE: 255
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: File Checksum

	CATEGORY:	Number(L)
WORD ID: 14T/08	MAX VALUE:	65535
SOURCE(s): Store	MIN VALUE:	0
DEST(s): Platform	RESOLUTION:	1
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^{15}
SIGNAL TYPE: Unsigned	LSB:	2^0
UNITS: N/A	FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Checksum	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Checksum Word

	CATEGORY: Number(L)
WORD ID: 14T/09	MAX VALUE: 65535
SOURCE(s): Store	MIN VALUE: 0
DEST(s): Platform	RESOLUTION: 1
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^{15}
SIGNAL TYPE: Unsigned	LSB: 2^0
UNITS: N/A	FULL SCALE: 65535

FIELD NAME	BIT NO.	DESCRIPTION
Checksum	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

6.15R ENVIRONMENTAL DATA [15R]

Environmental Data [15R] consists of the current atmospheric parameters being measured or estimated by the platform. Environmental Data is provided to the store to support store guidance, navigation, and control functions. Most stores require Environmental Data to be included as part of the pre-release data sent to the store prior to the platform initiating the store release process. However, some stores require the platform to periodically provide Environmental Data, as documented in the store supplement. Although the information contained in Environmental Data is not time stamped, it is time sensitive, requiring the platform to minimize data latency.

Platform Requirements

The platform shall **{ps_6152}** periodically provide Environmental Data [15R] to the store.

The platform shall **{ps_6153}** ensure that Environmental Data [15R] data latency is less than or equal to 300 msec.

Mission Store Requirements

The mission store shall **{ss_6172}** receive Environmental Data [15R] and extract the data for use by applicable store guidance, navigation, and control processes.

The mission store supplement **{sup_6078}** documents use of Environmental Data [15R].

6.15R.1 Wind Speed East, North, and Up [15R/03-08]

Wind Speed East [15R/03-04] is the platform measured (or best estimate) of wind speed east, with east defined as the component measured relative to the local surface in the east axis. Positive wind speed is from west to east. Wind Speed North [15R/05-06] is the platform measured (or best estimate) of wind speed north, with north defined as the component measured relative to the local surface in the north axis. Positive wind speed is from south to north. Wind Speed Up [15R/07-08] is the platform measured (or best estimate) of wind speed up, with up defined as the component measured relative to the local surface in the up axis. Positive wind speed is from down to up. Note: The platform sets Wind Speed Up [15R/07-08 = 0], if it is unable the measure (or estimate) Wind Speed Up.

Platform Requirements

The platform shall **{ps_6154}** provide Wind Speed East [15R/03-04], Wind Speed North [15R/05-06], and Wind Speed Up [15R/07-08] components of wind velocity to the store.

6.15R.2 True Airspeed [15R/09-10]

True Airspeed [15R/09-10] is the platform measured (or best estimate) of its airspeed through the airmass in which it flying. True Airspeed is equal to the speed over the

ground under zero wind conditions. An estimation of the wind is used to make a wind speed vector calculation that computes an estimated ground speed from the True Airspeed, and a wind correction angle, to maintain the desired ground track under wind conditions. Positive airspeed is from platform tail toward platform nose.

Platform Requirements

The platform shall **{ps_6155}** provide True Airspeed [15R/09-10] to the store.

6.15R.3 Free Air Temperature [15R/11]

Free Air Temperature [15R/11] is the platform measured (or best estimate) of the free air temperature of the airmass in which it is flying.

Platform Requirements

The platform shall **{ps_6156}** provide Free Air Temperature [15R/11] to the store.

6.15R.4 Air Pressure [15R/12-13]

Air Pressure [15R/12-13] is the platform measured (or best estimate) of the static force per unit area exerted by the airmass in which it is operating, against the platform's air pressure sensor(s).

Platform Requirements

The platform shall **{ps_6157}** provide Air Pressure [15R/12-13] to the store.

6.15R.5 Air Density [15R/14]

Air Density [15R/14] is the platform measured (or best estimate) of the mass per unit volume of the airmass in which it is flying.

Platform Requirements

The platform shall **{ps_6158}** provide Air Density [15R/14] to the store.

6.15R.6 Angle of Attack [15R/15]

Angle of Attack [15R/15] is the platform measured (or best estimate) of the true angle-of-attack (also called alpha) between the platform zero reference line and the air flow.

Platform Requirements

The platform shall **{ps_6159}** provide Angle of Attack [15R/15] to the store.

6.15R.7 Sideslip [15R/16]

Sideslip [15R/16] is the platform measured (or best estimate) of the angle of sideslip (also called beta) between the platform zero reference line and the air flow.

Platform Requirements

The platform shall **{ps_6160}** provide Sideslip [15R/16] to the store.

MESSAGE NAME: A/C Environmental Data
MESSAGE ID: 15R   TRANSFER TYPE: BC-RT
SOURCE: Platform   WORD COUNT: 16
DESTINATION: Store   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 01111 (B)
Header	01	Message Descriptor
Invalidity	02	Validity of the Message Data
Wind Speed E	03	East component of Local Wind Speed (MSW)
	04	East component of Local Wind Speed (LSW)
Wind Speed N	05	North component of Local Wind Speed (MSW)
	06	North component of Local Wind Speed (LSW)
Wind Speed U	07	Up component of Local Wind Speed (MSW)
	08	Up component of Local Wind Speed (LSW)
True Airspeed	09	Current True Airspeed of Platform (MSW)
	10	Current True Airspeed of Platform (LSW)
Free Air Temperature	11	Current Outside Air Temperature
Air Pressure	12	Static Air Pressure (MSW)
	13	Static Air Pressure (LSW)
Air Density	14	Air Density
Angle of Attack	15	Platform Angle of Attack
Sideslip	16	Platform Sideslip
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Header

	CATEGORY: Header
WORD ID: 15R/01	MAX VALUE: 3301 (H)
SOURCE(s): Platform	MIN VALUE: 3301 (H)
DEST(s): Store	RESOLUTION: 1
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^15
SIGNAL TYPE: Hexadecimal	LSB: 2^0
UNITS: N/A	FULL SCALE: FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB --
	-01-B	
	-02-B	Hex digit #1 value = 3 (H)
	-03-B	LSB --
Hex Digit #2	-04-B	MSB --
	-05-B	
	-06-B	Hex digit #2 value = 3 (H)
	-07-B	LSB --
Hex Digit #3	-08-B	MSB --
	-09-B	
	-10-B	Hex digit #3 value = 0 (H)
	-11-B	LSB --
Hex Digit #4	-12-B	MSB --
	-13-B	
	-14-B	Hex digit #4 value = 1 (H)
	-15-B	LSB --

REMARKS/NOTES:

WORD NAME: Invalidity

	CATEGORY:	Validity
WORD ID: 15R/02	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
W Speed E Invalid	-00-V	Set to logic 1 when words 3 & 4 are invalid.
W Speed N Invalid	-01-V	Set to logic 1 when words 5 & 6 are invalid.
W Speed U Invalid	-02-V	Set to logic 1 when words 7 & 8 are invalid.
Airspeed Invalid	-03-V	Set to logic 1 when words 9 & 10 are invalid.
Temperature Invalid	-04-V	Set to logic 1 when word 11 is invalid.
Air Pressure Invalid	-05-V	Set to logic 1 when words 12 & 13 are invalid.
Air Density Invalid	-06-V	Set to logic 1 when word 14 is invalid.
AOA Invalid	-07-V	Set to logic 1 when word 15 is invalid.
Sideslip Invalid	-08-V	Set to logic 1 when word 16 is invalid.
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME:	Wind Speed East			
			CATEGORY:	Velocity(M)+(L)
WORD ID:	15R/03-04		MAX VALUE:	1.0240E+3
SOURCE(s):	Platform		MIN VALUE:	-1.0240E+03
DEST(s):	Store		RESOLUTION:	3.8147E-06
COMP RATE:	Aperiodic		ACCURACY:	3.0000E+00
XMIT RATE:	Aperiodic		MSB:	2^12
SIGNAL TYPE:	2's Complement		LSB:	2^-18
UNITS:	Meters/Second		FULL SCALE:	8.1920E+03

FIELD NAME	BIT NO.	DESCRIPTION
Wind Speed E	MSW -00-S	Sign
	-01-N	MSB : 2^12 ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^-18 ---

REMARKS/NOTES:

1. A positive wind is defined as a wind blowing from the West to the East.

WORD NAME: Wind Speed North

	CATEGORY: Velocity(M)+(L)
WORD ID: 15R/05-06	MAX VALUE: 1.0240E+3
SOURCE(s): Platform	MIN VALUE: -1.0240E+03
DEST(s): Store	RESOLUTION: 3.8147E-06
COMP RATE: Aperiodic	ACCURACY: 3.0000E+00
XMIT RATE: Aperiodic	MSB: 2^12
SIGNAL TYPE: 2's Complement	LSB: 2^-18
UNITS: Meters/Second	FULL SCALE: 8.1920E+03

FIELD NAME	BIT NO.	DESCRIPTION
Wind Speed N	MSW -00-S	Sign
	-01-N	MSB : 2^12 --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^-18 --

REMARKS/NOTES:

1. A positive wind is defined as a wind blowing from the South to the North.

WORD NAME: Wind Speed Up

	CATEGORY:	Velocity(M)+(L)
WORD ID: 15R/07-08	MAX VALUE:	1.0240E+3
SOURCE(s): Platform	MIN VALUE:	-1.0240E+03
DEST(s): Store	RESOLUTION:	3.8147E-06
COMP RATE: Aperiodic	ACCURACY:	3.0000E+00
XMIT RATE: Aperiodic	MSB:	2^12
SIGNAL TYPE: 2's Complement	LSB:	2^-18
UNITS: Meters/Second	FULL SCALE:	8.1920E+03

FIELD NAME	BIT NO.	DESCRIPTION
Wind Speed U	MSW -00-S	Sign
	-01-N	MSB : 2^12 ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^-18 ---

REMARKS/NOTES:

1. A positive wind is defined as a wind blowing from Down to Up.

WORD NAME: True Airspeed

	CATEGORY:	Velocity(M)+(L)
WORD ID: 15R/09-10	MAX VALUE:	1.0240E+3
SOURCE(s): Platform	MIN VALUE:	0.0000E+00
DEST(s): Store	RESOLUTION:	3.8147E-06
COMP RATE: Aperiodic	ACCURACY:	2.5000E+01
XMIT RATE: Aperiodic	MSB:	2^12
SIGNAL TYPE: 2's Complement	LSB:	2^-18
UNITS: Meters/Second	FULL SCALE:	8.1920E+03

FIELD NAME	BIT NO.	DESCRIPTION
True Airspeed	MSW -00-S	Sign
	-01-N	MSB : 2^12 ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^-18 ---

REMARKS/NOTES:

WORD NAME:	Free Air Temperature	

	CATEGORY:	Temperature
WORD ID: 15R/11	MAX VALUE:	2.5600E+02
SOURCE(s): Platform	MIN VALUE:	-2.5600E+02
DEST(s): Store	RESOLUTION:	6.2500E-02
COMP RATE: Aperiodic	ACCURACY:	3.300E+00
XMIT RATE: Aperiodic	MSB:	2^10
SIGNAL TYPE: 2's Complement	LSB:	2^-4
UNITS: Degrees Celsius	FULL SCALE:	2.0479E+03

FIELD NAME	BIT NO.	DESCRIPTION
Free Air Temperature	-00-S	Sign
	-01-N	MSB : 2^10 ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^-4 ---

REMARKS/NOTES:

1. This word contains an estimate of the current free air temperature outside the platform.

WORD NAME: Air Pressure

		CATEGORY:	Pressure(M)+(L)
WORD ID:	15R/12-13	MAX VALUE:	1.5000E+02
SOURCE(s):	Platform	MIN VALUE:	7.0000E+00
DEST(s):	Store	RESOLUTION:	1.5259E-05
COMP RATE:	Aperiodic	ACCURACY:	1.0000E+00
XMIT RATE:	Aperiodic	MSB:	2^14
SIGNAL TYPE:	2's Complement	LSB:	2^-16
UNITS:	Kilopascals	FULL SCALE:	3.2768E+04

FIELD NAME	BIT NO.	DESCRIPTION
Air Pressure	MSW -00-S	Sign
	-01-N	MSB : 2^14 ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^-16 ---

REMARKS/NOTES:

WORD NAME:	Air Density			
			CATEGORY:	Special
WORD ID:	15R/14		MAX VALUE:	2.0000E+00
SOURCE(s):	Platform		MIN VALUE:	1.2500E-01
DEST(s):	Store		RESOLUTION:	3.9063E-01
COMP RATE:	Aperiodic		ACCURACY:	1.2500E-02
XMIT RATE:	Aperiodic		MSB:	2^7
SIGNAL TYPE:	Unsigned		LSB:	2^-8
UNITS:	Kg/m^3		FULL SCALE:	2.5600E+02

FIELD NAME	BIT NO.	DESCRIPTION
Air Density	-00-N	MSB : 2^7---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^-8---

REMARKS/NOTES:

WORD NAME: Angle of Attack

WORD ID: 15R/15	CATEGORY: Angle (M)
SOURCE(s): Platform	MAX VALUE: 1.0000E+00
DEST(s): Store	MIN VALUE: -1.0000E+00
COMP RATE: Aperiodic	RESOLUTION: 3.0518E-05
XMIT RATE: Aperiodic	ACCURACY: ±0.01111 Semicircles
SIGNAL TYPE: 2's Complement	MSB: 2^-1
UNITS: Semicircles	LSB: 2^-15
	FULL SCALE: 1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Angle of Attack	-00-S	Sign
	-01-N	MSB : 2^-1---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^-15 ---

REMARKS/NOTES:

WORD NAME: Sideslip

WORD ID:	15R/16
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	2's Complement
UNITS:	Semicircles

CATEGORY:	Angle (M)
MAX VALUE:	1.0000E+00
MIN VALUE:	-1.0000E+00
RESOLUTION:	3.0518E-05
ACCURACY:	±0.01111 Semicircles
MSB:	2^-1
LSB:	2^-15
FULL SCALE:	1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Sideslip	-00-S	Sign
	-01-N	MSB : 2^-1--
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB : 2^-15 ---

REMARKS/NOTES:

6.16R/T GEOZONE CONTROL/MONITOR [16R/T]

The GeoZone Control [16R] message to the mission store provides the capability to select, enter, and/or modify Engagement and Exclusion GeoZones. Platform implementation of GeoZone controls in Global Control Word 1 [16R/03] are mandatory; platform implementation of all other GeoZone controls is platform optional. The GeoZone Monitor [16T] message from the mission store provides current status of the GeoZone specified by Query Selected GeoZone [16R/T/04/05…06]. Table 3.5.22-1 provides definitions for GeoZones. Section 3.5.22 provides additional information and requirements.

The UAI GeoZone Control [16R] message point/line/area data elements are designed to be compatible with MIL-STD-6016C Tactical Data Link (Link-16) J3.0 Reference Point Message point/line/area data elements and definitions. This compatibility with Link-16 data link point/line/area data elements allows platforms that receive GeoZone updates via the platform data link system, to implement an automatic transfer of these GeoZone updates directly to the mission store, using the GeoZone Control [16R] message, with minimal platform data reformatting or aircrew interaction.

Platform Requirements

The platform shall **{ps_6510}** implement the following GeoZone Control [16R] commands, as a minimum, if CDS GeoZone Enabled **{cds_3038}**:

    a. Auto Abort on Zone [16R/03/00],

    b. Disable All GeoZones [16R/03/01],

    c. Exclusion Zone Overflight Enable [16R/03/02],

    d. Disable All Exclusion Zones [16R/03/03],

    e. Disable All Engagement Zones [16R/03/04].

The platform may **{pm_6049}** implement automatic transfer of GeoZone data, received via the platform data link system, to the mission store using GeoZone Control [16R] message(s), if CDS GeoZone Enabled **{cds_3038}**.

The platform annex **{ann_6014}** documents platform implementation of the GeoZone Control [16R] commands.

Carriage System Requirements

A Type 1 carriage system shall **{css_6162}** set all GeoZone Monitor [16T] Invalidity [16T/02] bits to logic 1 (invalid).

A Type 2 carriage system shall **{css_6163}** update GeoZone Monitor [16T], at a minimum rate of 25 Hz, to reflect the data from the next mission store to be released and set Selected Store [16T/04/12…15] to the release order number of the next mission store to be released.

Mission Store Requirements

The mission store supplement **{sup_6253}** documents if the mission store supports GeoZones and its GeoZone Enabled capability.

The mission store shall **{ss_6423}**, initialize all GeoZone Monitor [16T/04-30] data words to 0000 (H), prior to setting Platform ID Received [22T/05/02 = 1], until an GeoZone Control [16R] message is received with Global Control/Monitor Word 2 [16R/04 ≠ 0], if the mission store is GeoZone Enabled.

The mission store shall **{ss_6425}** store the data from GeoZone Control [16R] in mission store non-volatile memory, if the mission store is GeoZone Enabled.

6.16R/T.1 Global Control/Monitor Word 1 [16R/T/03]

Platforms implement the GeoZone controls in Global Control Word 1 [16R/03]. Table 6.16R/T-1 summarizes mission store responses to specific combinations of these GeoZone controls and target location WRT enabled GeoZones.

Table 6.16R/T-1 Mission Store Responses to Global Control/Monitor Word 1 [16R/03] Controls

GeoZone Control		Target / Target Coordinates Notes 4 & 5		
		Enters/Inside Enabled Exclusion GeoZone Note 2	Enters/Inside Enabled Engagement GeoZone	Leaves Enabled Engagement GeoZone
Disable all GeoZones Note 1	[16R/03/01 = 0]	Attack Prohibited	Attack Allowed	Note 3
	[16R/03/01 = 1]	Attack Allowed	Attack Allowed	Attack Allowed
Disable all Exclusion Zones	[16R/03/03 = 0]	Attack Prohibited	---	---
	[16R/03/03 = 1]	Attack Allowed	---	---
Disable all Engagement Zones	[16R/03/04 = 0]	---	Attack Allowed	Note 3
	[16R/03/04 = 1]	---	Attack Allowed	Attack Allowed

Notes:
1. Disable All GeoZones [16R/03/01] is a master override that disables all Engagement and Exclusion GeoZone restrictions/limits.
2. Enabled Exclusion GeoZones always override Enabled Engagement GeoZones.
3. Enabled Engagement GeoZones can restrict/limit mission store attack, if the target leaves the enabled Engagement GeoZone, and is documented in the mission store supplement.
4. The mission store engages the provided target coordinates, as long as the coordinates are not inside an enabled Exclusion GeoZone.
5. GeoZone restrictions/limits do not apply when the target coordinates are located outside and remain outside of all enabled Exclusion GeoZones and enabled Engagement GeoZones.

6.16R/T.1.1 Auto Abort on Zone [16R/T/03/00]

Auto Abort on Zone [16R/T/03/00] commands the mission store to abort (i.e., terminate) its mission to avoid entering an enabled Exclusion GeoZone, after the mission store is released.

Platform Requirements

The platform shall **{ps_6354}** set <u>Auto Abort on Zone</u> [16R/03/00 = 1] to command the mission store to abort its mission to avoid flying through or impacting within an enabled Exclusion GeoZone, if <u>CDS GeoZone Enabled</u> **{cds_3038}**.

The platform shall **{ps_6355}** provide the capability to select or enter <u>Auto Abort on Zone</u> [16R/03/00] command, if <u>CDS GeoZone Enabled</u> **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6426}** abort its mission (after release) to avoid flying through or impacting within an enabled Exclusion GeoZone, if <u>Auto Abort on Zone</u> [16R/03/00 = 1] and the mission store is <u>GeoZone Enabled</u>.

The mission store shall **{ss_6427}** set <u>Auto Abort on Zone</u> [16T/03/00] status equal to the <u>Auto Abort on Zone</u> [16R/03/00] command, if the mission store is <u>GeoZone Enabled</u>.

The mission store supplement **{sup_6203}** documents the mission store response to <u>Auto Abort on Zone</u> [16R/03/00], if the mission store is <u>GeoZone Enabled</u>.

6.16R/T.1.2 <u>Disable All GeoZones</u> [16R/T/03/01]

<u>Disable All GeoZones</u> [16R/T/03/01] is a master override control that allows the mission store to ignore all enabled Engagement and Exclusion GeoZone restrictions/limits when executing its post release mission.

Platform Requirements

The platform shall **{ps_6356}** set <u>Disable All GeoZones</u> [16R/03/01 = 1] to allow the mission store to execute its mission ignoring all enabled Engagement and Exclusion GeoZones restrictions/limits, if <u>CDS GeoZone Enabled</u> **{cds_3038}**.

The platform shall **{ps_6357}** provide the capability to select or enter <u>Disable All GeoZones</u> [16R/03/01] command, if <u>CDS GeoZone Enabled</u> **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6428}** ignore all enabled Engagement and Exclusion GeoZones restrictions/limits, when <u>Disable All GeoZones</u> [16R/03/01 = 1] and the mission store is <u>GeoZone Enabled</u>.

The mission store shall **{ss_6429}** set <u>Disable All GeoZones</u> [16T/03/01] status equal to the <u>Disable All GeoZones</u> [16R/03/01] command, if the mission store is <u>GeoZone Enabled</u>.

6.16R/T.1.3 <u>Exclusion Zones Overflight Enable</u> [16R/T/03/02]

<u>Exclusion Zone Overflight Enable</u> [16R/T/03/02] is a master override control that permits the mission store to fly inside/through the airspace within all three-dimensional (3D) Exclusion GeoZone(s), but not impact inside any enabled Exclusion GeoZones. This control allows the mission store to ignore any Exclusion GeoZone "no flight below" <u>Zone</u>

<u>Maximum Altitude</u> restrictions effectively changing all enabled Exclusion GeoZones into two dimensional (2D) no impact zones.

Platform Requirements

The platform shall **{ps_6358}** set <u>Exclusion Zone Overflight Enable</u> [16R/03/02 = 1] to allow the mission store to fly in the airspace above all enabled Exclusion GeoZone(s) maximum altitudes, but not impact within all enabled Exclusion GeoZones, if <u>CDS GeoZone Enabled</u> **{cds_3038}**.

The platform shall **{ps_6359}** provide the capability to select or enter <u>Exclusion Zone Overflight Enable</u> [16R/03/02] command, if <u>CDS GeoZone Enabled</u> **{cds_3038}**.

Mission Store Requirements

The mission store may **{sm_6011}** fly in the airspace above all enabled Exclusion GeoZone(s), but not impact within an enabled Exclusion GeoZones, if <u>Exclusion Zone Overflight Enable</u> [16R/03/02 = 1] and the mission store is <u>GeoZone Enabled</u>.

The mission store shall **{ss_6431}** set <u>Exclusion Zones Overflight Enable</u> [16T/03/02] status equal to the <u>Exclusion Zone Overflight Enable</u> [16R/03/02] command, if the mission store is <u>GeoZone Enabled</u>.

6.16R/T.1.4 **Disable All Exclusion Zones [16R/T/03/03]**

<u>Disable All Exclusion Zones</u> [16R/T/03/03] is a master override control that allows the mission store to ignore all enabled Exclusion GeoZone restrictions/limits when executing its post release mission.

Platform Requirements

The platform shall **{ps_6360}** set <u>Disable All Exclusion Zones</u> [16R/03/03 = 1] to allow the mission store to execute its mission ignoring all enabled Exclusion GeoZone restrictions/limits, if <u>CDS GeoZone Enabled</u> **{cds_3038}**.

The platform shall **{ps_6361}** provide the capability to select or enter <u>Disable All Exclusion Zones</u> [16R/03/03] command, if <u>CDS GeoZone Enabled</u> **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6432}** ignore all enabled Exclusion GeoZone restrictions/limits, if <u>Disable All Exclusion Zones</u> [16R/T/03/03 = 1] and the mission store is <u>GeoZone Enabled</u>.

The mission store shall **{ss_6433}** set <u>Disable All Exclusion Zones</u> [16T/03/03] status equal to the <u>Disable All Exclusion Zones</u> [16R/03/03] command, if the mission store is <u>GeoZone Enabled</u>.

6.16R/T.1.5 **Disable All Engagement Zones [16R/T/03/04]**

<u>Disable All Engagement Zones</u> [16R/T/03/04] is a master override control that allows the mission store to ignore all enabled Engagement GeoZone restrictions/limits when executing its post release mission.

Platform Requirements

The platform shall **{ps_6362}** set Disable All Engagement Zones [16R/03/04 = 1] to allow the mission store to execute its mission ignoring all enabled Engagement GeoZone restrictions/limits, if CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6363}** provide the capability to select or enter Disable All Engagement Zones [16R/03/04] command, if CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6600}** use the enabled Engagement GeoZone(s), when Disable All Engagement Zones [16R/T/03/04 = 0], if the mission store is GeoZone Enabled,

The mission store shall **{ss_6434}** ignore all enabled Engagement GeoZone restrictions/limits, if Disable All Engagement Zones [16R/T/03/04 = 1] and the mission store is GeoZone Enabled.

The mission store shall **{ss_6435}** set Disable All Engagement Zones [16T/03/04] status equal to the Disable All Engagement Zones [16R/03/04] command, if the mission store is GeoZone Enabled.

6.16R/T.2 Global Control/Monitor Word 2 [16R/T/04]

6.16R/T.2.1 Erase All GeoZone Data [16R/T/04/00]

Erase All GeoZone Data [16R/T/04/00] commands the mission store to delete all GeoZone data loaded in mission store memory. Section 6.16R/T.2.6   GeoZone Erase in Progress [16T/04/09] and 3.5.11 Data Erase Processing provide additional information and requirements.

Platform Requirements

The platform shall **{ps_6364}** set Erase All GeoZone Data [16R/04/00 = 1] to command the mission store to erase all GeoZone data, if CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6365}** provide the capability to select or enter Erase All GeoZone Data [16R/04/00] command, if CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6436}** erase all GeoZone data loaded in mission store memory after receipt of Erase All GeoZone Data [16R/04/00 = 1], if the mission store is is GeoZone Enabled.

The mission store shall **{ss_6437}** set Erase All GeoZone Data [16T/04/00] status equal to Erase All GeoZone Data [16R/04/00] command, if the mission store is is GeoZone Enabled.

6.16R/T.2.2 Erase Selected GeoZone [16R/T/04/01…02]

Erase Selected GeoZone [16R/T/04/01…02] is used to specify a particular GeoZone to erase from mission store memory, IAW Table 6.16R/T-2. Sections 3.5.11 Data Erase Processing, 6.16R/T.2.1 Erase All GeoZone Data [16R/T/04/00], 6.16R/T.2.6 GeoZone Erase in Progress [16T/04/15], and 6.16R/T.12.2 Multi-Point Line Definition in Multiple Messages provide additional information and requirements.

Table 6.16R/T-2 Erase Selected GeoZone [16R/T/04/01…02] Definitions

Value	Definition
00 (B)	No Operation Commanded (Default)
01 (B)	Erase the GeoZone specified by GeoZone Reference Number [16R/T/05-06].
10 (B)	Erase the GeoZone specified by Grid Label: Characters 1-4 [16R/T/07-08].
11 (B)	Reserved.

Platform Requirements

The platform shall **{ps_6366}** set Erase Selected GeoZone [16R/04/01…02] IAW Table 6.16R/T-2 and specify either GeoZone Reference Number [16R/05-06] or Grid Label: Characters 1-4 [16R/07-08] (as required), to command the mission store to erase the selected GeoZone from mission store memory, if CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6367}** provide the capability to select or enter Erase Selected GeoZone [16R/04/01…02] command, if CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6438}** erase the GeoZone specified by GeoZone Reference Number [16R/05-06], if Erase Selected GeoZone [16R/04/01…02 = 1] and the mission store is GeoZone Enabled.

The mission store shall **{ss_6439}** erase the GeoZone specified by Grid Label: Characters 1-4 [16R/07-08], if Erase Selected GeoZone [16R/04/01…02 = 2] and the mission store is GeoZone Enabled.

The mission store shall **{ss_6440}** set Erase Selected GeoZone [16T/04/01…02] status equal to Erase Selected GeoZone [16R/04/01…02] command, if the mission store is GeoZone Enabled.

6.16R/T.2.3 Edit Selected GeoZone [16R/T/04/03…04]

Edit Selected GeoZone [16R/T/04/03…04] is used to specify the GeoZone that is to be replaced in mission store memory, IAW Table 6.16R/T-3. Section 6.16R/T.12.2 Multi-Point Line Definition in Multiple Messages provides additional information and requirements.

Table 6.16R/T-3 Edit Selected GeoZone [16R/T/04/03…04] Definitions

Value	Definition
00 (B)	No Operation Commanded (Default)

Table 6.16R/T-3 Edit Selected GeoZone [16R/T/04/03…04] Definitions

Value	Definition
01 (B)	Replace or Add the GeoZone specified by GeoZone Reference Number [16R/T/05-06] into mission store memory.
10 (B)	Replace or Add the GeoZone specified by Grid Label:Characters 1-4 [16R/T/07-08] into mission store memory.
11 (B)	Reserved.

Platform Requirements

The platform shall **{ps_6368}** set Edit Selected GeoZone [16R/04/03…04] IAW Table 6.16R/T-3 and specify either GeoZone Reference Number [16R/05-06] or Grid Label: Characters 1-4 [16R/07-08] (as required), to command the mission store to replace/add the specified GeoZone into mission store memory with data contained in this message, if CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6369}** provide the capability to select or enter Edit Selected GeoZone [16R/04/03…04] commands, if CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6441}** store the GeoZone specified by GeoZone Reference Number [16R/05-06], if Edit Selected GeoZone [16R/04/03…04 = 1] and the mission store is GeoZone Enabled.

The mission store shall **{ss_6442}** store the GeoZone specified by Grid Label: Characters 1-4 [16R/07-08], if Edit Selected GeoZone [16R/04/03…04 = 2] and the mission store is GeoZone Enabled.

The mission store shall **{ss_6443}** set Edit Selected GeoZone [16T/04/03…04] status equal to Edit Selected GeoZone [16R/04/03…04] command, if the mission store is GeoZone Enabled.

6.16R/T.2.4 Query Selected GeoZone [16R/T/04/05…06]

Query Selected GeoZone [16R/T/04/05…06], IAW Table 6.16R/T-4, is used to specify the GeoZone data, loaded in mission store memory, that the mission store is to provide in subsequent GeoZone Monitor [16T/05-30] message data words. Sections 6.16R/T.2.5 and GeoZone Violation Type [16T/04/07…08], 6.16R/T.12.2 Multi-Point Line Definition in Multiple Messages, and 6.22T.1.16 GeoZone Violation [22T/02/15] provide additional information and requirements.

Table 6.16R/T-4 Query Selected GeoZone [16R/T/04/05…06] Definitions

Value	Definition
00 (B)	No Operation Commanded (Default), do not update/change GeoZone Monitor [16T/05-30].
01 (B)	Provide the GeoZone data specified by GeoZone Reference Number [16R/05-06] in GeoZone Monitor [16T/05-30].

Table 6.16R/T-4 Query Selected GeoZone [16R/T/04/05…06] Definitions

Value	Definition
10 (B)	Provide the GeoZone data specified by Grid Label: Characters 1-4 [16R/07-08] in GeoZone Monitor [16T/05-30].
11 (B)	Provide the GeoZone data in GeoZone Monitor [16T/05-30] applicable to the first GeoZone Reference Number [16T/05-06] of the Exclusion GeoZone that is the cause of the GeoZone Violation [22T/02/15 = 1], if GeoZone Violation Type [16T/04/07…08 > 0].

Platform Requirements

The platform shall **{ps_6370}** set Query Selected GeoZone [16R/04/05…06] IAW Table 6.16R/T-4 and specify either GeoZone Reference Number [16R/05-06] or Grid Label: Characters 1-4 [16R/07-08] (as required), to command the mission store to provide the requested GeoZone data, in subsequent GeoZone Monitor [16T/05-30] message data words, if CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6371}** provide the capability to select or enter Query Selected GeoZone [16R/04/05…06] commands, if CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6444}** provide the GeoZone data specified by GeoZone Reference Number [16R/05-06] in subsequent GeoZone Monitor [16T/05-30] message data words, if Query Selected GeoZone [16R/04/05…06 = 01 (B)] and the mission store is GeoZone Enabled.

The mission store shall **{ss_6445}** provide the GeoZone data specified by Grid Label: Characters 1-4 [16R/07-08] in subsequent GeoZone Monitor [16T/05-30] message data words, if Query Selected GeoZone [16R/04/05…06 = 10 (B)] and the mission store is GeoZone Enabled.

The mission store shall **{ss_6601}** provide the GeoZone data applicable to the first GeoZone Reference Number [16T/05-06] of the Exclusion GeoZone that is the cause of the GeoZone Violation [22T/02/15 = 1], in subsequent GeoZone Monitor [16T/05-30] message data words, if Query Selected GeoZone [16R/04/05…06 = 11 (B)] and the mission store is GeoZone Enabled.

The mission store shall **{ss_6670}** set Monitor [16T/05-30] message data words equal to 0000 (H), if Query Selected GeoZone [16R/04/05…06 = 11 (B)], GeoZone Violation [22T/02/15 = 0], and the mission store is GeoZone Enabled.

The mission store shall **{ss_6446}** set Query Selected GeoZone [16T/04/05…06] status equal to last received Query Selected GeoZone [16R/04/05…06 ≠ 00 (B)] command, if the mission store is GeoZone Enabled.

6.16R/T.2.5 GeoZone Violation Type [16T/04/07…08]

GeoZone Violation Type [16T/04/07…08] identifies the type of Exclusion GeoZone violation IAW 6.16R/T-5. When GeoZone Violation [22T/02/15] is set, the mission store sets GeoZone Violation Type [16T/04/07…08 = 11 (B)] and respond to Query Selected

GeoZone [16R/04/05…06] to provide the identity of the GeoZone(s) that is causing the GeoZone violation. Note: GeoZone Violation Type [16R/04/13…14] has no meaning in the GeoZone Control [16R] message. Section 6.16R/T.2.4 Query Selected GeoZone [16R/T/04/05…06] and 6.22T.1.16 GeoZone Violation [22T/02/15] provides additional information and requirements.

Table 6.16R/T-5 GeoZone Violation Type [16T/04/07…08] Definitions

Value	Definition
00 (B)	No Exclusion GeoZone Violation detected.
01 (B)	Exclusion GeoZone Violation based on pre-planned mission.
10 (B)	Exclusion GeoZone Violation based on "if released now" route of flight to the specified target location (or mission endpoint), when IR Status [22T/04/01 = 1] and/or IZ Status [22T/04/02 =1].
11 (B)	Reserved.

Platform Requirements

The platform shall **{ps_6508}** set GeoZone Violation Type [16R/04/07…08 = 00 (B)], if CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6602}** ignore platform provided GeoZone Violation Type [16R/04/07…08] commands, if the mission store is GeoZone Enabled.

The mission store shall **{ss_6594}** set the GeoZone Violation Type [16T/04/07…08] status IAW Table 6.16R/T-5, if the mission store is GeoZone Enabled.

The mission store shall **{ss_6671}** update GeoZone Violation Type [16T/04/07…08] ≤ 500 msec after receipt of a new or modified GeoZone in GeoZone Control [16R], as documented in the store supplement **{sup_6254}**, if the mission store is GeoZone Enabled.

6.16R/T.2.6 GeoZone Erase in Progress [16T/04/09]

GeoZone Erase in Progress [16T/04/09] indicates the mission store is in the process of erasing all GeoZone data provided by the platform, held within the stores memory, in response to a Erase All GeoZone Data [16R/04/00] or Erase Selected GeoZone [16R/04/01…02]. GeoZone Erase in Progress [16R/04/09] has no meaning in the GeoZone Control [16R] message. Sections 3.5.11 Data Erase Processing, 6.16R/T.2.1 Erase All GeoZone Data [16R/T/04/00], and 6.16R/T.2.2 Erase Selected GeoZone [16R/T/04/01…02] provide additional information and requirements.

Platform Requirements

The platform shall **{ps_6509}** set GeoZone Erase in Progress [16R/04/09 = 0], if CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6603}** ignore platform provided GeoZone Erase in Progress [16R/04/09] commands, if the mission store is GeoZone Enabled.

The mission store shall **{ss_6596}** set GeoZone Erase in Progress [16T/04/09 = 1] to indicate the mission store is in the process of erasing GeoZone data if the mission store is GeoZone Enabled.

The mission store shall **{ss_6597}** set GeoZone Erase in Progress [16T/04/09 = 0] to indicate the mission store has completed the GeoZone erase process, if the mission store is GeoZone Enabled.

The mission store supplement **{sup_6207}** defines the maximum times to erase a single GeoZone data block and all GeoZone data blocks, if the mission store is GeoZone Enabled

6.16R/T.2.7 Selected Store [16R/T/04/12…15]

Selected Store [16R/04/12…15] provides the capability to select a mission store on a Type 2 carriage system or submunition within a store for transfer of GeoZone Control [16R] data (Embedded Protocol). The Type 2 carriage system receives the data and based on the value in Selected Store, forwards the data to the corresponding mission store. The Selected Store number corresponds to the mission store release order number. Section 3.8.5.2, Embedded Protocol, provides further information and requirements.

Platform Requirements

The platform shall **{ps_6560}** set Selected Store [16R/04/12…15 = 1-8] (Embedded Protocol) to indicate that the GeoZone Control [16R] data is intended for a particular mission store in the release order, if CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6561}** set Selected Store [16R/04/12…15 = 0] to indicate that Embedded Protocol is not being used for transfer of GeoZone Control [16R] data to a mission store, if CDS GeoZone Enabled **{cds_3038}**.

Carriage System Requirements

A Type 2 carriage system shall **{css_6173}** transfer all GeoZone Control [16R] data (Embedded Protocol) to the corresponding mission store whose release order number equals the value in Selected Store [16R/04/12…15].

A Type 2 carriage system shall **{css_6174}** route the GeoZone Control [16R] commands to the mission store selected in Store Number [10R/02/08…11] (Directed Protocol) when Selected Store [16R/04/12…15 = 0].

A Type 2 carriage system shall **{css_6176}** set Selected Store [16T/04/12…15] to the release order number of the next mission store to be released to indicate that the GeoZone Monitor [16T] data is from that mission store when receiving a [16T] transmission request with Store Number [10R/02/08…11 = 0].

Mission Store Requirements

The mission store shall **{ss_6667}** set Selected Store [16T/04/12…15 = 0], if the mission store is GeoZone Enabled.

6.16R/T.3 GeoZone Reference Number [16R/T/05-06]

Each GeoZone is required to have a unique GeoZone Reference Number [16R/T/05-06]. GeoZone Reference Number is a 32-bit unsigned integer ID used to associate GeoZone information with information in other data link network(s). Therefore, to facilitate passing information received by the platform, via Link-16, and transferring this data to the mission store, the UAI GeoZone Reference Number is sized to make provisions for a 19-bit TADIL-J Track Number (as defined in MIL-STD-6016C, paragraph 4.3, Tactical Data Link (Link-16) J3.0 Message). Additionally, UAI GeoZone Reference Number is also sized to accommodate a 28-bit TADIL-K Target Number (as defined in the MIL-STD-6017, DFI 4003, DUI 001, page B-301) GeoZone ID.

A TADIL-J Track Number is a 19-bit alphanumeric group consisting of two (2) five-bit groups and three (3) three-bit groups. A five-bit group represents an alphanumeric character of either an alpha character of A through Z (excluding the alpha characters I and O) or a numeric character of zero through seven. A three-bit group represents a numeric character of zero through seven. Therefore, a TADIL-J GeoZone Reference Number [16R/T/05-06] can be represented by AANNN where A is an alphanumeric character coded with five bits and N is a numeric character coded with three bits. Table 6.16R/T-6 depicts GeoZone Reference Number coding for a five-bit field and a three-bit field, using the following TADIL-J definitions.

Table 6.16R/T-6 GeoZone Reference Number [16R/T/05-06] TADIL-J Coding

TADIL-J 5-Bit Character Field				TADIL-J 3-Bit Numeric Field	
Code	Character	Code	Character	Code	Character
00000	0	10000	J	000	0
00001	1	10001	K	001	1
00010	2	10010	L	010	2
00011	3	10011	M	011	3
00100	4	10100	N	100	4
00101	5	10101	P	101	5
00110	6	10110	Q	110	6
00111	7	10111	R	111	7
01000	A	11000	S	---	---
01001	B	11001	T	---	---
01010	C	11010	U	---	---
01011	D	11011	V	---	---
01100	E	11100	W	---	---
01101	F	11101	X	---	---
01110	G	11110	Y	---	---
01111	H	11111	Z	---	---

A <u>TADIL-K 28-bit Target Number</u> is a 28-bit alphanumeric group consisting of two (2) seven-bit groups and one (1) fourteen-bit groups. The first two seven-bit groups are alphanumeric characters in ANSI X3.4 American Standard for Information Interchange (ASCII) format, where only upper case alphabetic characters are used. The last group is 14-bits and represent a decimal value of 0000 through 9999, 10000 through 16383 are illegal. Therefore, a TADIL-K <u>GeoZone Reference Number</u> [16R/T/05-06] can be represented by AAN where A is an alphanumeric character coded with seven-bits and N is a numeric character coded with fourteen-bits.

Section 6.16R/T.12.2 Multi-Point Line Definition in Multiple Messages provides additional information and requirements for GeoZones that are defined as multi-point lines/areas.

Platform Requirements

The platform shall **{ps_6372}** set <u>GeoZone Reference Number</u> [16R/05-06], IAW Table 6.16R/T-6, to select a unique reference number for each GeoZone point provided to the mission store in <u>GeoZone Control</u> [16R/05-30] data words, if <u>CDS GeoZone Enabled</u> **{cds_3038}**.

The platform shall **{ps_6373}** provide the capability to select or enter <u>GeoZone Reference Number</u> [16R/05-06], if <u>CDS GeoZone Enabled</u> **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6447}** use <u>GeoZone Reference Number</u> [16R/T/05-06] as the reference number for the GeoZone provided by the platform in <u>GeoZone Control</u> [16R/05-30] data words, if the mission store is <u>GeoZone Enabled</u>.

The mission store shall **{ss_6448}** set <u>GeoZone Reference Number</u> [16T/05-06], IAW Table 6.16R/T-6, to the value corresponding to the GeoZone requested by the last received <u>Query Selected GeoZone</u> [16R/04/05…06 ≠ 0] command, if the mission store is <u>GeoZone Enabled</u>.

6.16R/T.4 UAI Grid Location Identifier

The UAI Grid Location Identifier (UGLI) consists of an Grid Origin Point, Grid End Point, and a Grid Labeling system that allows identification of a Cell, Sector, or Quadrant as an Engagement or Exclusion GeoZone.

6.16R/T.4.1 UAI Grid Location Identifier Definitions

The UGLI is based upon the USAF developed Common Grid Reference System (CGRS), defined in the HQ USAF Briefing "Agile Airspace Control Common Geographic Reference System via Link 16", Version 5, by Lt Col Brett 'Plink' Plentl AFC2ISRC/CCT, using a World Grid Reference (i.e., Latitude, Longitude, and Altitude HAE), as in Figure 6.16R/T-1.

The Grid Origin Point is defined by <u>Reference Point Location</u> [16R/T/12-17] as a latitude/longitude/altitude. The Grid End Point is defined by <u>Point 1 Offsets</u> [16R/T/25-27], as an offset in minutes. The Grid Dimensions are determined by the <u>Grid Reference</u>

Scale [16R/T/06/03…04] with the default scale of: Cell = 30 minutes x 30 minutes, Sector = 10 minutes x 10 minutes, and Quadrant = 5 minutes x 5 minutes. The Grid Labeling system uses Grid Label: Characters 1-4 [16R/T/07-08], where Grid Label: Character 1 [16R/T/07/00…07] = Row, Grid Label: Character 2 [16R/T/07/08…15] = Column, Grid Label: Character 3 [16R/T/08/00…07] = Sector, and Grid Label: Character 4 [16R/T/08/08…15] = Quadrant. Note: The CGRS quadrant reference depicted in Figure 6.16R/T-1 is "DF4 NorthEast", for UAI the same quadrant reference depicted in Figure 6.16R/T-1 is "DF42".
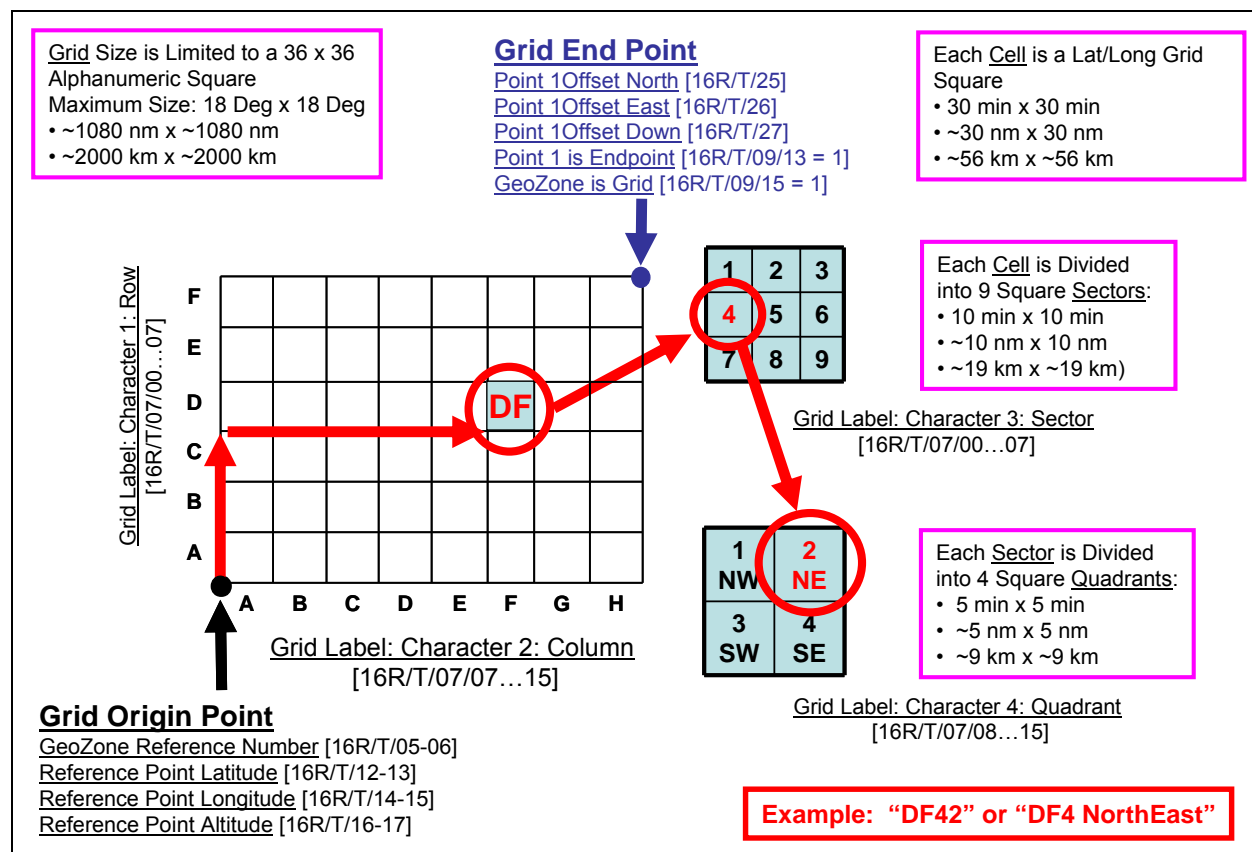
Figure 6.16R/T-1 UAI Grid Location Identifier Definitions

6.16R/T.4.2 Grid Label: Characters 1-4 [16R/T/07-08]

Grid Label: Characters 1-4 [16R/T/07-08] provides the capability to assign an optional UGLI Label to any GeoZone specified by GeoZone Reference Number [16R/05-06]. Grid Label: Characters 1-4 is a character code set of four (4) characters defined in ANSI X3.4 American Standard Code for Information Interchange (ASCII) where only upper case alphabetic characters are used. In standard 7-bit ASCII the first bit of each 8-bit character field (MSB) is set to logic zero (0), and the 7-bit ASCII code occupies the remaining seven bits of the field and this convention is used for all ASCII characters. Grid Label: Characters 1-4 are left justified, with the unused right-most characters filled with spaces (20 Hexadecimal).

Platform Requirements

The platform shall **{ps_6374}** set GeoZone is Grid [16R/09/15 = 1] and Grid Label characters for GeoZone Reference Number [16R/05-06], if CDS GeoZone Enabled **{cds_3038}** and specifying a UGLI GeoZone, as follows:

   a. Grid Label: Character 1 [16R/07/00…07 = Row ID]

   b. Grid Label: Character 2 [16R/07/08…15 = Column ID]

   c. Grid Label: Character 3 [16R/08/00…07 = Sector ID]

   d. Grid Label: Character 4 [16R/08/08…15 = Quadrant ID]

The platform shall **{ps_6375}** provide the capability to select or enter Grid Label: Characters 1-4 [16R/07-08], if CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6449}** set Grid Label: Characters 1-4 [16T/07-08] to the value(s) corresponding to the GeoZone requested by the last received Query Selected GeoZone [16R/04/05…06 ≠ 0] command, if the mission store is GeoZone Enabled.

6.16R/T.4.3 Specifying Grid Origin Point and Grid End Point

Grid Origin Point [16R/T/12-17], Grid End Point [16R/T/25-27], and Grid Scale [16R/T/10/00…01] establish the UGLI Grid references for Cell, Sector, and Quadrant GeoZone(s). Reference Point Location [16R/T/12-17] defines the Grid Origin Point latitude, longitude and altitude. Point 1 Offsets [16R/T/25-27] defines the Grid End Point offset wrt Reference Point Location and determines the overall Grid size. Note: When the GeoZone is a Grid, Point 1 Offset North [16R/T/25] and Point 1 Offset East [16R/T/26] units are in minutes, not meters, and Point 1 Offset Down [16R/T/27] units are meters.

Platform Requirements

The platform shall **{ps_6376}** set GeoZone is Grid [16R/09/15 = 1] and Reference Point Location [16R/12-17] to the Grid Origin Point, for a grid referenced GeoZone, if CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6377}** set Point 1 is Endpoint [16R/09/13 = 1], Point 2 is Endpoint [16R/T/09/14 = 0], Point 1 Offsets [16R/25-27] to the Grid End Point offset location, and Point 2 Offsets [16R/28-30 = 0], if GeoZone is Grid [16R/09/15 = 1] and CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6450}** use Reference Point Location [16R/12-17] and Point 1 Offsets [16R/25-27] to determine the Grid Origin Location, End Point Location, and Grid size, if GeoZone is Grid [16R/09/15 = 1] and the mission store is GeoZone Enabled.

6.16R/T.5 Geozone Definition Word 1 [16R/T/09]

To retain commonality with the existing platform tactical data link networks, UAI Point Type, Point Amplification, Point/Line/Area Continuation, Point/Line/Area Description, Point 1 is Endpoint, and Point 2 is Endpoint are compatible with the associated "similar-name" data element(s) defined in MIL-STD-6016C, Tactical Data Link (TDL) 16 Message Standard, Message J3.0.

6.16R/T.5.1 Point Type [16R/T/09/00…03] and Point Amplification [16R/T/09/04…07]

UAI required Point Type [16R/T/09/00…03] and Point Amplification [16R/T/09/04…07] combinations for Engagement or Exclusion GeoZones are defined in Table 6.16R/T-7. Note: The UAI Point Type and Point Amplification and associated definitions are compatible with the point type and point amplification definitions in MIL-STD-6016C1 Tactical Data Link (Link-16), J3.0 Message, Point Type/Point Amplification, definitions, Note 1.

Table 6.16R/T-7 Point Type [16R/09/00…03] and Point Amplification [16R/09/04…07] Definitions

UAI Engagement Zone Type	Point Type [16R/09/00…03]	Point Amplification [16R/09/04…07]	MIL-STD-6016C, Change 1 Description
Engagement Zone	6	11	Weapon Engagement Zone An area above and including the ground in which a weapon with autonomous targeting capabilities is allowed fly inside to autonomously engage hostile tactical forces (to include ground, air, or maritime).
Exclusion Zone	6	12	Weapon Exclusion Zone An area above and including the ground in which a weapon with autonomous targeting capabilities is prohibited from flying inside or impacting within, but may overfly.
See Mission Store Supplement	Note 4.	Note 4.	Note 4.

Notes:
1. UAI Point Type [16R/09/00…03] = MIL-STD-6016C1, DFI/DUI: 363 003, Point Type, Bit Position 51-54.
2. UAI Point Amplification [16R/09/04…07] = MIL-STD-6016C1, DFI/DUI: 379 002, Point Amplification, Bit Position 55-58.
3. A proposed change to MIL-STD-6016C1 has been submitted to add the Engagement and Exclusion Zone Point Type and Point Amplification definitions listed in this table.
4. UAI compatibility with Link-16 also allows platforms and mission stores to use other types of airspace control measures as defined in MIL-STD-6016C1, Tactical Data Link (Link-16) J3.0 Message, Point Type/Point Amplification. Mission store usage of other types airspace control measures is required to be documented in the mission store supplement.

Platform Requirements

The platform shall **{ps_6378}** set Point Type [16R/09/00…03] and Point Amplification [16R/09/04…07] IAW CDS Point Type/Amplification Valid Combinations **{cds_6144}** and Table 6.16R/T-7 to define the GeoZone Reference Number [16R/05-06] GeoZone type, if CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6381}** provide the capability to select or enter Point Type [16R/09/00…03] and Point Amplification [16R/09/04…07] IAW CDS Point Type/Amplification Valid Combinations **{cds_6144}** and Table 6.16R/T-7, if CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6451}** identify the GeoZone as an Engagement Zone when Point Type [16R/09/00…03 = 6] and Point Amplification [16R/09/04…07 = 11], if the mission store is GeoZone Enabled.

The mission store shall **{ss_6453}** identify the GeoZone as an Exclusion Zone when Point Type [16R/09/00…03 = 6] and Point Amplification [16R/09/04…07 = 12], if the mission store is GeoZone Enabled.

The mission store supplement **{sup_6256}** documents the valid combinations of Point Type [16R/09/00…03] and Point Amplification [16R/06/04…07] used by the mission store, if the mission store is GeoZone Enabled.

The mission store shall **{ss_6455}** set Point Type [16T/09/00…03] and Point Amplification [16T/09/04…07] to the value(s) corresponding to the GeoZone requested by the last received Query Selected GeoZone [16R/04/05…06 ≠ 0] command, if the mission store is GeoZone Enabled.

6.16R/T.5.2 Point/Line/Area Continuation [16R/T/09/08]

When the GeoZone is not a Grid, Point/Line/Area Continuation [16R/T/09/08] indicates that the point(s) provided in the current GeoZone Control [16R] message should be joined to form a segmented line/area with the point(s) provided in the previous GeoZone Control [16R] message. Section 6.16R/T.12.2 Multi-Point Line Definition in Multiple Messages provides further information and requirements.

Platform Requirements

The platform shall **{ps_6382}** set Point/Line/Area Continuation [16R/09/08 = 1], for GeoZone Reference Number [16R/05-06], to indicate that the line/area data in the current GeoZone Control [16R] message is a continuation of the line/area data defined in the previous GeoZone Control [16R] message(s), if CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6383}** provide the capability to select or enter Point/Line/Area Continuation [16R/09/08], if CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6456}** use Point/Line/Area Continuation [16R/09/08 = 1], for GeoZone Reference Number [16R/05-06], to determine that the multi-point line/area data in the current GeoZone Control [16R] message is a continuation of the multi-point line/area data provided in previous GeoZone Control [16R] message(s), if the mission store is GeoZone Enabled.

The mission store shall **{ss_6457}** set Point/Line/Area Continuation [16T/09/08] to the value(s) corresponding to the GeoZone requested by the last received Query Selected GeoZone [16R/04/05…06 ≠ 0] command, if the mission store is GeoZone Enabled.

6.16R/T.5.3 Point/Line/Area Descriptor [16R/T/09/09…10]

When the GeoZone is not a Grid, Point/Line/Area Descriptor [16R/T/09/09…10] IAW Table 6.16R/T-8, defines whether the GeoZone Control/Monitor [16R/T] message contains a point, single point area, a multi-point line, or multi-point area. Note: Point/Line/Area Continuation [16R/T/09/08 = 1] indicates that the multi-point line/area data in the current GeoZone Control [16R] message is a continuation of the multi-point line/area data provided in previous GeoZone Control [16R] message(s).

Traditionally, the Forward Edge of the Battle Area (FEBA), the Forward Line of Troops (FLOT), the Fire Support Coordination Line (FSCL), and Buffer Zones, etc, are defined as lines, with an action or operation allowed on one side of the line and not on the other. Link-16 and UAI GeoZones do not contain provisions for designating which side of these lines an action or operation is allowed or is not allowed. For UAI, these types of lines are defined as Single-Point Areas or Multi-Point Areas which are then designated as Engagement or Exclusion GeoZone(s).

Table 6.16R/T-8 Point/Line/Area Descriptor [16R/T/09/09…10] Definitions

Value	Definition	Description
00 (B)	Point	GeoZone Control/Monitor [16R/T] message contains a single point located at Reference Point Position [16R/T/12-17]. Not currently used for defining a UAI GeoZone.
01 (B)	Single Point Area	GeoZone Control/Monitor [16R/T] message contains a single point area which is a square, rectangle, circle or ellipse as defined using Reference Point Position [16R/T/12-17].
10 (B)	Multi-Point Line	GeoZone Control/Monitor [16R/T] message(s) contain a line consisting of two or more points where the first and last points do not coincide, using Point/Line/Area Continuation [16R/T/09/08], Reference Point Position [16R/T/12-17], Point 1 Offsets [16R/T/25-27], and Point 2 Offsets [16R/T/28-30]. Not currently used for defining a UAI GeoZone.
11 (B)	Multi-Point Area	GeoZone Control/Monitor [16R/T] message(s) contain an area consisting of four (4) or more points where the first and last coincide to form an area, using Point/Line/Area Continuation [16R/T/09/08], Reference Point Position [16R/T/12-17], Point 1 Offsets [16R/T/25-27], and Point 2 Offsets [16R/T/28-30].

Platform Requirements

The platform shall **{ps_6567}** set Point/Line/Area Descriptor [16R/09/09…10] IAW Table 6.16R/T-8, to indicate the type of point/line/area data provided for GeoZone Reference Number [16R/05-06], if GeoZone is Grid [16R/09/15 = 0] and CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6568}** provide the capability to select or enter Point/Line/Area Descriptor [16R/09/09…10], if CDS GeoZone Enabled **{cds_3038}**

Mission Store Requirements

The mission store shall **{ss_6458}** use Point/Line/Area Descriptor [16R/09/09…10], IAW Table 6.16R/T-8, to determine the type point/line/area data provided for GeoZone Reference Number [16R/05-06], if GeoZone is Grid [16R/09/15 = 0] and the mission store is GeoZone Enabled.

The mission store shall **{ss_6459}** set Point/Line/Area Descriptor [16T/09/09…10], IAW Table 6.16R/T-8, to the value corresponding to the GeoZone requested by the last received Query Selected GeoZone [16R/04/05…06 ≠ 0] command, if the mission store is GeoZone Enabled.

6.16R/T.5.4 Square/Circle Switch [16R/T/09/11…12]

When the GeoZone is not a Grid and Point/Line/Area Descriptor [16R/T/09/09…10] is set to Single Point Area, then Square/Circle Switch [16R/T/09/11…12], IAW Table 6.16R/T-9, defines whether the GeoZone a square/rectangle or circle/ellipse.

Table 6.16R/T-9 Square/Circle Switch [16R/T/09/11…12] Definitions

Value	Definition	Description
00 (B)	Not Applicable	Current GeoZone Control/Monitor [16R/T] message does not contain Square, Rectangle, Circle, or Elliptical data.
01 (B)	Square/Rectangle	If Area Major Axis [16R/T/23] and Area Minor Axis [16R/T/24] are equal, then the Single Point Area described is a square. If Area Major Axis [16R/T/23] and Area Minor Axis [16R/T/24] are not equal, then the Single Point Area described is a rectangle.
10 (B)	Circle/Ellipse	If Area Major Axis [16R/T/23] and Area Minor Axis [16R/T/24] are equal, then the Single Point Area described is a circle. If Area Major Axis [16R/T/23] and Area Minor Axis [16R/T/24] are not equal, then the Single Point Area described is a ellipse.
11 (B)	Reserved	Reserved.

Platform Requirements

The platform shall **{ps_6384}**, when Point/Line/Area Descriptor [16R/09/09…10 = 01 (B) = Single Point Area], set Square/Circle Switch [16R/09/11…12] IAW Table 6.16 R/T-9, to indicate the square/circle type of data for GeoZone Reference Number [16R/05-06], if GeoZone is Grid [16R/09/15 = 0] and CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6385}** provide the capability to select or enter Square/Circle Switch [16R/09/11…12], if CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6460}** use Square/Circle Switch [16R/09/11…12] IAW Table 6.16 R/T-9, to determine the square/circle type of data for GeoZone Reference Number [16R/05-06], if Point/Line/Area Descriptor [16R/09/09…10 = 01 (B) = Single Point Area] and GeoZone is Grid [16R/09/15 = 0], and the mission store is GeoZone Enabled.

The mission store shall **{ss_6461}** set Square/Circle Switch [16T/09/11…12], IAW Table 6.16 R/T-9, to the value corresponding to the GeoZone requested by the last received Query Selected GeoZone [16R/04/05…06 ≠ 0] command, if the mission store is GeoZone Enabled.

6.16R/T.5.5 Point 1 is Endpoint [16R/T/09/13] & Point 2 is Endpoint [16R/T/09/14]

When the GeoZone is not a Grid and Point/Line/Area Descriptor [16R/09/09…10] specifies a multi-point line/area, Point 1 is Endpoint [16R/T/09/13] is used to indicate that the associated Point 1 Offsets [16R/T/25-27] is the last point in a multi-point line/area in the current GeoZone Control [16R] message. Point 2 is Endpoint [16R/T/09/14] is used to indicate that the associated Point 2 Offsets [16R/T/28-30] is the last point in a multi-point line/area GeoZone Control [16R] message. Note: Point 1 is Endpoint and Point 2 is Endpoint cannot both be set to a logical 1 in the same message. See figures 16R/T-5 and 16R/T-6 for description of usage. Section 6.16R/T.4.3 Specifying Grid Origin Point and Grid End Point provides further information and requirements when GeoZone is a Grid.

Platform Requirements

The platform shall **{ps_6386}** set Point 1 is Endpoint [16R/09/13 = 1] and Point 2 is Endpoint [16R/09/14 = 0] to indicate that the Point 1 Offsets [16R/25-27] is the first point in a multi-point line/area, for GeoZone Reference Number [16R/05-06], when GeoZone is Grid [16R/09/15 = 0], Point/Line/Area Descriptor [16R/09/09…10 = 11 (B)], and CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6387}** set Point 1 is Endpoint [16R/09/13 = 0] and Point 2 is Endpoint [16R/09/14 = 1] to indicate that the Point 2 Offsets [16R/28-30] is the last point in a multi-point line/area, for GeoZone Reference Number [16R/05-06], when GeoZone is Grid [16R/09/15 = 0], Point/Line/Area Descriptor [16R/09/09…10 = 11 (B)], and CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6388}** set Point 1 is Endpoint [16R/09/13 = 0] and Point 2 is Endpoint [16R/09/14 = 0] to indicate that the Point 1 Offsets [16R/25-27] and Point 2 Offsets [16R/28-30] are not the last point(s) in a multi-point line/area, for GeoZone Reference Number [16R/05-06], when GeoZone is Grid [16R/09/15 = 0], Point/Line/Area Descriptor [16R/09/09…10 = 11 (B)], and CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6569}** set Point 1 is Endpoint [16R/09/13 = 0] and Point 2 is Endpoint [16R/09/14 = 0] for GeoZone Reference Number [16R/05-06], when GeoZone is Grid [16R/09/15 = 0], Point/Line/Area Descriptor [16R/09/09…10 = 01 (B)], and CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6389}** provide the capability to select or enter Point 1 is Endpoint [16R/09/13], if CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6390}** provide the capability to select or enter Point 2 is Endpoint [16R/09/14], if CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6462}** use Point 1 is Endpoint [16R/09/13] and Point 2 is Endpoint [16R/09/14] to determine if the associated Point 1 Offsets [16R/25-27] or Point 2 Offsets [16R/28-30] is the last point in a multi-point line/area, for GeoZone Reference Number [16R/05-06], if GeoZone is Grid [16R/09/15 = 0] and the mission store is GeoZone Enabled.

The mission store shall **{ss_6463}** set Point 1 is Endpoint [16T/09/13] and Point 2 is Endpoint [16T/09/14] to the value(s) corresponding to the GeoZone requested by the last received Query Selected GeoZone [16R/04/05…06 ≠ 0] command, if the mission store is GeoZone Enabled.

6.16R/T.5.6 GeoZone is Grid [16R/T/09/15]

GeoZone is Grid [16R/T/09/15] specifies that the GeoZone is a UGLI GeoZone. When the GeoZone is a Grid, then Point 1 Offset North [16R/T/25] and Point 1 Offset East [16R/T/26] units are in minutes, not meters, and Point 1 Offset Down [16R/T/27] units are meters. Sections 6.16R/T.4.2 Grid Label: Characters 1-4 [16R/T/07-08] and 6.16R/T.4.3 Specifying Grid Origin Point and Grid End Point provide additional information and requirements.

Mission Store Requirements

The mission store shall **{ss_6464}** set GeoZone is Grid [16T/09/15] to the value corresponding to the GeoZone requested by the last received Query Selected GeoZone [16R/04/05…06 ≠ 0] command, if the mission store is GeoZone Enabled.

6.16R/T.6 Geozone Definition Word 2 [16R/T/10]

6.16R/T.6.1 Grid Scale [16R/T/10/00…01]

Grid Scale [16R/T/10/00…01] identifies the dimensions of the grid, IAW Table 6.16R/T-10.

Table 6.16R/T-10 Grid Scale [16R/T/10/00…01] Definitions

Value	Cell Size	Sector Size	Quadrant Size
00 (B)	30 min x 30 min	10 min x 10 min	5 min x 5 min
01 (B)	60 min x 60 min	20 min x 20 min	10 min x 10 min

Table 6.16R/T-10 Grid Scale [16R/T/10/00…01] Definitions

Value	Cell Size	Sector Size	Quadrant Size
10 (B)	Reserved.	Reserved.	Reserved.
11 (B)	Reserved.	Reserved.	Reserved.

Platform Requirements

The platform shall **{ps_6649}** set Grid Scale [16R/10/00…01] IAW Table 6.16R/T-10, if CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6650}** provide the capability to select or enter Grid Scale [16R/10/00…01] IAW Table 6.16R/T-10, if CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6604}** use Grid Scale [16R/T/10/00…01] IAW Table 6.16R/T-10 to determine the dimensions of the UAI Grid, if the mission store is GeoZone Enabled.

6.16R/T.7 GeoZone Time Word [16R/T/11]

6.16R/T.7.1 Time Function Selection [16R/T/11/00…02]

Time Function Selection [16R/T/11/00…02] describes how the time in Hour [16R/T/11/05…09] and Minute [16R/T/11/10…15] data fields are used in the current GeoZone Control/Monitor [16R/T] message, IAW Table 6.16R/T-11.

Table 6.16R/T-11 Time Function Selection [16R/T/11/00…02] Definitions

Value	Definition	Description
000 (B)	No Statement	GeoZone Time Word [16R/T/11] is not used.
001 (B)	Activation Time	GeoZone Activation Time for GeoZone Reference Number [16R/T/05-06] is Hour [16R/T/11/05…09] and Minute [16R/T/11/10…15] referenced to 0000 hours GMT. Note 1.
010 (B)	Deactivation Time	GeoZone Deactivation Time for GeoZone Reference Number [16R/T/05-06] is Hour [16R/T/11/05…09] and Minute [16R/T/11/10…15] referenced to 0000 hours GMT.
011 (B)	Arrival Time	Not currently used for UAI.
100 (B)	Departure Time	Not currently used for UAI.
101 (B)	Time Point Established	Not currently used for UAI.
110 (B)	Non-Operational Time	Not currently used for UAI.
111 (B)	Operational Time	Not currently used for UAI.

Notes:

1. For moving GeoZones (i.e., when GeoZone Velocity [16R/T/20-21] is non-zero), GeoZone Activation Time specifies the time when the moving GeoZone was at the geographic location specified by Reference Point Location [16R/12-17].

2. Sections 6.16R/T.8 Reference Point Location [16R/T/12-17] and 6.16R/T.10 GeoZone Velocity [16R/T/20-21] provide additional information and requirements.

Platform Requirements

The platform shall **{ps_6391}** set <u>Time Function Selection</u> [16R/11/00…02], IAW Table 6.16 R/T-11, for <u>GeoZone Reference Number</u> [16R/05-06], if <u>CDS GeoZone Enable</u> **{cds_3038}**.

The platform shall **{ps_6392}** provide the capability to select or enter <u>Time Function Selection</u> [16R/11/00…02], if <u>CDS GeoZone Enabled</u> **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6465}** use <u>Time Function Selection</u> [16R/11/00…02], IAW Table 6.16 R/T-11, for <u>GeoZone Reference Number</u> [16T/05-06], if the mission store is <u>GeoZone Enabled,</u> as documented in the store supplement **{sup_6204}**.

The mission store shall **{ss_6466}** set <u>Time Function Selection</u> [16T/11/00…02], IAW Table 6.16 R/T-11, to the value corresponding to the GeoZone requested by the last received <u>Query Selected GeoZone</u> [16R/04/05…06 ≠ 0] command, if the mission store is <u>GeoZone Enabled</u>.

6.16R/T.7.2 <u>Hour</u> **[16R/T/11/05…09] and <u>Minute</u> [16R/T/11/10…15]**

Platform Requirements

The platform shall **{ps_6393}** set <u>Hour</u> [16R/11/05…09] and <u>Minute</u> [16R/11/10…15], referenced to 0000 hours GMT, when <u>Time Function Selection</u> [16R/11/00…02 > 000 (B)], for <u>GeoZone Reference Number</u> [16R/05-06], if <u>CDS GeoZone Enabled</u> **{cds_3038}**.

The platform shall **{ps_6394}** provide the capability to select or enter <u>Hour</u> [16R/11/05…09] and <u>Minute</u> [16R/11/10…15], if <u>CDS GeoZone Enabled</u> **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6467}** use <u>Hour</u> [16R/11/05…09] and <u>Minute</u> [16R/11/10…15], referenced to 0000 hours GMT, when <u>Time Function Selection</u> [16R/11/00…02 > 000 (B)], for <u>GeoZone Reference Number</u> [16R/05-06], if the mission store is <u>GeoZone Enabled</u>.

The mission store shall **{ss_6468}** set <u>Hour</u> [16T/11/05…09] and <u>Minute</u> [16T/11/10…15], to the value(s) corresponding to the GeoZone requested by the last received <u>Query Selected GeoZone</u> [16R/04/05…06 ≠ 0] command, if the mission store is <u>GeoZone Enabled</u>.

6.16R/T.8 <u>Reference Point Location</u> **[16R/T/12-17]**

When the GeoZone is not a Grid, the geographic <u>Reference Point Location</u> [16R/12-17] contains the <u>Reference Point Latitude</u> [16R/12-13], <u>Reference Point Longitude</u> [16R/14-15], and <u>Reference Point Altitude</u> [16R/16-17] (ground elevation referenced to HAE) of the GeoZone (i.e., circle, ellipse, square, rectangle, or polygon) contained in the current <u>GeoZone Control/Monitor</u> [16R/T] message. Section 6.16R/T.4.3 Specifying Grid Origin

Point and Grid End Point provides further information and requirements when GeoZone is a Grid.

The geographic Reference Point Location represents the center of a circle/ellipse and square/ rectangle GeoZones, or the start point of the current line/line segment for a polygon GeoZone. Figure 6.16R/T-2 depicts Reference Point Location with respect to a circle/ellipse, polygon, and square/rectangle GeoZones.
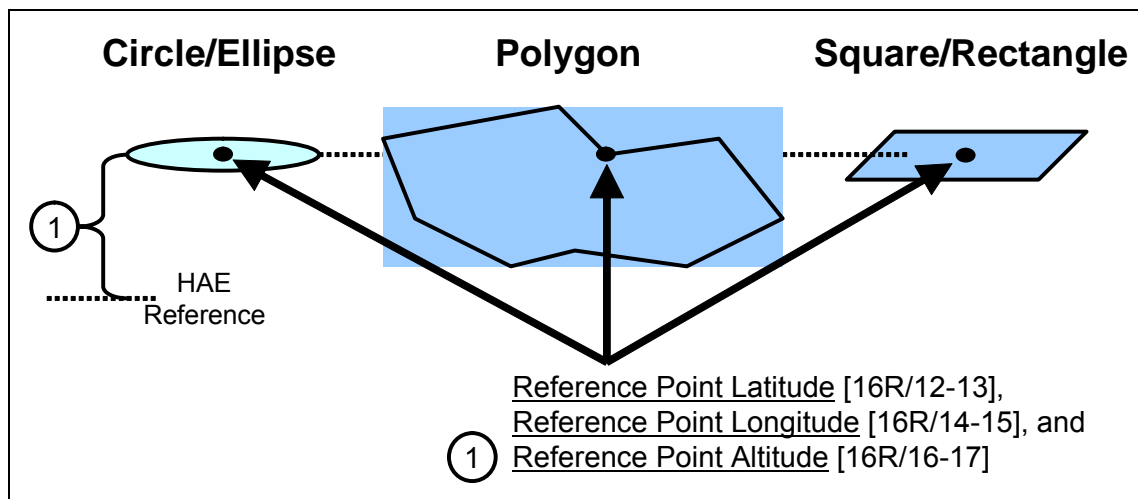
Figure 6.16R/T-2 GeoZone Reference Point [16R/12-17] Definitions

Platform Requirements

The platform shall **{ps_6395}** provide Reference Point Latitude [16R/12-13], Reference Point Longitude [16R/14-15], and Reference Point Altitude [16R/16-17], for GeoZone Reference Number [16R/05-06] IAW Figure 6.16R/T-2, if GeoZone is Grid [16R/09/15 = 0] and CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6396}** provide the capability to select or enter Reference Point Location [16R/12-17], if CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6469}** use platform provided Reference Point Latitude [16R/12-13], Reference Point Longitude [16R/14-15], and Reference Point Altitude [16R/16-17], for GeoZone Reference Number [16R/05-06] IAW Figure 6.16R/T-2, if GeoZone is Grid [16R/09/15 = 0] and the mission store is GeoZone Enabled.

The mission store shall **{ss_6470}** set Reference Point Latitude [16T/12-13], Reference Point Longitude [16T/14-15], and Reference Point Altitude [16T/16-17], IAW Figure 6.16R/T-2, to the value corresponding to the GeoZone requested by the last received Query Selected GeoZone [16R/04/05…06 ≠ 0] command, if the mission store is GeoZone Enabled.

6.16R/T.9 Zone Maximum Altitude [16R/T/18-19]

For all types of GeoZones, Zone Maximum Altitude [16R/18-19] (referenced to HAE) is defined as the upper (or top) surface of a three-dimensional (3D) Exclusion or

Engagement GeoZone. For GeoZone(s) with multiple points (e.g. polygons), <u>Zone Maximum Altitude</u> is always set to the same (i.e., constant) HAE altitude for all points that define the GeoZone. Additionally, a GeoZone can be defined as two-dimensional (2D), when <u>Zone Maximum Altitude</u> [16R/18-19] is set equal to 0 feet HAE. Note: For GeoZones with <u>Reference Point Altitude</u> [16T/16-17] that is less than 0 feet HAE, <u>Zone Maximum Altitude</u> [16R/18-19] must be set to a positive value that is greater than zero to create a three-dimensional (3D) Exclusion GeoZone.

The minimum altitude (or bottom) of a three-dimensional (3D) GeoZone is always the terrain. In level terrain, this minimum altitude can be approximated using the <u>Reference Point Altitude</u> [16R/16-17] (i.e., ground elevation referenced to HAE). However, in rugged or mountainous terrain, <u>Reference Point Altitude</u> is not a useful approximation of terrain elevation. In either case, to preclude inadvertent mission store impact with the terrain, set <u>Ingress / Cruise Altitude</u> [17R/T-1/16] and/or <u>Endgame Entry Altitude</u> [17R/T-1/18] to a value above the maximum terrain elevation within a GeoZone.

Figure 6.16R/T-3 depicts <u>Zone Maximum Altitude</u> with respect to circle/ellipse (as a 3D cylinder), polygon (as a 3D polygon), and square/rectangle (as a 3D box) GeoZones.
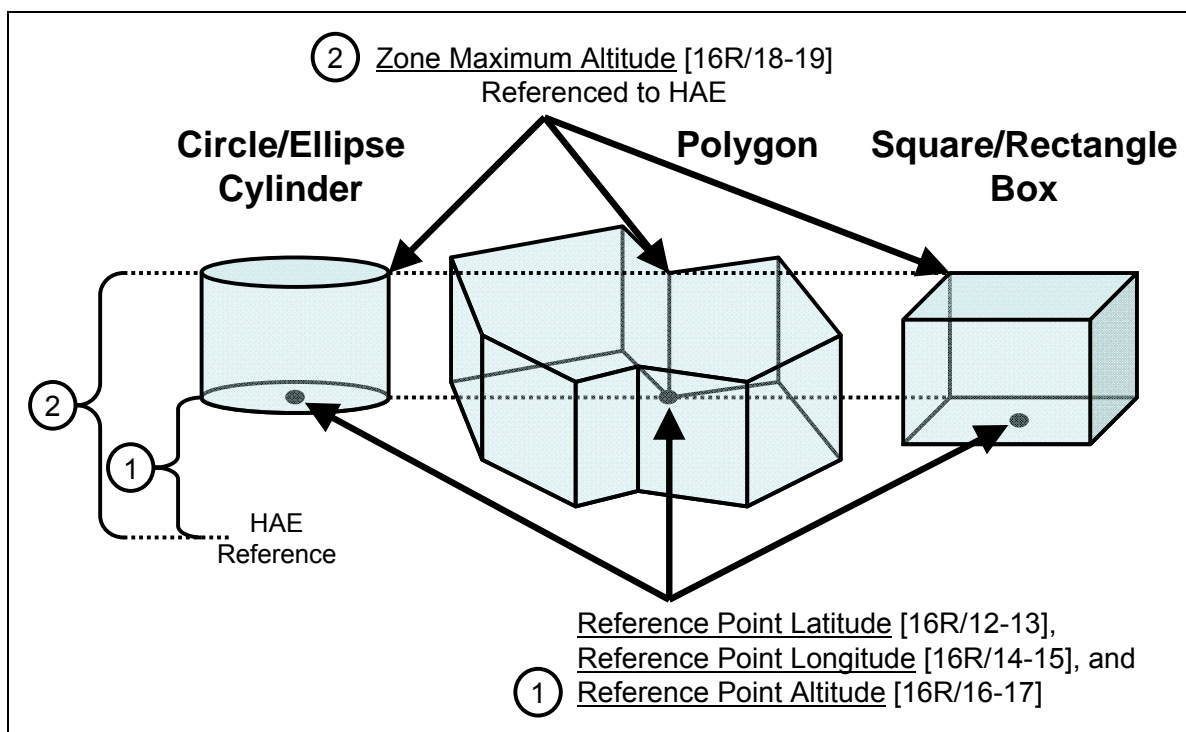
Figure 6.16R/T-3 Definition of Zone Maximum Altitude [16R/18-19]

Platform Requirements

The platform shall **{ps_6397}** provide <u>Zone Maximum Altitude</u> [16R/18-19], IAW Figure 6.16R/T-3, for <u>GeoZone Reference Number</u> [16R/05-06] to specify a three-dimensional Engagement or Exclusion GeoZone, if <u>CDS GeoZone Enabled</u> **{cds_3038}**.

The platform shall **{ps_6398}** set Zone Maximum Altitude [16R/18-19 = 0] to specify the GeoZone is two-dimensional (i.e., having no vertical extent above the terrain), if CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6399}** set Zone Maximum Altitude [16R/18-19] to the same (i.e., constant) value for all points that define the polygon GeoZone(s), if CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6400}** provide the capability to select or enter Zone Maximum Altitude [16R/18-19], if CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6471}** use platform provided Zone Maximum Altitude [16R/18-19], IAW Figure 6.16R/T-3, for GeoZone Reference Number [16R/05-06], if the mission store is GeoZone Enabled.

The mission store shall **{ss_6472}** set Zone Maximum Altitude [16T/18-19], IAW Figure 6.16R/T-3, to the value corresponding to the GeoZone requested by the last received Query Selected GeoZone [16R/04/05…06 ≠ 0] command, if the mission store is GeoZone Enabled.

The mission store shall **{ss_6676}** specify the GeoZone as two-dimensional (i.e., having no vertical extent above the terrain), if Zone Maximum Altitude [16R/18-19 = 0] and CDS GeoZone Enabled **{cds_3038}**.

6.16R/T.10 GeoZone Velocity [16R/T/20-21]

When the GeoZone is not a Grid, GeoZone Velocity [16R/T/20-21] provides the capability to define moving GeoZone(s). GeoZone Velocity North [16R/T/20] is the velocity with respect to True North, with positive velocity defined as travel from south to north. GeoZone Velocity East [16R/T/21] is the velocity with respect to True East, with positive velocity defined as travel from west to east.

For moving GeoZones (i.e., when GeoZone Velocity [16R/T/20-21] is non-zero), the Geozone Time Word [16R/T/11] specifies the time when the moving GeoZone was at the geographic location specified by Reference Point Location [16R/12-17]. Section 6.16R/T.7 GeoZone Time Word [16R/T/11] and 6.16R/T.8 Reference Point Location [16R/T/12-17] provide additional information and requirements.

For polygon GeoZone(s), GeoZone Velocity North [16R/T/20] and GeoZone Velocity East [16R/T/21] are always equal to the north and east velocities as defined for the first polygon point to prevent the GeoZone from changing shape/size over time.

Platform Requirements

The platform shall **{ps_6401}** set GeoZone Velocity North [16R/20] and GeoZone Velocity East [16R/21] to define a moving GeoZone, for GeoZone Reference Number [16R/05-06], when GeoZone is Grid [16R/09/15 = 0] and CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6402}**, for polygon GeoZone(s), set GeoZone Velocity North [16R/20] and GeoZone Velocity East [16R/21] for the first point in the polygon to the same velocity value(s) for all points that define the polygon, if Point/Line/Area Descriptor [16R/09/09…10 = 11 (B)] and CDS GeoZone Enabled **{cds_3038}** (Note: All points of a multi-point polygon have the same north and east velocities as defined for the first polygon point).

The platform shall **{ps_6403}** provide the capability to select or enter GeoZone Velocity North [16R/20] and GeoZone Velocity East [16R/21], if CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6473}** use GeoZone Velocity North [16R/20] and GeoZone Velocity East [16R/21], for GeoZone Reference Number [16R/05-06], if GeoZone is Grid [16R/09/15 = 0] and the mission store is GeoZone Enabled.

The mission store shall **{ss_6678}**, for polygon GeoZone(s), use GeoZone Velocity North [16R/20] and GeoZone Velocity East [16R/21] of the first point in the polygon for all points in the polygon, if Point/Line/Area Descriptor [16R/09/09…10 = 11 (B)] and the mission store is GeoZone Enabled.

The mission store shall **{ss_6474}** set GeoZone Velocity North [16T/20] and GeoZone Velocity East [16T/21], to the value corresponding to the GeoZone requested by the last received Query Selected GeoZone [16R/04/05…06 ≠ 0] command, if the mission store is GeoZone Enabled.

6.16R/T.11 Symmetrical And Non-Symmetrical GeoZone(s)

When the GeoZone is not a Grid, Symmetrical GeoZone(s) are defined when Point/Line/Area Descriptor [16R/05/01] designates a single point area and Area Major Axis [16R/T/23] is equal to Area Minor Axis [16R/T/24]. The Area Axis Orientation [16R/T/22] parameter defines the angle between the Area Major Axis and True North. For symmetrical, elliptical GeoZone(s) (i.e., a circle), the Area Axis Orientation [16R/T/22] parameter has no meaning.

Non-symmetrical GeoZone(s) are defined when Point/Line/Area Descriptor [16R/05/01] designates a single point area and Area Major Axis [16R/T/23] is not equal to Area Minor Axis [16R/T/24]. The Area Axis Orientation [16R/T/22] parameter defines the angle between the Area Major Axis and True North.

Figure 6.16R/T-4 shows the relationships between Reference Point Location (RPL) [16R/T/12…17], Circle/Square Switch [16R/05/03…04], Area Axis Orientation [16R/T/22], Area Major Axis [16R/T/23], and Area Minor Axis [16R/T/24].
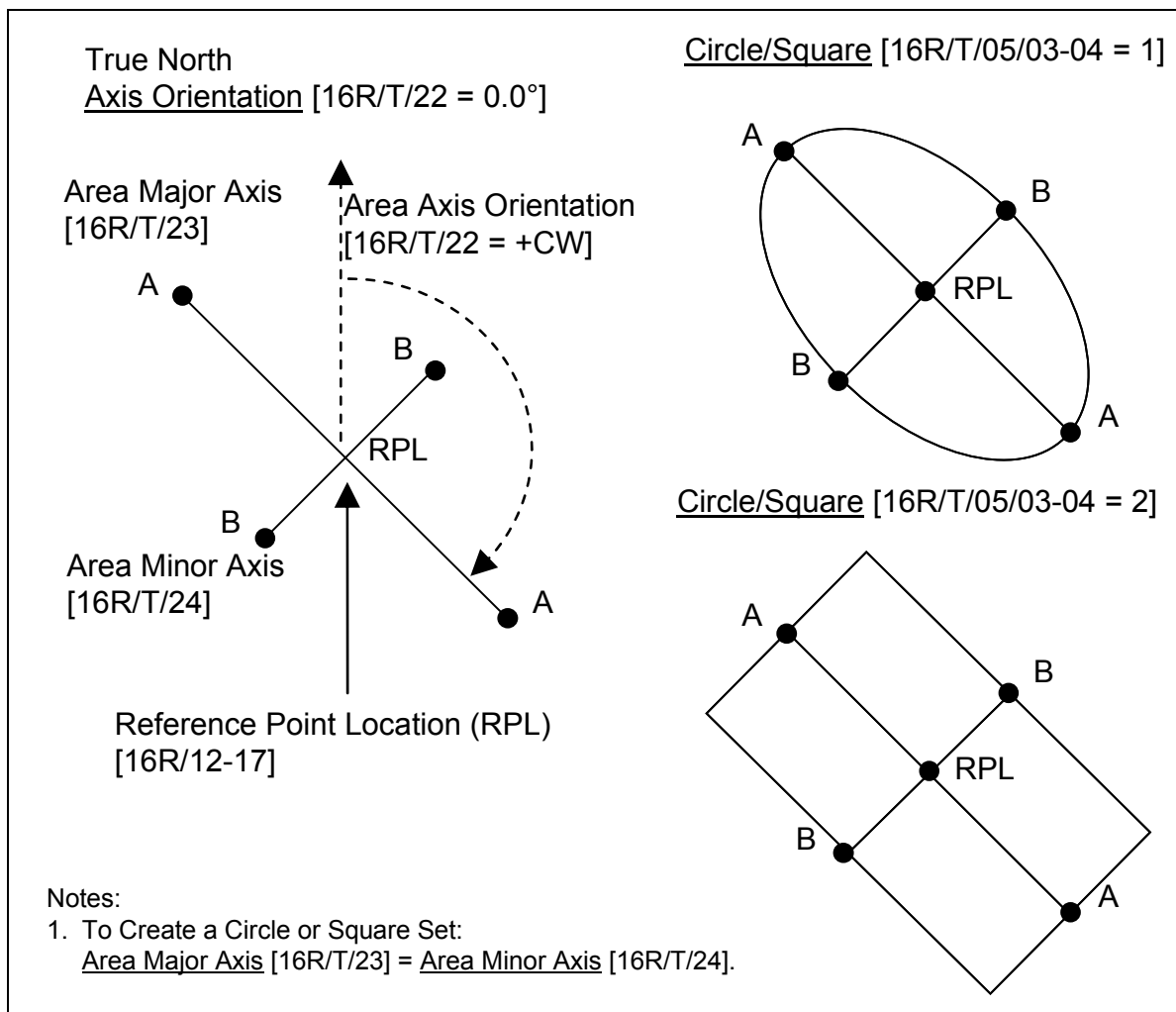
Figure 6.16R/T-4 Symmetric and Non-Symmetric GeoZone Definitions

6.16R/T.11.1 Area Axis Orientation [16R/T/22]

When the GeoZone is not a Grid and Point/Line/Area Descriptor [16R/05/01] designates a single point area, Area Axis Orientation [16R/T/22], IAW Figure 6.16R/T-4, is the angle between major axis of a GeoZone with respect to True North.

Platform Requirements

The platform shall **{ps_6404}** set Area Axis Orientation [16R/22] for the GeoZone Reference Number [16R/05-06], if Point/Line/Area Descriptor [16R/05/01 = 1 (single point area)], GeoZone is Grid [16R/09/15 = 0], and CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6405}** provide the capability to select or enter Area Axis Orientation [16R/22], if CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6475}** use Area Axis Orientation [16R/22] for GeoZone Reference Number [16R/05-06], when Point/Line/Area Descriptor [16R/05/01 = 1 (single point area)], GeoZone is Grid [16R/09/15 = 0], and the mission store is GeoZone Enabled.

The mission store shall **{ss_6476}** set provided Area Axis Orientation [16T/22] to the value corresponding to the GeoZone requested by the last received Query Selected GeoZone [16R/04/05…06 ≠ 0] command, if the mission store is GeoZone Enabled.

6.16R/T.11.2 Area Major Axis [16R/23] & Area Minor Axis [16R/24]

When the GeoZone is not a Grid and Point/Line/Area Descriptor [16R/05/01] designates a single point area, the Area Major Axis [16R/T/23] and the Area Minor Axis [16R/T/24] define the shape and size of the GeoZone. Area Minor Axis is perpendicular to Area Major Axis. The Reference Point Location [16R/T/12-17] bisects both Area Major Axis and Area Minor Axis.

Figure 6.16R/T-4 shows the relationships between Reference Point Location [16R/T/12-17], Area Axis Orientation [16R/T/22], Area Major Axis [16R/T/23], and Area Minor Axis [16R/T/24].

Platform Requirements

The platform shall **{ps_6406}** set Area Major Axis [16R/23] and Area Minor Axis [16R/24] for GeoZone Reference Number [16R/05-06], if Point/Line/Area Descriptor [16R/05/01 = 1 (single point area)], GeoZone is Grid [16R/09/15 = 0], and CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6407}** provide the capability to select or enter Area Major Axis [16R/23] and Area Minor Axis [16R/24], if CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6477}** use Area Major Axis [16R/23] and Area Minor Axis [16R/24] for GeoZone Reference Number [16R/05-06], if Point/Line/Area Descriptor [16R/05/01 = 1 (single point area)], GeoZone is Grid [16R/09/15 = 0], and the mission store is GeoZone Enabled.

The mission store shall **{ss_6478}** set Area Major Axis [16R/23] and Area Minor Axis [16R/24] to the value(s) corresponding to the GeoZone requested by the last received Query Selected GeoZone [16R/04/05…06 ≠ 0] command, if the mission store is GeoZone Enabled.

6.16R/T.12 Multi-Point Line/Area Definitions

UAI multi-point line/area definitions are compliant with MIL-STD-6016C, paragraph D.5.2.3.3.5 and D.5.2.3.3.6, Tactical Data Link (Link-16) J3.0 Message multi-point line/area definitions and protocols.

Each GeoZone Control/Monitor [16R/T] message provides the capability to specify two points (i.e. Point 1 and Point 2) in terms of a delta Latitude (i.e., north offset), delta Longitude (i.e., east offset), and delta Altitude (down offset) wrt the Reference Point Location [16R/T/12-17]. Positive north offset is from south to north. Positive east offset is from west to east. Positive down offset is from up to down.

6.16R/T.12.1 Multi-Point Line Definition in a Single Message

When the GeoZone is not a Grid and Point/Line/Area Descriptor [16R/05/01] designates a multi-point line, GeoZone Control/Monitor [16R/T] allows for the passing of a two-point line or three-point line within a single message. Using Reference Point Location [16R/T/12-17], Point 1 Offset [16R/T/25-27], and Point 2 Offset [16R/T/28-30] are used to define a two-point line or a three-point line.

Figure 6.16R/T-5 shows how Reference Point Location [16R/T/12-17], Point 1 Offsets [16R/T/25-27], and Point 1 is Endpoint [16R/T/09/13] are used to define a two-point line segment. Figure 6.16R/T-5 also shows how Reference Point Location [16R/T/12-17], Point 1 Offsets [16R/T/25-27], Point 2 Offsets [16R/T/28-30], Point 1 is Endpoint [16R/T/09/13], and Point 2 is Endpoint [16R/T/09/14] are used to define a three-point line segment.
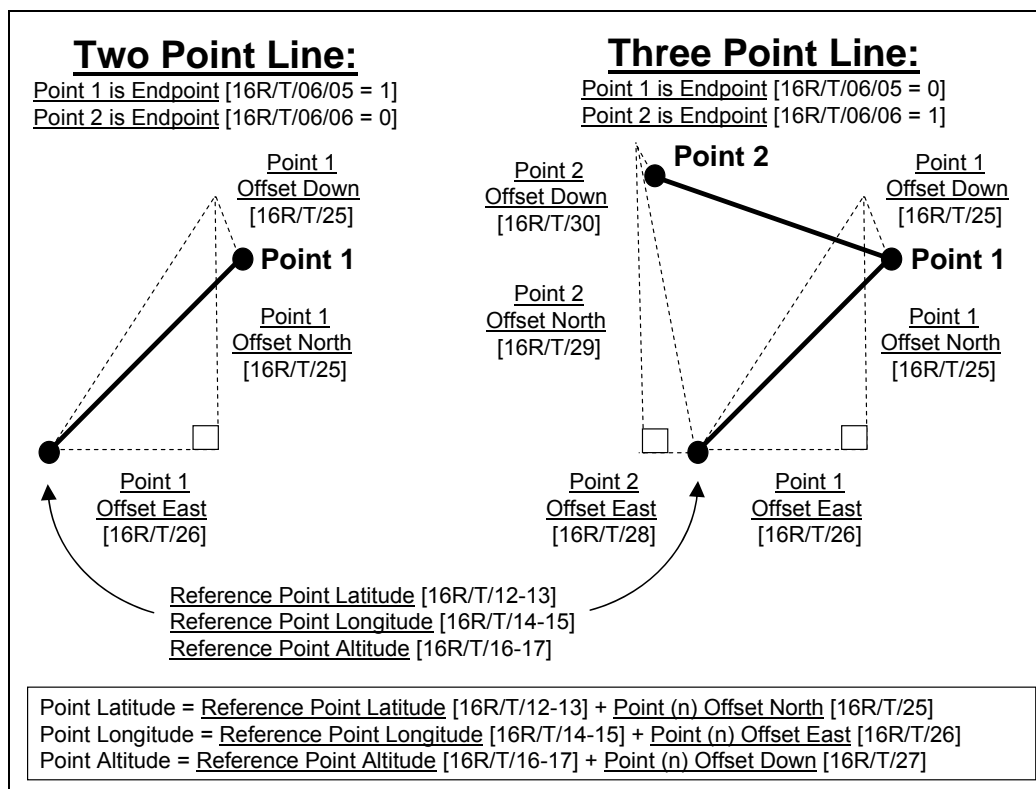
Figure 6.16R/T-5 Line Definition in a Single 16R/T Message

6.16R/T.12.2 Multi-Point Line Definition in Multiple Messages

When the GeoZone is not a Grid and Point/Line/Area Descriptor [16R/05/01] designates a multi-point line or multi-point area, GeoZone Control/Monitor [16R/T] is used to pass

multi-point lines and multi-point polygons using a series of two-point line segments and/or three-point line segments, sent in successive GeoZone Control/Monitor [16R/T] messages, where the Point 1 Offsets [16R/T/25-27] of the new message coincides with the Point 2 Offsets [16R/T/28-30] of the previous message, and the Reference Point Location [16R/T/12-17] of all the messages is the same. Note: For UAI GeoZones multi-point lines segments have no meaning. Section 6.16R/T.5.3 Point/Line/Area Descriptor [16R/T/09/09…10] provides additional information and requirements.

Starting with the GeoZone Reference Number [16R/05-06] assigned to the first point of the multi-point GeoZone line/area, the GeoZone Reference Number [16R/05-06] for each of the additional multi-point line/area points are required to be in sequential numeric order. Additionally, the GeoZone Reference Number [16R/05-06] for the first point of a multi-point GeoZone line/area is also the common identifier for the entire set of points associated with this multi-point line/area. Section 6.16R/T.3 GeoZone Reference Number [16R/T/05-06] provides additional information and requirements.

Figure 6.16R/T-6 shows how Point/Line/Area Descriptor [16R/T/016/01…02], Reference Point Location [16R/T/12-17], Point 1 Offsets [16R/T/25-27], and Point 2 Offsets [16R/T/28-30] are used to define a multi-point line and a multi-point area, using successive GeoZone Control/Monitor [16R/T] messages. The two-point line segments and three-point line segments (sent in successive [16R/T] messages) are indicated with different colors. Section 6.16R/T.6.2 Point/Line/Area Continuation [16R/T/09/08] provides further information and requirements.
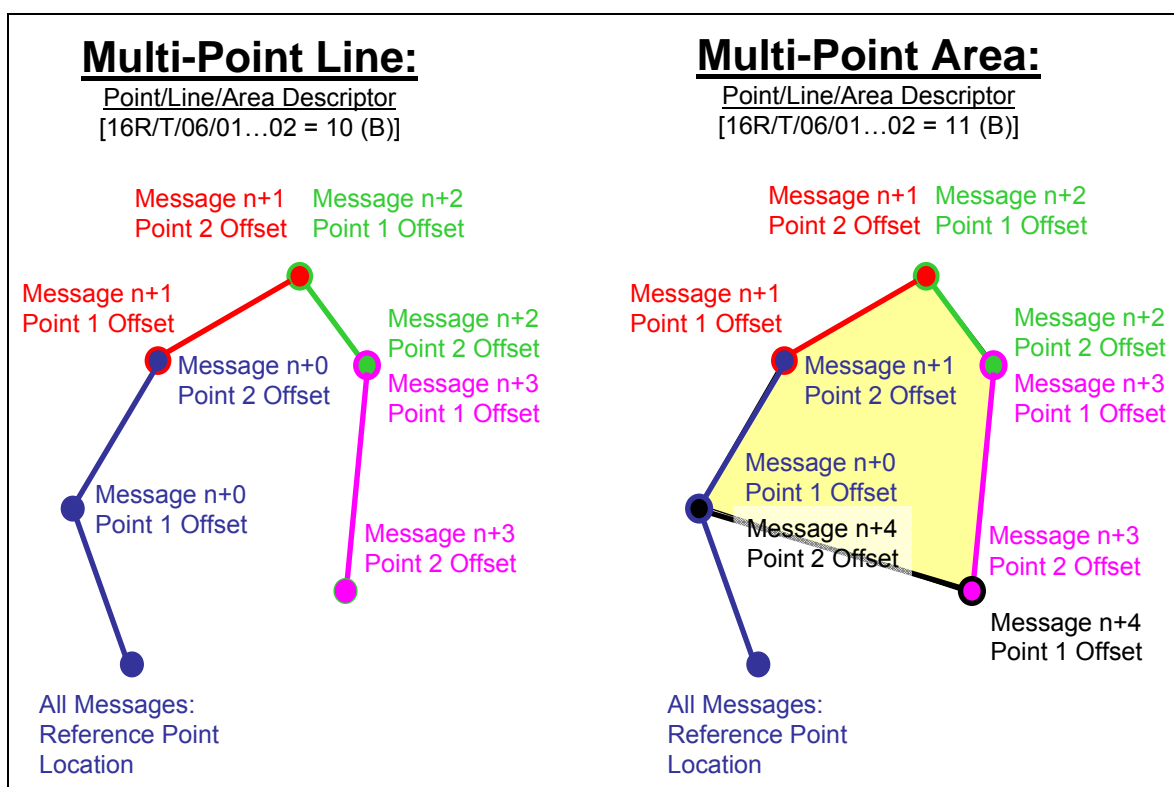
Figure 6.16R/T-6 Multi-Point Line and Multi-Point Area Definitions Using Multiple Messages

Platform Requirements

The platform shall **{ps_6408}**, to erase a GeoZone that is defined as a multi-point line/area of four or more points, do the following, if <u>CDS GeoZone Enabled</u> **{cds_3038}**:

    a. Set <u>Erase Selected GeoZone</u> [16R/04/01…02 = 01 (B)].

    b. Set <u>GeoZone is Grid</u> [16R/09/15 = 0].

    c. Set <u>GeoZone Reference Number</u> [16R/05-06] to the first point of the multi-point GeoZone line/area to be erased.

The platform shall **{ps_6410}**, to replace/add a GeoZone that is defined as a multi-point line/area of four or more points, do the following, if <u>CDS GeoZone Enabled</u> **{cds_3038}**:

    a. Set <u>Edit Selected GeoZone</u> [16R/04/03…04 = 01 (B)].

    b. Set <u>GeoZone is Grid</u> [16R/09/15 = 0].

    c. Set the <u>GeoZone Reference Number</u> [16R/05-06] of the first point of the multi-point area/line sequence to a unique (i.e., unused) value.

    d. Set <u>Point/Line/Area Descriptor</u> [16R/09/09…10] = 10 (B) when transferring a multi-point line, and = 11 (B) when transferring a multi-point area.

    e. Set the <u>Reference Point Location</u> [16R/12-17] in all <u>GeoZone Control</u> [16R] message(s) to the same reference point.

    f. In the first <u>GeoZone Control</u> [16R] message, set <u>Point/Line/Area/Continuation</u> [16R/09/08 = 0], <u>Point 1 is Endpoint</u> [16R/09/13 = 0], <u>Point 2 is Endpoint</u> [16R/09/14 = 0].

    g. In the second and subsequent <u>GeoZone Control</u> [16R] message(s), set:

        1. Sequentially increment the <u>GeoZone Reference Number</u> [16R/05-06] for this point in the multi-point area/line sequence,

        2. <u>Point/Line/Area/Continuation</u> [16R/09/08 = 1],

        3. <u>Point 1 is Endpoint</u> [16R/09/13 = 0],

        4. <u>Point 2 is Endpoint</u> [16R/09/14 = 0],

        5. <u>Point 1 Offsets</u> [16R/25-27] equal to the <u>Point 2 Offsets</u> [16R/28-30] values in the previous <u>GeoZone Control</u> [16R] message.

    h. In the last <u>GeoZone Control</u> [16R] message, set:

        1. Sequentially increment the <u>GeoZone Reference Number</u> [16R/05-06] for the last point in the multi-point area/line sequence,

        2. <u>Point/Line/Area/Continuation</u> [16R/09/08 = 1],

        3. <u>Point 1 is Endpoint</u> [16R/09/13 = 0],

        4. <u>Point 2 is Endpoint</u> [16R/09/14 = 1],

5. Point 1 Offsets [16R/25-27] equal to the Point 2 Offsets [16R/28-30] values in the previous GeoZone Control [16R] message.

i. Additionally, for a multi-point area, in the last GeoZone Control [16R] message, set the Point 2 Offsets [16R/28-30] equal to the Point 1 Offsets [16R/25-27] values in the first GeoZone Control [16R] message.

The platform shall **{ps_6409}**, to query a GeoZone that is defined as a multi-point line/area of four or more points, do the following, if CDS GeoZone Enabled **{cds_3038}**:

a. Set Query Selected GeoZone [16R/04/05…06 = 01 (B)].

b. Set GeoZone is Grid [16R/09/15 = 0].

c. Set GeoZone Reference Number [16R/05-06] to the first point of the multi-point line/area, Transmit GeoZone Control [16R] message, wait a minimum of 40.0 msec, and then request a GeoZone Monitor [16T] message.

d. Sequentially increment the GeoZone Reference Number [16R/05-06] to select the next point of the multi-point line/area, Transmit the GeoZone Control [16R] message, wait a minimum of 40.0 msec, then request a GeoZone Monitor [16T] message.

e. Repeat step "d" as required until the mission store responds with a GeoZone Monitor [16T] message with Point 2 is Endpoint [16T/09/14 = 1].

Mission Store Requirements

The mission store shall **{ss_6677}** erase all of the GeoZone points associated with a multi-point line/area, when Erase Selected GeoZone [16R/04/01…02 = 01 (B)], GeoZone is Grid [16R/09/15 = 0], GeoZone Reference Number [16R/05-06] is associated with the first point (or any of the points) of a multi-point line/area of four or more points, and the mission store is GeoZone Enabled.

6.16R/T.12.3 Point 1 Offsets [16R/T/25-27]

When the GeoZone is not a Grid, Point 1 Offset North, East, Down [16R/T/25-27] is used to define the Point 1 location. Point 1 Offset North [16R/T/25] is the north offset from Reference Point Latitude [16R/12-13]. Point 1 Offset East [16R/T/26] is the east offset from Reference Point Longitude [16R/14-15], and Point 1 Offset Down [16R/T/27] is the altitude offset down with respect to Reference Point Altitude [16R/16-17]. Section 6.16R/T.4.3 Specifying Grid Origin Point and Grid End Point provides further information and requirements when GeoZone is a Grid.

Platform Requirements

The platform shall **{ps_6411}** set Point 1 Offset North [16R/25], Point 1 Offset East [16R/26], Point 1 Offset Down [16R/27], for GeoZone Reference Number [16R/05-06], if providing a multi-point line/area to the mission store, when GeoZone is Grid [16R/09/15 = 0], Point/Line/Area Descriptor [16R/09/09…10 = 11 (B)], and CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6570}** set Point 1 Offset North [16R/25 = 0], Point 1 Offset East [16R/26 = 0], and Point 1 Offset Down [16R/27 = 0] for GeoZone Reference Number [16R/05-06], when GeoZone is Grid [16R/09/15 = 0], Point/Line/Area Descriptor [16R/09/09…10 = 01 (B)], and CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6412}** provide the capability to select or enter Point 1 Offsets [16R/T/25-27], if CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6479}** use Point 1 Offset North [16R/25], Point 1 Offset East [16R/26], Point 1 Offset Down [16R/27], for GeoZone Reference Number [16R/05-06], if GeoZone is Grid [16R/09/15 = 0] and the mission store is GeoZone Enabled.

The mission store shall **{ss_6480}** set Point 1 Offset North [16T/25], Point 1 Offset East [16T/26], Point 1 Offset Down [16T/27], to the value(s) corresponding to the GeoZone requested by the last received Query Selected GeoZone [16R/04/05…06 ≠ 0] command, if the mission store is GeoZone Enabled.

6.16R/T.12.4 Point 2 Offsets [16R/T/28-30]

When the GeoZone is not a Grid, Point 2 Offset North, East, Down [16R/T/28-30] is used to define the Point 2 location. Point 2 Offset North [16R/T/28] is the north offset from Reference Point Latitude [16R/12-13]. Point 2 Offset East [16R/T/29] is the east offset from Reference Point Longitude [16R/14-15], and Point 2 Offset Down [16R/T/30] is the altitude offset down with respect to Reference Point Altitude [16R/16-17]. Section 6.16R/T.4.3 Specifying Grid Origin Point and Grid End Point provides further information and requirements when GeoZone is a Grid.

Platform Requirements

The platform shall **{ps_6413}** set Point 2 Offset North [16R/28], Point 2 Offset East [16R/29], Point 2 Offset Down [16R/30], for GeoZone Reference Number [16R/05-06], if providing a multi-point line segment or multi-point area to the mission store, when GeoZone is Grid [16R/09/15 = 0], Point/Line/Area Descriptor [16R/09/09…10 = 11 (B)], and CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6571}** set Point 2 Offset North [16R/28 = 0], Point 2 Offset East [16R/29 = 0], and Point 2 Offset Down [16R/30 = 0] for GeoZone Reference Number [16R/05-06], when GeoZone is Grid [16R/09/15 = 0], Point/Line/Area Descriptor [16R/09/09…10 = 01 (B)], and CDS GeoZone Enabled **{cds_3038}**.

The platform shall **{ps_6414}** provide the capability to select or enter Point 2 Offsets [16R/28-30], if CDS GeoZone Enabled **{cds_3038}**.

Mission Store Requirements

The mission store shall **{ss_6481}** use platform provided Point 2 Offset North [16R/28], Point 2 Offset East [16R/29], Point 2 Offset Down [16R/30], for GeoZone

Reference Number [16R/05-06], if <u>GeoZone is Grid</u> [16R/09/15 = 0] and the mission store is <u>GeoZone Enabled</u>.

The mission store shall **{ss_6482}** set <u>Point 2 Offset North</u> [16T/28], <u>Point 2 Offset East</u> [16T/29], <u>Point 2 Offset Down</u> [16R/30], to the value(s) corresponding to the GeoZone requested by the last received <u>Query Selected GeoZone</u> [16R/04/05…06 ≠ 0] command, if the mission store is <u>GeoZone Enabled</u>.

FOR OFFICIAL USE ONLY

MESSAGE NAME: GeoZone Control/Monitor
MESSAGE ID: 16R/T TRANSFER TYPE: BC-RT
SOURCE: Platform/Store WORD COUNT: 30
DESTINATION: Platform/Store XMIT RATE: Aperiodic to 32.0 Hz

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 10000 (B)
Status Word	SW	MIL-STD-1553 Status Word
Header	01	Message Descriptor
Invalidity	02	Validity of Message Data
Global Control/Monitor Word 1	03	Global Control/Monitor Word 1
Global Control/Monitor Word 2	04	Global Control/Monitor Word 2
GeoZone Reference Number (MSW)	05	GeoZone Reference Number (MSW)
GeoZone Reference Number (LSW)	06	GeoZone Reference Number (LSW)
Grid Label: Character 1/2	07	Grid Label: Character 1/2
Grid Label: Character 1/2	08	Grid Label: Character 1/2
GeoZone Definition, Word 1	09	GeoZone Definition, Word 1
GeoZone Definition, Word 2	10	GeoZone Definition, Word 2
GeoZone Time	11	Time attributes associated with designated zone
Reference Point Latitude	12	Zone Reference Point Latitude (MSW)
	13	Zone Reference Point Latitude (LSW)
Reference Point Longitude	14	Zone Reference Point Longitude (MSW)
	15	Zone Reference Point Longitude (LSW)
Reference Point Altitude	16	Zone Reference Point Altitude (MSW)
	17	Zone Reference Point Altitude (LSW)
Zone Maximum Altitude	18	Maximum (i.e., Top) Zone Altitude (MSW)
	19	Maximum (i.e., Top) Zone Altitude (LSW)
GeoZone Velocity North	20	Moving GeoZone Velocity North
GeoZone Velocity East	21	Moving GeoZone Velocity North
Area Axis Orientation	22	GeoZone Orientation Angle
Area Major Axis	23	GeoZone Major Axis Length
Area Minor Axis	24	GeoZone Minor Axis Length
Point 1 Offset North	25	Point 1 Offset North wrt Reference Point
Point 1 Offset East	26	Point 1 Offset East wrt Reference Point
Point 1 Offset Down	27	Point 1 Offset Down wrt Reference Point
Point 2 Offset North	28	Point 2 Offset North wrt Reference Point
Point 2 Offset East	29	Point 2 Offset East wrt Reference Point
Point 2 Offset Down	30	Point 2 Offset Down wrt Reference Point
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Header

	CATEGORY: Header
WORD ID: 16R/T/01	MAX VALUE: 16E0 (H)
SOURCE(s): Platform/Store	MIN VALUE: 16E0 (H)
DEST(s): Store/Platform	RESOLUTION: 1
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^{15}
SIGNAL TYPE: Hexadecimal	LSB: 2^0
UNITS: N/A	FULL SCALE: FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB --
	-01-B	
	-02-B	Hex digit #1 value = 1 (H)
	-03-B	LSB --
Hex Digit #2	-04-B	MSB --
	-05-B	
	-06-B	Hex digit #2 value = 6 (H)
	-07-B	LSB --
Hex Digit #3	-08-B	MSB --
	-09-B	
	-10-B	Hex digit #3 value = E (H)
	-11-B	LSB --
Hex Digit #4	-12-B	MSB --
	-13-B	
	-14-B	Hex digit #4 value = 0 (H)
	-15-B	LSB --

REMARKS/NOTES:

WORD NAME: Invalidity

		CATEGORY:	Validity
WORD ID:	16R/T/02	MAX VALUE:	N/A
SOURCE(s):	Platform/Store	MIN VALUE:	N/A
DEST(s):	Store/Platform	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	Binary	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Word 3 Invalidity	-00-V	Set to logic 1 if word 03 is invalid.
Word 4 Invalidity	-01-V	Set to logic 1 if word 04 is invalid.
Words 5-6 Invalidity	-02-V	Set to logic 1 if words 05-06 are invalid.
Words 7-8 Invalidity	-03-V	Set to logic 1 if word 07-08 is invalid.
Word 9 Invalidity	-04-V	Set to logic 1 if word 09 is invalid.
Word 10 Invalidity	-05-V	Set to logic 1 if word 10 is invalid.
Word 11 Invalidity	-06-V	Set to logic 1 if word 11 is invalid.
Words 12-17 Invalidity	-07-V	Set to logic 1 if words 12-17 are invalid.
Words 18-19 Invalidity	-08-V	Set to logic 1 if words 18-19 are invalid.
Words 20-21 Invalidity	-09-V	Set to logic 1 if words 20-21 are invalid.
Words 22-24 Invalidity	-10-V	Set to logic 1 if words 22-24 are invalid.
Words 25-27 Invalidity	-11-V	Set to logic 1 if words 25-27 are invalid.
Words 28-30 Invalidity	-12-V	Set to logic 1 if words 28-30 are invalid.
Reserved	-13-0	Set to logic 0.
Reserved	-14-0	Set to logic 0.
Reserved	-15-0	Set to logic 0.

REMARKS/NOTES:

WORD NAME: Global Control/Monitor Word 1

		CATEGORY:	Special
WORD ID:	16R/T/03	MAX VALUE:	N/A
SOURCE(s):	Platform/Store	MIN VALUE:	N/A
DEST(s):	Store/Platform	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Auto Abort on Zone	-00-D	1 = Abort Mission Upon Entering an Enabled Exclusion GeoZone.
Disable All GeoZones	-01-D	1 = Disables All Exclusion and Engagement GeoZones.
Exclusion Zone Overflight Enable	-02-D	1 = Enables Flight Through but Not Impact Within All Enabled Exclusion GeoZones.
Disable All Exclusion Zones	-03-D	1 = Disables All Exclusion GeoZones.
Disable All Engagement Zones	-04-D	1 = Disables All Engagement GeoZones.
Reserved	-05-0	Set to logic 0.
Reserved	-06-0	Set to logic 0.
Reserved	-07-0	Set to logic 0.
Reserved	-08-0	Set to logic 0.
Reserved	-09-0	Set to logic 0.
Reserved	-10-0	Set to logic 0.
Reserved	-11-0	Set to logic 0.
Reserved	-12-0	Set to logic 0.
Reserved	-13-0	Set to logic 0.
Reserved	-14-0	Set to logic 0.
Reserved	-15-0	Set to logic 0.

REMARKS/NOTES:

WORD NAME: Global Control/Monitor Word 2

		CATEGORY:	Special
WORD ID:	16R/T/04	MAX VALUE:	N/A
SOURCE(s):	Platform/Store	MIN VALUE:	N/A
DEST(s):	Store/Platform	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Erase All GeoZone Data	-00-D	1 = Erase All GeoZone Data in Store Memory.
Erase Selected GeoZone	-01-C	MSB : 2^1--
	-02-C	LSB : 2^0--
Edit Selected GeoZone	-03-C	MSB : 2^1--
	-04-C	LSB : 2^0--
Query Selected GeoZone	-05-C	MSB : 2^1--
	-06-C	LSB : 2^0--
GeoZone Violation Type	-07-C	MSB : 2^1--
	-08-C	LSB : 2^0--
GeoZone Erase in Progress	-09-D	1 = GeoZone Erase in Progress.
Reserved	-10-0	Set to logic 0.
Reserved	-11-0	Set to logic 0.
Selected Store	-12-N	MSB : 2^3--
	-13-N	Max value = 8.
	-14-N	
	-15-N	LSB : 2^0--

REMARKS/NOTES:

WORD NAME: GeoZone Reference Number (MSW and LSW)

	CATEGORY:	Number (M & L)
WORD ID: 16R/T/05-06	MAX VALUE:	2.1475E+09
SOURCE(s): Platform/Store	MIN VALUE:	0
DEST(s): Store/Platform	RESOLUTION:	1
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^31
SIGNAL TYPE: Unsigned	LSB:	2^0
UNITS: N/A	FULL SCALE:	4.2950E+09

FIELD NAME	BIT NO.	DESCRIPTION	
		TADIL-J	TADIL-K
GeoZone	MSW -00-N	MSB : 2^12 ----------------------------	: 2^0 ----------------------------
Reference Number	-01-N		Not Used by TADIL-K
	-02-N		
	-03-N		: 2^0 ----------------------------
	-04-N		: 2^6 ----------------------------
	-05-N		
	-06-N	Not Used by TADIL-J	
	-07-N		First 7-bit ASCII Character
	-08-N		
	-09-N		
	-10-N		: 2^0 ----------------------------
	-11-N		: 2^6 ----------------------------
	-12-N	: 2^0----------------------------	
	-13-N	: 2^4----------------------------	Second 7-bit ASCII
	-14-N	First 5-bit Character	Character
	-15-N	Field (0-7, A-Z).	
	LSW -00-N		
	-01-N	: 2^0----------------------------	: 2^0 ----------------------------
	-02-N	: 2^4----------------------------	: 2^13----------------------------
	-03-N	Second 5-bit Character	
	-04-N	Field (0-7, A-Z)	
	-05-N		14-bit Decimal Value
	-06-N	: 2^0----------------------------	
	-07-N	: 2^2----------------------------	SIGNAL TYPE: Unsigned
	-08-N	3-bit Numeric Field	UNITS: N/A
	-09-N	: 2^0----------------------------	MAX VALUE: 9999 (D)
	-10-N	: 2^2----------------------------	MIN VALUE: 0
	-11-N	3-bit Numeric Field	RESOLUTION: 1
	-12-N	: 2^0----------------------------	ACCURACY: 1
	-13-N	: 2^2----------------------------	FULL SCALE: 9999 (D)
	-14-N	3-bit Numeric Field	
	-15-N	LSB : 2^0---	

REMARKS/NOTES:

1. Refer to Section 6.16R/T.3 <u>GeoZone Reference Number</u> [16R/T/05-06] for additional information.

WORD NAME: Grid Label: Character 1/2

CATEGORY:	Special
WORD ID: 16R/T/07	MAX VALUE: N/A
SOURCE(s): Platform/Store	MIN VALUE: N/A
DEST(s): Store/Platform	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: ASCII	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Grid Label: Character 1: Row	-00-0	MSB : 2^7---
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #1
	-05-A	
	-06-A	
	-07-A	LSB : 2^0---
Grid Label: Character 2: Column	-08-0	MSB : 2^7---
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #2
	-13-A	
	-14-A	
	-15-A	LSB : 2^0---

REMARKS/NOTES:

WORD NAME: Grid Label: Character 3/4

WORD ID:	16R/T/08
SOURCE(s):	Platform/Store
DEST(s):	Store/Platform
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	ASCII
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Grid Label: Character 3: Sector	-00-0	MSB : 2^7--
	-01-A	
	-02-A	
	-03-A	
	-04-A	ASCII Character #3
	-05-A	
	-06-A	
	-07-A	LSB : 2^0--
Grid Label: Character 4: Quadrant	-08-0	MSB : 2^7--
	-09-A	
	-10-A	
	-11-A	
	-12-A	ASCII Character #4
	-13-A	
	-14-A	
	-15-A	LSB : 2^0--

REMARKS/NOTES:

WORD NAME: GeoZone Definition Word 1

WORD ID:	16R/T/09
SOURCE(s):	Platform/Store
DEST(s):	Store/Platform
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Point Type	-00-C	MSB : 2^3---
	-01-C	
	-02-C	
	-03-C	LSB : 2^0---
Point Amplification	-04-C	MSB : 2^3---
	-05-C	
	-06-C	
	-07-C	LSB : 2^0---
Point/Line/Area Continuation	-08-D	1 = Current Point is Line/Area Continuation.
Point/Line/Area Descriptor	-09-C	MSB : 2^1---
	-10-C	LSB : 2^0---
Square/Circle Switch	-11-C	MSB : 2^1---
	-12-C	LSB : 2^0---
Point 1 is Endpoint	-13-D	1 = Last Point of Multi-Point Line/Area
Point 2 is Endpoint	-14-D	1 = Last Point of Multi-Point Line/Area
GeoZone is Grid	-15-D	1 = GeoZone is a UGLI Grid

REMARKS/NOTES:

WORD NAME: GeoZone Definition Word 2

WORD ID:	16R/T/10	CATEGORY:	Special
SOURCE(s):	Platform/Store	MAX VALUE:	N/A
DEST(s):	Store/Platform	MIN VALUE:	N/A
COMP RATE:	Aperiodic	RESOLUTION:	N/A
XMIT RATE:	Aperiodic	ACCURACY:	N/A
SIGNAL TYPE:	N/A	MSB:	N/A
UNITS:	N/A	LSB:	N/A
		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Grid Scale	-00-C	MSB : 2^1---
	-01-C	LSB : 2^0---
Reserved	-02-0	Set to logic 0.
Reserved	-03-0	Set to logic 0.
Reserved	-04-0	Set to logic 0.
Reserved	-05-0	Set to logic 0.
Reserved	-06-0	Set to logic 0.
Reserved	-07-0	Set to logic 0.
Reserved	-08-0	Set to logic 0.
Reserved	-09-0	Set to logic 0.
Reserved	-10-0	Set to logic 0.
Reserved	-11-0	Set to logic 0.
Reserved	-12-0	Set to logic 0.
Reserved	-13-0	Set to logic 0.
Reserved	-14-0	Set to logic 0.
Reserved	-15-0	Set to logic 0.

REMARKS/NOTES:

WORD NAME: GeoZone Time

	CATEGORY: Special
WORD ID: 16R/T/11	MAX VALUE: N/A
SOURCE(s): Platform/Store	MIN VALUE: N/A
DEST(s): Store/Platform	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Time Function	-00-C	MSB : 2^2---
	-01-C	
	-02-C	LSB : 2^0---
Reserved	-03-0	Set to logic 0.
Reserved	-04-0	Set to logic 0.
Hour	-05-N	MSB SIGNAL TYPE: Unsigned
		UNITS: Hours
	-06-N	MAX VALUE: 23 (24-31are Illegal values)
		MIN VALUE: 0
	-07-N	RESOLUTION: 1
		ACCURACY: N/A
	-08-N	FULL SCALE: 31
	-09-N	LSB
Minute	-10-N	MSB SIGNAL TYPE: Unsigned
		UNITS: Minute
	-11-N	MAX VALUE: 59 (60-63 are Illegal values)
		MIN VALUE: 0
	-12-N	RESOLUTION: 1
		ACCURACY: N/A
	-13-N	FULL SCALE: 63
	-14-N	
	-15-N	LSB

REMARKS/NOTES:

WORD NAME: Reference Point Latitude

	CATEGORY: Angle(M)+(L)
WORD ID: 16R/T/12-13	MAX VALUE: 5.0000E-01
SOURCE(s): Platform/Store	MIN VALUE: -5.0000E-01
DEST(s): Store/Platform	RESOLUTION: 2^-31
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^-1
SIGNAL TYPE: 2's Complement	LSB: 2^-31
UNITS: Semicircles	FULL SCALE: 1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Latitude	MSW -00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. North latitudes are positive and south latitudes are negative.

WORD NAME: Reference Point Longitude

	CATEGORY:	Angle(M)+(L)
WORD ID: 16R/T/14-15	MAX VALUE:	1.0000E+00
SOURCE(s): Platform/Store	MIN VALUE:	-1.0000E+00
DEST(s): Store/Platform	RESOLUTION:	2^-31
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^-1
SIGNAL TYPE: 2's Complement	LSB:	2^-31
UNITS: Semicircles	FULL SCALE:	1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Longitude	MSW -00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Longitude is defined as zero at the prime meridian with positive to the East.

WORD NAME:	Reference Point Altitude		
		CATEGORY:	Distance(M)+(L)
WORD ID:	16R/T/16-17	MAX VALUE:	1.6777E+07
SOURCE(s):	Platform/Store	MIN VALUE:	-1.6777E+07
DEST(s):	Store/Platform	RESOLUTION:	7.8125E-03
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^23
SIGNAL TYPE:	2's Complement	LSB:	2^-7
UNITS:	Meters	FULL SCALE:	1.6777E+07

FIELD NAME	BIT NO.	DESCRIPTION
Altitude	MSW -00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. The altitude reference is WGS-84 Ellipsoid (HAE).

WORD NAME:	Zone Maximum Altitude		
		CATEGORY:	Distance(M)+(L)
WORD ID:	16R/T/18-19	MAX VALUE:	1.6777E+07
SOURCE(s):	Platform/Store	MIN VALUE:	-1.6777E+07
DEST(s):	Store/Platform	RESOLUTION:	7.8125E-03
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^23
SIGNAL TYPE:	2's Complement	LSB:	2^-7
UNITS:	Meters	FULL SCALE:	1.6777E+07

FIELD NAME	BIT NO.	DESCRIPTION
Altitude	MSW -00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Zone Maximum Altitude [16R/T/18-19] is the top surface of a three-dimensional GeoZone, reference is WGS-84 Ellipsoid (HAE).

WORD NAME: GeoZone Velocity North

	CATEGORY: Velocity(M)
WORD ID: 16R/T/20	MAX VALUE: 8.1920E+03
SOURCE(s): Platform/Store	MIN VALUE: -8.1920E+03
DEST(s): Store/Platform	RESOLUTION: 5.0000E-01
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^13
SIGNAL TYPE: 2's Complement	LSB: 2^-1
UNITS: Meters/Second	FULL SCALE: 1.6383E+04

FIELD NAME	BIT NO.	DESCRIPTION
GeoZone Velocity North	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Velocity vector from South to North is positive.

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WORD NAME:	GeoZone Velocity East	

		CATEGORY:	Velocity(M)
WORD ID:	16R/T/21	MAX VALUE:	8.1920E+03
SOURCE(s):	Platform/Store	MIN VALUE:	-8.1920E+03
DEST(s):	Store/Platform	RESOLUTION:	5.0000E-01
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^13
SIGNAL TYPE:	2's Complement	LSB:	2^-1
UNITS:	Meters/Second	FULL SCALE:	1.6383E+04

FIELD NAME	BIT NO.	DESCRIPTION
GeoZone Velocity East	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Velocity vector from West to East is positive.

WORD NAME: Area Axis Orientation

		CATEGORY:	Angle (M)
WORD ID:	16R/T/22	MAX VALUE:	9.9997E-01
SOURCE(s):	Platform/Store	MIN VALUE:	-1.0000E+00
DEST(s):	Store/Platform	RESOLUTION:	3.0518E-05
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^-1
SIGNAL TYPE:	2's Complement	LSB:	2^-15
UNITS:	Semicircles	FULL SCALE:	9.9997E-01

FIELD NAME	BIT NO.	DESCRIPTION
Area Axis Orientation	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Orientation of the <u>Area Major Axis</u> wrt True North. Positive in the CW direction (for example +0.5 semicircles = +90.0 degrees).

WORD NAME: Area Major Axis

	CATEGORY:	Distance(F)
WORD ID: 16R/T/23	MAX VALUE:	1.6383E+04
SOURCE(s): Platform/Store	MIN VALUE:	-1.6383E+04
DEST(s): Store/Platform	RESOLUTION:	5.0000E-01
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^13
SIGNAL TYPE: 2's Complement	LSB:	2^-1
UNITS: Meters	FULL SCALE:	1.6383E+04

FIELD NAME	BIT NO.	DESCRIPTION
Area Major Axis	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Area Minor Axis

WORD ID:	16R/T/24
SOURCE(s):	Platform/Store
DEST(s):	Store/Platform
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	2's Complement
UNITS:	Meters

CATEGORY:	Distance(F)
MAX VALUE:	1.6383E+04
MIN VALUE:	-1.6383E+04
RESOLUTION:	5.0000E-01
ACCURACY:	N/A
MSB:	2^13
LSB:	2^-1
FULL SCALE:	1.6383E+04

FIELD NAME	BIT NO.	DESCRIPTION
Area Minor Axis	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Point 1 Offset North

		CATEGORY:	Distance(F)
WORD ID:	16R/T/25	MAX VALUE:	1.6383E+04
SOURCE(s):	Platform/Store	MIN VALUE:	-1.6383E+04
DEST(s):	Store/Platform	RESOLUTION:	5.0000E-01
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^13
SIGNAL TYPE:	2's Complement	LSB:	2^-1
UNITS:	Meters (Note 1)	FULL SCALE:	1.6383E+04

FIELD NAME	BIT NO.	DESCRIPTION
Offset North	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Units are in minutes when GeoZone is Grid [16R/T/09/15 = 1].

WORD NAME: Point 1 Offset East

	CATEGORY: Distance(F)
WORD ID: 16R/T/26	MAX VALUE: 1.6383E+04
SOURCE(s): Platform/Store	MIN VALUE: -1.6383E+04
DEST(s): Store/Platform	RESOLUTION: 5.0000E-01
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^13
SIGNAL TYPE: 2's Complement	LSB: 2^-1
UNITS: Meters (Note 1)	FULL SCALE: 1.6383E+04

FIELD NAME	BIT NO.	DESCRIPTION
Offset East	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Units are in minutes when GeoZone is Grid [16R/T/09/15 = 1].

WORD NAME: Point 1 Offset Down

		CATEGORY:	Distance(F)
WORD ID:	16R/T/27	MAX VALUE:	1.6383E+04
SOURCE(s):	Platform/Store	MIN VALUE:	-1.6383E+04
DEST(s):	Store/Platform	RESOLUTION:	5.0000E-01
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^{13}
SIGNAL TYPE:	2's Complement	LSB:	2^{-1}
UNITS:	Meters (Note 1)	FULL SCALE:	1.6383E+04

FIELD NAME	BIT NO.	DESCRIPTION
Offset Down	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Units are in meters (i.e., do not change) when <u>GeoZone is Grid</u> [16R/T/09/15 = 1].

WORD NAME: Point 2 Offset North

		CATEGORY:	Distance(F)
WORD ID:	16R/T/28	MAX VALUE:	1.6383E+04
SOURCE(s):	Platform/Store	MIN VALUE:	-1.6383E+04
DEST(s):	Store/Platform	RESOLUTION:	5.0000E-01
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^13
SIGNAL TYPE:	2's Complement	LSB:	2^-1
UNITS:	Meters	FULL SCALE:	1.6383E+04

FIELD NAME	BIT NO.	DESCRIPTION
Offset North	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Point 2 Offset East

	CATEGORY: Distance(F)
WORD ID: 16R/T/29	MAX VALUE: 1.6383E+04
SOURCE(s): Platform/Store	MIN VALUE: -1.6383E+04
DEST(s): Store/Platform	RESOLUTION: 5.0000E-01
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^13
SIGNAL TYPE: 2's Complement	LSB: 2^-1
UNITS: Meters	FULL SCALE: 1.6383E+04

FIELD NAME	BIT NO.	DESCRIPTION
Offset East	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME:	Point 2 Offset Down		
		CATEGORY:	Distance(F)
WORD ID:	16R/T/30	MAX VALUE:	1.6383E+04
SOURCE(s):	Platform/Store	MIN VALUE:	-1.6383E+04
DEST(s):	Store/Platform	RESOLUTION:	5.0000E-01
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^13
SIGNAL TYPE:	2's Complement	LSB:	2^-1
UNITS:	Meters	FULL SCALE:	1.6383E+04

FIELD NAME	BIT NO.	DESCRIPTION
Offset Down	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

6.17R/T-1 Modify Mission: Target [17R/T-1]

The Modify Mission: Target [17R/T-1] is used to transfer Non-MDT mission data for a store to attack either a fixed or moving point above, on, or below the Earth's surface. The Modify Mission: Target [17R-1] from the platform is stored in the location specified in Mod Msn Storage Location [22R/08]. The Modify Mission: Target [17T-1] from the mission store reports the mission data to be used for the mission specified in Mod Msn Storage Location [22R/08]. All platform-provided altitude information is referenced to WGS-84 Ellipsoid (HAE). Section 3.5.8 provides additional information and requirements. Additional requirements for Modify Mission: Target [17T-1] volatile and non-volatile memory storage times are specified in 3.5.8.1.2 Non MDT of Mission Data.

Platform Requirements

The platform shall **{ps_6161}** provide Non-MDT mission data to the store via Modify Mission: Target [17R-1], if CDS Modify Mission Type **{cds_6070}** equals Target, as described below.

The platform shall **{ps_6162}** provide altitude information referenced to HAE.

Carriage System Requirements

A Type 1 carriage system shall **{css_6125}** set all Modify Mission: Target Invalidity [17T-1/02] bits to logic 1 (invalid).

A Type 2 carriage system shall **{css_6126}** update Modify Mission: Target [17T-1], at a minimum rate of 25 Hz, to reflect the data from the next mission store to be released.

Mission Store Requirements

The mission store shall **{ss_6173}** set the Modify Mission: Target [17T-1] to the mission data specified in Mod Msn Storage Location [22R/08] as provided by Modify Mission: Target [17R-1] or provided by the equivalent subset of the MDS data provided in an MDT-Mission [13R-020] or as changed via WDL, inclusive of any modifications performed by the store (e.g. due to store limits), as documented in the mission store supplement **{sup_6193}**.

The mission store shall **{ss_6410}** update Modify Mission: Target [17T-1] data when Modify Mission: Target [17R-1] data has been stored.

6.17R/T-1.1 Mission Number [17R/T-1/03]

The Mission Number [17R/T-1/03] provides a means to uniquely designate a mission. This is reported by the mission store as Selected Primary Msn Num [22T/13]. Mission Number can be used by the platform as index/reference into a platform targeting table, from which it can display a unique mission reference to the aircrew.

Platform Requirements

The platform shall **{ps_6163}** assign a <u>Mission Number</u> [17R-1/03] to the MDS being downloaded to the store.

6.17R/T-1.2 <u>Attack Controls</u> [17R/T-1/04]

6.17R/T-1.2.1 <u>Storage Mode</u> [17R/T-1/04/00]

<u>Storage Mode</u> [17R/T-1/04/00] specifies MDS stored in volatile or non-volatile memory.

Platform Requirements

The platform shall **{ps_6164}** set <u>Storage Mode</u> [17R-1/04/00 = 0] to command the mission store to write non-MDT mission data into non-volatile memory.

The platform shall **{ps_6165}** set <u>Storage Mode</u> [17R-1/04/00 = 1] to command the mission store to write non-MDT mission data into volatile memory.

Mission Store Requirements

The mission store shall **{ss_6174}** write all non-MDT mission data in non-volatile memory if <u>Storage Mode</u> [17R-1/04/00 = 0].

The mission store shall **{ss_6175}** write all non-MDT mission data in volatile memory if <u>Storage Mode</u> [17R-1/04/00 = 1].

6.17R/T-1.2.2 <u>PF Control</u> [17R/T-1/04/01]

Platform Requirements

The platform shall **{ps_6166}** set <u>PF Control</u> [17R-1/04/01 = 1], if <u>PF Onboard</u> [22T/02/12 = 1], to command the mission store to use <u>PF Data</u> [11R/08-12], [11R/15-19] and [11R/25-28] (as applicable).

The platform shall **{ps_6167}** set <u>PF Control</u> [17R-1/04/01 = 0], if <u>PF Onboard</u> [22T/02/12 = 1], to command the mission store to use default or PF panel settings (as applicable).

The platform shall **{ps_6168}** provide the capability to select or enter <u>PF Control</u> [17R-1/04/01], if <u>CDS Programmable Fuze Onboard</u> **{cds_6071}** and/or <u>PF Onboard</u> [22T/02/12 = 1].

Mission Store Requirements

The mission store shall **{ss_6176}** use the programmable fuze settings specified by <u>PF Data</u> [11R/08-12], [11R/15-19], and [11R/25-28], if available and <u>PF Control</u> [17R-1/04/01 = 1].

The store supplement **{sup_6080}** documents programmable fuze capabilities, including default settings and allowable panel settings (as applicable).

6.17R/T-1.2.3 Flight Mode [17R/T-1/04/02…03]

Platform Requirements

The platform shall **{ps_6169}** set Flight Mode [17R-1/04/02…03] IAW Table 6.17R/T-1-1 to command which flight mode to use if CDS Flight Mode Controllable **{cds_6072}**.

Table 6.17R/T-1-1 Flight Mode Definitions

Value	Flight Mode	Definition
00 (B)	Default	Store uses default flight mode for attacking the Target Location [17R/T-1/05-10].
01 (B)	Range On Heading	Store intercepts the Attack Heading [17R/T-1/12] at Range [17R/T-1/17] from the Target Location for attacking the Target Location [17R/T-1/05-10].
10 (B)	Use Attack Heading	Store intercepts the Attack Heading [17R/T-1/12] for attacking the Target Location [17R/T-1/05-10].
11 (B)	Direct Trajectory	Store flies a direct line of attack, as defined in the mission store supplement, to the Target Location [17R/T-1/05-10].

The platform shall **{ps_6170}** provide the capability to select or enter Flight Mode [17R-1/04/02…03] if CDS Flight Mode Controllable **{cds_6072}**.

Mission Store Requirements

The mission store shall **{ss_6177}** use Flight Mode [17R-1/04/02…03] to determine which Flight Mode to use IAW Table 6.17R/T-1-1 if the store is flight mode controllable.

The store supplement **{sup_6081}** documents Flight Mode [17R-1/04/02…03] usage.

6.17R/T-1.2.4 Relative Targeting [17R/T-1/04/04]

This parameter specifies whether the target coordinates were obtained with on-platform sensors, or were obtained from some other source (e.g., pre-planned, data link, etc.).

Platform Requirements

The platform shall **{ps_6171}** set Relative Targeting [17R-1/04/04 = 1] if target coordinates are derived from an on-platform sensor.

Mission Store Requirements

The store supplement **{sup_6082}** documents Relative Targeting [17R-1/04/04] usage.

6.17R/T-1.2.5 Target Class [17R/T-1/04/05…10]

This parameter specifies what type of target is being attacked. Target Class is used to support refinement of the target impact point, and improve lethality for a range of target types, and to optimize fuze settings.

Platform Requirements

The platform shall **{ps_6172}** assign a <u>Target Class</u> [17R-1/04/05…10] to a target IAW Table 6.17R/T-1-2 below, if <u>CDS Target Class Enabled</u> **{cds_6073}**.

Table 6.17R/T-1-2 <u>Target Class</u> Definitions

Value	Target Class
0	No Target Class Provided (Default)
1	Wheeled Vehicle - Small (Car)
2	Wheeled Vehicle - Medium (Sport Utility Vehicle, Light Truck)
3	Wheeled Vehicle - Large (Heavy Truck)
4	Tracked Vehicle - APC
5	Tracked Vehicle - Artillery
6	Tracked Vehicle - Tank
7	Artillery - Towed
8	Artillery - Wheeled
9	Artillery - Rocket Launcher
10	Boat - Small
11	Boat - Medium (Patrol Craft)
12	Boat - Large (Ship)
13	Air Defense System - Fixed
14	Air Defense System - Wheeled
15	Air Defense System - Tracked
16	Missile / Transporter Erector Launcher
17	Radar / EW Site
18	Command, Control, and /or Communications Node
19	Building - Small
20	Building - Medium
21	Building - Large
22	Aircraft in the Open
23	Aircraft in Revetment
24	Aircraft in Aircraft Shelter
25	Dam
26	Bridge
27	Logistics/Supply Area
28	Personnel
29	Flying TACAN Station
30-63	Undefined

The platform shall **{ps_6173}** provide the capability to select or enter <u>Target Class</u> [17R-1/04/05…10].

Mission Store Requirements

The mission store supplement **{sup_6083}** documents <u>Target Class</u> [17R-1/04/05…10] usage.

6.17R/T-1.2.6 Reserved

6.17R/T-1.2.7 Selected Store [17R/T-1/04/12…15]

Selected Store [17R/T-1/04/12…15] provides the capability to select a mission store on a carriage system for transfer of mission data (Embedded Protocol). The Type 2 carriage system receives the data and based on the value in Selected Store, forwards the data to the corresponding mission store. The Selected Store number corresponds to the mission store release order number.

Platform Requirements

The platform shall **{ps_6315}** set Selected Store [17R-1/04/12…15 = 1-8] (Embedded Protocol) to indicate that the Modify Mission: Target [17R-1] data is intended for a particular mission store in the release order.

The platform shall **{ps_6316}** set Selected Store [17R-1/04/12…15 = 0] to indicate that Embedded Protocol is not being used for transfer of Modify Mission: Target [17R-1] data to a mission store.

Carriage System Requirements

A Type 2 carriage system shall **{css_6127}** transfer all mission data in [17R-1] (Embedded Protocol) to the corresponding mission store whose release order number equals the value in Selected Store when Selected Store [17R-1/04/12…15 = 1-8].

A Type 2 carriage system shall **{css_6128}** route the data to the store selected in Store Number [10R/02/08…11] (Directed Protocol) when Selected Store [17R-1/04/12…15 = 0].

A Type 2 carriage system shall **{css_6153}** set Selected Store [17T-1/04/12…15] to the release order number of the next mission store to be released to indicate that the Modify Mission: Target [17T-1] data is from that mission store when receiving a [17T-1] transmission request with Store Number [10R/02/08…11 = 0].

Mission Store Requirements

The mission store shall **{ss_6367}** set Selected Store [17T-1/04/12…15 = 0].

6.17R/T-1.3 Target Location [17R/T-1/05-10]

Target Location contains the Latitude [17R-1/05-06], Longitude [17R-1/07-08], and Altitude [17R-1/09-10] of the target.

Platform Requirements

The platform shall **{ps_6174}** provide Target Location [17R-1/05-10], with time of validity specified by Time Stamp [17R-1/30].

The platform shall **{ps_6175}** provide the capability to select or enter Target Location [17R-1/05-10].

Mission Store Requirements

The mission store supplement **{sup_6084}** documents <u>Target Location</u> [17R/T-1/05-10] usage.

6.17R/T-1.4 <u>Velocity</u> [17R/T-1/11]

For mission stores that impact targets, this parameter specifies the minimum speed the store is commanded to achieve at impact. For mission stores that carry submunitions that are dispensed at an altitude/distance above the target, this parameter specifies the velocity that the mission store achieves at the initial function point.

Platform Requirements

The platform shall **{ps_6176}** provide <u>Velocity</u> [17R-1/11], if <u>CDS Velocity Enabled</u> **{cds_6074}**.

The platform shall **{ps_6177}** provide the capability to select or enter <u>Velocity</u> [17R-1/11], if <u>CDS Velocity Enabled</u> **{cds_6074}**.

Mission Store Requirements

The mission store supplement **{sup_6085}** documents how <u>Velocity</u> [17R-1/11] is used by the mission store.

6.17R/T-1.5 <u>Attack Heading</u> [17R/T-1/12]

<u>Attack Heading</u> [17R-1/12] is defined as the angle between the store horizontal flight path (heading) and True North as the store approaches the target.

Platform Requirements

The platform shall **{ps_6178}** provide <u>Attack Heading</u> [17R-1/12] when <u>Flight Mode</u> [17R-1/04/02…03 = 1 or 2], if <u>CDS Attack Heading Enabled</u> **{cds_6075}**.

The platform shall **{ps_6179}** provide the capability to select or enter <u>Attack Heading</u> [17R-1/12], if <u>CDS Attack Heading Enabled</u> **{cds_6075}**.

Mission Store Requirements

The mission store supplement **{sup_6086}** documents:

    a. Mission store actions in the absence of a valid <u>Attack Heading</u> [17R-1/12].

    b. The default distance from the target location at which the mission store intercepts and then maintains the commanded <u>Attack Heading</u>.

    c. The store usage of <u>Attack Heading</u> [17R-1/12].

6.17R/T-1.6 <u>Impact Angle</u> [17R/T-1/13]

<u>Impact Angle</u> [17R/T-1/13], for mission stores that impact the target, specifies the intended angle, relative to horizontal, that the mission store expects to achieve at target impact. For mission stores that carry submunitions dispensed at an altitude/distance

above the target, this parameter specifies the submunition dispense angle, relative to horizontal, that the mission store expects at the initial function point.

Platform Requirements

The platform shall **{ps_6180}** provide Impact Angle [17R-1/13], if CDS Impact Angle Enabled **{cds_6076}**.

The platform shall **{ps_6181}** provide the capability to select or enter Impact Angle [17R-1/13], if CDS Impact Angle Enabled **{cds_6076}**.

Mission Store Requirements

The mission store supplement **{sup_6087}** documents store usage of Impact Angle [17R-1/13] and actions in the absence of a valid Impact Angle [17R-1/13].

6.17R/T-1.7 Target Wind North / East [17R/T-1/14]

Target Wind North / East [17R/T-1/14] provides the average anticipated magnitudes of the Northerly (true North) and Easterly (true East) components of wind velocity, at the target location, from the surface to the intended initial function altitude.

Platform Requirements

The platform shall **{ps_6182}** provide Target Wind North / East [17R-1/14], if CDS Target Wind Enabled **{cds_6077}**.

The platform shall **{ps_6183}** provide the capability to select or enter Target Wind North / East [17R-1/14], if CDS Target Wind Enabled **{cds_6077}**.

Mission Store Requirements

The mission store may **{sm_6008}** use the Target Wind North [17R-1/14/00…07] and Target Wind East [17R-1/14/08…15] to determine the wind profile at the target location.

The mission store supplement **{sup_6088}** documents Target Wind North / East [17R-1/14] usage.

6.17R/T-1.8 Ingress / Cruise Mach [17R/T-1/15]

Ingress / Cruise Mach [17R-1/15] is the mach number beginning at the mission store release point until the transition into terminal attack.

Platform Requirements

The platform shall **{ps_6184}** provide Ingress / Cruise Mach [17R-1/15], if CDS Ingress/Cruise Mach Enabled **{cds_6078}**.

The platform shall **{ps_6185}** provide the capability to select or enter Ingress / Cruise Mach [17R-1/15], if CDS Ingress/Cruise Mach Enabled **{cds_6078}**.

Mission Store Requirements

The mission store supplement **{sup_6089}** documents Ingress / Cruise Mach [17R-1/15] usage.

6.17R/T-1.9 Ingress / Cruise Altitude [17R/T-1/16]

Ingress / Cruise Altitude is the altitude for the mission store beginning at the store release point until the transition into terminal attack.

Platform Requirements

The platform shall **{ps_6186}** provide Ingress / Cruise Altitude [17R-1/16], if CDS Ingress/Cruise Altitude Enabled **{cds_6079}**.

The platform shall **{ps_6187}** provide the capability to select or enter Ingress / Cruise Altitude [17R-1/16], if CDS Ingress/Cruise Altitude Enabled **{cds_6079}**.

Mission Store Requirements

The mission store supplement **{sup_6090}** documents usage of Ingress / Cruise Altitude [17R-1/16].

6.17R/T-1.10 Range [17R/T-1/17]

Range [17R/T-1/17] is the range at which the store is commanded to intercept the Attack Heading [17R/T/12] to the Target Location. See Figure 6.17R/T-1-1 for a pictorial representation of Range On Heading Flight Mode.
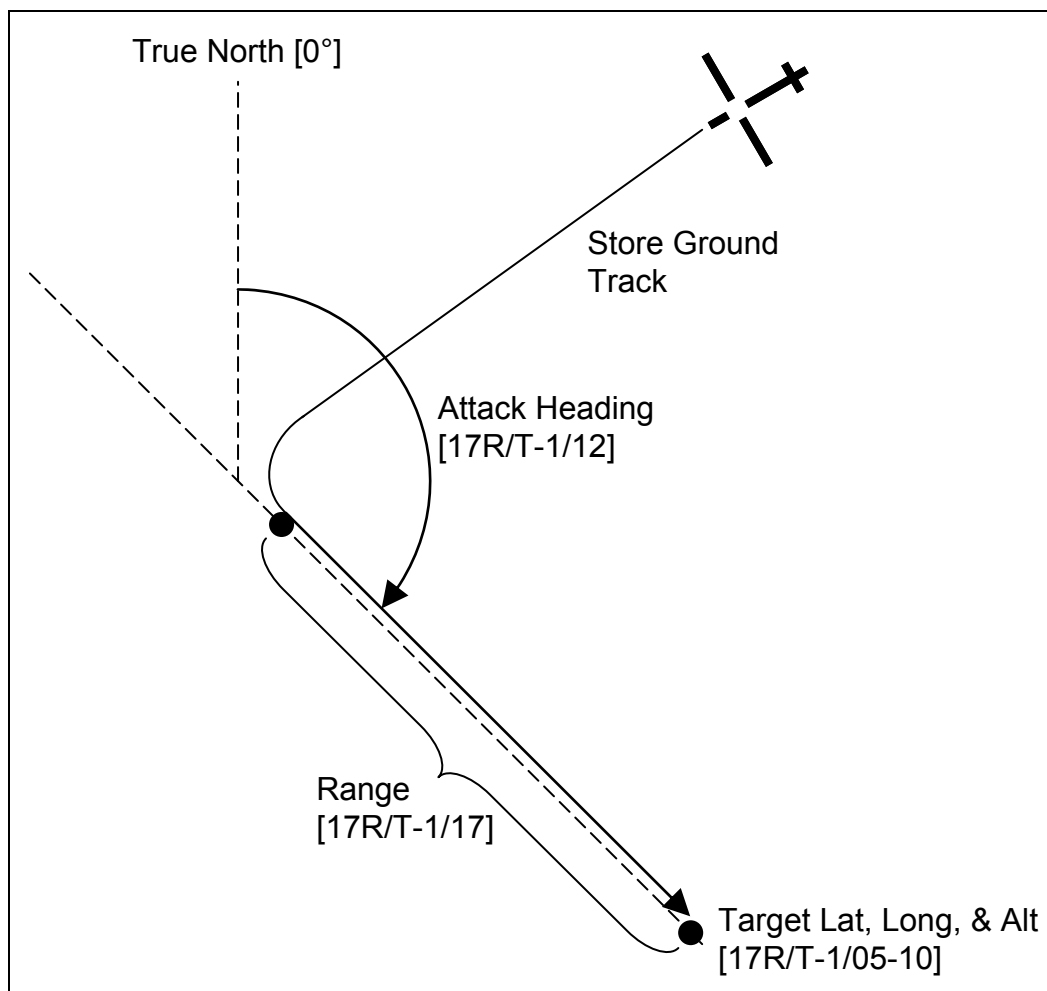
Figure 6.17R/T-1-1 Range On Heading Flight Mode

Platform Requirements

The platform shall **{ps_6188}** provide Range [17R-1/17], if Flight Mode [17R-1/04/02…03 = 1] and CDS Range Enabled **{cds_6080}**.

The platform shall **{ps_6189}** provide the capability to select or enter Range [17R-1/17], if CDS Range Enabled **{cds_6080}**.

Mission Store Requirements

The mission store supplement **{sup_6091}** documents Range [17R-1/17] usage.

6.17R/T-1.11 Endgame Entry Altitude [17R/T-1/18]

Endgame Entry Altitude [17R/T-1/18] defines an altitude relative to the target Altitude [17R/T-1/09-10] that the store is commanded to fly at store endgame entry range from the target to where it begins terminal maneuvers. Endgame entry range is a distance from the target location that is determined by the store. See Figure 6.17R/T-1-2 for a pictorial representation of the endgame variables.
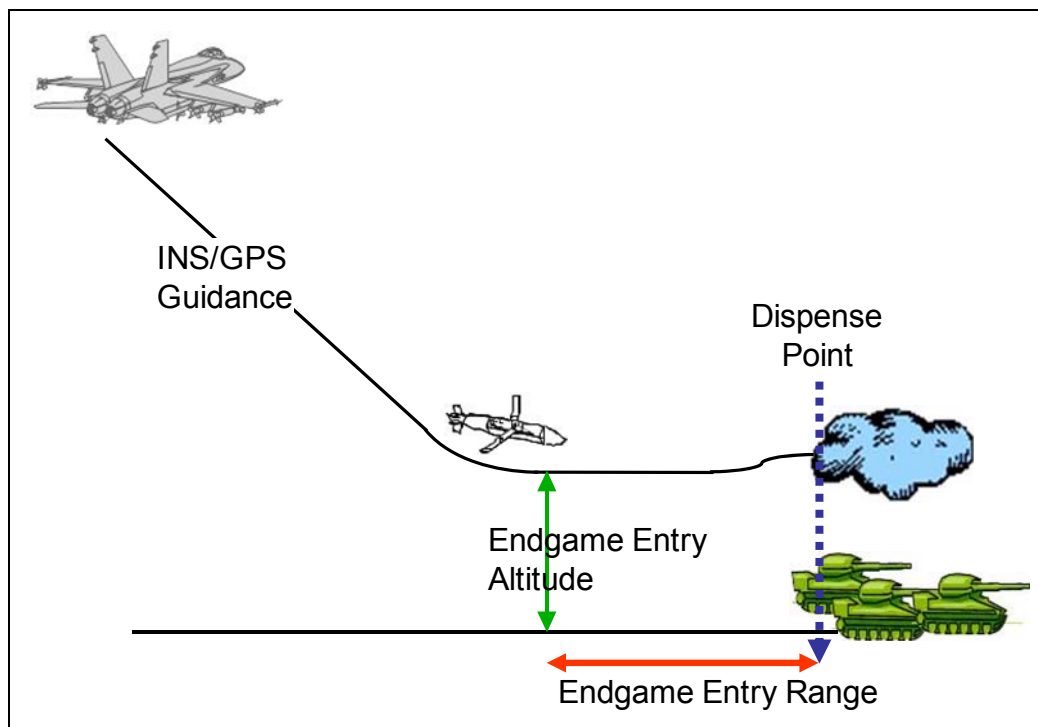
Figure 6.17R/T-1-2 Endgame Variables

Platform Requirements

The platform may **{pm_6036}** provide <u>Endgame Entry Altitude</u> [17R-1/18], if <u>CDS Endgame Entry Altitude Enabled</u> **{cds_6081}**.

The platform shall **{ps_6190}** provide the capability to select or enter <u>Endgame Entry Altitude</u> [17R-1/18], if <u>CDS Endgame Entry Altitude Enabled</u> **{cds_6081}**.

Mission Store Requirements

The mission store supplement **{sup_6092}** documents <u>Endgame Entry Altitude</u> [17R-1/18] usage and defines endgame entry range.

6.17R/T-1.12 <u>Target Offset</u> [17R/T-1/19-21]

<u>Offset North</u> [17R/T-1/19] is the offset north with respect to True North, <u>Offset East</u> [17R/T-1/20] is the offset east with respect to True East, and <u>Offset Down</u> [17R/T-1/21] is the altitude offset down referenced to HAE. Target Offset provides a means to attack an aimpoint relative to a known reference point. The known reference point is the <u>Target Location</u> [17R/T-1/05-10]. The final mission aimpoint is the <u>Target Location</u> [17R/T-1/05-10] plus the <u>Target Offset</u> [17R/T-1/19-21].

Platform Requirements

The platform may **{pm_6037}** provide a <u>Target Offset</u> [17R/T-1/19-21], if <u>CDS Target Offset Enabled</u> **{cds_6082}**.

The platform shall **{ps_6191}** provide the capability to select or enter Target Offset [17R-1/19-21], if CDS Target Offset Enabled **{cds_6082}**.

Mission Store Requirements

The mission store supplement **{sup_6093}** documents Offset North [17R/T-1/19], Offset East [17R/T-1/20], and Offset Down [17R/T-1/21] usage.

6.17R/T-1.13 Target Velocity [17R/T-1/22-23]

Target Velocity provides velocity vector of a moving target to the mission store so the store can adjust the endgame aimpoint. Target Velocity North [17R-1/22] is the velocity with respect to True North and Target Velocity East [17R-1/23] is the velocity with respect to True East.

Platform Requirements

The platform shall **{ps_6192}** provide Target Velocity North [17R-1/22] and Target Velocity East [17R-1/23] for moving targets, with time of validity specified by Time Stamp [17R-1/30], if CDS Target Velocity Enabled **{cds_6083}**.

The platform shall **{ps_6193}** provide the capability to select or enter Target Velocity North [17R-1/22] and Target Velocity East [17R-1/23] for moving targets, if CDS Target Velocity Enabled **{cds_6083}**.

Mission Store Requirements

The mission store supplement **{sup_6094}** documents Target Velocity North [17R-1/22] and Target Velocity East [17R-1/23] usage.

6.17R/T-1.14 North, East Vel Uncertainty [17R/T-1/24-25]

North, East Vel Uncertainty [17R/T-1/24-25] provides an estimate of the uncertainty associated with the Target Velocity [17R/T-1/22-23]. North Vel Uncertainty [17R-1/24] is the velocity with respect to True North and East Vel Uncertainty [17R-1/25] is the velocity with respect to True East. If provided, these values correspond to the last valid values of Target Velocity North [17R-1/22] and Target Velocity East [17R-1/23], respectively.

Platform Requirements

The platform shall **{ps_6194}** provide North Vel Uncertainty [17R-1/24] and East Vel Uncertainty [17R-1/25] for moving targets, if CDS Target Velocity Enabled **{cds_6083}**.

The platform may **{pm_6038}** provide the capability to select or enter North Vel Uncertainty [17R-1/24] and East Vel Uncertainty [17R-1/25] for moving targets, if CDS Target Velocity Enabled **{cds_6083}**.

Mission Store Requirements

The mission store supplement **{sup_6095}** documents North Vel Uncertainty [17R-1/24] and East Vel Uncertainty [17R-1/25] usage.

6.17R/T-1.15 Target Location Error [17R/T-1/26-27]

Target Location Error (TLE) [17R/T-1/26-27] provides an estimate of the uncertainty or error associated with the Target Location [17R/T-1/05-10]. Horizontal TLE is provided in the form of an ellipse centered on the horizontal Target Location [17R-1/05-08] which is defined by a TLE Major Axis [17R/T-1/26/00…07], a TLE Minor Axis [17R/T-1/26/08…15], and a TLE Direction [17R/T-1/27/00…07] for the major axis orientation as shown in Figure 6.17R/T-1-3. TLE Major Axis is the half-width of the major axis of the error ellipse, and TLE Minor Axis is the half-width of the minor axis of the error ellipse. The lengths expressed in TLE Major Axis and TLE Minor Axis are doubled and centered on the horizontal Target Location. The major axis of the area that is formed is offset from true north by the number of degrees indicated in the TLE Direction. The reported TLE ellipse expresses an area in which there is a 95% probability that the target is actually located at the time of the report, and it should incorporate all known errors and biases. TLE Vertical [17R/T-1/27/08…15] is an estimate of the uncertainty or error associated with the Altitude [17R-1/09-10] of the target.

It is possible that horizontal TLE will be available to the platform but vertical TLE will not be, or vice versa. To cover this case, the platform can set TLE Major Axis [17R/T-1/26/00…07 = FF (H)] and TLE Minor Axis [17R/T-1/26/08…15 = FF (H)] to indicate to the mission store that horizontal TLE is invalid; and, the platform can set TLE Vertical [17R/T-1/27/08…15 = FF (H)] to indicate to the mission store that vertical TLE is invalid.
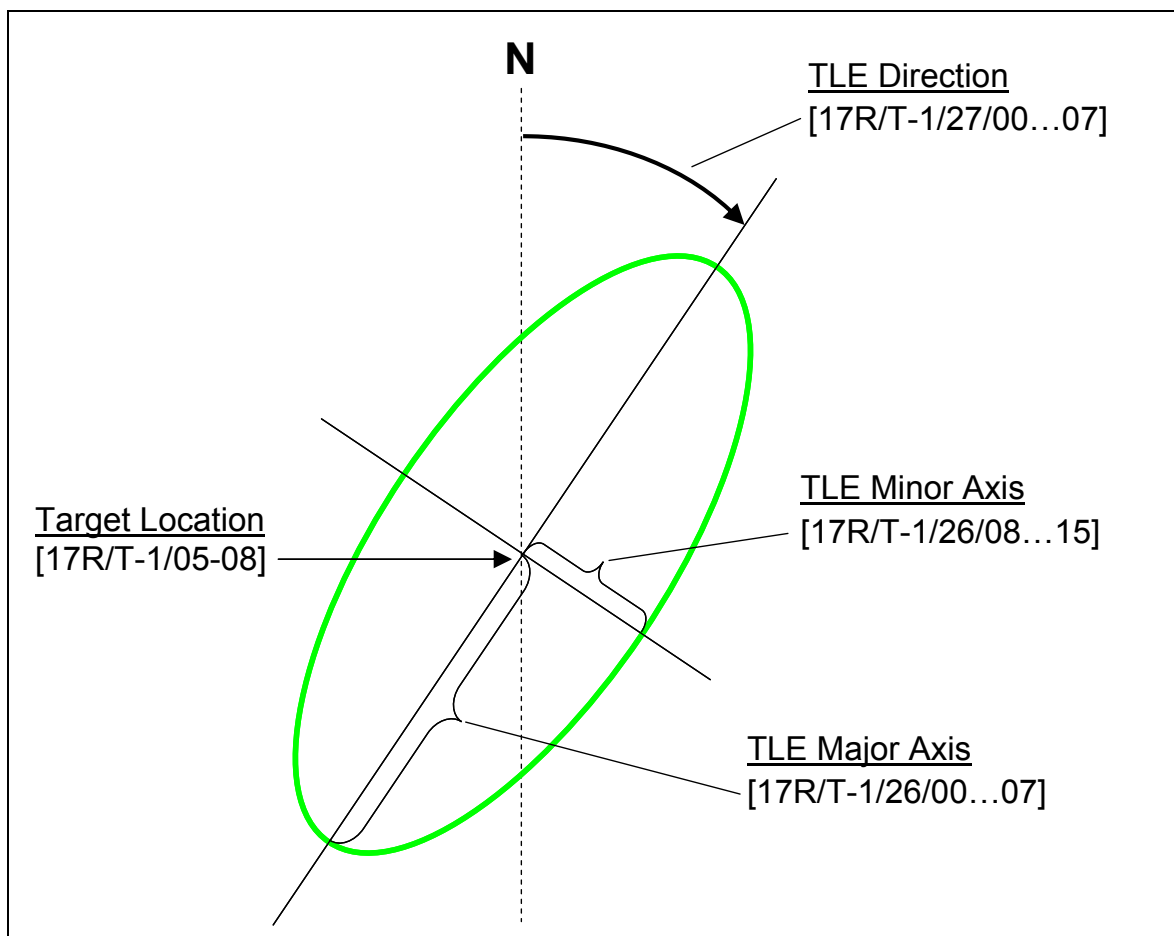
Figure 6.17R/T-1-3 Horizontal Target Location Error

Platform Requirements

The platform shall **{ps_6195}** provide Target Location Error [17R-1/26-27], if CDS TLE Enabled **{cds_6084}**.

The platform may **{pm_6039}** provide the capability to select or enter Target Location Error [17R-1/26-27], if CDS TLE Enabled **{cds_6084}**.

The platform may **{pm_6062}** set TLE Major / Minor Axis [17R-1/26 = FFFF (H)] to indicate that horizontal TLE is invalid, if CDS TLE Enabled **{cds_6084}**.

The platform may **{pm_6063}** set TLE Vertical [17R-1/27/08…15 = FF (H)] to indicate that vertical TLE is invalid, if CDS TLE Enabled **{cds_6084}**.

Mission Store Requirements

The mission store shall **{ss_6836}** consider horizontal TLE invalid when TLE Major / Minor Axis [17R-1/26 = FFFF (H)].

The mission store shall **{ss_6837}** consider vertical TLE invalid when TLE Vertical [17R-1/27/08…15 = FF (H)].

The mission store supplement **{sup_6096}** documents Target Location Error [17R/T-1/26-27] usage.

6.17R/T-1.16 Spin Rate [17R/T-1/28]

Spin Rate [17R/T-1/28] is the rate of spin that the store is commanded to achieve at the initial function point.

Platform Requirements

The platform shall **{ps_6196}** provide Spin Rate [17R-1/28], if CDS Spin Rate Enabled **{cds_6085}**.

The platform shall **{ps_6197}** provide the capability to select or enter Spin Rate [17R-1/28], if CDS Spin Rate Enabled **{cds_6085}**.

Mission Store Requirements

The mission store supplement **{sup_6097}** documents Spin Rate [17R-1/28] usage.

6.17R/T-1.17 Time at Reset [17R/T-1/29]

This word is set to the maximum value attained by the platform clock (prior to being reset) that is used to generate Synchronize with Data Word [MC17R] mode commands and time tag time stamp words (see section 3.5.17.1). This word should be set to full scale if the platform clock is not reset but instead rolls over. The total error budget associated with establishing time of data validity through time stamping is +/- 10.0 msec. Time at Reset [17R-1/29] platform and store requirements are defined in section 3.5.17.1. Time at Reset [17T-1/29] is not used and is set invalid by the mission store.

Mission Store Requirements

The mission store shall **{ss_6756}** set Time Stamp Invld [17T-1/02/15 = 1].

6.17R/T-1.18 Time Stamp [17R/T-1/30]

This word contains the time tag of the Target Location [17R-1/05-10] data and Target Velocity [17R-1/22-23] data (see section 3.5.17.1). The total error budget associated with establishing time of data validity through time stamping is +/- 10.0 msec. Time Stamp [17R-1/30] platform and store requirements are defined in section 3.5.17.1. Time Stamp [17T-1/30] is not used and is set invalid by the mission store.

MESSAGE NAME: Modify Mission: Target
MESSAGE ID: 17R/T-1   TRANSFER TYPE: BC-RT/RT-BC
SOURCE: Platform/Store   WORD COUNT: 30
DESTINATION: Store/Platform   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 10001 (B)
Status Word (Transmit)	SW	MIL-STD-1553 Status Word
Header	01	Message Descriptor
Invalidity	02	Validity of Message Data
Mission Number	03	Mission Number
Attack Controls	04	Attack Controls
Latitude (MSW)	05	Latitude of Target
Latitude (LSW)	06	Latitude of Target
Longitude (MSW)	07	Longitude of Target
Longitude (LSW)	08	Longitude of Target
Altitude (MSW)	09	Altitude of Target
Altitude (LSW)	10	Altitude of Target
Velocity	11	Velocity
Attack Heading	12	Attack Heading wrt True North
Impact Angle	13	Impact Angle on Target
Target Wind North / East	14	Target Wind wrt True North & True East
Ingress / Cruise Mach	15	Ingress / Cruise Mach
Ingress / Cruise Altitude	16	Ingress / Cruise Altitude
Range	17	Range On Heading
Endgame Entry Altitude	18	Endgame Entry Altitude
Offset North	19	Displacement of Target Offset wrt True North
Offset East	20	Displacement of Target Offset wrt True East
Offset Down	21	Down Displacement of Target Offset
Target Velocity North	22	Target Velocity wrt True North
Target Velocity East	23	Target Velocity wrt True East
North Vel Uncertainty	24	Uncertainty of Target Velocity North
East Vel Uncertainty	25	Uncertainty of Target Velocity East
TLE Major / Minor Axis	26	Horizontal TLE Ellipse Major and Minor Axes
TLE Direction / Vertical	27	Horizontal TLE Major Axis Direction and Vertical TLE
Spin Rate	28	Spin Rate
Time at Reset	29	Time at Reset
Time Stamp	30	Time Stamp
Status Word (Receive)	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Header

WORD ID:	17R/T-1/01	
SOURCE(s):	Platform/Store	
DEST(s):	Store/Platform	
COMP RATE:	Aperiodic	
XMIT RATE:	Aperiodic	
SIGNAL TYPE:	Hexadecimal	
UNITS:	N/A	

CATEGORY:	Header
MAX VALUE:	1701 (H)
MIN VALUE:	0
RESOLUTION:	1
ACCURACY:	N/A
MSB:	2^{15}
LSB:	2^0
FULL SCALE:	FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB ---
	-01-B	
	-02-B	Hex digit #1 value=1 (H)
	-03-B	LSB ---
Hex Digit #2	-04-B	MSB ---
	-05-B	
	-06-B	Hex digit #2 value=7 (H)
	-07-B	LSB ---
Hex Digit #3	-08-B	MSB ---
	-09-B	
	-10-B	Hex digit #3 value=0 (H)
	-11-B	LSB ---
Hex Digit #4	-12-B	MSB ---
	-13-B	
	-14-B	Hex digit #4 value=1 (H)
	-15-B	LSB ---

REMARKS/NOTES:

WORD NAME: Invalidity

	CATEGORY: Validity
WORD ID: 17R/T-1/02	MAX VALUE: N/A
SOURCE(s): Platform/Store	MIN VALUE: N/A
DEST(s): Store/Platform	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: Binary	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Mission Number	-00-V	Set to logic 1 if word 3 is invalid
Attack Ctls Invalid	-01-V	Set to logic 1 if word 4 is invalid
Position Invalid	-02-V	Set to logic 1 if words 5, 6, 7, 8, 9 & 10 are invalid
Impact Vel Invalid	-03-V	Set to logic 1 if word 11 is invalid
Attack Hdg Invalid	-04-V	Set to logic 1 if word 12 is invalid
Impact Angle Invalid	-05-V	Set to logic 1 if word 13 is invalid
Target Wind Invalid	-06-V	Set to logic 1 if word 14 is invalid
Ingress Mach Invalid	-07-V	Set to logic 1 if word 15 is invalid
Ingress Crus Alt Invld	-08-V	Set to logic 1 if word 16 is invalid
Rng On Hdg Invalid	-09-V	Set to logic 1 if word 17 is invalid
Endgme Ent Alt Invld	-10-V	Set to logic 1 if word 18 is invalid
Offset Invalid	-11-V	Set to logic 1 if words 19, 20 & 21 are invalid
Target Vel Invalid	-12-V	Set to logic 1 if words 22 & 23 are invalid
Tgt Vel Uncrtnty Invld	-13-V	Set to logic 1 if words 24 & 25 are invalid
Target Location Error Invld	-14-V	Set to logic 1 if words 26 & 27 are invalid
Time Stamp Invld	-15-V	Set to logic 1 if words 29 & 30 are invalid

REMARKS/NOTES:

WORD NAME: Mission Number

CATEGORY:	Number (L)
WORD ID: 17R/T-1/03	MAX VALUE: 65535
SOURCE(s): Platform/Store	MIN VALUE: 0
DEST(s): Store/Platform	RESOLUTION: 1
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^15
SIGNAL TYPE: Unsigned	LSB: 2^0
UNITS: N/A	FULL SCALE: 65535

FIELD NAME	BIT NO.	DESCRIPTION
Mission Number	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Attack Controls

	CATEGORY: Special
WORD ID: 17R/T-1/04	MAX VALUE: N/A
SOURCE(s): Platform/Store	MIN VALUE: N/A
DEST(s): Store/Platform	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.		DESCRIPTION
Storage Mode	-00-B		0=Non-Volatile Memory, 1=Volatile Memory
PF Control	-01-B		0 = Use PF Default/Panel Settings, 1 = Use PF Data
Flight Mode	-02-N	MSB	See Table 6.17R/T-1-1
	-03-N	LSB	---
Relative Targeting	-04-B		0 = Not Derived from On-Platform Sensor 1 = Derived from On-Platform Sensor
Target Class Type	-05-N	MSB	2^5 ---
	-06-N		
	-07-N		
	-08-N		
	-09-N		
	-10-N	LSB	2^0 ---
Reserved	-11-0		Set to logic 0
Selected Store	-12-N	MSB	2^3 ---
	-13-N		Max value = 8
	-14-N		
	-15-N	LSB	2^0 ---

REMARKS/NOTES:

WORD NAME: Latitude

	CATEGORY:	Angle(M)+(L)
WORD ID: 17R/T-1/05-06	MAX VALUE:	5.0000E-01
SOURCE(s): Platform/Store	MIN VALUE:	-5.0000E-01
DEST(s): Store/Platform	RESOLUTION:	2^-31
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^-1
SIGNAL TYPE: 2's Complement	LSB:	2^-31
UNITS: Semicircles	FULL SCALE:	1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Latitude	MSW -00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. North latitudes are positive and South latitudes are negative.

WORD NAME: Longitude

		CATEGORY:	Angle(M)+(L)
WORD ID:	17R/T-1/07-08	MAX VALUE:	1.0000E+00
SOURCE(s):	Platform/Store	MIN VALUE:	-1.0000E+00
DEST(s):	Store/Platform	RESOLUTION:	2^-31
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^-1
SIGNAL TYPE:	2's Complement	LSB:	2^-31
UNITS:	Semicircles	FULL SCALE:	1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Longitude	MSW -00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Longitude is defined as zero at the prime meridian with positive to the East.

WORD NAME: Altitude

WORD ID:	17R/T-1/09-10
SOURCE(s):	Platform/Store
DEST(s):	Store/Platform
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	2's Complement
UNITS:	Meters

CATEGORY:	Distance(M)+(L)
MAX VALUE:	1.0000E+04
MIN VALUE:	-5.0000E+02
RESOLUTION:	7.8125E-03
ACCURACY:	N/A
MSB:	2^23
LSB:	2^-7
FULL SCALE:	1.6777E+07

FIELD NAME	BIT NO.	DESCRIPTION
Altitude	MSW -00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Velocity

	CATEGORY: Velocity(M)
WORD ID: 17R/T-1/11	MAX VALUE: 8.1920E+03
SOURCE(s): Platform/Store	MIN VALUE: 0.0000E+00
DEST(s): Store/Platform	RESOLUTION: 2.5000E-01
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^{12}
SIGNAL TYPE: 2's Complement	LSB: 2^{-2}
UNITS: Meters/Second	FULL SCALE: 8.1920E+03

FIELD NAME	BIT NO.	DESCRIPTION
Velocity	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Attack Heading

	CATEGORY: Angle(M)
WORD ID: 17R/T-1/12	MAX VALUE: 9.9997E-01
SOURCE(s): Platform/Store	MIN VALUE: -1.0000E+00
DEST(s): Store/Platform	RESOLUTION: 3.0518E-05
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^-1
SIGNAL TYPE: 2's Complement	LSB: 2^-15
UNITS: Semicircles	FULL SCALE: 9.9997E-01

FIELD NAME	BIT NO.	DESCRIPTION
Attack Heading	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. A zero value for this word specifies store flight from South to North.
2. A 90 degree value for this word specifies store flight from West to East.

WORD NAME: Impact Angle

	CATEGORY: Angle(M)
WORD ID: 17R/T-1/13	MAX VALUE: 5.0000E-01
SOURCE(s): Platform/Store	MIN VALUE: 0.0000E+00
DEST(s): Store/Platform	RESOLUTION: 3.0518E-05
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^-1
SIGNAL TYPE: 2's Complement	LSB: 2^-15
UNITS: Semicircles	FULL SCALE: 9.9997E-01

FIELD NAME	BIT NO.	DESCRIPTION
Impact Angle	-00-S	
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. This word contains the specified impact angle (0 to 90 degrees relative to horizontal) at target impact.

WORD NAME: Target Wind North/East

	CATEGORY:	Special
WORD ID: 17R/T-1/14	MAX VALUE:	N/A
SOURCE(s): Platform/Store	MIN VALUE:	N/A
DEST(s): Store/Platform	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Target Wind North	-00-S	Sign
	-01-N	MSB --
	-02-N	SIGNAL TYPE: 2's Complement UNITS: Meter/Sec
	-03-N	MAX VALUE: 127 MIN VALUE: -127
	-04-N	RESOLUTION: 1, ACCURACY: 1
	-05-N	MSB: 2^7 LSB: 2^0
	-06-N	FULL SCALE: 127
	-07-N	LSB --
Target Wind East	-08-S	Sign
	-09-N	MSB --
	-10-N	SIGNAL TYPE: 2's Complement UNITS: Meter/Sec
	-11-N	MAX VALUE: 127 MIN VALUE: -127
	-12-N	RESOLUTION: 1, ACCURACY: 1
	-13-N	MSB: 2^7 LSB: 2^0
	-14-N	FULL SCALE: 127
	-15-N	LSB --

REMARKS/NOTES:

1. This word contains an estimate of true North and East components of wind speed in meters/second at the target location.
2. Wind vector from South to North and West to East is positive.

WORD NAME: Ingress / Cruise Mach

	CATEGORY:	Number(S)
WORD ID: 17R/T-1/15	MAX VALUE:	8.0000E+00
SOURCE(s): Platform/Store	MIN VALUE:	0.0000E+00
DEST(s): Store/Platform	RESOLUTION:	9.7700E-04
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^4
SIGNAL TYPE: 2's Complement	LSB:	2^-10
UNITS: Mach	FULL SCALE:	1.6000E+01

FIELD NAME	BIT NO.	DESCRIPTION
Ingress / Cruise Mach	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Ingress / Cruise Alt

		CATEGORY:	Distance
WORD ID:	17R/T-1/16	MAX VALUE:	65534
SOURCE(s):	Platform/Store	MIN VALUE:	0.0000E+00
DEST(s):	Store/Platform	RESOLUTION:	2
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^15
SIGNAL TYPE:	2's Complement	LSB:	2^1
UNITS:	Meters	FULL SCALE:	65534

FIELD NAME	BIT NO.	DESCRIPTION
Ingress / Cruise Alt	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Range

WORD ID:	17R/T-1/17
SOURCE(s):	Platform/Store
DEST(s):	Store/Platform
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	2's Complement
UNITS:	Meters

CATEGORY:	Distance (F)
MAX VALUE:	1.6383E+04
MIN VALUE:	0.0000E+00
RESOLUTION:	5.0000E-01
ACCURACY:	N/A
MSB:	2^{13}
LSB:	2^{-1}
FULL SCALE:	1.6383E+04

FIELD NAME	BIT NO.	DESCRIPTION
Range	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. This word defines the Range, along the heading specified in [17R/T-1/12], to the target location.

WORD NAME:	Endgame Entry Altitude	

		CATEGORY:	Distance(F)
WORD ID:	17R/T-1/18	MAX VALUE:	1.6383E+04
SOURCE(s):	Platform/Store	MIN VALUE:	-1.6383E+04
DEST(s):	Store/Platform	RESOLUTION:	5.0000E-01
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^13
SIGNAL TYPE:	2's Complement	LSB:	2^-1
UNITS:	Meters	FULL SCALE:	1.6383E+04

FIELD NAME	BIT NO.	DESCRIPTION
Endgame Entry Altitude	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME:	Offset North		

		CATEGORY:	Distance(F)
WORD ID:	17R/T-1/19	MAX VALUE:	1.6383E+04
SOURCE(s):	Platform/Store	MIN VALUE:	-1.6383E+04
DEST(s):	Store/Platform	RESOLUTION:	5.0000E-01
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^{13}
SIGNAL TYPE:	2's Complement	LSB:	2^{-1}
UNITS:	Meters	FULL SCALE:	1.6383E+04

FIELD NAME	BIT NO.	DESCRIPTION
Offset North	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Offset East

	CATEGORY: Distance(F)
WORD ID: 17R/T-1/20	MAX VALUE: 1.6383E+04
SOURCE(s): Platform/Store	MIN VALUE: -1.6383E+04
DEST(s): Store/Platform	RESOLUTION: 5.0000E-01
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^13
SIGNAL TYPE: 2's Complement	LSB: 2^-1
UNITS: Meters	FULL SCALE: 1.6383E+04

FIELD NAME	BIT NO.	DESCRIPTION
Offset East	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

FOR OFFICIAL USE ONLY

WORD NAME: Offset Down

		CATEGORY:	Distance(F)
WORD ID:	17R/T-1/21	MAX VALUE:	1.6383E+04
SOURCE(s):	Platform/Store	MIN VALUE:	-1.6383E+04
DEST(s):	Store/Platform	RESOLUTION:	5.0000E-01
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^13
SIGNAL TYPE:	2's Complement	LSB:	2^-1
UNITS:	Meters	FULL SCALE:	1.6383E+04

FIELD NAME	BIT NO.	DESCRIPTION
Offset Down	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME:	Target Velocity North		

		CATEGORY:	Velocity(M)
WORD ID:	17R/T-1/22	MAX VALUE:	8.1920E+03
SOURCE(s):	Platform/Store	MIN VALUE:	-8.1920E+03
DEST(s):	Store/Platform	RESOLUTION:	2.5000E-01
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^12
SIGNAL TYPE:	2's Complement	LSB:	2^-2
UNITS:	Meters/Second	FULL SCALE:	8.1920E+03

FIELD NAME	BIT NO.	DESCRIPTION
Target Vel North	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Velocity vector from South to North is positive.

WORD NAME:	Target Velocity East		

		CATEGORY:	Velocity(M)
WORD ID:	17R/T-1/23	MAX VALUE:	8.1920E+03
SOURCE(s):	Platform/Store	MIN VALUE:	-8.1920E+03
DEST(s):	Store/Platform	RESOLUTION:	2.5000E-01
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^12
SIGNAL TYPE:	2's Complement	LSB:	2^-2
UNITS:	Meters/Second	FULL SCALE:	8.1920E+03

FIELD NAME	BIT NO.	DESCRIPTION
Target Velocity East	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Velocity vector from West to East is positive.

WORD NAME: North Vel Uncertainty

		CATEGORY:	Velocity(M)
WORD ID:	17R/T-1/24	MAX VALUE:	8.1920E+03
SOURCE(s):	Platform/Store	MIN VALUE:	-8.1920E+03
DEST(s):	Store/Platform	RESOLUTION:	2.5000E-01
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^12
SIGNAL TYPE:	2's Complement	LSB:	2^-2
UNITS:	Meters/Second	FULL SCALE:	8.1920E+03

FIELD NAME	BIT NO.	DESCRIPTION
North Vel Uncertainty	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: East Vel Uncertainty

WORD ID:	17R/T-1/25
SOURCE(s):	Platform/Store
DEST(s):	Store/Platform
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	2's Complement
UNITS:	Meters/Second

CATEGORY:	Velocity(M)
MAX VALUE:	8.1920E+03
MIN VALUE:	-8.1920E+03
RESOLUTION:	2.5000E-01
ACCURACY:	N/A
MSB:	2^12
LSB:	2^-2
FULL SCALE:	8.1920E+03

FIELD NAME	BIT NO.	DESCRIPTION
East Vel Uncertainty	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME:　　TLE Major / Minor Axis

WORD ID:	17R/T-1/26
SOURCE(s):	Platform/Store
DEST(s):	Store/Platform
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
TLE Major Axis	-00-N	MSB 2^11---
	-01-N	
	-02-N	SIGNAL TYPE: Unsigned UNITS: Meters
	-03-N	MAX VALUE: 4080 MIN VALUE: 0　　　　Note 1
	-04-N	RESOLUTION: 16 ACCURACY: N/A
	-05-N	FULL SCALE: 4080
	-06-N	
	-07-N	LSB 2^4 ---
TLE Minor Axis	-08-N	MSB 2^11---
	-09-N	
	-10-N	SIGNAL TYPE: Unsigned UNITS: Meters
	-11-N	MAX VALUE: 4080 MIN VALUE: 0　　　　Note 1
	-12-N	RESOLUTION: 16 ACCURACY: N/A
	-13-N	FULL SCALE: 4080
	-14-N	
	-15-N	LSB 2^4 ---

REMARKS/NOTES:

1. <u>TLE Major / Minor Axis</u> [17R-1/26 = FFFF (H)] indicates that horizontal TLE is invalid.

WORD NAME: TLE Direction / Vertical

	CATEGORY: Special
WORD ID: 17R/T-1/27	MAX VALUE: N/A
SOURCE(s): Platform/Store	MIN VALUE: N/A
DEST(s): Store/Platform	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
TLE Direction	-00-N	MSB 2^7 ---
	-01-N	
	-02-N	SIGNAL TYPE: Unsigned
		UNITS: Degrees
	-03-N	MAX VALUE: 179
		MIN VALUE: 0 Note 1
	-04-N	RESOLUTION: 1
		ACCURACY: N/A
	-05-N	FULL SCALE: 255
	-06-N	
	-07-N	LSB 2^0 ---
TLE Vertical	-08-N	MSB 2^10---
	-09-N	
	-10-N	SIGNAL TYPE: Unsigned
		UNITS: Meters
	-11-N	MAX VALUE: 2040
		MIN VALUE: 0 Note 2
	-12-N	RESOLUTION: 8
		ACCURACY: N/A
	-13-N	FULL SCALE: 2040
	-14-N	
	-15-N	LSB 2^3 ---

REMARKS/NOTES:

1. This field contains the direction of the major axis of the TLE ellipse with respect to True North.

2. TLE Vertical [17R-1/27/08…15 = FF (H)] indicates that vertical TLE is invalid.

WORD NAME: Spin Rate

WORD ID:	17R/T-1/28
SOURCE(s):	Platform/Store
DEST(s):	Store/Platform
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	Unsigned Integer
UNITS:	RPM

CATEGORY:	Special
MAX VALUE:	65535
MIN VALUE:	0
RESOLUTION:	1
ACCURACY:	N/A
MSB:	2^{15}
LSB:	2^0
FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Spin Rate	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME:	Time at Reset	

			CATEGORY:	Time(L)
WORD ID:	17R/T-1/29		MAX VALUE:	4.1942E+06
SOURCE(s):	Platform/Carriage System/Store		MIN VALUE:	0.0000E+00
DEST(s):	Store/Carriage System/Platform		RESOLUTION:	6.4000E+01
COMP RATE:	Aperiodic		ACCURACY:	See Note 1
XMIT RATE:	Aperiodic		MSB:	2^21
SIGNAL TYPE:	Unsigned		LSB:	2^6
UNITS:	Microseconds		FULL SCALE:	4.1942E+06

FIELD NAME	BIT NO.	DESCRIPTION
Time at Reset	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. The total platform error budget associated with establishing time of data validity is +/- 10.0 msec.

WORD NAME: Time Stamp

	CATEGORY:	Time(L)
WORD ID: 17R/T-1/30	MAX VALUE:	4.1942E+06
SOURCE(s): Platform/Carriage System/Store	MIN VALUE:	0.0000E+00
DEST(s): Store/Carriage System/Platform	RESOLUTION:	6.4000E+01
COMP RATE: Aperiodic	ACCURACY:	See Note 1
XMIT RATE: Aperiodic	MSB:	2^{21}
SIGNAL TYPE: Unsigned	LSB:	2^{6}
UNITS: Microseconds	FULL SCALE:	4.1942E+06

FIELD NAME	BIT NO.	DESCRIPTION
Time Stamp	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. The total platform error budget associated with establishing time of data validity is +/- 10.0 msec.

6.17R/T-2 Modify Mission: Loiter [17R/T-2]

Modify Mission: Loiter [17R/T-2] is used to transfer Non-MDT mission data for a mission store to fly to, and remain in, a defined area. The Modify Mission: Loiter [17R-2] from the platform is stored in the location specified in Mod Msn Storage Location [22R/08]. The Modify Mission: Loiter [17T-2] from the mission store reports the mission data that is to be used for the mission specified in Mod Msn Storage Location [22R/08]. All platform provided altitude information is referenced to WGS-84 Ellipsoid (HAE). Section 3.5.8 provides additional information and requirements. Additional requirements for Modify Mission: Loiter [17T-2] volatile and non-volatile memory storage times are specified in 3.5.8.1.2 Non-MDT of Mission Data.

Platform Requirements

The platform shall **{ps_6198}** provide Non-MDT mission data to the store via Modify Mission: Loiter [17R-2], if CDS Modify Mission Type **{cds_6070}** equals Loiter.

The platform shall **{ps_6199}** provide altitude information referenced to HAE.

Carriage System Requirements

A Type 1 carriage system shall **{css_6129}** set all Modify Mission: Loiter Invalidity [17T-2/02] bits to logic 1 (invalid).

A Type 2 carriage system shall **{css_6130}** update Modify Mission: Loiter [17T-2], at a minimum rate of 25 Hz, to reflect the data from the next mission store to be released.

Mission Store Requirements

The mission store shall **{ss_6178}** set the Modify Mission: Loiter [17T-2] to the mission data specified in Mod Msn Storage Location [22R/08] as provided by Modify Mission: Loiter [17R-2] or provided by the equivalent subset of the MDS data provided in an MDT-Mission [13R-020] or as changed via WDL, inclusive of any modifications performed by the store (e.g. due to store limits), as documented in the mission store supplement **{sup_6195}**.

The mission store shall **{ss_6411}** update Modify Mission: Loiter [17T-2] data when Modify Mission: Loiter [17R-2] data has been stored.

6.17R/T-2.1 Mission Number [17R/T-2/03]

Mission Number [17R/T-2/03] provides a means to uniquely designate a mission. This is reported by the store as Selected Primary Msn Num [22T/13]. Mission Number can be used by the platform as index/reference into a platform targeting table, from which it can display a unique mission reference.

Platform Requirements

The platform shall **{ps_6200}** assign a Mission Number [17R-2/03] to the MDS being downloaded to the store.

6.17R/T-2.2 Mission Controls [17R/T-2/04]

6.17R/T-2.2.1 Storage Mode [17R/T-2/04/00]

Storage Mode [17R/T-2/04/00] specifies whether MDS will be stored in volatile or non-volatile memory.

Platform Requirements

The platform shall **{ps_6201}** set Storage Mode [17R-2/04/00 = 0] to command the mission store to write non-MDT mission data into non-volatile memory.

The platform shall **{ps_6202}** set Storage Mode [17R-2/04/00 = 1] to command the mission store to write non-MDT mission data into volatile memory.

Mission Store Requirements

The mission store shall **{ss_6179}** write all non-MDT mission data in non-volatile memory if Storage Mode [17R-2/04/00 = 0].

The mission store shall **{ss_6180}** write all non-MDT mission data in volatile memory if Storage Mode [17R-2/04/00 = 1].

6.17R/T-2.2.2 Flight Mode [17R/T-2/04/02…03]

Flight Mode [17R-2/04/02…03] specifies what flight mode the mission store will use when transitioning to the mission endpoint.

Platform Requirements

The platform shall **{ps_6203}** set Flight Mode [17R-2/04/02…03] IAW Table 6.17R/T-2-1 to command which flight mode to use if CDS Flight Mode Controllable **{cds_6072}**.

Table 6.17R/T-2-1 Flight Mode Definitions

Value	Flight Mode	Definition
00 (B)	Default	Store uses default flight mode to complete the mission.
01 (B)	Range On Heading (Fly-to)	Store intercepts the Ingress Heading to Endpoint [17R/T-2/11] at Range [17R/T-2/12] from the Mission Endpoint Location [17R/T-2/05-10].and then flies to the Mission Endpoint Location.
10 (B)	Use Ingress True Heading (Point & Shoot)	Store flies the Ingress True Heading [17R-2/16] after release and continues on that heading for Ingress Max Commanded Range [17R/T-2/17].
11 (B)	Reserved	Reserved

The platform shall **{ps_6204}** provide the capability to select or enter Flight Mode [17R-2/04/02…03] if CDS Flight Mode Controllable **{cds_6072}**.

Mission Store Requirements

The mission store shall **{ss_6181}** use <u>Flight Mode</u> [17R-2/04/02…03] to determine which flight mode to use IAW Table 6.17R/T-2-1.

The mission store supplement **{sup_6098}** documents <u>Flight Mode</u> [17R-2/04/02…03] usage.

6.17R/T-2.2.3 <u>Selected Store</u> [17R/T-2/04/12…15]

<u>Selected Store</u> [17R/T-2/04/12…15] provides the capability to select a mission store on a carriage system for transfer of mission data (Embedded Protocol). The Type 2 carriage system receives the data and based on the value in <u>Selected Store</u>, forwards the data to the corresponding mission store. The Selected Store number corresponds to the mission store release order number.

Platform Requirements

The platform shall **{ps_6553}** set <u>Selected Store</u> [17R-2/04/12…15 = 1-8] (Embedded Protocol) to indicate that the <u>Modify Mission: Loiter</u> [17R-2] data is intended for a particular mission store in the release order.

The platform shall **{ps_6554}** set <u>Selected Store</u> [17R-2/04/12…15 = 0] to indicate that Embedded Protocol is not being used for transfer of <u>Modify Mission: Loiter</u> [17R-2] data to a mission store.

Carriage System Requirements

A Type 2 carriage system shall **{css_6131}** transfer all mission data in [17R-2] (Embedded Protocol) to the corresponding mission store whose release order number equals the value in <u>Selected Store</u> when <u>Selected Store</u> [17R-2/04/12…15 = 1-8].

A Type 2 carriage system shall **{css_6132}** route the data to the store selected in <u>Store Number</u> [10R/02/08…11] (Directed Protocol) when <u>Selected Store</u> [17R-2/04/12…15 = 0].

A Type 2 carriage system shall **{css_6155}** set <u>Selected Store</u> [17T-2/04/12…15] to the release order number of the next mission store to be released to indicate that the <u>Modify Mission: Loiter</u> [17T-2] data is from that mission store when receiving a [17T-2] transmission request with <u>Store Number</u> [10R/02/08…11 = 0].

Mission Store Requirements

The mission store shall **{ss_6368}** set <u>Selected Store</u> [17T-2/04/12…15 = 0].

6.17R/T-2.3 <u>Mission Endpoint Location</u> [17R/T-2/05-10]

<u>Mission Endpoint Location</u> [17R/T-2/05-10] is a composite of words which contain the latitude, longitude and altitude of the mission endpoint. In the Default <u>Flight Mode</u> [17R-2/04/02…03 = 0] and the Range On Heading (Fly-to) <u>Flight Mode</u> [17R-2/04/02…03 = 1], the <u>Mission Endpoint Location</u> is provided by the platform. In the Use Ingress True

Heading (Point & Shoot) Flight Mode [17R-2/04/02…03 = 2], the platform provides Ingress True Heading [17R/T-2/16] and Ingress Max Commanded Range [17R/T-2/17] for the mission store to use and the mission store calculates the end point based on those parameters and the current platform location.

Platform Requirements

The platform shall **{ps_6350}** provide Mission Endpoint Location [17R-2/05-10] if Flight Mode [17R-2/04/02…03 = 0 or 1].

The platform shall **{ps_6205}** provide the capability to select or enter Mission Endpoint Location [17R-2/05-10].

Mission Store Requirements

The mission store shall **{ss_6414}** use the Mission Endpoint Location [17R-2/05-10] if Flight Mode [17R-2/04/02…03 = 0 or 1].

The mission store shall **{ss_6182}** calculate Mission Endpoint Location [17T-2/05-10] using Ingress True Heading [17R/T-2/16], Ingress Max Commanded Range [17R/T-2/17], and current platform location if Flight Mode [17R-2/04/02…03 = 2].

The mission store shall **{ss_6183}** set Mission Endpoint Location [17T-2/05-10] to Mission Endpoint Location [17R-2/05-10] if Flight Mode [17R-2/04/02…03 = 0 or 1].

The mission store shall **{ss_6415}** set Mission Endpoint Location [17T-2/05-10] to the value calculated by the store if Flight Mode [17R-2/04/02…03 = 2].

The mission store supplement **{sup_6099}** documents how the store calculates Mission Endpoint Location [17T-2/05-10] in the Use Ingress True Heading (Point & Shoot) Flight Mode [17R-2/04/02…03 = 2].

6.17R/T-2.4 Heading to Endpoint [17R/T-2/11]

Heading to Endpoint [17R/T-2/11] specifies the heading that is intercepted at Range [17R/T-2/12] and flown to the mission endpoint. Note: Heading to Endpoint is not used when Flight Mode [17R/T-2/04/02…03 = 0 or 2].

Platform Requirements

The platform shall **{ps_6206}** provide Heading to Endpoint [17R-2/11] when Flight Mode [17R-2/04/02…03 = 1], if CDS Heading to Endpoint Enabled **{cds_6086}**.

The platform shall **{ps_6207}** provide the capability to select or enter the Heading to Endpoint [17R-2/11], if CDS Heading to Endpoint Enabled **{cds_6086}**.

Mission Store Requirements

The mission store shall **{ss_6184}** use the provided Heading to Endpoint [17R-2/11] as the heading into the Mission Endpoint Location [17R-2/05-10] if Flight Mode [17R-2/04/02…03 = 1].

The mission store supplement **{sup_6100}** documents usage of Heading to Endpoint [17R-2/11].

6.17R/T-2.5 Range [17R/T-2/12]

Range [17R/T-2/12] is the distance at which the mission store is commanded to intercept Heading to Endpoint [17R/T-2/11] in the Range On Heading (Fly-to) Flight Mode [17R-2/04/02…03 = 1]. The store uses the provided Range as the distance from the Mission Endpoint Location [17R/T-2/05-10] at which the specified Heading to Endpoint is intercepted. See Figure 6.17R/T-2-1 for a pictorial representation of Range On Heading (Fly-to) Flight Mode.
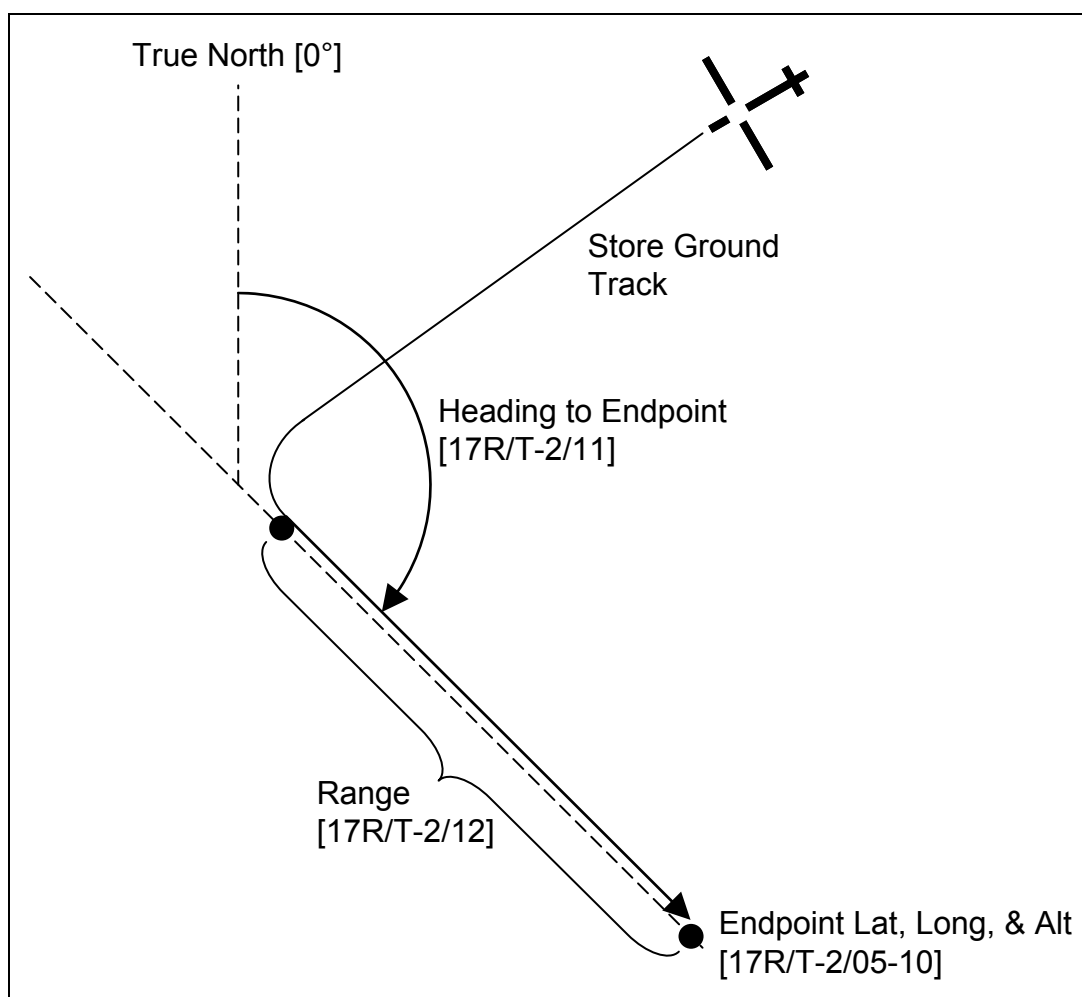
Figure 6.17R/T-2-1 Range On Heading (Fly-to) Flight Mode

Platform Requirements

The platform shall **{ps_6208}** provide Range [17R-2/12] if Flight Mode [17R-2/04/02…03 = 1] and CDS Range Enabled **{cds_6080}**.

The platform shall **{ps_6209}** provide the capability to select or enter Range [17R-2/12] if CDS Range Enabled **{cds_6080}**.

Mission Store Requirements

The mission store shall **{ss_6416}** use the provided Range [17R-2/12] if Flight Mode [17R-2/04/02…03 = 1].

The mission store supplement **{sup_6101}** documents usage of Range [17R-2/12].

6.17R/T-2.6 Ingress Mach [17R/T-2/13]

Ingress Mach [17R/T-2/13] specifies the Mach number beginning at the mission store release point until transition to final mission maneuvers, orbit, or function.

Platform Requirements

The platform shall **{ps_6210}** provide Ingress Mach [17R-2/13] if CDS Ingress Mach Enabled **{cds_6078}**.

The platform shall **{ps_6211}** provide the capability to select or enter Ingress Mach [17R-2/13] if CDS Ingress Mach Enabled **{cds_6078}**.

Mission Store Requirements

The mission store supplement **{sup_6102}** documents usage of Ingress Mach [17R-2/13].

6.17R/T-2.7 Ingress Altitude [17R/T-2/14-15]

Ingress Altitude [17R/T-2/14-15] is the altitude for the store beginning at the store release point until transition to final mission maneuvers, orbit, or function.

Platform Requirements

The platform shall **{ps_6212}** provide Ingress Altitude [17R-2/14-15] if CDS Ingress Altitude Enabled **{cds_6079}**.

The platform shall **{ps_6213}** provide the capability to select or enter Ingress Altitude [17R-2/14-15] if CDS Ingress Altitude Enabled **{cds_6079}**.

Mission Store Requirements

The mission store supplement **{sup_6103}** documents usage of Ingress Altitude [17R/T-2/14-15].

6.17R/T-2.8 Ingress True Heading [17R/T-2/16]

Ingress True Heading [17R/T-2/16] specifies the heading that the mission store will turn to and maintain after release in the Use Ingress True Heading (Point & Shoot) Flight Mode [17R-2/04/02…03 = 2]. The mission store flies on this heading for a range equal to Ingress Max Commanded Range [17R/T-2/17] and uses that location as the mission endpoint. See section 6.17R/T-2.9, Ingress Max Commanded Range, for further information.

Platform Requirements

The platform shall **{ps_6214}** provide Ingress True Heading [17R-2/16] if Flight Mode [17R-2/04/02…03 = 2] and CDS Ingress True Heading Enabled **{cds_6087}**.

The platform shall **{ps_6215}** provide the capability to select or enter Ingress True Heading [17R-2/16] if CDS Ingress True Heading Enabled **{cds_6087}**.

Mission Store Requirements

The mission store shall **{ss_6417}** use the provided Ingress True Heading [17R-2/16] if Flight Mode [17R-2/04/02…03 = 2].

The mission store supplement **{sup_6104}** documents usage of Ingress True Heading [17R/T-2/16].

6.17R/T-2.9 Ingress Max Commanded Range [17R/T-2/17]

Ingress Max Commanded Range [17R/T-2/17] data is used by the store to calculate a mission endpoint in the Use Ingress True Heading (Point & Shoot) Flight Mode [17R-2/04/02…03 = 2].

Platform Requirements

The platform shall **{ps_6216}** provide Ingress Max Commanded Range [17R-2/17], if Flight Mode [17R-2/04/02…03 = 2] and if CDS Ingress Max Commanded Range Enabled **{cds_6088}**.

The platform shall **{ps_6217}** provide the capability to select or enter Ingress Max Commanded Range [17R-2/17], if CDS Ingress Max Commanded Range Enabled **{cds_6088}**.

Mission Store Requirements

The mission store shall **{ss_6418}** use the provided Ingress Max Commanded Range [17R-2/17] if Flight Mode [17R-2/04/02…03 = 2].

The mission store supplement **{sup_6105}** documents usage of Ingress Max Commanded Range [17R-2/17].

6.17R/T-2.10 Payload Controls [17R/T-2/18]

Payload Controls [17R/T-2/18] provides a means to define control settings for the payload onboard the mission store. Ingress Payload Control [17R-2/18/00…02] is used to control the payload during ingress, and Orbit Payload Control [17R-2/18/03…05] is used to control the payload after transition from ingress to orbit. Payload Controls (1-4) [17R/T-2/18/06…15] are user defined payload control functions.

Platform Requirements

The platform shall **{ps_6218}** provide Payload Controls [17R-2/18] if CDS Payload Controls Enabled **{cds_6089}**.

The platform shall **{ps_6219}** set <u>Ingress Payload Control</u> [17R-2/18/00…02] IAW Table 6.17R-2-2 below.

Table 6.17R/T-2-2 <u>Ingress Payload Control</u> Definitions

Decimal Value	Function
0	No Ingress Payload Control Commanded
1	Ingress Payload Control Setting 1
2	Ingress Payload Control Setting 2
3	Ingress Payload Control Setting 3
4	Ingress Payload Control Setting 4
5	Ingress Payload Control Setting 5
6	Ingress Payload Control Setting 6
7	Ingress Payload Control Setting 7

The platform shall **{ps_6220}** set <u>Orbit Payload Control</u> [17R-2/18/03…05] IAW Table 6.17R/T-2-3 below.

Table 6.17R/T-2-3 <u>Orbit Payload Control</u> Definitions

Decimal Value	Function
0	No Orbit Payload Control Commanded
1	Orbit Payload Control Setting 1
2	Orbit Payload Control Setting 2
3	Orbit Payload Control Setting 3
4	Orbit Payload Control Setting 4
5	Orbit Payload Control Setting 5
6	Orbit Payload Control Setting 6
7	Orbit Payload Control Setting 7

The platform shall **{ps_6221}** set <u>Payload Controls (1-4)</u> [17R-2/18/06…15] IAW Table 6.17R/T-2-4 and Table 6.17R/T-2-4.1 below.

Table 6.17R/T-2-4 <u>Payload Controls (1-3)</u>

Decimal Value	Function
0	No Payload Control Commanded
1	Payload Control X Setting 1
2	Payload Control X Setting 2
3	Payload Control X Setting 3
Where X = 1-3	

Table 6.17R/T-2-4.1 <u>Payload Control 4</u>

Decimal Value	Function
0	No Payload Control Commanded
1	Payload Control 4 Setting 1
2	Payload Control 4 Setting 2
3	Payload Control 4 Setting 3
4	Payload Control 4 Setting 4

Table 6.17R/T-2-4.1 Payload Control 4

Decimal Value	Function
5	Payload Control 4 Setting 5
6	Payload Control 4 Setting 6
7	Payload Control 4 Setting 7
8	Payload Control 4 Setting 8
9	Payload Control 4 Setting 9
10	Payload Control 4 Setting 10
11	Payload Control 4 Setting 11
12	Payload Control 4 Setting 12
13	Payload Control 4 Setting 13
14	Payload Control 4 Setting 14
15	Payload Control 4 Setting 15

The platform shall **{ps_6222}** provide the capability to select or enter Payload Controls [17R-2/18] if CDS Payload Controls Enabled **{cds_6089}**.

Mission Store Requirements

The mission store supplement **{sup_6106}** documents usage of Payload Controls [17R/T-2/18] including sufficient detail to support platform naming conventions and crew control.

6.17R/T-2.11 Orbit Controls [17R/T-2/19]

Orbit Controls [17R/T-2/19] provides four user defined orbit control parameters and a user defined terminate mode parameter.

Platform Requirements

The platform shall **{ps_6223}** provide Orbit Controls [17R-2/19] if CDS Orbit Controls Enabled **{cds_6090}**.

The platform shall **{ps_6224}** set Orbit Controls [17R-2/19] IAW Tables 6.17R/T-2-5 through 6.17R/T-2-9.

Table 6.17R/T-2-5 Orbit Parameter 1 Definitions

Decimal Value	Function
0	Orbit Parameter 1 Option A
1	Orbit Parameter 1 Option B

Table 6.17R/T-2-6 Orbit Parameter 2 Definitions

Decimal Value	Function
0	No Orbit Parameter 2 Setting Commanded
1	Orbit Parameter 2 Option A
2	Orbit Parameter 2 Option B
3	Orbit Parameter 2 Option C

Table 6.17R/T-2-6 Orbit Parameter 2 Definitions

Decimal Value	Function
4	Orbit Parameter 2 Option D
5	Orbit Parameter 2 Option E
6	Orbit Parameter 2 Option F
7	Orbit Parameter 2 Option G

Table 6.17R/T-2-7 Orbit Parameter 3 Definitions

Decimal Value	Function
0	No Orbit Parameter 3 Setting Commanded
1	Orbit Parameter 3 Option A
2	Orbit Parameter 3 Option B
3	Orbit Parameter 3 Option C
4	Orbit Parameter 3 Option D
5	Orbit Parameter 3 Option E
6	Orbit Parameter 3 Option F
7	Orbit Parameter 3 Option G

Table 6.17R/T-2-8 Orbit Parameter 4 Definitions

Decimal Value	Function
0	No Orbit Parameter 4 Setting Commanded
1	Orbit Parameter 4 Option A
2	Orbit Parameter 4 Option B
3	Orbit Parameter 4 Option C
4	Orbit Parameter 4 Option D
5	Orbit Parameter 4 Option E
6	Orbit Parameter 4 Option F
7	Orbit Parameter 4 Option G

Table 6.17R/T-2-9 Terminate Mode Definitions

Decimal Value	Function
0	No Terminate Mode Commanded
1	Terminate Mode Option A
2	Terminate Mode Option B
3	Terminate Mode Option C
4	Terminate Mode Option D
5	Terminate Mode Option E
6	Terminate Mode Option F
7	Terminate Mode Option G

The platform shall **{ps_6225}** provide the capability to select or enter the Orbit Controls [17R-2/19] if CDS Orbit Controls Enabled **{cds_6090}**.

Mission Store Requirements

The mission store supplement **{sup_6107}** documents usage of Orbit Controls [17R-2/19] including sufficient detail to support platform naming conventions and crew control.

6.17R/T-2.12 Orbit Altitude [17R/T-2/20-21]

Orbit Altitude [17R/T-2/20-21] allows the platform to specify the flight altitude during orbit.

Platform Requirements

The platform shall **{ps_6226}** provide Orbit Altitude [17R-2/20-21] if an orbit is selected in Orbit Controls [17R-2/19] and CDS Orbit Altitude Enabled **{cds_6091}**.

The platform shall **{ps_6227}** provide the capability to select or enter the Orbit Altitude [17R/T-2/20-21] if CDS Orbit Altitude Enabled **{cds_6091}**.

Mission Store Requirements

The mission store supplement **{sup_6108}** documents usage of Orbit Altitude [17R/T-2/20-21].

6.17R/T-2.13 Loiter Time [17R/T-2/22]

Loiter Time [17R/T-2/22] allows the platform to specify the store orbit time.

Platform Requirements

The platform shall **{ps_6228}** provide Loiter Time [17R-2/22] if an orbit is selected in Orbit Controls [17R-2/19] and CDS Loiter Time Enabled **{cds_6092}**.

The platform shall **{ps_6229}** provide the capability to select or enter the Loiter Time [17R-2/22] if CDS Loiter Time Enabled **{cds_6092}**.

Mission Store Requirements

The mission store supplement **{sup_6109}** documents usage of Loiter Time [17R/T-2/22].

MESSAGE NAME: Modify Mission: Loiter
MESSAGE ID: 17R/T-2   TRANSFER TYPE: BC-RT/RT-BC
SOURCE: Platform/Store   WORD COUNT: 30
DESTINATION: Store/Platform   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 1001 (B)
Status Word (Transmit)	SW	MIL-STD-1553 Status Word
Header	01	Message Descriptor
Invalidity	02	Validity of Message Data
Mission Number	03	Mission Number
Mission Controls	04	Mission Controls
Latitude (MSW)	05	Latitude of Mission Endpoint
Latitude (LSW)	06	Latitude of Mission Endpoint
Longitude (MSW)	07	Longitude of Mission Endpoint
Longitude (LSW)	08	Longitude of Mission Endpoint
Altitude (MSW)	09	Altitude of Mission Endpoint
Altitude (LSW)	10	Altitude of Mission Endpoint
Heading to Endpoint	11	Heading to to be used in Range on Heading
Range	12	Range on Heading
Ingress Mach	13	Ingress Mach
Ingress Altitude (MSW)	14	Ingress Altitude
Ingress Altitude (LSW)	15	Ingress Altitude
Ingress True Heading	16	Ingress True Heading
Ingress Max Commanded Range	17	Maximum Commanded Range to Fly
Payload Controls	18	Payload Controls
Orbit Controls	19	Orbit Controls
Orbit Altitude	20	Orbit Altitude
Orbit Altitude	21	Orbit Altitude
Loiter Time	22	Loiter Time
Reserved	23	Reserved
Reserved	24	Reserved
Reserved	25	Reserved
Reserved	26	Reserved
Reserved	27	Reserved
Reserved	28	Reserved
Reserved	29	Reserved
Reserved	30	Reserved
Status Word (Receive)	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Header

WORD ID:	17R/T-2/01
SOURCE(s):	Platform/Store
DEST(s):	Store/Platform
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	Hexadecimal
UNITS:	N/A

CATEGORY:	Header
MAX VALUE:	1702 (H)
MIN VALUE:	2
RESOLUTION:	1
ACCURACY:	N/A
MSB:	2^{15}
LSB:	2^0
FULL SCALE:	FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB ---
	-01-B	
	-02-B	Hex digit #1 value=1 (H)
	-03-B	LSB ---
Hex Digit #2	-04-B	MSB ---
	-05-B	
	-06-B	Hex digit #2 value=7 (H)
	-07-B	LSB ---
Hex Digit #3	-08-B	MSB ---
	-09-B	
	-10-B	Hex digit #3 value=0 (H)
	-11-B	LSB ---
Hex Digit #4	-12-B	MSB ---
	-13-B	
	-14-B	Hex digit #4 value=2 (H)
	-15-B	LSB ---

REMARKS/NOTES:

WORD NAME: Invalidity

		CATEGORY:	Validity
WORD ID: 17R/T-2/02   MAX VALUE: N/A
SOURCE(s):   Platform/Store   MIN VALUE: N/A
DEST(s):   Store/Platform   RESOLUTION: N/A
COMP RATE: Aperiodic   ACCURACY: N/A
XMIT RATE: Aperiodic   MSB: N/A
SIGNAL TYPE: Binary   LSB: N/A
UNITS: N/A   FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Mission Number Invld	-00-V	Set to logic 1 if word 3 is invalid
Mission Controls Invld	-01-V	Set to logic 1 if word 4 is invalid
Endpoint Invalid	-02-V	Set to logic 1 if words 05-10 are invalid
Heading Invalid	-03-V	Set to logic 1 if word 11 is Invalid
Range Invalid	-04-V	Set to logic 1 if word 12 is invalid
Ingress Mach Invalid	-05-V	Set to logic 1 if word 13 is invalid
Ingress Alt Invalid	-06-V	Set to logic 1 if words 14-15 are invalid
True Heading Invalid	-07-V	Set to logic 1 if word 16 is invalid
Comd Range Invalid	-08-V	Set to logic 1 if word 17 is invalid
Payload Controls Invld	-09-V	Set to logic 1 if words 18 is invalid
Orbit Controls Invalid	-10-V	Set to logic 1 if word 19 is invalid
Orbit Alt Invalid	-11-V	Set to logic 1 if words 20-21 are invalid
Loiter Time Invalid	-12-V	Set to logic 1 if word 22 is invalid
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Mission Number

		CATEGORY:	Number (L)
WORD ID:	17R/T-2/03	MAX VALUE:	65535
SOURCE(s):	Platform /Store	MIN VALUE:	0
DEST(s):	Store/Platform	RESOLUTION:	1
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^15
SIGNAL TYPE:	Unsigned	LSB:	2^0
UNITS:	N/A	FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Mission Number	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Mission Controls

		CATEGORY:	Special
WORD ID:	17R/T-2/04	MAX VALUE:	N/A
SOURCE(s):	Platform/Store	MIN VALUE:	N/A
DEST(s):	Store/Platform	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.		DESCRIPTION
Storage Mode	-00-B		0=Non-volatile memory, 1=Volatile memory
Reserved	-01-0		Set to Logic 0
Flight Mode	-02-N	MSB	See Table 6.17R/T-2-1
	-03-N	LSB	--
Reserved	-04-0		Set to logic 0
Reserved	-05-0		Set to logic 0
Reserved	-06-0		Set to logic 0
Reserved	-07-0		Set to logic 0
Reserved	-08-0		Set to logic 0
Reserved	-09-0		Set to logic 0
Reserved	-10-0		Set to logic 0
Reserved	-11-0		Set to logic 0
Selected Store	-12-N	MSB	2^3 --
	-13-N		Max value = 8
	-14-N		
	-15-N	LSB	2^0 --

REMARKS/NOTES:

WORD NAME: Latitude

		CATEGORY:	Angle (M)+(L)
WORD ID:	17R/T-2/05-06	MAX VALUE:	5.0000E-01
SOURCE(s):	Platform/Store	MIN VALUE:	-5.0000E-01
DEST(s):	Store/Platform	RESOLUTION:	2^-31
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^-1
SIGNAL TYPE:	2's Complement	LSB:	2^-31
UNITS:	Semicircles	FULL SCALE:	1.0000E+00

FIELD NAME		BIT NO.	DESCRIPTION
Latitude	MSW	-00-S	Sign
		-01-N	MSB ---
		-02-N	
		-03-N	
		-04-N	
		-05-N	
		-06-N	
		-07-N	
		-08-N	
		-09-N	
		-10-N	
		-11-N	
		-12-N	
		-13-N	
		-14-N	
		-15-N	
	LSW	-00-N	
		-01-N	
		-02-N	
		-03-N	
		-04-N	
		-05-N	
		-06-N	
		-07-N	
		-08-N	
		-09-N	
		-10-N	
		-11-N	
		-12-N	
		-13-N	
		-14-N	
		-15-N	LSB ---

REMARKS/NOTES:

1. North latitudes are positive and South latitudes are negative.

WORD NAME: Longitude

		CATEGORY:	Angle (M)+(L)
WORD ID:	17R/T-2/07-08	MAX VALUE:	1.0000E+00
SOURCE(s):	Platform/Store	MIN VALUE:	-1.0000E+00
DEST(s):	Store/Platform	RESOLUTION:	2^-31
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^-1
SIGNAL TYPE:	2's Complement	LSB:	2^-31
UNITS:	Semicircles	FULL SCALE:	1.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Longitude	MSW -00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Longitude is defined as zero at the prime meridian with positive to the East.

WORD NAME: Altitude

	CATEGORY:	Distance (M) +(L)
WORD ID: 17R/T-2/09-10	MAX VALUE:	1.6777E+07
SOURCE(s): Platform/Store	MIN VALUE:	-5.0000E+02
DEST(s): Store/Platform	RESOLUTION:	7.8125E-03
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	2^{23}
SIGNAL TYPE: 2's Complement	LSB:	2^{-7}
UNITS: Meters	FULL SCALE:	1.6777E+07

FIELD NAME	BIT NO.	DESCRIPTION
Altitude	MSW -00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

FOR OFFICIAL USE ONLY

WORD NAME:	Heading to Endpoint	

			CATEGORY:	Angle(M)
WORD ID:	17R/T-2/11		MAX VALUE:	9.9997E-01
SOURCE(s):	Platform/Store		MIN VALUE:	-1.0000
DEST(s):	Store/Platform		RESOLUTION:	3.0518E-05
COMP RATE:	Aperiodic		ACCURACY:	N/A
XMIT RATE:	Aperiodic		MSB:	2^-1
SIGNAL TYPE:	2's Complement		LSB:	2^-15
UNITS:	Semicircles		FULL SCALE:	9.9997E-01

FIELD NAME	BIT NO.	DESCRIPTION
Heading to Endpoint	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. A zero value for this word specifies store flight from South to North.
2. A 90 degree value for this word specifies store flight from West to East.

WORD NAME: Range

WORD ID:	17R/T-2/12	CATEGORY: Distance(M)
SOURCE(s):	Platform/Store	MAX VALUE: 1.8500E+05
DEST(s):	Store/Platform	MIN VALUE: 1.0000E+04
COMP RATE:	Aperiodic	RESOLUTION: 5.1200E+02
XMIT RATE:	Aperiodic	ACCURACY: N/A
SIGNAL TYPE:	2's Complement	MSB: 2^{23}
UNITS:	Meters	LSB: 2^9
		FULL SCALE: 1.6777E+07

FIELD NAME	BIT NO.	DESCRIPTION
Range	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. This word defines the Range, along the heading specified in [17R/T-2/12], to the endpoint location.

FOR OFFICIAL USE ONLY

WORD NAME:	Ingress Mach	

			CATEGORY:	Number(S)
WORD ID:	17R/T-2/13		MAX VALUE:	9.5000E-01
SOURCE(s):	Platform/Store		MIN VALUE:	2.5000E-01
DEST(s):	Store/Platform		RESOLUTION:	9.7700E-04
COMP RATE:	Aperiodic		ACCURACY:	N/A
XMIT RATE:	Aperiodic		MSB:	2^4
SIGNAL TYPE:	2's Complement		LSB:	2^{-10}
UNITS:	Mach		FULL SCALE:	3.1999E+01

FIELD NAME	BIT NO.	DESCRIPTION
Ingress Mach	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME:	Ingress Altitude		
		CATEGORY:	Distance (M) +(L)
WORD ID:	17R/T-2/14-15	MAX VALUE:	1.6777E+07
SOURCE(s):	Platform/Store	MIN VALUE:	-5.0000E+02
DEST(s):	Store/Platform	RESOLUTION:	7.8125E-03
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^23
SIGNAL TYPE:	2's Complement	LSB:	2^-7
UNITS:	Meters	FULL SCALE:	1.6777E+07

FIELD NAME	BIT NO.	DESCRIPTION
Altitude	MSW -00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Ingress True Heading

	CATEGORY: Angle(M)
WORD ID: 17R/T-2/16	MAX VALUE: 9.9997E-01
SOURCE(s): Platform/Store	MIN VALUE: -1.0000E+00
DEST(s): Store/Platform	RESOLUTION: 3.0518E-05
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^-1
SIGNAL TYPE: 2's Complement	LSB: 2^-15
UNITS: Semicircles	FULL SCALE: 9.9997E-01

FIELD NAME	BIT NO.	DESCRIPTION
Ingress True Heading	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. A zero value for this word specifies store flight from South to North.
2. A 90 degree value for this word specifies store flight from West to East.

WORD NAME: Ingress Max Commanded Range

	CATEGORY: Distance(M)
WORD ID: 17R/T-2/17	MAX VALUE: 1.6777E+07
SOURCE(s): Platform/Store	MIN VALUE: 0.0000E+00
DEST(s): Store/Platform	RESOLUTION: 5.1200E+02
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^23
SIGNAL TYPE: 2's Complement	LSB: 2^9
UNITS: Meters	FULL SCALE: 1.6777E+07

FIELD NAME	BIT NO.	DESCRIPTION
Ingress Max Commanded Range	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Payload Controls

CATEGORY:	Special

WORD ID: 17R/T-2/18
SOURCE(s):   Platform/Store
DEST(s):   Store/Platform
COMP RATE: Aperiodic
XMIT RATE: Aperiodic
SIGNAL TYPE: N/A
UNITS: N/A

MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Ingress Payload Control	-00-C	MSB 2^2 --
	-01-C	
	-02-C	LSB 2^0 --
Orbit Payload Control	-03-C	MSB 2^2 --
	-04-C	
	-05-C	LSB 2^0 --
Payload Control 1	-06-C	MSB 2^1 --
	-07-C	LSB 2^0 --
Payload Control 2	-08-C	MSB 2^1 --
	-09-C	LSB 2^0 --
Payload Control 3	-10-C	MSB 2^1 --
	-11-C	LSB 2^0 --
Payload Control 4	-12-N	MSB 2^3 --
	-13-N	
	-14-N	
	-15-N	LSB 2^0 --

REMARKS/NOTES:

WORD NAME: Orbit Controls

WORD ID:	17R/T-2/19
SOURCE(s):	Platform/Store
DEST(s):	Store/Platform
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Orbit Parameter 1	-00-B	
Orbit Parameter 2	-01-C	MSB 2^2 --
	-02-C	
	-03-C	LSB 2^0 ---
Reserved	-04-0	Set to logic 0
Orbit Parameter 3	-05-C	MSB 2^2 --
	-06-C	
	-07-C	LSB 2^0 ---
Reserved	-08-0	Set to logic 0
Orbit Parameter 4	-09-N	MSB 2^2 --
	-10-N	
	-11-N	LSB 2^0 ---
Reserved	-12-0	Set to logic 0
Terminate Mode	-13-C	MSB 2^2 --
	-14-C	
	-15-C	LSB 2^0 ---

REMARKS/NOTES:

WORD NAME: Orbit Altitude

	CATEGORY: Distance (M) +(L)
WORD ID: 17R/T-2/20-21	MAX VALUE: 1.6777E+07
SOURCE(s): Platform/Store	MIN VALUE: -5.0000E+02
DEST(s): Store/Platform	RESOLUTION: 7.8125E-03
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^23
SIGNAL TYPE: 2's Complement	LSB: 2^-7
UNITS: Meters	FULL SCALE: 1.6777E+07

FIELD NAME	BIT NO.	DESCRIPTION
Orbit Altitude	MSW -00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Loiter Time

	CATEGORY: Time(M)
WORD ID: 17R/T-2/22	MAX VALUE: 2.4000E+09
SOURCE(s): Platform/Store	MIN VALUE: 0.0000E+00
DEST(s): Store/Platform	RESOLUTION: 4.1943E+06
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: 2^{37}
SIGNAL TYPE: Unsigned	LSB: 2^{22}
UNITS: Microseconds	FULL SCALE: 2.7488E+11

FIELD NAME	BIT NO.	DESCRIPTION
Loiter Time	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Reserved

	CATEGORY: N/A
WORD ID: 17R/T-2/23-30	MAX VALUE: N/A
SOURCE(s): Platform/Store	MIN VALUE: N/A
DEST(s): Store/Platform	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0
	-01-0	Set to logic 0
	-02-0	Set to logic 0
	-03-0	Set to logic 0
	-04-0	Set to logic 0
	-05-0	Set to logic 0
	-06-0	Set to logic 0
	-07-0	Set to logic 0
	-08-0	Set to logic 0
	-09-0	Set to logic 0
	-10-0	Set to logic 0
	-11-0	Set to logic 0
	-12-0	Set to logic 0
	-13-0	Set to logic 0
	-14-0	Set to logic 0
	-15-0	Set to logic 0

REMARKS/NOTES:

6.18R DIFFERENTIAL GLOBAL POSITIONING SYSTEM (DGPS) DATA [18R]

DGPS [18R] transfers differential GPS correction data to the store prior to release. Platforms capable of receiving DGPS data can provide DGPS data to the store in order to improve the store GPS-aided navigation accuracy. The mission store, if DGPS capable, after receipt of DGPS data for a minimum quantity of satellite vehicles (SVs), updates its GPS-aided navigation solution, as documented in the mission store supplement **{sup_6110}**. Each DGPS message contains data for up to 2 SVs. Additional requirements for Differential GPS Data [18R] data volatile and non-volatile memory storage times are specified in Section 6.22T.4.1 Improved Accuracy Received [22T/05/01].

6.18R.1 Satellite Number [18R/04/00…07] & [18R/10/00…07]

SV 1 Satellite Number [18R/04/00…07] is used to indicate the applicable satellite number for the DGPS data in data words 4 through 8. Similarly, the SV 2 Satellite Number [18R/10/00…07] is used to indicate the applicable satellite number for the DGPS [18R] data in data words 10 through 14.

Platform Requirements

The platform shall **{ps_6230}** always set SV 1 Satellite Number [18R/04/00…07 = 1-32] to indicate the satellite number associated with the DGPS data in words 4 through 8.

The platform shall **{ps_6231}** set SV 2 Satellite Number [18R/10/00…07 = 1-32] to indicate the satellite number associated with the DGPS data in words 10 through 14.

The platform shall **{ps_6232}** set SV 2 Satellite Number [18R/10/00…07 = 0] if DGPS data is being provided for only one satellite.

Mission Store Requirements

The mission store shall **{ss_6185}** accept DGPS [18R] associated with a particular SV when SV 1 Satellite Number [18R/04/00…07 = 1-32] or SV 2 Satellite Number [18R/10/00…07 = 1-32].

6.18R.2 IODE [18R/04/08…15] & [18R/10/08…15]

SV 1 IODE [18R/04/08…15] and SV 2 IODE [18R/10/08…15] are used to indicate which issue of corresponding ephemeris data was used to derive the DGPS correction data for the associated satellite number.

Platform Requirements

The platform shall **{ps_6233}** set SV 1 IODE [18R/04/08…15 = 0-255] and SV 2 IODE [18R/10/08…15 = 0-255] to indicate which issue of corresponding ephemeris data was used to derive the DGPS correction data for the associated satellite number.

Mission Store Requirements

The mission store shall **{ss_6186}** use SV 1 IODE [18R/04/08…15] and SV 2 IODE [18R/10/08…15] to determine whether it matches the IODE of the corresponding Ephemeris Data [13R-010/27/00…07] for the associated satellite number.

The mission store supplement **{sup_6111}** documents whether the matching of IODEs for the DGPS data and Ephemeris Data for each SV affects the validity of the DGPS data for a SV and therefore affects the setting of Improved Accuracy Received [22T/05/01].

6.18R.3 Modified GPS Time [18R/05] & [18R/11]

The DGPS correction data that is computed by a reference GPS Receiver is valid for 30 minutes from the time measurement of the corrections are made. SV 1 Modified GPS Time [18R/05] and SV 2 Modified GPS Time [18R/11] are used to indicate the UTC Time of Day at which the DGPS correction data for a SV applies. SV 1 Modified GPS Time and SV 2 Modified GPS Time are used by the mission store to determine the age of the DGPS data that it receives for the associated satellite number.

Platform Requirements

The platform shall **{ps_6234}** set SV 1 Modified GPS Time [18R/05] and SV 2 Modified GPS Time [18R/11] to the UTC Time of Day at which the DGPS correction data applies for the associated satellite number.

Mission Store Requirements

The mission store shall **{ss_6187}** use SV 1 Modified GPS Time [18R/05] and SV 2 Modified GPS Time [18R/11] to determine the age of the DGPS data that it receives for the associated satellite number.

The mission store supplement **{sup_6112}** documents how the age of the DGPS data affects the validity of the DGPS data for a SV and therefore affects the setting of Improved Accuracy Received [22T/05/01].

6.18R.4 Position X, Y, Z and Clock Corrections [18R/06-07] & [18R/12-13]

The DGPS correction data for each SV consists of position corrections in all 3 axes, X, Y and Z and a clock correction. These data are derived by a reference GPS receiver and passed on to the store to improve its GPS-aided navigation accuracy during fly-out to the target.

Platform Requirements

The platform shall **{ps_6235}** set SV 1 Position X Correction [18R/06/00…07], SV 1 Position Y Correction [18R/06/08…15], SV 1 Position Z Correction [18R/07/00…07], and SV 1 Clock Correction [18R/07/08…15] to the values derived by a reference GPS receiver for the associated satellite number.

The platform shall **{ps_6236}** set SV 2 Position X Correction [18R/12/00…07], SV 2 Position Y Correction [18R/12/08…15], SV 2 Position Z Correction [18R/13/00…07],

and <u>SV 2 Clock Correction</u> [18R/13/08…15] to the values derived by a reference GPS receiver for the associated satellite number if DGPS data for a second satellite is provided to the store within the same [18R].

Mission Store Requirements

The mission store shall **{ss_6188}** use DGPS position and clock correction data that it receives for a SV to improve its GPS-aided navigation accuracy if the DGPS data for the SV meets the following conditions:

a. <u>SV 1 Satellite Number</u> [18R/04/00…07 = 1-32] or <u>SV 2 Satellite Number</u> [18R/10/00…07 = 1-32].

b. SV 1 Correction Uncertainty [18R/08/02…07 ≠ 0] or SV 2 Correction Uncertainty [18R/14/02…07≠ 0].

The mission store shall **{ss_6189}** write to memory the most recent DGPS data that is received for each SV if the data meets the two validity criteria.

The mission store supplement **{sup_6113}** documents the criteria for setting <u>Improved Accuracy Received</u> [22T/05/01 = 1] including how many SVs it requires valid DGPS data for.

6.18R.5 <u>Correction Scaling</u> [18R/08/00…01] & [18R/14/00…01]

<u>SV 1 Correction Scaling</u> [18R/08/00…01] and <u>SV 2 Correction Scaling</u> [18R/14/00…01] are used to indicate the common scaling of the DGPS correction data that is provided for the associated satellite number.

Platform Requirements

The platform shall **{ps_6237}** set <u>SV 1 Correction Scaling</u> [18R/08/00…01] and <u>SV 2 Correction Scaling</u> [18R/14/00…01] to a 2-bit coded value IAW Table 6.18R-1 to indicate the common scaling of the position and clock correction data that is provided for the associated satellite number.

Table 6.18R-1 DGPS Correction Data Scaling Options

Correction Scaling [18R/08/00…01]/ [18R/14/00…01]	LSB	Max Value	Min Value	Resolution	Full Scale
00	2^-4	7.9375E+00	-8.0000E+00	6.2500E-02	7.9375E+00
01	2^-3	1.5875E+01	-1.6000E+01	1.2500E-01	1.5875E+01
10	2^-1	6.3500E+01	-6.4000E+01	5.0000E-01	6.3500E+01
11	2^1	2.5400E+02	-2.5600E+02	2.0000E+00	2.5400E+02

Mission Store Requirements

The mission store shall **{ss_6190}** apply the scaling provided in <u>SV 1 Correction Scaling</u> [18R/08/00…01] and <u>SV 2 Correction Scaling</u> [18R/14/00…01] IAW Table

6.18R-1 to derive the correct value of the position and clock correction data that is provided for the associated satellite number.

6.18R.6 <u>Correction Uncertainty</u> [18R/08/02…07] & [18R/14/02…07]

<u>SV 1 Correction Uncertainty</u> [18R/08/02…07] and <u>SV 2 Correction Uncertainty</u> [18R/14/02…07] are used to indicate the range of uncertainty associated with the <u>DGPS</u> correction data that is provided for the associated satellite number.

Platform Requirements

The platform shall **{ps_6238}** set <u>SV 1 Correction Uncertainty</u> [18R/08/02…07] and <u>SV 2 Correction Uncertainty</u> [18R/14/02…07] to a 6-bit coded value IAW Table 6.18R-2 to indicate the range of uncertainty associated with the position and clock correction data that is provided for the associated satellite number.

Table 6.18R-2 DGPS Correction Uncertainty Settings

Correction Uncertainty [18R/08/02…07]/ [18R/14/02…07]	Uncertainty Range (Meters)
000000	Uncertainty > 3 15/16
000001	Uncertainty ≤ 1/16
000010	1/16 < Uncertainty ≤ 1/8
000011	2/16 < Uncertainty ≤ 3/16
. . .	. . .
111111	3 7/8 < Uncertainty ≤ 3 15/16

Mission Store Requirements

The mission store shall **{ss_6191}** accept the DGPS data for the associated satellite number if <u>SV 1 Correction Uncertainty</u> [18R/08/02…07 ≠ 0] or <u>SV 2 Correction Uncertainty</u> [18R/14/00…07 ≠ 0].

MESSAGE NAME: Differential GPS Data
MESSAGE ID: 18R   TRANSFER TYPE: BC-RT
SOURCE: Platform   WORD COUNT: 15
DESTINATION: Store   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 10010 (B)
Header	01	Message Descriptor
Reserved	02	Reserved
Reserved	03	Reserved
SV 1 Sat No/IODE	04	SV 1 Satellite Number and IODE
SV 1 Modified GPS Time	05	SV 1 Modified GPS Time
SV 1 Pos X Corr/Pos Y Corr	06	SV 1 Position X and Y Correction
SV 1 Pos Z Corr/Clock Corr	07	SV 1 Position Z and Clock Correction
SV 1 Corr Scaling/Corr Unc	08	SV 1 Correction Scaling and Uncertainty
Reserved	09	Reserved
SV 2 Sat No/IODE	10	SV 2 Satellite Number and IODE
SV 2 Modified GPS Time	11	SV 2 Modified GPS Time
SV 2 Pos X Corr/Pos Y Corr	12	SV 2 Position X and Y Correction
SV 2 Pos Z Corr/Clock Corr	13	SV 2 Position Z and Clock Correction
SV 2 Corr Scaling/Corr Unc	14	SV 2 Correction Scaling and Uncertainty
Reserved	15	Reserved
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Header

	CATEGORY:	Header
WORD ID: 18R/01	MAX VALUE:	DABE (H)
SOURCE(s): Platform	MIN VALUE:	DABE (H)
DEST(s): Store	RESOLUTION:	1
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic to 16 Hz	MSB:	2^15
SIGNAL TYPE: Hexadecimal	LSB:	2^0
UNITS: N/A	FULL SCALE:	FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB ---
	-01-B	
	-02-B	Hex digit #1 value=D (H)
	-03-B	LSB ---
Hex Digit #2	-04-B	MSB ---
	-05-B	
	-06-B	Hex digit #2 value=A (H)
	-07-B	LSB ---
Hex Digit #3	-08-B	MSB ---
	-09-B	
	-10-B	Hex digit #3 value=B (H)
	-11-B	LSB ---
Hex Digit #4	-12-B	MSB ---
	-13-B	
	-14-B	Hex digit #4 value=E (H)
	-15-B	LSB ---

REMARKS/NOTES:

WORD NAME: Reserved

	CATEGORY: Special
WORD ID: 18R/02…03	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic to 16 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0
Reserved	-01-0	Set to logic 0
Reserved	-02-0	Set to logic 0
Reserved	-03-0	Set to logic 0
Reserved	-04-0	Set to logic 0
Reserved	-05-0	Set to logic 0
Reserved	-06-0	Set to logic 0
Reserved	-07-0	Set to logic 0
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: SV 1 Sat No/IODE

	CATEGORY: Special
WORD ID: 18R/04	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic to 16 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
SV 1 Satellite Number	-00-N	MSB ---
	-01-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-02-N	MAX VALUE = 32, MIN VALUE =1 RESOLUTION = 1, ACCURACY = N/A
	-03-N	MSB = 2^7, LSB = 2^0 FULL SCALE: 255
	-04-N	
	-05-N	
	-06-N	
	-07-N	LSB --
SV 1 IODE (Issue of Data, Ephemeris)	-08-N	MSB ---
	-09-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-10-N	MAX VALUE = 255, MIN VALUE =0 RESOLUTION = 1, ACCURACY = N/A
	-11-N	MSB = 2^7, LSB = 2^0 FULL SCALE: 255
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: SV 1 Modified GPS Time

	CATEGORY: Time
WORD ID: 18R/05	MAX VALUE: 8.6398E+04
SOURCE(s): Platform	MIN VALUE: 0
DEST(s): Store	RESOLUTION: 2
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic to 16 Hz	MSB: 2^{16}
SIGNAL TYPE: Unsigned	LSB: 2^1
UNITS: Seconds	FULL SCALE: 1.3107E+05

FIELD NAME	BIT NO.	DESCRIPTION
SV 1 Modified GPS Time	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: SV 1 Pos X Corr/Pos Y Corr

	CATEGORY: Special
WORD ID: 18R/06	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic to 16 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
SV 1 Position X Correction	-00-N	MSB --
	-01-N	SIGNAL TYPE: 2's Complement UNITS: Meters
	-02-N	MAX VALUE: Note 1, MIN VALUE: Note 1 RESOLUTION: Note 1, ACCURACY: N/A
	-03-N	MSB: Note 1, LSB: Note 1 FULL SCALE: Note 1
	-04-N	
	-05-N	
	-06-N	
	-07-N	LSB ---
SV 1 Position Y Correction	-08-N	MSB --
	-09-N	SIGNAL TYPE: 2's Complement UNITS: Meters
	-10-N	MAX VALUE: Note 1, MIN VALUE: Note 1 RESOLUTION: Note 1, ACCURACY: N/A
	-11-N	MSB: Note 1, LSB: Note 1 FULL SCALE: Note 1
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. The noted values are determined by SV 1 Correction Scaling [18R/08/00…01] and Table 6.18R-1.

WORD NAME: SV 1 Pos Z Corr/Clock Corr

WORD ID:	18R/07	CATEGORY: Special
SOURCE(s):	Platform	MAX VALUE: N/A
DEST(s):	Store	MIN VALUE: N/A
COMP RATE:	Aperiodic	RESOLUTION: N/A
XMIT RATE:	Aperiodic to 16 Hz	ACCURACY: N/A
SIGNAL TYPE:	N/A	MSB: N/A
UNITS:	N/A	LSB: N/A
		FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
SV 1 Position Z Correction	-00-N	MSB
	-01-N	SIGNAL TYPE: 2's Complement UNITS: Meters
	-02-N	MAX VALUE: Note 1, MIN VALUE: Note 1 RESOLUTION: Note 1, ACCURACY: N/A
	-03-N	MSB: Note 1, LSB: Note 1 FULL SCALE: Note 1
	-04-N	
	-05-N	
	-06-N	
	-07-N	LSB --
SV 1 Clock Correction	-08-N	MSB --
	-09-N	SIGNAL TYPE: 2's Complement UNITS: Meters
	-10-N	MAX VALUE: Note 1, MIN VALUE: Note 1 RESOLUTION: Note 1, ACCURACY: N/A
	-11-N	MSB: Note 1, LSB: Note 1 FULL SCALE: Note 1
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. The noted values are determined by SV 1 Correction Scaling [18R/08/00…01] and Table 6.18R-1.

WORD NAME: SV 1 Corr Scaling/Corr Unc

		CATEGORY:	Special
WORD ID:	18R/08	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic to 16 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
SV 1 Correction Scaling	-00-N	MSB ---
		Note 1
	-01-N	LSB ---
SV 1 Correction Uncertainty	-02-N	MSB ---
	-03-N	
	-04-N	Note 2
	-05-N	
	-06-N	
	-07-N	LSB ---
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

1. The setting of SV 1 Correction Scaling [18R/08/00…01] establishes the common scaling of SV 1 Position X Correction [18R/06/00…07], SV 1 Position Y Correction [18R/06/08…15], SV 1 Position Z Correction [18R/07/00…07], and SV 1 Clock Correction [18R/07/08…15] as specified in Table 6.18R-1.

2. The setting of SV 1 Correction Uncertainty [18R/08/02…07] defines the range of uncertainty associated with the SV 1 Position X Correction [18R/06/00…07], SV 1 Position Y Correction [18R/06/08…15], SV 1 Position Z Correction [18R/07/00…07], and SV 1 Clock Correction [18R/07/08…15] as specified in Table 6.18R-2.

WORD NAME: Reserved

	CATEGORY: N/A
WORD ID: 18R/09	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION N/A
COMP RATE: N/A	ACCURACY: N/A
XMIT RATE: Aperiodic to 16 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0
Reserved	-01-0	Set to logic 0
Reserved	-02-0	Set to logic 0
Reserved	-03-0	Set to logic 0
Reserved	-04-0	Set to logic 0
Reserved	-05-0	Set to logic 0
Reserved	-06-0	Set to logic 0
Reserved	-07-0	Set to logic 0
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: SV 2 Sat No/IODE

	CATEGORY:	Special
WORD ID: 18R/10	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic to 16 Hz	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
SV 2 Satellite Number	-00-N	MSB ---
	-01-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-02-N	MAX VALUE = 32, MIN VALUE =0 RESOLUTION = 1, ACCURACY = N/A
	-03-N	MSB = 2^7, LSB = 2^0 FULL SCALE: 255
	-04-N	
	-05-N	
	-06-N	
	-07-N	LSB ---
SV 2 IODE (Issue of Data, Ephemeris)	-08-N	MSB ---
	-09-N	SIGNAL TYPE: Unsigned UNITS: N/A
	-10-N	MAX VALUE = 255, MIN VALUE =0 RESOLUTION = 1, ACCURACY = N/A
	-11-N	MSB = 2^7, LSB = 2^0 FULL SCALE: 255
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: SV 2 Modified GPS Time

		CATEGORY:	Time
WORD ID:	18R/11	MAX VALUE:	8.6398E+04
SOURCE(s):	Platform	MIN VALUE:	0
DEST(s):	Store	RESOLUTION:	2
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic to 16 Hz	MSB:	2^16
SIGNAL TYPE:	Unsigned	LSB:	2^1
UNITS:	Seconds	FULL SCALE:	1.3107E+05

FIELD NAME	BIT NO.	DESCRIPTION
SV 2 Modified GPS Time	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: SV 2 Pos X Corr/Pos Y Corr

			CATEGORY:	Special
WORD ID:	18R/12		MAX VALUE:	N/A
SOURCE(s):	Platform		MIN VALUE:	N/A
DEST(s):	Store		RESOLUTION	N/A
COMP RATE:	Aperiodic		ACCURACY:	N/A
XMIT RATE:	Aperiodic to 16 Hz		MSB:	N/A
SIGNAL TYPE:	N/A		LSB:	N/A
UNITS:	N/A		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
SV 2 Position X Correction	-00-N	MSB ---
	-01-N	SIGNAL TYPE: 2's Complement UNITS: Meters
	-02-N	MAX VALUE: Note 1, MIN VALUE: Note 1 RESOLUTION: Note 1, ACCURACY: N/A
	-03-N	MSB: Note 1, LSB: Note 1 FULL SCALE: Note 1
	-04-N	
	-05-N	
	-06-N	
	-07-N	LSB ---
SV 2 Position Y Correction	-08-N	MSB ---
	-09-N	SIGNAL TYPE: 2's Complement UNITS: Meters
	-10-N	MAX VALUE: Note 1, MIN VALUE: Note 1 RESOLUTION: Note 1, ACCURACY: N/A
	-11-N	MSB: Note 1, LSB: Note 1 FULL SCALE: Note 1
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. The noted values are determined by SV 2 Correction Scaling [18R/14/00…01] and Table 6.18R-1.

WORD NAME: SV 2 Pos Z Corr/Clock Corr

		CATEGORY:	Special
WORD ID:	18R/13	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic to 16 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
SV 2 Position Z Correction	-00-N	MSB ---
	-01-N	SIGNAL TYPE: 2's Complement UNITS: Meters
	-02-N	MAX VALUE: Note 1, MIN VALUE: Note 1 RESOLUTION: Note 1, ACCURACY: N/A
	-03-N	MSB: Note 1, LSB: Note 1 FULL SCALE: Note 1
	-04-N	
	-05-N	
	-06-N	
	-07-N	LSB ---
SV 2 Clock Correction	-08-N	MSB ---
	-09-N	SIGNAL TYPE: 2's Complement UNITS: Meters
	-10-N	MAX VALUE: Note 1, MIN VALUE: Note 1 RESOLUTION: Note 1, ACCURACY: N/A
	-11-N	MSB: Note 1, LSB: Note 1 FULL SCALE: Note 1
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. The noted values are determined by SV 2 Correction Scaling [18R/14/00…01] and Table 6.18R-1.

WORD NAME: SV 2 Corr Scaling/Corr Unc

	CATEGORY: Special
WORD ID: 18R/14	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic to 16 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
SV 2 Correction Scaling	-00-N	MSB ---
		Note 1
	-01-N	LSB ---
SV 2 Correction Uncertainty	-02-N	MSB ---
	-03-N	
	-04-N	Note 2
	-05-N	
	-06-N	
	-07-N	LSB ---
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

1. The setting of SV 2 Correction Scaling [18R/14/00…01] establishes the common scaling of SV 2 Position X Correction [18R/12/00…07], SV 2 Position Y Correction [18R/12/08…15], SV 2 Position Z Correction [18R/13/00…07], and SV 2 Clock Correction [18R/13/08…15] as specified in Table 6.18R-1.

2. The setting of SV 2 Correction Uncertainty [18R/14/02…07] defines the range of uncertainty associated with the SV 2 Position X Correction [18R/12/00…07], SV 2 Position Y Correction [18R/12/08…15], SV 2 Position Z Correction [18R/13/00…07], and SV 2 Clock Correction [18R/13/08…15] as specified in Table 6.18R-2.

WORD NAME:　　Reserved

	CATEGORY:　　N/A
WORD ID:　　18R/15	MAX VALUE:　　N/A
SOURCE(s):　　Platform	MIN VALUE:　　N/A
DEST(s):　　Store	RESOLUTION:　　N/A
COMP RATE:　　N/A	ACCURACY:　　N/A
XMIT RATE:　　Aperiodic to 16 Hz	MSB:　　N/A
SIGNAL TYPE:　　N/A	LSB:　　N/A
UNITS:　　N/A	FULL SCALE:　　N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0
Reserved	-01-0	Set to logic 0
Reserved	-02-0	Set to logic 0
Reserved	-03-0	Set to logic 0
Reserved	-04-0	Set to logic 0
Reserved	-05-0	Set to logic 0
Reserved	-06-0	Set to logic 0
Reserved	-07-0	Set to logic 0
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

6.20T STORE SUMMARY STATUS [20T]

Store Summary Status [20T] provides mission store status from all mission stores on the carriage system. The mission store numbering (01 thru 08) is based upon mission store release order number in the carriage system controlled release sequence. This message applies to Type 2 carriage systems only.

Platform Requirements

The platform shall **{ps_6239}** request Store Summary Status [20T] if not using directed protocol to query each mission store for Store Monitor [11T] and Mission Monitor [22T] for a Type 2 carriage system.

Carriage System Requirements

A Type 2 carriage system shall **{css_6133}** update Store Summary Status [20T] data from the mission stores at a minimum rate of 25 Hz.

A Type 2 carriage system shall **{css_6134}** initialize Store Summary Status [20T] status per Table 6.20T-1, unless the mission store is able to provide more complete status.

Table 6.20T-1 Message Summary

20T	Description	Value (Hex)
01	Header	2020
02-05	XX - Store Inventory	0000
06	Key Coverage	0000
07, 09, 11, 13, 15, 17, 19, 21	XX - Store Monitor (1)	4100
08, 10, 12, 14, 16, 18, 20, 22	XX - Store Monitor (2)	0000
23-30	XX - Store GPS Active Cryptonet	0000

6.20T.1 Store (XX) - (XX+1) Inventory [20T/02, 03, 04, 05]

Store (XX) - (XX+1) Inventory [20T/02, 03, 04, 05] (where (XX) = 01, 03, 05, and 07) provides a summary of key status indicators for the mission stores loaded on the carriage system, based on the store release order.

Carriage System Requirement

A Type 2 carriage system shall **{css_6135}** set XX - Store Committed to Store Separation [20T/02-05/00, 08] equal to Committed to Store Separation [11T/04/02] from XX - Store in the release sequence.

A Type 2 carriage system shall **{css_6136}** set XX - Store Selected for Release [20T/02-05/01, 09 = 1] to indicate that XX - store is the store to be released if the currently selected carriage system controlled release sequence is executed.

A Type 2 carriage system shall **{css_6137}** set XX - Store IBIT in Progress [20T/02-05/02, 10] to reflect the status of Store in Initiated BIT [11T/04/06] from each individual store.

A Type 2 carriage system shall **{css_6228}** set XX - Abort Release/Launch Status [20T/02-05/03, 11] to reflect the status of Abort Release/Launch Status [11T/05/04] from each individual store.

A Type 2 carriage system shall **{css_6233}** set XX - Non-Safety Critical Release Functions Activated [20T/02-05/04, 12] to reflect the status of Non-Safety Critical Release Functions Activated [11T/05/05] from each individual store.

A Type 2 carriage system shall **{css_6240}** set XX - GeoZone Violation [20T/02-05/05, 13 = 1] when GeoZone Violation Type [16T/04/07…08 $\neq$ 00 (B)] from each individual store.

6.20T.2 Key Coverage [20T/06]

Key Coverage [20T/06/00…06] indicates the minimum number of consecutive days reported by the first mission store GPS receiver for daily keys from the current date/time.

Carriage System Requirements

A Type 2 carriage system shall **{css_6138}** set Key Coverage [20T/06/00…06] equal to Key Coverage [22T/16/03…09] for the first mission store in the release order.

6.20T.3 XX - Store Monitor (1) [20T/07, 09, 11, 13, 15, 17, 19, 21]

XX - Store Monitor (1) [20T/07, 09, 11, 13, 15, 17, 19, 21] allows the platform access to operational status indicators of all the carriage system stores. The mission store statuses are transferred by the carriage system from the equivalent bit/field in the store Mission Monitor [22T] as outlined in Table 6.20T-3 below. Section 6.22T Mission Monitor [22T] provides definition and details for the signal name s in XX - Store Monitor (1) [20T/07, 09, 11, 13, 15, 17, 19, 21].

Table 6.20T-2 Reserved

Table 6.20T-3 XX - Store Monitor (1) Description

[20T] XX - Store Monitor (1) Location	20T and 22TSignal Name	Unpowered Store Value	[22T] Mission Monitor Location
[20T/W/00]	Minimum Mission Capable	0	[22T/02/00]
[20T/W/01]	Critical HW Passed	Note 2	[22T/02/01]
[20T/W/02…03]	Nav Solution Quality	00	[22T/04/13…14]
[20T/W/04]	AUR Ready	0	[22T/02/04]
[20T/W/05]	TXA Good	0	[22T/02/05]
[20T/W/06]	Min GPS Data	0	[22T/02/06]
[20T/W/07]	Last BIT Passed	Note 3	[22T/02/07]
[20T/W/08]	Conditioning	0	[22T/02/08]

Table 6.20T-3 XX - Store Monitor (1) Description

[20T] XX - Store Monitor (1) Location	20T and 22TSignal Name	Unpowered Store Value	[22T] Mission Monitor Location
	Complete		
[20T/W/09]	Safety Enable	0	[22T/02/09]
[20T/W/10]	Data Change via WDL	0	[22T/18/15]
[20T/W/11…13]	GPS Configuration	000	[22T/16/00…02]
[20T/W/14]	Power Interruption	0	[22T/02/14]
[20T/W/15]	Reserved	0	N/A

Notes:
1. W = word 07, 09, 11, 13, 15, 17, 19, 21 for Store 01-08 in the release order respectively
2. See section 6.20T.3.1
3. See section 6.20T.3.2

Carriage System Requirements

A Type 2 carriage system shall **{css_6139}** set <u>XX - Store Monitor (1)</u> [20T/07, 09, 11, 13, 15, 17, 19, 21] per Table 6.20T-3 based on the store release order.

A Type 2 carriage system shall **{css_6140}** set <u>XX - Store Monitor (1)</u> [20T/07, 09, 11, 13, 15, 17, 19, 21] for unpowered stores or empty stations to the Unpowered Store Values defined in Table 6.20T-3.

A Type 2 carriage system supplement **{sup_6114}** documents the unpowered mission store values.

6.20T.3.1 <u>Critical HW Passed</u> [20T/07, 09, 11, 13, 15, 17, 19, 21/01]

Carriage System Requirements

A Type 2 carriage system shall **{css_6243}** set:

    a. <u>Critical HW Passed</u> [20T/07, 09, 11, 13, 15, 17, 19, 21/01 = 1] when the respective mission store has never had power applied.

    b. <u>Critical HW Passed</u> [20T/07, 09, 11, 13, 15, 17, 19, 21/01] to the value reported by the respective mission store while <u>Operating Power</u> [Power] is applied.

    c. <u>Critical HW Passed</u> [20T/07, 09, 11, 13, 15, 17, 19, 21/01] to the last value reported by the respective store when <u>Operating Power</u> [Power] is removed.

6.20T.3.2 <u>Last BIT Passed</u> [20T/07, 09, 11, 13, 15, 17, 19, 21/07]

Carriage System Requirements

A Type 2 carriage system shall **{css_6244}** set:

    a. <u>Last BIT Passed</u> [20T/07, 09, 11, 13, 15, 17, 19, 21/07 = 1] when the respective mission store has never had power applied.

b. <u>Last BIT Passed</u> [20T/07, 09, 11, 13, 15, 17, 19, 21/07] to the value reported by the respective mission store while <u>Operating Power</u> [Power] is applied.

c. <u>Last BIT Passed</u> [20T/07, 09, 11, 13, 15, 17, 19, 21/07] to the last value reported by the respective store when <u>Operating Power</u> [Power] is removed.

6.20T.4 <u>XX - Store Monitor (2)</u> [20T/08, 10, 12, 14, 16, 18, 20, 22]

<u>XX - Store Monitor (2)</u> [20T/08, 10, 12, 14, 16, 18, 20, 22] allows the platform access to additional operational status indicators of all the carriage system stores. These statuses are transferred by the carriage system from the equivalent bit/field in the store <u>Mission Monitor</u> [22T] as outlined Table 6.20T-4 below. Section 6.22T <u>Mission Monitor</u> [22T] provides definition and details for the signal names in <u>XX - Store Monitor (2)</u> [20T/08, 10, 12, 14, 16, 18, 20, 22].

Table 6.20T-4 XX - Store Monitor (2) Description

[20T] XX - Store Monitor (2) Location	20T and 22T Signal Name	Unpowered Store Value	[22T] Mission Monitor Location
[20T/(W+1)/00]	Improved Accuracy Received	0	[22T/05/01]
[20T/(W+1)/01]	Platform ID Received	0	[22T/05/02]
[20T/(W+1)/02]	Min TXA Received	0	[22T/02/02]
[20T/(W+1)/03]	Min MDS Received	0	[22T/02/03]
[20T/(W+1)/04]	Env Data Received	0	[22T/05/06]
[20T/(W+1)/05]	Over Temp Caution	0	[22T/05/04]
[20T/(W+1)/06]	CNM Received	0	[22T/03/11]
[20T/(W+1)/07]	Almanac Received	0	[22T/03/03]
[20T/(W+1)/08]	Ephemeris Received	0	[22T/03/04]
[20T/(W+1)/09]	AS/SV Received	0	[22T/03/05]
[20T/(W+1)/10]	GPS Keys Received	0	[22T/03/06]
[20T/(W+1)/11]	Time Received	0	[22T/03/07]
[20T/(W+1)/12]	Crypto Data Zeroized	0	[22T/04/11]
[20T/(W+1)/13]	Mission Data Erased	0	[22T/04/12]
[20T/(W+1)/14]	Over Temp Warning	0	[22T/05/05]

Notes:
1.   W = word 07, 09, 11, 13, 15, 17, 19, 21 for Stores 01-8 in the release order respectively

Platform Requirement

The platform shall **{ps_6240}** verify <u>XX - Platform ID Received</u> [20T/W+1/01 = 1] (where W = word 07, 09, 11, 13, 15, 17, 19, 21 for Store 01-08 in the release order respectively) before attempting to communicate with a mission store on a Type 2 carriage system.

Carriage System Requirements

A Type 2 carriage system shall **{css_6141}** set <u>XX - Store Monitor (2)</u> [20T/08, 10, 12, 14, 16, 18, 20, 22] per Table 6.20T-4 based on the store release order.

A Type 2 carriage system shall **{css_6142}** set <u>XX - Store Monitor (2)</u> [20T/08, 10, 12, 14, 16, 18, 20, 22] for unpowered stores or empty stations to the Unpowered Store Values defined in Table 6.20T-4.

6.20T.5 <u>XX - Store GPS Active Cryptonet</u> [20T/23-30]

<u>XX - Store GPS Active Cryptonet</u> [20T/23-30] reflects the GPS Cryptonet being used by each individual store.

Carriage System Requirements

A Type 2 carriage system shall **{css_6143}** set <u>XX - Store GPS Active Cryptonet</u> [20T/23-30] equal to <u>GPS Active Cryptonet</u> [22T/17] from XX - Store in the release sequence.

MESSAGE NAME: Store Summary Status
MESSAGE ID: 20T TRANSFER TYPE: RT-BC
SOURCE: Carriage system WORD COUNT: 30
DESTINATION: Platform XMIT RATE: 0.167 Hz to 32.0 Hz

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 10100 binary
Status Word	SW	MIL-STD-1553 Status Word
Header	01	Message Descriptor
Store 01-02 Inventory	02	Quick Look Status - Stores 01-02
Store 03-04 Inventory	03	Quick Look Status - Stores 03-04
Store 05-06 Inventory	04	Quick Look Status - Stores 05-06
Store 07-08 Inventory	05	Quick Look Status - Stores 07-08
Key Coverage	06	Number of Days GPS Receiver Has Keys For
Store 01 Monitor (1)	07	Store 01 Status Information Word 1
Store 01 Monitor (2)	08	Store 01 Status Information Word 2
Store 02 Monitor (1)	09	Store 02 Status Information Word 1
Store 02 Monitor (2)	10	Store 02 Status Information Word 2
Store 03 Monitor (1)	11	Store 03 Status Information Word 1
Store 03 Monitor (2)	12	Store 03 Status Information Word 2
Store 04 Monitor (1)	13	Store 04 Status Information Word 1
Store 04 Monitor (2)	14	Store 04 Status Information Word 2
Store 05 Monitor (1)	15	Store 05 Status Information Word 1
Store 05 Monitor (2)	16	Store 05 Status Information Word 2
Store 06 Monitor (1)	17	Store 06 Status Information Word 1
Store 06 Monitor (2)	18	Store 06 Status Information Word 2
Store 07 Monitor (1)	19	Store 07 Status Information Word 1
Store 07 Monitor (2)	20	Store 07 Status Information Word 2
Store 08 Monitor (1)	21	Store 08 Status Information Word 1
Store 08 Monitor (2)	22	Store 08 Status Information Word 2
Store 01 GPS Active Cryptonet	23	Active Cryptonet for Store 01 GPS Receiver
Store 02 GPS Active Cryptonet	24	Active Cryptonet for Store 02 GPS Receiver
Store 03 GPS Active Cryptonet	25	Active Cryptonet for Store 03 GPS Receiver
Store 04 GPS Active Cryptonet	26	Active Cryptonet for Store 04 GPS Receiver
Store 05 GPS Active Cryptonet	27	Active Cryptonet for Store 05 GPS Receiver
Store 06 GPS Active Cryptonet	28	Active Cryptonet for Store 06 GPS Receiver
Store 07 GPS Active Cryptonet	29	Active Cryptonet for Store 07 GPS Receiver
Store 08 GPS Active Cryptonet	30	Active Cryptonet for Store 08 GPS Receiver

REMARKS/NOTES:

WORD NAME: Header

WORD ID:	20T/01
SOURCE(s):	Carriage system
DEST(s):	Platform
COMP RATE:	25.0 Hz Minimum
XMIT RATE:	0.167 Hz to 25.0 Hz
SIGNAL TYPE:	Hexadecimal
UNITS:	N/A

CATEGORY:	Header
MAX VALUE:	2020 (H)
MIN VALUE:	2020 (H
RESOLUTION:	1
ACCURACY:	N/A
MSB:	2^15
LSB:	2^0
FULL SCALE:	FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB --
	-01-B	
	-02-B	Hex digit #1 value=2 (H)
	-03-B	LSB --
Hex Digit #2	-04-B	MSB --
	-05-B	
	-06-B	Hex digit #2 value=0 (H)
	-07-B	LSB --
Hex Digit #3	-08-B	MSB --
	-09-B	
	-10-B	Hex digit #3 value=2 (H)
	-11-B	LSB --
Hex Digit #4	-12-B	MSB --
	-13-B	
	-14-B	Hex digit #4 value=0 (H)
	-15-B	LSB --

REMARKS/NOTES:

WORD NAME: Store 01-02 Inventory

	CATEGORY: Special
WORD ID: 20T/02	MAX VALUE: N/A
SOURCE(s): Carriage system	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: 25.0 Hz Minimum	ACCURACY: N/A
XMIT RATE: 0.167 Hz to 25.0 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
01 - Committed to Store Separation	-00-D	1 = Store is ready for release [11T/04/02].
01 - Selected for Release	-01-D	1 = Store is selected for release.
01 - IBIT in Progress	-02-D	1 = Store is in Initiated BIT [11T/04/06].
01 - Abort Release/Launch Status	-03-D	1 = Store is in Abort Release/Launch Status [11T/05/04].
01 - Non-Safety Critical Release Functions Activated	-04-D	1 = Store Non-Safety Critical Release Functions are Complete [11T/05/05].
01 - GeoZone Violation	-05-D	1 = Store GeoZone Violation [16T/04/07…08 $\neq$ 00 (B)].
Reserved	-06-0	Set to logic 0
Reserved	-07-0	Set to logic 0
02 - Committed to Store Separation	-08-D	1 = Store is ready for release [11T/04/02].
02 - Selected for Release	-09-D	1 = Store is selected for release.
02 - IBIT in Progress	-10-D	1 = Store is in Initiated BIT [11T/04/06].
02 - Abort Release/Launch Status	-11-D	1 = Store is in Abort Release/Launch Status [11T/05/04].
02 - Non-Safety Critical Release Functions Activated	-12-D	1 = Store Non-Safety Critical Release Functions are Complete [11T/05/05].
02 - GeoZone Violation	-13-D	1 = Store GeoZone Violation [16T/04/07…08 $\neq$ 00 (B)].
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Store 03-04 Inventory

		CATEGORY:	Special
WORD ID:	20T/03	MAX VALUE:	N/A
SOURCE(s):	Carriage	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	25.0 Hz Minimum	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 25.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
03 - Committed to Store Separation	-00-D	1 = Store is ready for release [11T/04/02].
03 - Selected for Release	-01-D	1 = Store is selected for release.
03 - IBIT in Progress	-02-D	1 = Store is in Initiated BIT [11T/04/06].
03 - Abort Release/Launch Status	-03-D	1 = Store is in Abort Release/Launch Status [11/05/04].
03 - Non-Safety Critical Release Functions Activated	-04-D	1 = Store Non-Safety Critical Release Functions are Complete [11T/05/05].
03 - GeoZone Violation	-05-D	1 = Store GeoZone Violation [16T/04/07…08 ≠ 00 (B)].
Reserved	-06-0	Set to logic 0
Reserved	-07-0	Set to logic 0
04 - Committed to Store Separation	-08-D	1 = Store is ready for release [11T/04/02].
04 - Selected for Release	-09-D	1 = Store is selected for release.
04 - IBIT in Progress	-10-D	1 = Store is in Initiated BIT [11T/04/06].
04 - Abort Release/Launch Status	-11-D	1 = Store is in Abort Release/Launch Status [11T/05/04].
04 - Non-Safety Critical Release Functions Activated	-12-D	1 = Store Non-Safety Critical Release Functions are Complete [11T/05/05].
04 - GeoZone Violation	-13-D	1 = Store GeoZone Violation [16T/04/07…08 ≠ 00 (B)].
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Store 05-06 Inventory

WORD ID:	20T/04
SOURCE(s):	Carriage system
DEST(s):	Platform
COMP RATE:	25.0 Hz Minimum
XMIT RATE:	0.167 Hz to 25.0 Hz
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
05 - Committed to Store Separation	-00-D	1 = Store is ready for release [11T/04/02].
05 - Selected for Release	-01-D	1 = Store is selected for release.
05 - IBIT in Progress	-02-D	1 = Store is in Initiated BIT [11T/04/06].
05 - Abort Release/Launch Status	-03-D	1 = Store is in Abort Release/Launch Status [11T/05/04].
05 - Non-Safety Critical Release Functions Activated	-04-D	1 = Store Non-Safety Critical Release Functions are Complete [11T/05/05].
05 - GeoZone Violation	-05-D	1 = Store GeoZone Violation [16T/04/07…08 ≠ 00 (B)].
Reserved	-06-0	Set to logic 0
Reserved	-07-0	Set to logic 0
06 - Committed to Store Separation	-08-D	1 = Store is ready for release [11T/04/02].
06 - Selected for Release	-09-D	1 = Store is selected for release.
06 - IBIT in Progress	-10-D	1 = Store is in Initiated BIT [11T/04/06].
06 - Abort Release/Launch Status	-11-D	1 = Store is in Abort Release/Launch Status [11T/05/04].
06 - Non-Safety Critical Release Functions Activated	-12-D	1 = Store Non-Safety Critical Release Functions are Complete [11T/05/05].
06 - GeoZone Violation	-13-D	1 = Store GeoZone Violation [16T/04/07…08 ≠ 00 (B)].
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Store 07-08 Inventory

	CATEGORY:	Special
WORD ID: 20T/05	MAX VALUE:	N/A
SOURCE(s): Carriage system	MIN VALUE:	N/A
DEST(s): Platform	RESOLUTION:	N/A
COMP RATE: 25.0 Hz Minimum	ACCURACY:	N/A
XMIT RATE: 0.167 Hz to 25.0 Hz	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
07 - Committed to Store Separation	-00-D	1 = Store is ready for release [11T/04/02].
07 - Selected for Release	-01-D	1 = Store is selected for release.
07 - IBIT in Progress	-02-D	1 = Store is in Initiated BIT [11T/04/06].
07 - Abort Release/Launch Status	-03-D	1 = Store is in Abort Release/Launch Status [11T/05/04].
07 - Non-Safety Critical Release Functions Activated	-04-D	1 = Store Non-Safety Critical Release Functions are Complete [11T/05/05].
07 - GeoZone Violation	-05-D	1 = Store GeoZone Violation [16T/04/07…08 $\neq$ 00 (B)].
Reserved	-06-0	Set to logic 0
Reserved	-07-0	Set to logic 0
08 - Committed to Store Separation	-08-D	1 = Store is ready for release [11T/04/02].
08 - Selected for Release	-09-D	1 = Store is selected for release.
08 - IBIT in Progress	-10-D	1 = Store is in Initiated BIT [11T/04/06].
08 - Abort Release/Launch Status	-11-D	1 = Store is in Abort Release/Launch Status [11T/05/04].
08 - Non-Safety Critical Release Functions Activated	-12-D	1 = Store Non-Safety Critical Release Functions are Complete [11T/05/05].
08 - GeoZone Violation	-13-D	1 = Store GeoZone Violation [16T/04/07…08 $\neq$ 00 (B)].
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Key Coverage

		CATEGORY:	Special
WORD ID:	20T/06	MAX VALUE:	N/A
SOURCE(s):	Carriage system	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION	N/A
COMP RATE:	25.0 Hz Minimum	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 25.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Key Coverage	-00-N	MSB : 2^6---
	-01-N	SIGNAL TYPE: Unsigned, UNITS: Days
	-02-N	MAX VALUE: 56, MIN VALUE: 0
	-03-N	RESOLUTION: 1, ACCURACY: 1
	-04-N	FULL SCALE: 127
	-05-N	
	-06-N	LSB : 2^0---
Reserved	-07-0	Set to logic 0
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Store 01 Monitor (1)

WORD ID:	20T/07	CATEGORY:	Special
SOURCE(s):	Carriage system	MAX VALUE:	N/A
DEST(s):	Platform	MIN VALUE:	N/A
COMP RATE:	25.0 Hz Minimum	RESOLUTION:	N/A
XMIT RATE:	0.167 Hz to 25.0 Hz	ACCURACY:	N/A
SIGNAL TYPE:	N/A	MSB:	N/A
UNITS:	N/A	LSB:	N/A
		FULL SCALE:	N/A

FIELD NAME	BIT NO.		DESCRIPTION
01 - Minimum Mission Capable	-00-D		1 = Store is minimum mission capable
01 - Critical HW Passed	-01-D		1 = All critical components passed BIT
01 - Nav Solution Quality	-02-N	MSB	---
	-03-N	LSB	---
01 - AUR Ready	-04-D		1 = Store is fully mission capable
01 - TXA Good	-05-D		1 = Transfer alignment is complete
01 - Min GPS Data	-06-D		1 = Store has received & stored required GPS data
01 - Last BIT Passed	-07-D		1 = Most current BIT (IBIT or PBIT) passed
01 - Conditioning Complete	-08-D		1 = Store avionics subsystems are stable and store is ready for IBIT
01 - Safety Enable	-09-D		1 = Store has sensed Safety Enable (Discrete)
01 - Data Change via WDL	-10-D		Set to logic 1 when mission data has been changed via WDL
01 - GPS Configuration	-11-C	MSB	---
	-12-C		See Table 6.20T-2
	-13-C	LSB	---
01 - Power Interruption	-14-D		1 = Store has detected a power dropout or power initialization
Reserved	-15-0		Set to logic 0

REMARKS/NOTES:

WORD NAME: Store 01 Monitor (2)

WORD ID:	20T/08	CATEGORY:	Special
SOURCE(s):	Carriage system	MAX VALUE:	N/A
DEST(s):	Platform	MIN VALUE:	N/A
COMP RATE:	25.0 Hz Minimum	RESOLUTION:	N/A
XMIT RATE:	0.167 Hz to 25.0 Hz	ACCURACY:	N/A
SIGNAL TYPE:	N/A	MSB:	N/A
UNITS:	N/A	LSB:	N/A
		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
01 - Improved Accuracy Received	-00-D	1 = Valid Improved Accuracy data received
01 - Platform ID Received	-01-D	1 = Platform ID [01R] received
01 - Min TXA Received	-02-D	1 = Minimum TXA data received
01 - Min MDS Received	-03-D	1 = Primary MDS is valid
01 - Env Data Received	-04-D	1 = Platform Environmental Data received
01 - Over Temp Caution	-05-D	1 = Store has declared Over Temp Caution
01 - CNM Received	-06-D	1 = CNM data received
01 - Almanac Received	-07-D	1 = Almanac data is stored in Store memory
01 - Ephemeris Received	-08-D	1 = Valid Ephemeris data for at least 4 SV stored in memory
01 - AS/SV Received	-09-D	Set to logic 1 when AS Status/SV Configuration message received
01 - GPS Keys Received	-10-D	1 = valid GPS Crypto Key loaded in the Store
01 - Time Received	-11-D	1 = Store has established current date and time
01 - Crypto Data Zeroized	-12-D	1 = Crypto Data have been Zeroized
01 - Mission Data Erased	-13-D	1 = All mission data have been erased
01 - Over Temp Warning	-14-D	1 = Store has declared Over Temp Warning
01 - Not Used	-15-X	Not Used

REMARKS/NOTES:

WORD NAME: Store 02 Monitor (1)

		CATEGORY:	Special
WORD ID:	20T/09	MAX VALUE:	N/A
SOURCE(s):	Carriage system	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	25.0 Hz Minimum	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 25.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
02 - Minimum Mission Capable	-00-D	1 = Store is minimum mission capable
02 - Crit HW Passed	-01-D	1 = All critical components passed BIT
02 - Nav Solution Quality	-02-N	MSB ---
	-03-N	LSB ---
02 - AUR Ready	-04-D	1 = Store is fully mission capable
02 - TXA Good	-05-D	1 = Transfer alignment is complete
02 - Min GPS Data	-06-D	1 = Store has received & stored required GPS data
02 - Last BIT Passed	-07-D	1 = Most current BIT (IBIT or PBIT) passed
02 - Conditioning Complete	-08-D	1 = Store avionics subsystems are stable and store is ready for IBIT
02 - Safety Enable	-09-D	1 = Store has sensed Safety Enable (Discrete)
02 - Data Change via WDL	-10-D	Set to logic 1 when mission data has been changed via WDL
02 - GPS Configuration	-11-C	MSB ---
	-12-C	See Table 6.20T-2
	-13-C	LSB ---
02 - Power Interruption	-14-D	1 = Store has detected a power dropout or power initialization
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

FOR OFFICIAL USE ONLY

WORD NAME: Store 02 Monitor (2)

		CATEGORY:	Special
WORD ID:	20T/10	MAX VALUE:	N/A
SOURCE(s):	Carriage system	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	25.0 Hz Minimum	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 25.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
02 - Improved Accuracy Received	-00-D	1 = Valid Improved Accuracy data received
02 - Platform ID Received	-01-D	1 = Platform ID [01R] received
02 - Min TXA Received	-02-D	1 = Minimum TXA data received
02 - Min MDS Received	-03-D	1 = Primary MDS is valid
02 - Env Data Received	-04-D	1 = Platform Environmental Data received
02 - Over Temp Caution	-05-D	1 = Store has declared Over Temp Caution
02 - CNM Received	-06-D	1 = CNM data received
02 - Almanac Received	-07-D	1 = Almanac data is stored in Store memory
02 - Ephemeris Received	-08-D	1 = Valid Ephemeris data for at least 4 SV stored in memory
02 - AS/SV Received	-09-D	Set to logic 1 when AS Status/SV Configuration message received
02 - GPS Keys Received	-10-D	1 = valid GPS Crypto Key loaded in the Store
02 - Time Received	-11-D	1 = Store has established current date and time
02 - Crypto Data Zeroized	-12-D	1 = Crypto Data have been Zeroized
02 - Mission Data Erased	-13-D	1 = All mission data have been erased
02 - Over Temp Warning	-14-D	1 = Store has declared Over Temp Warning
02 - Not Used	-15-X	Not Used

REMARKS/NOTES:

WORD NAME: Store 03 Monitor (1)

WORD ID:	20T/11	
SOURCE(s):	Carriage system	
DEST(s):	Platform	
COMP RATE:	25.0 Hz Minimum	
XMIT RATE:	0.167 Hz to 25.0 Hz	
SIGNAL TYPE:	N/A	
UNITS:	N/A	

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
03 - Minimum Mission Capable	-00-D	1 = Store is minimum mission capable
03 - Crit HW Passed	-01-D	1 = All critical components passed BIT
03 - Nav Solution Quality	-02-N	MSB ---
	-03-N	LSB ---
03 - AUR Ready	-04-D	1 = Store is fully mission capable
03 - TXA Good	-05-D	1 = Transfer alignment is complete
03 - Min GPS Data	-06-D	1 = Store has received & stored required GPS data
03 - Last BIT Passed	-07-D	1 = Most current BIT (IBIT or PBIT) passed
03 - Condioning Complete	-08-D	1 = Store avionics subsystems are stable and store is ready for IBIT
03 - Safety Enable	-09-D	1 = Store has sensed Safety Enable (Discrete)
03 - Data Change via WDL	-10-D	Set to logic 1 when mission data has been changed via WDL
03 - GPS Configuration	-11-C	MSB ---
	-12-C	See Table 6.20T-2
	-13-C	LSB ---
03 - Power Interruption	-14-D	1 = Store has detected a power dropout or power initialization
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Store 03 Monitor (2)

	CATEGORY:	Special
WORD ID: 20T/12	MAX VALUE:	N/A
SOURCE(s): Carriage system	MIN VALUE:	N/A
DEST(s): Platform	RESOLUTION:	N/A
COMP RATE: 25.0 Hz Minimum	ACCURACY:	N/A
XMIT RATE: 0.167 Hz to 25.0 Hz	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
03 - Improved Accuracy Received	-00-D	1 = Valid Improved Accuracy data received
03 - Platform ID Received	-01-D	1 = Platform ID [01R] received
03 - Min TXA Received	-02-D	1 = Minimum TXA data received
03 - Min MDS Received	-03-D	1 = Primary MDS is valid
03 - Env Data Received	-04-D	1 = Platform Environmental Data received
03 - Over Temp Caution	-05-D	1 = Store has declared Over Temp Caution
03 - CNM Received	-06-D	1 = CNM data received
03 - Almanac Received	-07-D	1 = Almanac data is stored in Store memory
03 - Ephemeris Received	-08-D	1 = Valid Ephemeris data for at least 4 SV stored in memory
03 - AS/SV Received	-09-D	Set to logic 1 when AS Status/SV Configuration message received
03 - GPS Keys Received	-10-D	1 = valid GPS Crypto Key loaded in the Store
03 - Time Received	-11-D	1 = Store has established current date and time
03 - Crypto Data Zeroized	-12-D	1 = Crypto Data have been Zeroized
03 - Mission Data Erased	-13-D	1 = All mission data have been erased
03 - Over Temp Warning	-14-D	1 = Store has declared Over Temp Warning
03 - Not Used	-15-X	Not Used

REMARKS/NOTES:

WORD NAME: Store 04 Monitor (1)

WORD ID:	20T/13	CATEGORY:	Special
SOURCE(s):	Carriage system	MAX VALUE:	N/A
DEST(s):	Platform	MIN VALUE:	N/A
COMP RATE:	25.0 Hz Minimum	RESOLUTION:	N/A
XMIT RATE:	0.167 Hz to 25.0 Hz	ACCURACY:	N/A
SIGNAL TYPE:	N/A	MSB:	N/A
UNITS:	N/A	LSB:	N/A
		FULL SCALE:	N/A

FIELD NAME	BIT NO.		DESCRIPTION
04 - Minimum Mission Capable	-00-D		1 = Store is minimum mission capable
04 - Crit HW Passed	-01-D		1 = All critical components passed BIT
04 - Nav Solution Quality	-02-N	MSB	---
	-03-N	LSB	---
04 - AUR Ready	-04-D		1 = Store is fully mission capable
04 - TXA Good	-05-D		1 = Transfer alignment is complete
04 - Min GPS Data	-06-D		1 =Store has received & stored required GPS data
04 - Last BIT Passed	-07-D		1 = Most current BIT (IBIT or PBIT) passed
04 - Condioning Complete	-08-D		1 = Store avionics subsystems are stable and store is ready for IBIT
04 - Safety Enable	-09-D		1 = Store has sensed Safety Enable (Discrete)
04 - Data Change via WDL	-10-D		Set to logic 1 when mission data has been changed via WDL
04 - GPS Configuration	-11-C	MSB	---
	-12-C		See Table 6.20T-2
	-13-C	LSB	---
04 - Power Interruption	-14-D		1 = Store has detected a power dropout or power initialization
Reserved	-15-0		Set to logic 0

REMARKS/NOTES:

WORD NAME: Store 04 Monitor (2)

WORD ID:	20T/14	CATEGORY: Special
SOURCE(s):	Carriage system	MAX VALUE: N/A
DEST(s):	Platform	MIN VALUE: N/A
COMP RATE:	25.0 Hz Minimum	RESOLUTION: N/A
XMIT RATE:	0.167 Hz to 25.0 Hz	ACCURACY: N/A
SIGNAL TYPE:	N/A	MSB: N/A
UNITS:	N/A	LSB: N/A
		FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
04 - Improved Accuracy Received	-00-D	1 = Valid Improved Accuracy data received
04 - Platform ID Received	-01-D	1 = Platform ID [01R] received
04 - Min TXA Received	-02-D	1 = Minimum TXA data received
04 - Min MDS Received	-03-D	1 = Primary MDS is valid
04 - Env Data Received	-04-D	1 = Platform Environmental Data received
04 - Over Temp Caution	-05-D	1 = Store has declared Over Temp Caution
04 - CNM Received	-06-D	1 = CNM data received
04 - Almanac Received	-07-D	1 = Almanac data is stored in Store memory
04 - Ephemeris Received	-08-D	1 = Valid Ephemeris data for at least 4 SV stored in memory
04 - AS/SV Received	-09-D	Set to logic 1 when AS Status/SV Configuration message received
04 - GPS Keys Received	-10-D	1 = valid GPS Crypto Key loaded in the Store
04 - Time Received	-11-D	1 = Store has established current date and time
04 - Crypto Data Zeroized	-12-D	1 = Crypto Data have been Zeroized
04 - Mission Data Erased	-13-D	1 = All mission data have been erased
04 - Over Temp Warning	-14-D	1 = Store has declared Over Temp Warning
04 - Not Used	-15-X	Not Used

REMARKS/NOTES:

WORD NAME: Store 05 Monitor (1)

WORD ID:	20T/15	CATEGORY:	Special
SOURCE(s):	Carriage system	MAX VALUE:	N/A
DEST(s):	Platform	MIN VALUE:	N/A
COMP RATE:	25.0 Hz Minimum	RESOLUTION:	N/A
XMIT RATE:	0.167 Hz to 25.0 Hz	ACCURACY:	N/A
SIGNAL TYPE:	N/A	MSB:	N/A
UNITS:	N/A	LSB:	N/A
		FULL SCALE:	N/A

FIELD NAME	BIT NO.		DESCRIPTION
05 - Minimum Mission Capable	-00-D		1 = Store is minimum mission capable
05 - Crit HW Passed	-01-D		1 = All critical components passed BIT
05 - Nav Solution Quality	-02-N	MSB	---
	-03-N	LSB	---
05 - AUR Ready	-04-D		1 = Store is fully mission capable
05 - TXA Good	-05-D		1 = Transfer alignment is complete
05 - Min GPS Data	-06-D		1 =Store has received & stored required GPS data
05 - Last BIT Passed	-07-D		1 = Most current BIT (IBIT or PBIT) passed
05 - Condioning Complete	-08-D		1 = Store avionics subsystems are stable and store is ready for IBIT
05 - Safety Enable	-09-D		1 = Store has sensed Safety Enable (Discrete)
05 - Data Change via WDL	-10-D		Set to logic 1 when mission data has been changed via WDL
05 - GPS Configuration	-11-C	MSB	---
	-12-C		See Table 6.20T-2
	-13-C	LSB	---
05 - Power Interruption	-14-D		1 = Store has detected a power dropout or power initialization
Reserved	-15-0		Set to logic 0

REMARKS/NOTES:

WORD NAME: Store 05 Monitor (2)

		CATEGORY:	Special
WORD ID:	20T/16	MAX VALUE:	N/A
SOURCE(s):	Carriage system	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	25.0 Hz Minimum	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 25.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
05 - Improved Accuracy Received	-00-D	1 = Valid Improved Accuracy data received
05 - Platform ID Received	-01-D	1 = Platform ID [01R] received
05 - Min TXA Received	-02-D	1 = Minimum TXA data received
05 - Min MDS Received	-03-D	1 = Primary MDS is valid
05 - Env Data Received	-04-D	1 = Platform Environmental Data received
05 - Over Temp Caution	-05-D	1 = Store has declared Over Temp Caution
05 - CNM Received	-06-D	1 = CNM data received
05 - Almanac Received	-07-D	1 = Almanac data is stored in Store memory
05 - Ephemeris Received	-08-D	1 = Valid Ephemeris data for at least 4 SV stored in memory
05 - AS/SV Received	-09-D	Set to logic 1 when AS Status/SV Configuration message received
05 - GPS Keys Received	-10-D	1 = valid GPS Crypto Key loaded in the Store
05 - Time Received	-11-D	1 = Store has established current date and time
05 - Crypto Data Zeroized	-12-D	1 = Crypto Data have been Zeroized
05 - Mission Data Erased	-13-D	1 = All mission data have been erased
05 - Over Temp Warning	-14-D	1 = Store has declared Over Temp Warning
05 - Not Used	-15-X	Not Used

REMARKS/NOTES:

WORD NAME: Store 06 Monitor (1)

		CATEGORY:	Special
WORD ID:	20T/17	MAX VALUE:	N/A
SOURCE(s):	Carriage system	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	25.0 Hz Minimum	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 25.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.		DESCRIPTION
06 - Minimum Mission Capable	-00-D		1 = Store is minimum mission capable
06 - Crit HW Passed	-01-D		1 = All critical components passed BIT
06 - Nav Solution Quality	-02-N	MSB	--
	-03-N	LSB	--
06 - AUR Ready	-04-D		1 = Store is fully mission capable
06 - TXA Good	-05-D		1 = Transfer alignment is complete
06 - Min GPS Data	-06-D		1 = Store has received & stored required GPS data
06 - Last BIT Passed	-07-D		1 = Most current BIT (IBIT or PBIT) passed
06 - Condioning Complete	-08-D		1 = Store avionics subsystems are stable and store is ready for IBIT
06 - Safety Enable	-09-D		1 = Store has sensed Safety Enable (Discrete)
06 - Data Change via WDL	-10-D		Set to logic 1 when mission data has been changed via WDL
06 - GPS Configuration	-11-C	MSB	--
	-12-C		See Table 6.20T-2
	-13-C	LSB	--
06 - Power Interruption	-14-D		1 = Store has detected a power dropout or power initialization
Reserved	-15-0		Set to logic 0

REMARKS/NOTES:

WORD NAME: Store 06 Monitor (2)

WORD ID:	20T/18	CATEGORY: Special
SOURCE(s):	Carriage system	MAX VALUE: N/A
DEST(s):	Platform	MIN VALUE: N/A
COMP RATE:	25.0 Hz Minimum	RESOLUTION: N/A
XMIT RATE:	0.167 Hz to 25.0 Hz	ACCURACY: N/A
SIGNAL TYPE:	N/A	MSB: N/A
UNITS:	N/A	LSB: N/A
		FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
06 - Improved Accuracy Received	-00-D	1 = Valid Improved Accuracy data received
06 - Platform ID Received	-01-D	1 = Platform ID [01R] received
06 - Min TXA Received	-02-D	1 = Minimum TXA data received
06 - Min MDS Received	-03-D	1 = Primary MDS is valid
06 - Env Data Received	-04-D	1 = Platform Environmental Data received
06 - Over Temp Caution	-05-D	1 = Store has declared Over Temp Caution
06 - CNM Received	-06-D	1 = CNM data received
06 - Almanac Received	-07-D	1 = Almanac data is stored in Store memory
06 - Ephemeris Received	-08-D	1 = Valid Ephemeris data for at least 4 SV stored in memory
06 - AS/SV Received	-09-D	Set to logic 1 when AS Status/SV Configuration message received
06 - GPS Keys Received	-10-D	1 = valid GPS Crypto Key loaded in the Store
06 - Time Received	-11-D	1 = Store has established current date and time
06 - Crypto Data Zeroized	-12-D	1 = Crypto Data have been Zeroized
06 - Mission Data Erased	-13-D	1 = All mission data have been erased
06 - Over Temp Warning	-14-D	1 = Store has declared Over Temp Warning
06 - Not Used	-15-X	Not Used

REMARKS/NOTES:

WORD NAME: Store 07 Monitor (1)

WORD ID:	20T/19	CATEGORY:	Special
SOURCE(s):	Carriage system	MAX VALUE:	N/A
DEST(s):	Platform	MIN VALUE:	N/A
COMP RATE:	25.0 Hz Minimum	RESOLUTION:	N/A
XMIT RATE:	0.167 Hz to 25.0 Hz	ACCURACY:	N/A
SIGNAL TYPE:	N/A	MSB:	N/A
UNITS:	N/A	LSB:	N/A
		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
07 - Minimum Mission Capable	-00-D	1 = Store is minimum mission capable
07 - Crit HW Passed	-01-D	1 = All critical components passed BIT
07 - Nav Solution Quality	-02-N	MSB --
	-03-N	LSB --
07 - AUR Ready	-04-D	1 = Store is fully mission capable
07 - TXA Good	-05-D	1 = Transfer alignment is complete
07 - Min GPS Data	-06-D	1 =Store has received & stored required GPS data
07 - Last BIT Passed	-07-D	1 = Most current BIT (IBIT or PBIT) passed
07 - Condioning Complete	-08-D	1 = Store avionics subsystems are stable and store is ready for IBIT
07 - Safety Enable	-09-D	1 = Store has sensed Safety Enable (Discrete)
07 - Data Change via WDL	-10-D	Set to logic 1 when mission data has been changed via WDL
07 - GPS Configuration	-11-C	MSB --
	-12-C	See Table 6.20T-2
	-13-C	LSB --
07 - Power Interruption	-14-D	1 = Store has detected a power dropout or power initialization
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

FOR OFFICIAL USE ONLY

WORD NAME: Store 07 Monitor (2)

		CATEGORY:	Special
WORD ID:	20T/20	MAX VALUE:	N/A
SOURCE(s):	Carriage system	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	25.0 Hz Minimum	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 25.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
07 - Improved Accuracy Received	-00-D	1 = Valid Improved Accuracy data received
07 - Platform ID Received	-01-D	1 = Platform ID [01R] received
07 - Min TXA Received	-02-D	1 = Minimum TXA data received
07 - Min MDS Received	-03-D	1 = Primary MDS is valid
07 - Env Data Received	-04-D	1 = Platform Environmental Data received
07 - Over Temp Caution	-05-D	1 = Store has declared Over Temp Caution
07 - CNM Received	-06-D	1 = CNM data received
07 - Almanac Received	-07-D	1 = Almanac data is stored in Store memory
07 - Ephemeris Received	-08-D	1 = Valid Ephemeris data for at least 4 SV stored in memory
07 - AS/SV Received	-09-D	Set to logic 1 when AS Status/SV Configuration message received
07 - GPS Keys Received	-10-D	1 = valid GPS Crypto Key loaded in the Store
07 - Time Received	-11-D	1 = Store has established current date and time
07 - Crypto Data Zeroized	-12-D	1 = Crypto Data have been Zeroized
07 - Mission Data Erased	-13-D	1 = All mission data have been erased
07 - Over Temp Warning	-14-D	1 = Store has declared Over Temp Warning
07 - Not Used	-15-X	Not Used

REMARKS/NOTES:

WORD NAME: Store 08 Monitor (1)

		CATEGORY:	Special
WORD ID:	20T/21	MAX VALUE:	N/A
SOURCE(s):	Carriage system	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	25.0 Hz Minimum	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 25.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.		DESCRIPTION
08 - Minimum Mission Capable	-00-D		1 = Store is minimum mission capable
08 - Crit HW Passed	-01-D		1 = All critical components passed BIT
08 - Nav Solution Quality	-02-N	MSB	--
	-03-N	LSB	--
08 - AUR Ready	-04-D		1 = Store is fully mission capable
08 - TXA Good	-05-D		1 = Transfer alignment is complete
08 - Min GPS Data	-06-D		1 =Store has received & stored required GPS data
08 - Last BIT Passed	-07-D		1 = Most current BIT (IBIT or PBIT) passed
08 - Condioning Complete	-08-D		1 = Store avionics subsystems are stable and store is ready for IBIT
08 - Safety Enable	-09-D		1 = Store has sensed Safety Enable (Discrete)
08 - Data Change via WDL	-10-D		Set to logic 1 when mission data has been changed via WDL
08 - GPS Configuration	-11-C	MSB	--
	-12-C		See Table 6.20T-2
	-13-C	LSB	--
08 - Power Interruption	-14-D		1 = Store has detected a power dropout or power initialization
Reserved	-15-0		Set to logic 0

REMARKS/NOTES:

WORD NAME: Store 08 Monitor (2)

		CATEGORY:	Special
WORD ID:	20T/22	MAX VALUE:	N/A
SOURCE(s):	Carriage system	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	25.0 Hz Minimum	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 25.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
08 - Improved Accuracy Received	-00-D	1 = Valid Improved Accuracy data received
08 - Platform ID Received	-01-D	1 = Platform ID [01R] received
08 - Min TXA Received	-02-D	1 = Minimum TXA data received
08 - Min MDS Received	-03-D	1 = Primary MDS is valid
08 - Env Data Received	-04-D	1 = Platform Environmental Data received
08 - Over Temp Caution	-05-D	1 = Store has declared Over Temp Caution
08 - CNM Received	-06-D	1 = CNM data received
08 - Almanac Received	-07-D	1 = Almanac data is stored in Store memory
08 - Ephemeris Received	-08-D	1 = Valid Ephemeris data for at least 4 SV stored in memory
08 - AS/SV Received	-09-D	Set to logic 1 when AS Status/SV Configuration message received
08 - GPS Keys Received	-10-D	1 = valid GPS Crypto Key loaded in the Store
08 - Time Received	-11-D	1 = Store has established current date and time
08 - Crypto Data Zeroized	-12-D	1 = Crypto Data have been Zeroized
08 - Mission Data Erased	-13-D	1 = All mission data have been erased
08 - Over Temp Warning	-14-D	1 = Store has declared Over Temp Warning
08 - Not Used	-15-X	Not Used

REMARKS/NOTES:

WORD NAME: Store 01 GPS Active Cryptonet

		CATEGORY:	Special
WORD ID:	20T/23	MAX VALUE:	N/A
SOURCE(s):	Carriage system	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	25.0 Hz Minimum	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 25.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Store 01 GPS Active Cryptonet	-00-C	MSB ---
	-01-C	
	-02-C	
	-03-C	
	-04-C	
	-05-C	
	-06-C	
	-07-C	
	-08-C	
	-09-C	
	-10-C	
	-11-C	
	-12-C	
	-13-C	
	-14-C	
	-15-C	LSB ---

REMARKS/NOTES:

WORD NAME: Store 02 GPS Active Cryptonet

WORD ID:	20T/24
SOURCE(s):	Carriage system
DEST(s):	Platform
COMP RATE:	25.0 Hz Minimum
XMIT RATE:	0.167 Hz to 25.0 Hz
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Store 02 GPS Active Cryptonet	-00-C	MSB ---
	-01-C	
	-02-C	
	-03-C	
	-04-C	
	-05-C	
	-06-C	
	-07-C	
	-08-C	
	-09-C	
	-10-C	
	-11-C	
	-12-C	
	-13-C	
	-14-C	
	-15-C	LSB ---

REMARKS/NOTES:

WORD NAME: Store 03 GPS Active Cryptonet

	CATEGORY: Special
WORD ID: 20T/25	MAX VALUE: N/A
SOURCE(s): Carriage system	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: 25.0 Hz Minimum	ACCURACY: N/A
XMIT RATE: 0.167 Hz to 25.0 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Store 03 GPS Active Cryptonet	-00-C	MSB --
	-01-C	
	-02-C	
	-03-C	
	-04-C	
	-05-C	
	-06-C	
	-07-C	
	-08-C	
	-09-C	
	-10-C	
	-11-C	
	-12-C	
	-13-C	
	-14-C	
	-15-C	LSB ---

REMARKS/NOTES:

FOR OFFICIAL USE ONLY

WORD NAME: Store 04 GPS Active Cryptonet

	CATEGORY: Special
WORD ID: 20T/26	MAX VALUE: N/A
SOURCE(s): Carriage system	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: 25.0 Hz Minimum	ACCURACY: N/A
XMIT RATE: 0.167 Hz to 25.0 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Store 04 GPS Active Cryptonet	-00-C	MSB --
	-01-C	
	-02-C	
	-03-C	
	-04-C	
	-05-C	
	-06-C	
	-07-C	
	-08-C	
	-09-C	
	-10-C	
	-11-C	
	-12-C	
	-13-C	
	-14-C	
	-15-C	LSB ---

REMARKS/NOTES:

WORD NAME: Store 05 GPS Active Cryptonet

CATEGORY:	Special

WORD ID: 20T/27
SOURCE(s):   Carriage system
DEST(s):   Platform
COMP RATE: 25.0 Hz Minimum
XMIT RATE: 0.167 Hz to 25.0 Hz
SIGNAL TYPE: N/A
UNITS: N/A

MAX VALUE: N/A
MIN VALUE: N/A
RESOLUTION: N/A
ACCURACY: N/A
MSB: N/A
LSB: N/A
FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Store 05 GPS Active Cryptonet	-00-C	MSB --
	-01-C	
	-02-C	
	-03-C	
	-04-C	
	-05-C	
	-06-C	
	-07-C	
	-08-C	
	-09-C	
	-10-C	
	-11-C	
	-12-C	
	-13-C	
	-14-C	
	-15-C	LSB --

REMARKS/NOTES:

WORD NAME: Store 06 GPS Active Cryptonet

		CATEGORY:	Special
WORD ID:	20T/28	MAX VALUE:	N/A
SOURCE(s):	Carriage system	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	25.0 Hz Minimum	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 25.0 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Store 06 GPS Active Cryptonet	-00-C	MSB --
	-01-C	
	-02-C	
	-03-C	
	-04-C	
	-05-C	
	-06-C	
	-07-C	
	-08-C	
	-09-C	
	-10-C	
	-11-C	
	-12-C	
	-13-C	
	-14-C	
	-15-C	LSB ---

REMARKS/NOTES:

WORD NAME: Store 07 GPS Active Cryptonet

	CATEGORY:	Special
WORD ID: 20T/29	MAX VALUE:	N/A
SOURCE(s): Carriage system	MIN VALUE:	N/A
DEST(s): Platform	RESOLUTION:	N/A
COMP RATE: 25.0 Hz Minimum	ACCURACY:	N/A
XMIT RATE: 0.167 Hz to 25.0 Hz	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Store 07 GPS Active Cryptonet	-00-C	MSB --
	-01-C	
	-02-C	
	-03-C	
	-04-C	
	-05-C	
	-06-C	
	-07-C	
	-08-C	
	-09-C	
	-10-C	
	-11-C	
	-12-C	
	-13-C	
	-14-C	
	-15-C	LSB --

REMARKS/NOTES:

WORD NAME: Store 08 GPS Active Cryptonet

WORD ID:	20T/30
SOURCE(s):	Carriage system
DEST(s):	Platform
COMP RATE:	25.0 Hz Minimum
XMIT RATE:	0.167 Hz to 25.0 Hz
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Store 08 GPS Active Cryptonet	-00-C	MSB --
	-01-C	
	-02-C	
	-03-C	
	-04-C	
	-05-C	
	-06-C	
	-07-C	
	-08-C	
	-09-C	
	-10-C	
	-11-C	
	-12-C	
	-13-C	
	-14-C	
	-15-C	LSB ---

REMARKS/NOTES:

6.21R/T WDL CONTROL/MONITOR [21R/T]

WDL Control [21R] and WDL Monitor [21T] provide the means to monitor and modify the WDL configuration of the mission store terminal(s) and the net participants. Sections 3.5.21 Weapon Data Link (WDL) and 6.22T.17 Weapon Data Link ID [22T/18] provide additional information and requirements.

The WDL Control [21R] controls are designed to provide the platforms with explicit control of mission store WDL terminal operations before mission store release, including: operating power, transmitter control, receiver control, controller configuration, and enabling pre-release updates via the weapon data link, to controller and/or mission data. The platform implementation of these WDL controls is documented in the platform annex.

After the mission store is released, it responds to controller and/or mission data changes sent by authorized controllers.

Any valid transmission of Store DL Settings [21R/04] updates the store DL settings for the mission store. Any valid transmission of IDL DL Settings 1/2 [21R/05-06] updates the IDL DL settings for the IDL specified in IDL DL Selector [21R/05/00…02]. Store DL settings are not affected by mission selection or net participant changes. IDL DL settings for a particular IDL are not affected by mission selection.

Even though the store network ID data can be mission planned to be mission specific, transmission of a [21R] with Controller or Mission Store Terminal Select [21R/07/00…02 = 001 (B), 010 (B), or 011 (B)] to configure the store network ID data [21R/07-20] for a particular network type (i.e., waveform) updates the mission store network ID data for all missions for the applicable network type, until MDT-Mission [13R-020] is reloaded.

Net participant WDL Network/Terminal ID Data is mission planned through MDT-Net Participants [13R-029]. Platform edits of the net participant WDL Network/Terminal ID Data [21R/07-25], with Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)], updates the net participant data as directed by the Net Participant Index [21R/03/03…07].

Target Reference Number [21R/26-27] can be mission planned within MDT-Mission [13R-020] but might not be mission specific. Platform edits of Target Reference Number [21R/26-27], however, are mission specific, and only apply to the mission in the Mod Msn Storage Location [22R/08] until MDT-Mission [13R-020] is reloaded.

The WDL Monitor [21T] message is an aggregate of data from a variety of sources. Table 6.21R/T-1 summarizes the dependence of WDL Monitor [21T] words on other [T] message fields.

Table 6.21R/T-1 WDL Monitor [21T] Composition

WDL Monitor [21T] words	Data depends on:
01-04	Data is common (does not depend on other transmit [T] message fields)
05-06	IDL DL Selector [21T/05/00…02]
07-25	WDL Monitor Select [21T/03/09…11] and possibly Net Participant Index

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Table 6.21R/T-1 WDL Monitor [21T] Composition

WDL Monitor [21T] words	Data depends on:
	[21T/03/03…07] and Download Select [21T/03/08]
26-27	Mod Msn Storage Location [22T/12]
28	Pri Msn Storage Location [22T/06]
29	Data is common (based on all IDLs present)

Platform Requirements

The platform shall **{ps_6566}** only modify WDL Control [21R] commands prior to sending CTS [11R/04/02 = 1] to the mission store, if WDL Onboard [22T/05/11 = 1].

The platform shall **{ps_6648}** only modify Set Net Participants [22R/11] prior to sending CTS [11R/04/02 = 1] to the mission store, if WDL Onboard [22T/05/11 = 1].

Carriage System Requirements

A Type 1 carriage system shall **{css_6166}** set all WDL Monitor [21T] Invalidity [21T/02] bits to logic 1 (invalid).

A Type 2 carriage system shall **{css_6168}** update WDL Monitor [21T], at a minimum rate of 25 Hz, to reflect the data from the first mission store in the release sequence and set Selected Store [21T/03/12…15] to the release order number of the next mission store to be released, if the mission store is reporting WDL Onboard [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6487}** initialize WDL Monitor [21T] data words to 0000 (H), prior to setting Platform ID Received [22T/05/02 = 1], if WDL Onboard [22T/05/11 = 1] and WDL configuration settings were not previously stored in mission store non-volatile memory.

The mission store shall **{ss_6488}** initialize WDL Monitor Select [21T/03/09…11 = 001 (B)] and IDL DL Selector [21T/05/00…02 = 001 (B)] and set Store DL Settings [21T/04] to the store DL settings, IDL DL Settings 1/2 [21T/05-06] to the IDL DL setting for IDL 1, and WDL Monitor [21T/07-20] data words to the Mission Store WDL Network ID data specified by Store WDL Data #1, prior to setting Platform ID Received [22T/05/02 = 1], if WDL Onboard [22T/05/11 = 1] and WDL configuration settings have previously been stored in mission store non-volatile memory.

The mission store shall **{ss_6844}** discard WDL Control [21R] and take no action if Word 3 Invalidity [21R/02/00 = 1].

The mission store shall **{ss_6489}** not respond to changes to WDL Control [21R] commands after receiving CTS [11R/04/02 = 1], if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6845}** not respond to changes to Set Net Participants [22R/11] commands after receiving CTS [11R/04/02 = 1], if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6773}** use mission store network ID data received via MDT-Mission [13R-020] for a particular mission store terminal until receipt of a WDL Control [21R] modifying that data.

The mission store shall **{ss_6774}** use the mission store network ID data provided in WDL Control [21R] with Controller or Mission Store Terminal Select [21R/07/00…02 = 001 (B), 010 (B), or 011 (B)] for the associated waveform for all missions in place of mission store network ID data previously received, if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6775}** use mission store network ID data provided in MDT-Mission [13R-020] and erase/invalidate any WDL Control [21R] mission store network ID data previously provided.

The mission store shall **{ss_6847}** use the controllers referenced in MDT-Mission [13R-020] for the MDS in Mod Msn Storage Location [22R/08] until receipt of a Store Control [22R] with valid Set Net Participants [22R/11] for the MDS in Mod Msn Storage Location [22R/08].

The mission store shall **{ss_6848}** retain the previous net participants indices for each MDS except the MDS in Mod Msn Storage Location [22R/08] upon receipt of a Store Control [22R] with valid Set Net Participants [22R/11].

The mission store shall **{ss_6849}** use the net participant data for a particular controller provided in MDT-Net Participants [13R-029] until receipt of a WDL Control [21R] modifying that net participant data.

The mission store shall **{ss_6850}** erase/invalidate any Set Net Participants [22R/11] data upon receipt of net participants indices provided in a subsequently downloaded MDT-Mission [13R-020].

The mission store shall **{ss_6851}** use the net participant data provided in MDT-Net Participants [13R-029] and erase/invalidate any WDL Control [21R] net participant data previously provided.

6.21R/T.1 WDL Control/Monitor Word [21R/T/03]

WDL Control/Monitor Word [21R/T/03] provides the WDL common control/monitor functions, controls the type operation the mission store is to perform using the data contained in WDL Config Set [21R/04-27] data words, and specifies the type of data the mission store is to provide in the WDL Monitor [21T] message.

6.21R/T.1.1 WDL Configuration Select [21R/T/03/00…02]

WDL Configuration Select [21R/T/03/00…02] identifies the type operation the mission store is to perform, IAW Table 6.21R/T-1.1, using the data contained in the WDL Control [21R] message.

Table 6.21R/T-1.1 WDL Configuration Select [21R/T/03/00…02] Definitions

Value	Definition	Description
000 (B)	No Operation Commanded	Mission store ignores all WDL Control [21R] message commands/data. The platform uses this command to inform the mission store not to respond to any commands or data in the WDL Control [21R] message.
001 (B)	Configure WDL Monitor [21T] message	Mission store configures WDL Monitor [21T] based on the settings in WDL Control Word [21R/03] and IDL DL Selector [21R/05/00…02] and ignores all other data/commands in WDL Control [21R/04-29] data words.
010 (B)	Execute Commands in WDL Control Words [21R/03-06] and [21R/26-27] only	Mission store only responds to data/commands in WDL Control [21R/03-06] and [21R/26-27] and ignores the data/commands in WDL Control [21R/07-25] data words.
011 (B)	Modify Network/Terminal ID Data	Mission store responds to all commands in WDL Control [21R/03-06] and [21R/26-27] and overwrites the Network/Terminal ID Data for the mission store terminal or net participant specified by Controller or Mission Store Terminal Select [21R/07/00…02] based on the data provided in WDL Control [21R/07-25].
All Others	Reserved	Reserved

Platform Requirements

The platform shall **{ps_6423}** set WDL Configuration Select [21R/03/00…02] IAW Table 6.21R/T-1.1 to specify the operation the mission store is to perform using the data contained in the WDL Control [21R] message, if WDL Onboard [22T/05/11 = 1].

The platform shall **{ps_6517}** provide the capability to select or enter WDL Configuration Select [21R/03/00…02] command IAW Table 6.21R/T-1.1, if WDL Onboard [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6492}** respond to WDL Configuration Select [21R/03/00…02] IAW Table 6.21R/T-1.1, if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6493}** echo WDL Configuration Select [21R/03/00…02] command in WDL Configuration Select [21T/03/00…02] status, if WDL Onboard [22T/05/11 = 1].

6.21R/T.1.2 Net Participant Index [21R/T/03/03…07]

The Net Participant Index [21R/T/03/03…07] is used by the platform and store to coordinate changes to Net Participant configurations, and identify which network participant the WDL Monitor [21T] data represents.

Platform Requirements

The platform shall **{ps_6634}** set Net Participant Index [21R/03/03…07 ≠ 00000 (B)] when WDL Monitor Select [21R/03/09…11 = 100 (B)], if WDL Onboard [22T/05/11 = 1].

The platform shall **{ps_6635}** set <u>Net Participant Index</u> [21R/03/03…07 ≠ 00000 (B)] when <u>WDL Configuration Select</u> [21R/03/00…02 = 011 (B)] and <u>Controller or Mission Store Terminal Select</u> [21R/07/00…02 = 100 (B)], if <u>WDL Onboard</u> [22T/05/11 = 1].

The platform shall **{ps_6636}** provide the capability to select or enter <u>Net Participant Index</u> [21R/03/03…07], if <u>WDL Onboard</u> [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6852}** update <u>Net Participant Index</u> [21T/03/03…07] with <u>Net Participant Index</u> [21R/03/03…07], if <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store shall **{ss_6853}** update <u>WDL Monitor</u> [21T/07-25] with data representing <u>Net Participant Index</u> [21T/03/03…07] when <u>WDL Monitor Select</u> [21T/03/09…11 = 100 (B)], if <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store shall **{ss_6854}** update the Net Participant identified by the <u>Net Participant Index</u> [21R/03/03…07] with data from <u>WDL Control</u> [21R/07-25] when <u>WDL Configuration Select</u> [21R/03/00…02 = 011 (B)] and <u>Controller or Mission Store Terminal Select</u> [21R/07/00…02 = 100 (B)], if <u>WDL Onboard</u> [22T/05/11 = 1].

6.21R/T.1.3 <u>Downlink Select</u> [21R/T/03/08]

<u>Downlink Select</u> [21R/T/03/08] allows the platform to identify whether the requested data in a <u>WDL Monitor</u> [21T] message contains the uplink or the downlink WDL information.

Platform Requirements

The platform shall **{ps_6637}** set <u>Downlink Select</u> [21R/03/08 = 1] when <u>WDL Monitor Select</u> [21R/03/09…11 = 100 (B)] to request downlink information, if <u>WDL Onboard</u> [22T/05/11 = 1].

The platform shall **{ps_6638}** set <u>Downlink Select</u> [21R/03/08 = 0] when <u>WDL Monitor Select</u> [21R/03/09…11 = 100 (B)] to request uplink information, if <u>WDL Onboard</u> [22T/05/11 = 1].

The platform shall **{ps_6639}** provide the capability to select or enter <u>Downlink Select</u> [21R/03/08], if <u>WDL Onboard</u> [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6855}** update <u>WDL Monitor</u> [21T] with uplink information for the Net Participant identified by the <u>Net Participant Index</u> [21T/03/03…07] when <u>WDL Monitor Select</u> [21R/03/09…11 = 100 (B)] and <u>Downlink Select</u> [21R/03/08 = 0], if <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store shall **{ss_6856}** update <u>WDL Monitor</u> [21T] with downlink information for the Net Participant identified by the <u>Net Participant Index</u> [21T/03/03…07] when <u>WDL Monitor Select</u> [21R/03/09…11 = 100 (B)] and <u>Downlink Select</u> [21R/03/08 = 1], if <u>WDL Onboard</u> [22T/05/11 = 1]. Note: If the downlink

information is identical to the uplink information the mission store reports identical data to the platform.

6.21R/T.1.4 WDL Monitor Select [21R/T/03/09…11]

WDL Monitor Select [21R/T/03/09…11] identifies the WDL Network/Terminal ID data the mission store is to provide in subsequent WDL Monitor [21T/07-25] data words IAW Table 6.21R/T-4.

Table 6.21R/T-4 WDL Monitor Select [21R/T/03/09…11] Definitions

Value	Definition	WDL Monitor [21T] Description
000 (B)	No Selection	WDL Monitor [21T/07-25] data words are set to 0000 (H) and do not contain WDL Network/Terminal ID data.
001 (B)	Store WDL Data #1	WDL Monitor [21T/07-20] data words contain Mission Store Network ID data #1.
010 (B)	Store WDL Data #2	WDL Monitor [21T/07-20] data words contain Mission Store Network ID data #2.
011 (B)	Store WDL Data #3	WDL Monitor [21T/07-20] data words contain Mission Store Network ID data #3.
100 (B)	Net Participant WDL Data	WDL Monitor [21T/07-25] data words contain Net Participant WDL Network/Terminal ID data as indexed by Net Participant Index [21T/03/03…07].
101 (B)	Reserved	Reserved
110 (B)	Reserved	Reserved
111 (B)	Reserved	Reserved

Platform Requirements

The platform shall **{ps_6431}** set WDL Monitor Select [21R/03/09…11] to specify the WDL Network/Terminal ID data source for WDL Monitor [21T/07-25] data words IAW Table 6.21R/T-4, if WDL Onboard [22T/05/11 = 1].

The platform shall **{ps_6518}** provide the capability to select or enter WDL Monitor Select [21R/03/09…11], if WDL Onboard [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6503}** respond to WDL Monitor Select [21R/03/09…11] IAW Table 6.21R/T-4, and provide the requested WDL Network/Terminal ID data in subsequent WDL Monitor [21T/07-25] data words, if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6504}** set WDL Monitor Select [21T/03/09…11] IAW Table 6.21R/T-4, to identify the type of the WDL Network/Terminal ID data that the mission store is providing in the current WDL Monitor [21T/07-25] data words, if WDL Onboard [22T/05/11 = 1].

6.21R/T.1.5 Selected Store [21R/T/03/12…15]

Selected Store [21R/03/12…15] provides the capability to select a mission store on a Type 2 carriage system or controllable submunition within a store for transfer of WDL Control [21R] data (Embedded Protocol). The Type 2 carriage system receives the data

and based on the value in Selected Store, forwards the data to the corresponding mission store. The Selected Store number corresponds to the mission store release order number. Section 3.8.5.2 Embedded Protocol, provides further information and requirements.

Platform Requirements

The platform shall **{ps_6432}** set Selected Store [21R/03/12…15 = 1-8] (Embedded Protocol) to indicate that the WDL Control [21R] data is intended for a particular mission store on a Type 2 carriage system in the release order, if WDL Onboard [22T/05/11 = 1].

The platform shall **{ps_6433}** set Selected Store [21R/03/12…15 = 0] to indicate that Embedded Protocol is not being used for transfer of WDL Control [21R] data to a mission store on a Type 2 carriage system, if WDL Onboard [22T/05/11 = 1].

Carriage System Requirements

A Type 2 carriage system shall **{css_6169}** transfer all WDL Control [21R] data (Embedded Protocol) to the corresponding mission store whose release order number equals the value in Selected Store [21R/03/12…15 = 1-8].

A Type 2 carriage system shall **{css_6170}** route the WDL Control [21R] commands to the mission store selected in Store Number [10R/02/08…11] (Directed Protocol) when Selected Store [21R/03/12…15 = 0].

A Type 2 carriage system shall **{css_6172}** set Selected Store [21T/03/12…15] to the release order number of the next mission store to be released to indicate that the WDL Monitor [21T] data is from that mission store when receiving a [21T] transmission request with Store Number [10R/02/08…11 = 0].

Mission Store Requirements

The mission store shall **{ss_6491}** set Selected Store [21T/03/12…15 = 0], if WDL Onboard [22T/05/11 = 1].

6.21R/T.2 Store DL Settings [21R/T/04]

Store DL Settings [21R/T/04] provides non-mission specific controls and monitoring for WDL functions. The store DL settings in [21R/T/04] apply to the mission store and are not associated with any particular mission loaded into that mission store or any particular IDL.

Mission Store Requirements

The mission store shall **{ss_6857}** use the store DL settings provided in MDT-Net Participants [13R-029] for all missions and all IDLs until receipt of a WDL Control [21R] with Store DL Settings [21R/04], if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6858}** use Store DL Settings [21R/04] for all missions and all IDLs until receipt of an MDT-Net Participants [13R-029] that contains store DL settings, if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6890}** update Store DL Settings [21T/04] with the store DL settings being used, if WDL Onboard [22T/05/11 = 1].

6.21R/T.2.1 WDL Power Control [21R/T/04/00]

WDL Power Control [21R/T/04/00] enables the mission store to provide full power to its WDL subsystem in order to support full WDL capability while the mission store is attached to the platform. This control is provided to assist the platform in power management. When this bit is set to logic zero, the mission store WDL subsystem(s) uses only the minimum power necessary to communicate and accept WDL commands and configuration data, and the mission store does not energize components of the WDL subsystem which require high power (i.e., high current draw) to operate, such as the WDL transmitter. Setting this control to logic zero could affect the ability of the mission store to establish connectivity to the network(s) while the mission store is attached to the platform. The mission store defaults this setting to minimum power. This command is not able to be preplanned and must be received in the WDL Control [21R] message in order to enable full power operations while the mission store is attached to the platform.

Platform Requirements

The platform shall **{ps_6436}** set WDL Power Control [21R/04/00 = 1] to enable the mission store to apply full power to its WDL subsystem(s) while the mission store is attached to the platform, if WDL Onboard [22T/05/11 = 1].

The platform shall **{ps_6437}** provide the capability to select or enter WDL Power Control [21R/04/00], if WDL Onboard [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6509}** only apply full power to its WDL subsystem while the mission store is attached to the platform, when WDL Power Control [21R/04/00 = 1] and WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6510}** set WDL Power Control [21T/04/00 = 1] when WDL Onboard [22T/05/11 = 1] and full power is applied to its WDL subsystem.

The mission store supplement **{sup_6295}** documents the WDL subsystem power requirements for full power operation (i.e., WDL Power Control [21R/T/04/00 = 1]) and for reduced power operation (i.e., WDL Power Control [21R/T/04/00 = 0]) and documents what WDL subsystem capabilities are lost while the mission store is attached to the platform when reduced power operation is commanded.

6.21R/T.2.2 Reserved

Table 6.21R/T-6 Deleted

6.21R/T.2.3 Xmit Seeker Image [21R/T/04/01]

Xmit Seeker Image [21R/T/04/01] commands the mission store to transmit a single seeker/sensor (i.e., snapshot) image, via the WDL, while the mission store is attached

to the platform. The mission store responds to this command when the <u>Xmit Seeker Image</u> [21R/04/01] transitions from 0 to 1. This command is functional only when the mission store is communicating on the WDL network and also supports pre-release seeker/sensor imaging. The mission store defaults the setting of this command to "0". This command is not able to be preplanned and must be received in the <u>WDL Control</u> [21R] message. Section 6.24R/T <u>Seeker/Sensor Control/Monitor</u> [24R/T] provides additional information on controlling the mission store seeker/sensor.

Platform Requirements

The platform may **{pm_6052}** set <u>Xmit Seeker Image</u> [21R/04/01 = 1] to command the mission store to transmit current seeker/sensor image via WDL while the mission store is attached to the platform, if <u>WDL Onboard</u> [22T/05/11 = 1], <u>Seeker Onboard</u> [22T/05/15 = 1], and <u>CDS Transmit Image Capable</u> **{cds_6137}**.

The platform may **{pm_6048}** provide the capability to select or enter <u>Xmit Seeker Image</u> [21R/04/01], if <u>WDL Onboard</u> [22T/05/11 = 1], <u>Seeker Onboard</u> [22T/05/15 = 1], and <u>CDS Transmit Image Capable</u> **{cds_6137}**.

Mission Store Requirements

The mission store shall **{ss_6674}** transmit the current seeker/sensor image via WDL while the mission store is attached to the platform when <u>Xmit Seeker Image</u> [21R/04/01] transitions from 0 to 1, <u>WDL Onboard</u> [22T/05/11 = 1], <u>Seeker Onboard</u> [22T/05/15 = 1], and the mission store supports pre-release seeker/sensor imaging, as documented in the mission store supplement **{sup_6243}**.

The mission store shall **{ss_6599}** set <u>Xmit Seeker Image</u> [21T/04/01] equal to <u>Xmit Seeker Image</u> [21R/04/01], if <u>WDL Onboard</u> [22T/05/11 = 1] and the mission store supports pre-release seeker/sensor imaging.

6.21R/T.2.4 <u>Xmit Seeker Video</u> [21R/T/04/02]

<u>Xmit Seeker Video</u> [21R/T/04/02] commands the mission store to transmit the current seeker/sensor streaming video, via the WDL, while the mission store is attached to the platform. This command is functional only when the mission store is communicating on the WDL network and the mission store supports pre-release seeker/sensor imaging. The mission store defaults the setting of this command to "0". This command is not able to be preplanned and must be received in the <u>WDL Control</u> [21R] message. Section 6.24R/T <u>Seeker/Sensor Control/Monitor</u> [24R/T] provides additional information on controlling the mission store seeker/sensor.

Platform Requirements

The platform may **{pm_6053}** set <u>Xmit Seeker Video</u> [21R/04/02 = 1] to command the mission store to transmit current seeker/sensor video via WDL while the mission store is attached to the platform, if <u>WDL Onboard</u> [22T/05/11 = 1], <u>Seeker Onboard</u> [22T/05/15 = 1], and <u>CDS Transmit Video Capable</u> **{cds_6142}**.

The platform may **{pm_6054}** provide the capability to select or enter <u>Xmit Seeker Video</u> [21R/04/02], if <u>WDL Onboard</u> [22T/05/11 = 1], <u>Seeker Onboard</u> [22T/05/15 = 1], and <u>CDS Transmit Video Capable</u> **{cds_6142}**.

Mission Store Requirements

The mission store shall **{ss_6891}** initialize <u>Xmit Seeker Video</u> [21T/04/02 = 0], if <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store shall **{ss_6662}** transmit the current seeker/sensor video via WDL while the mission store is attached to the platform, when <u>Xmit Seeker Video</u> [21R/04/02 = 1], if <u>WDL Onboard</u> [22T/05/11 = 1], <u>Seeker Onboard</u> [22T/05/15 = 1], and the mission store supports pre-release seeker/sensor imaging, as documented in the mission store supplement **{sup_6251}**.

The mission store shall **{ss_6663}** set <u>Xmit Seeker Video</u> [21T/04/02 = 1] when transmitting the current seeker/sensor video via WDL, if <u>WDL Onboard</u> [22T/05/11 = 1].

6.21R/T.2.5 Pre-Release WDL Update Enable [21R/T/04/03]

<u>Pre-Release WDL Update Enable</u> [21R/04/03] commands the mission store to accept controller and/or mission data updates via the platform/mission store interface or the weapon data link prior to mission store release.

a. When <u>Pre-Release WDL Update Enable</u> [21R/04/03 = 0], the mission store rejects any change to controller and/or mission data via the WDL.

b. When <u>Pre-Release WDL Update Enable</u> [21R/04/03 = 1], the mission store accepts changes to controller and/or mission data via the WDL and ignores platform commands to change mission data, programmable fuze settings, GeoZone data, WDL settings, and seeker/sensor settings, in order to prevent the platform from simultaneously modifying the same mission store data as the current controller and/or designated <u>Third Party IFTU</u> source.

The mission store defaults the setting of this command to "0". This command is not able to be preplanned and must be received in the <u>WDL Control</u> [21R] message.

Sections 6.21R/T.4.1 <u>WDL EMCON</u> [21R/T/06/00], 6.21R/T.2.7 <u>Third Party IFTU Source Enable</u> [21R/T/04/05…06], 6.21R/T.13.1 <u>WDL Connectivity Status</u> [21T/28/00…01, 02…03, & 04…05], and 6.21R/T.13.2 <u>Mission/Controller Data Changes via WDL</u> [21T/28/06…12] provide additional information and requirements.

Platform Requirements

The platform may **{pm_6061}** provide the capability to select or enter <u>Pre-Release WDL Update Enable</u> [21R/04/03], if <u>WDL Onboard</u> [22T/05/11 = 1].

The platform shall **{ps_6555}** set <u>Pre-Release WDL Update Enable</u> [21R/04/03 = 0] to specify the platform as the only source for controller and/or mission data updates prior to mission store release, if <u>WDL Onboard</u> [22T/05/11 = 1].

The platform shall **{ps_6428}** set <u>Pre-Release WDL Update Enable</u> [21R/04/03 = 1] to specify the current controller and/or designated third party IFTU source as the only source for controller and/or mission data updates via WDL prior to mission store release, if <u>WDL Onboard</u> [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6649}** initialize <u>Pre-Release WDL Update Enable</u> [21T/04/03 = 0], if <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store shall **{ss_6661}** accept pre-release updates to controller and/or mission data only from the platform, when <u>Pre-Release WDL Update Enable</u> [21T/04/03 = 0] and <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store shall **{ss_6500}** accept pre-release controller and/or mission data updates via WDL only from the current controller and/or designated third party IFTU source, when <u>Pre-Release WDL Update Enable</u> [21T/04/03 = 1] and <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store shall **{ss_6650}** ignore the following platform commands/data, when <u>Pre-Release WDL Update Enable</u> [21T/04/03 = 1] and <u>WDL Onboard</u> [22T/05/11 = 1]:

   a. All <u>Store Control</u> [11R] programmable fuze settings commands/data in data words [11R/08-12], [11R/15-19], and [11R/25-28].

   b. All <u>GeoZone Control</u> [16R] commands/data, except the commands in <u>Global Control Word 1</u> [16R/03].

   c. All <u>Modify Mission</u> [17R] commands/data.

   d. All <u>WDL Control</u> [21R] commands/data, except <u>Pre-Release WDL Update Enable</u> [21R/04/03], <u>Reset WDL Change Flags</u> [21R/04/04] and the commands in <u>WDL Control Word</u> [21R/03], and <u>IDL DL Selector</u> [21R/05/00…02] which are used to configure the <u>WDL Monitor</u> [21T] message.

   e. All <u>Mission Control</u> [22R] commands/data, except <u>Test Controls</u> [22R/06] and <u>Mod Msn Storage Location</u> [22R/08] (so platform can monitor mission data changes in <u>Critical Monitor</u> [11T] and <u>Modify Mission</u> [17T]).

   f. All <u>Seeker/Sensor Control</u> [24R] commands/data, except the commands in <u>Seeker/Sensor Control 1</u> [24R/03] and <u>Seeker/Sensor Control 2</u> [24R/04].

The mission store shall **{ss_6501}** set <u>Pre-Release WDL Update Enable</u> [21T/04/03 = 1] when the mission store is accepting pre-release controller and/or mission data updates via WDL from the current controller or designated third party IFTU source, if <u>WDL Onboard</u> [22T/05/11 = 1].

6.21R/T.2.6 <u>Reset WDL Change Flags</u> [21R/T/04/04]

<u>Reset WDL Change Flags</u> [21R/04/04] is used to reset the <u>Mission/Controller Data Changes via WDL</u> [21T/28/06…12] status indications. Note: When the platform sets

Reset WDL Change Flag at the same time a controller is changing data via the WDL (when Pre-Release WDL Update Enable [21T/04/03 = 1]), some Mission/Controller Data Changes via WDL [21T/28/06…12] status indications could appear to not reset. The mission store defaults the setting of this command to "0". This command is not able to be preplanned and must be received in the WDL Control [21R] message. Sections 6.21R/T.2.5 Pre-Release WDL Update Enable [21R/T/04/03] and 6.21R/T.13.2 Mission/Controller Data Changes via WDL [21T/28/06…12] provide additional information and requirements.

Platform Requirements

The platform shall **{ps_6558}** set Reset WDL Change Flags [21R/04/04 = 1] to command the mission store to set Mission/Controller Data Changes via WDL [21T/28/06…12 = 0] and Data Change Via WDL [22T/18/15 = 0], if WDL Onboard [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6664}** set Mission/Controller Data Changes via WDL [21T/28/06…12 = 0] and Data Change via WDL [22T/18/15 = 0] when Reset WDL Change Flags [21R/04/04 = 1], if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6666}** set Reset WDL Change Flags [21T/04/04] equal to Reset WDL Change Flags [21R/04/04], if WDL Onboard [22T/05/11 = 1].

6.21R/T.2.7　Third Party IFTU Source Enable [21R/T/04/05…06]

Third Party IFTU Source Enable [21R/T/04/05…06] enables the Third Party IFTU Source to provide inflight mission data updates to the mission store or communicate ping-only IAW Table 6.21R/T-3. Ping-only refers to communications with the store only for the purpose of establishing communications; no update information is passed to the store or accepted by the store. Enabled Third Party IFTU Source(s) do not actually take control of the store.

Table 6.21R/T-3　Third Party IFTU Source Enable [21R/T/04/05…06] Definitions

Value	Definition	Description
00 (B)	Third Party IFTU Source Disabled	Mission Store is prevented from responding to data provided via the WDL from the Third Party IFTU Source.
01 (B)	Third Party IFTU Source Ping-Only	Mission Store responds Third Party IFTU Source communications ping-only.
10 (B)	Third Party IFTU Source Fully Enabled	Mission Store responds to IFTU data received from the Third Party IFTU Source.
11 (B)	Reserved	Reserved

Platform Requirements

The platform shall **{ps_6426}** set Third Party IFTU Source Enable [21R/04/05…06] IAW Table 6.21R/T-3, if WDL Onboard [22T/05/11 = 1].

The platform shall **{ps_6427}** provide the capability to select or enter Third Party IFTU Source Enable [21R/04/05…06], if WDL Onboard [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6498}** respond to Third Party IFTU Source Enable [21R/04/05…06] IAW Table 6.21R/T-3 to enable Third Party IFTU Source communications, when WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6499}** set Third Party IFTU Source Enable [21T/04/05…06] status IAW Table 6.21R/T-3, if WDL Onboard [22T/05/11 = 1].

6.21R/T.2.8 WDL Growth Function A-B [21R/T/04/07…08]

WDL Growth Function A-B [21R/T/04/07…08] are two (2) customizable two-state (i.e., off/on) controls that enable mission store WDL growth functions, independent of the selected MDS or IDL, that are documented in the mission store supplement.

Platform Requirements

The platform shall **{ps_6473}** set WDL Growth Function A [21R/04/07 = 1] to enable WDL growth function A, if WDL Onboard [22T/05/11 = 1] and CDS WDL Growth Functions Enabled **{cds_6129}**.

The platform shall **{ps_6474}** set WDL Growth Function B [21R/04/08 = 1] to enable WDL growth function B, if WDL Onboard [22T/05/11 = 1] and CDS WDL Growth Functions Enabled **{cds_6129}**.

The platform shall **{ps_6478}** provide the capability to select or enter WDL Growth Function A-B [21R/04/07…08] commands, if WDL Onboard [22T/05/11 = 1] and CDS WDL Growth Functions Enabled **{cds_6129}**.

Mission Store Requirements

The mission store shall **{ss_6544}** activate WDL growth function A when WDL Growth Function A [21R/04/07 = 1], if WDL Onboard [22T/05/11 = 1], as documented in the mission store supplement **{sup_6223}**.

The mission store shall **{ss_6880}** set WDL Growth Function A [21T/04/07] to reflect the status of WDL growth function A, if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6545}** activate WDL growth function B when WDL Growth Function B [21R/04/08 = 1], if WDL Onboard [22T/05/11 = 1], as documented in the mission store supplement **{sup_6224}**.

The mission store shall **{ss_6881}** set WDL Growth Function B [21T/04/08] to reflect the status of WDL growth function B, if WDL Onboard [22T/05/11 = 1].

6.21R/T.3 IDL DL Settings 1 [21R/T/05]

IDL DL Settings 1 [21R/T/05] provides IDL-specific controls and monitoring functions for the WDL transceiver. The IDL DL Settings 1 [21R/T/05] apply to the IDL identified in IDL

DL Selector [21R/T/05/00…02] and are not associated with any particular mission loaded into that mission store.

Mission Store Requirements

The mission store shall **{ss_6859}** use the equivalent IDL DL settings provided in MDT-Net Participants [13R-029] for each IDL supported until receipt of a WDL Control [21R] with IDL DL Settings 1 [21R/05] that change those IDL DL settings, if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6860}** use IDL DL Settings 1 [21R/05] for the IDL identified in IDL DL Selector [21R/05/00…02] until receipt of a MDT-Net Participants [13R-029] that contains IDL DL settings for that IDL, if WDL Onboard [22T/05/11 = 1].

6.21R/T.3.1 IDL DL Selector [21R/T/05/00…02]

IDL DL Selector [21R/T/05/00…02] is a number from 1 to 7 which identifies the IDL to which the IDL DL Settings 1/2 [21R/T/05-06] apply.

Platform Requirements

The platform shall **{ps_6652}** set IDL DL Selector [21R/05/00…02] to select the IDL to which the IDL DL Settings 1/2 [21R/05-06] apply, if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 010 (B) or 011 (B)].

The platform shall **{ps_6655}** set IDL DL Selector [21R/05/00…02] to select the IDL for which IDL DL Settings 1/2 [21T/05-06] will be set, if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 001 (B) (Configure WDL Monitor Message)].

The platform shall **{ps_6653}** provide the capability to select or enter IDL DL Selector [21R/05/00…02] for which the IDL DL Settings 1/2 [21R/05-06] apply, if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 010 (B) or 011 (B)].

Mission Store Requirements

The mission store shall **{ss_6878}** apply IDL DL Settings 1/2 [21R/05-06] to the IDL indicated in IDL DL Selector [21R/05/00…02], if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 010 (B) or 011 (B)].

The mission store shall **{ss_6879}** set IDL DL Selector [21T/05/00…02] equal to IDL DL Selector [21R/05/00…02], if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6680}** set IDL DL Settings 1/2 [21T/05-06] to the IDL DL settings associated with the IDL indicated by IDL DL Selector [21T/05/00…02], if WDL Onboard [22T/05/11 = 1].

6.21R/T.3.2 WDL Transmitter Power [21R/T/05/03]

WDL Transmitter Power [21R/T/05/03] provides IDL-specific control and monitoring of the weapon data link transmitter power level(s) while the mission store is attached to the platform, assuming WDL Power Control [21R/T/04/00 = 1], WDL Transmitter Control [21R/T/05/04…05 = 01 or 11 (B)] and the mission store supports controllable WDL transmitter power. The mission store defaults this setting to low power. This command is not able to be preplanned and must be received in the WDL Control [21R] message in order to enable high transmitter power level(s) while the mission store is attached to the platform.

Platform Requirements

The platform shall **{ps_6446}** set WDL Transmitter Power [21R/05/03 = 1] to command mission store WDL transmitter(s) to high power for the IDL indicated in IDL DL Selector [21R/05/00…02] while the mission store is attached to the platform, if WDL Onboard [22T/05/11 = 1] and CDS WDL Xmit Power Select **{cds_6119}**.

The platform shall **{ps_6447}** provide the capability to select or enter WDL Transmitter Power [21R/05/03] for the desired IDL, if WDL Onboard [22T/05/11 = 1] and CDS WDL Xmit Power Select **{cds_6119}**.

Mission Store Requirements

The mission store shall **{ss_6651}** initialize its WDL transmitter(s) to low power for all IDLs while the mission store is attached to the platform and set WDL Transmitter Power [21T/05/03 = 0] for all IDLs prior to setting Platform ID Received [22T/05/02 = 1], if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6675}** set its WDL transmitter(s) to high power for the IDL indicated in IDL DL Selector [21R/05/00…02] while the mission store is attached to the platform when WDL Transmitter Power [21R/05/03 = 1], if WDL Onboard [22T/05/11 = 1], as documented in the mission store supplement **{sup_6209}**.

The mission store shall **{ss_6882}** set WDL Transmitter Power [21T/05/03] status for the IDL indicated in IDL DL Selector [21T/05/00…02], if WDL Onboard [22T/05/11 = 1].

6.21R/T.3.3 WDL Transmitter Control [21R/T/05/04…05]

WDL Transmitter Control [21R/T/05/04…05] provides IDL-specific control and monitoring of the weapon data link transmitter IAW Table 6.21R/T-7. The mission store defaults this setting to "Authorized to Transmit WDL Data - After Release Only". This command is not able to be preplanned and must be received in the WDL Control [21R] message. WDL Transmitter Control [21R/05/04…05] must be set to 01 (B) or 11 (B) (transmit before release) in order for the for the mission store to become connected to the WDL network associated with the IDL indicated in IDL DL Selector [21T/05/00…02] while the mission store is attached to the platform. Note: Some mission stores do not support all of the WDL Transmitter Control options. Sections 6.21R/T.4.1 WDL EMCON [21R/T/06/00], 6.21R/T.2.5 Pre-Release WDL Update Enable [21R/T/04/03], and

6.21R/T.13.1 <u>WDL Connectivity Status</u> [21T/28/00…01, 02…03, & 04…05] provide additional information and requirements.

Table 6.21R/T-7 <u>WDL Transmitter Control</u> [21R/05/04…05] Definitions

Value	Definition
00 (B)	Standby - Not Authorized to Transmit WDL Data
01 (B)	Authorized to Transmit WDL Data - Before Release Only
10 (B)	Authorized to Transmit WDL Data - After Release Only (Default)
11 (B)	Authorized to Transmit WDL Data - Before and After Release

Platform Requirements

The platform shall **{ps_6438}** set <u>WDL Transmitter Control</u> [21R/05/04…05] IAW Table 6.21R/T-7 for the IDL indicated in <u>IDL DL Selector</u> [21R/05/00…02], if <u>WDL Onboard</u> [22T/05/11 = 1].

The platform shall **{ps_6439}** provide the capability to select or enter <u>WDL Transmitter Control</u> [21R/05/04…05] for the desired IDL, if <u>WDL Onboard</u> [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6511}** respond to <u>WDL Transmitter Control</u> [21R/05/04…05] commands IAW Table 6.21R/T-7 for the IDL indicated in <u>IDL DL Selector</u> [21R/05/00…02], if <u>WDL Onboard</u> [22T/05/11 = 1], as documented in the mission store supplement **{sup_6296}**.

The mission store shall **{ss_6512}** set <u>WDL Transmitter Control</u> [21T/05/04…05] status IAW Table 6.21R/T-7 for the IDL indicated in <u>IDL DL Selector</u> [21T/05/00…02], for the supported options documented in the mission store supplement **{sup_6297}**, if <u>WDL Onboard</u> [22T/05/11 = 1].

6.21R/T.3.4 <u>WDL Receiver Control</u> [21R/T/05/06…07]

<u>WDL Receiver Control</u> [21R/T/05/06…07] provides IDL-specific control and monitoring of the weapon data link receiver IAW Table 6.21R/T-8. The mission store defaults this setting to "Authorized to Receive WDL Data - After Release Only". This command is not able to be preplanned and must be received in the <u>WDL Control</u> [21R] message. <u>WDL Receiver Control</u> [21R/05/06…07] must be set to 01 (B) or 11 (B) (receive before release) in order for the for the mission store to become connected to the WDL network associated with the IDL indicated in <u>IDL DL Selector</u> [21T/05/00…02] while the mission store is attached to the platform. Note: Some mission stores do not support all of the <u>WDL Transmitter Control</u> options. Sections 6.21R/T.4.1 <u>WDL EMCON</u> [21R/T/06/00], 6.21R/T.2.5 <u>Pre-Release WDL Update Enable</u> [21R/T/04/03], and 6.21R/T.13.1 <u>WDL Connectivity Status</u> [21T/28/00…01, 02…03, & 04…05] provide additional information and requirements.

Table 6.21R/T-8 WDL Receiver Control [21R/T/05/06…07] Definitions

Value	Definition
00 (B)	Standby - Not Authorized to Receive WDL Data
01 (B)	Authorized to Receive WDL Data - Before Release Only
10 (B)	Authorized to Receive WDL Data - After Release Only (Default)
11 (B)	Authorized to Receive WDL Data - Before and After Release

Platform Requirements

The platform shall **{ps_6440}** set WDL Receiver Control [21R/05/06…07] IAW Table 6.21R/T-8 for the IDL indicated in IDL DL Selector [21R/05/00…02], if WDL Onboard [22T/05/11 = 1].

The platform shall **{ps_6441}** provide the capability to select or enter WDL Receiver Control [21R/05/06…07] for the desired IDL, if WDL Onboard [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6513}** respond to WDL Receiver Control [21R/05/06…07] commands IAW Table 6.21R/T-8 for the IDL indicated in IDL DL Selector [21R/05/00…02], if WDL Onboard [22T/05/11 = 1], as documented in the mission store supplement **{sup_6298}**.

The mission store shall **{ss_6514}** set WDL Receiver Control [21T/05/06…07] status IAW Table 6.21R/T-8 for the IDL indicated in IDL DL Selector [21T/05/00…02], for the supported options documented in the mission store supplement **{sup_6299}**, if WDL Onboard [22T/05/11 = 1].

6.21R/T.3.5 WDL Antenna Pre-Launch Select [21R/T/05/08…09]

WDL Antenna Pre-Launch Select [21R/T/05/08…09] provides IDL-specific control and monitoring of the weapon data link directional antenna(s), IAW Table 6.21R/T-9 while the mission store is attached to the platform. This IDL-specific control can be preplanned and provided to the mission store in the MDT-Net Participants [13R-029] file.

Table 6.21R/T-9 WDL Antenna Pre-Launch Select [21R/T/05/08…09] Definitions

Value	Definition
00 (B)	Default - Auto Antenna Select (if applicable)
01 (B)	See Mission Store Supplement
10 (B)	See Mission Store Supplement
11 (B)	See Mission Store Supplement

Platform Requirements

The platform shall **{ps_6442}** set WDL Antenna Pre-Launch Select [21R/05/08…09] IAW Table 6.21R/T-9 for the IDL indicated in IDL DL Selector [21R/05/00…02], if WDL Onboard [22T/05/11 = 1] and CDS WDL Antenna Select **{cds_6135}**.

The platform shall **{ps_6443}** provide the capability to select or enter WDL Antenna Pre-Launch Select [21R/05/08…09] for the desired IDL, if WDL Onboard [22T/05/11 = 1] and CDS WDL Antenna Select **{cds_6135}**.

Mission Store Requirements

The mission store shall **{ss_6515}** respond to WDL Antenna Pre-Launch Select [21R/05/08…09] IAW Table 6.21R/T-9 for the IDL indicated in IDL DL Selector [21R/05/00…02], if WDL Onboard [22T/05/11 = 1], as documented in the mission store supplement **{sup_6208}**.

The mission store shall **{ss_6516}** set WDL Antenna Pre-Launch Select [21T/05/08…09] status IAW Table 6.21R/T-9 for the IDL indicated in IDL DL Selector [21T/05/00…02], if WDL Onboard [22T/05/11 = 1].

6.21R/T.3.6 WDL Antenna Post-Launch Select [21R/T/05/10…11]

WDL Antenna Post-Launch Select [21R/T/05/10…11] provides IDL-specific control and monitoring of the weapon data link directional antenna(s) after launch IAW Table 6.21R/T-10. This IDL-specific control can be preplanned and provided to the mission store in the MDT-Net Participants [13R-029] file.

Table 6.21R/T-10 WDL Antenna Post-Launch Select [21R/T/05/10…11] Definitions

Value	Definition
00 (B)	Default - Auto Antenna Select (if applicable)
01 (B)	See Mission Store Supplement
10 (B)	See Mission Store Supplement
11 (B)	See Mission Store Supplement

Platform Requirements

The platform shall **{ps_6444}** set WDL Antenna Post-Launch Select [21R/05/10…11] IAW Table 6.21R/T-10 for the IDL indicated in IDL DL Selector [21R/05/00…02], if WDL Onboard [22T/05/11 = 1] and CDS WDL Antenna Select **{cds_6135}**.

The platform shall **{ps_6445}** provide the capability to select or enter WDL Antenna Post-Launch Select [21R/05/10…11] for the desired IDL, if WDL Onboard [22T/05/11 = 1] and CDS WDL Antenna Select **{cds_6135}**.

Mission Store Requirements

The mission store shall **{ss_6517}** respond to WDL Antenna Post-Launch Select [21R/05/10…11] IAW Table 6.21R/T-10 for the IDL indicated in IDL DL Selector [21R/05/00…02], if WDL Onboard [22T/05/11 = 1], as documented in the mission store supplement **{sup_6208}**.

The mission store shall **{ss_6518}** set WDL Antenna Post-Launch Select [21T/05/10…11] status IAW Table 6.21R/T-10 for the IDL indicated in IDL DL Selector [21T/05/00…02], if WDL Onboard [22T/05/11 = 1].

6.21R/T.3.7 WDL Anti-Jam Enable [21R/T/05/12]

WDL Anti-Jam Enable [21R/T/05/12] provides IDL-specific control and monitoring of the weapon data link anti-jam features. Note: A WDL network that uses a Frequency (Frequency/Circuit Number Type [21R/T/21/00…02 = 001 (B)]) can require other information (e.g., an AJ Net Number (Frequency/Circuit Number Type [21R/T/21/00…02 = 010 (B)])) to support the anti-jam mode. If this is the case, the AJ Net Number [21R/22-24] needs to be provided in conjunction with issuing the WDL Anti-Jam Enable [21R/T/05/12 = 1] command. This IDL-specific control can be preplanned and provided to the mission store in the MDT-Net Participants [13R-029] file.

Platform Requirements

The platform shall **{ps_6448}** set WDL Anti-Jam Enable [21R/05/12 = 1] to enable the mission store WDL Anti-Jam capability for the IDL indicated in IDL DL Selector [21R/05/00…02], if WDL Onboard [22T/05/11 = 1] and CDS WDL Anti-Jam Select **{cds_6131}**.

The platform shall **{ps_6449}** provide the capability to select or enter WDL Anti-Jam Enable [21R/05/12] for the desired IDL, if WDL Onboard [22T/05/11 = 1] and CDS WDL Anti-Jam Select **{cds_6131}**.

Mission Store Requirements

The mission store shall **{ss_6520}** enable WDL Anti-Jam capability for the IDL indicated in IDL DL Selector [21R/05/00…02] when WDL Anti-Jam Enable [21R/05/12 = 1] and WDL Onboard [22T/05/11 = 1], as documented in the mission store supplement **{sup_6210}**.

The mission store shall **{ss_6883}** set WDL Anti-Jam Enable [21T/05/12] status for the IDL indicated in IDL DL Selector [21T/05/00…02], if WDL Onboard [22T/05/11 = 1].

6.21R/T.3.8 WDL Secure Mode Enable [21R/T/05/13]

WDL Secure Mode Enable [21R/T/05/13] provides IDL-specific control and monitoring of the weapon data link message security features. This IDL-specific control can be preplanned and provided to the mission store in the MDT-Net Participants [13R-029] file.

Platform Requirements

The platform shall **{ps_6450}** set WDL Secure Mode Enable [21R/05/13 = 1] for the IDL indicated in IDL DL Selector [21R/05/00…02] to enable the mission store secure mode capability, if WDL Onboard [22T/05/11 = 1] and CDS WDL Secure Mode Select **{cds_6120}**.

The platform shall **{ps_6451}** provide the capability to select or enter WDL Secure Mode Enable [21R/05/13] for the desired IDL, if WDL Onboard [22T/05/11 = 1] and CDS WDL Secure Mode Select **{cds_6120}**.

Mission Store Requirements

The mission store shall **{ss_6522}** enable its secure mode capability for the IDL indicated in <u>IDL DL Selector</u> [21R/05/00…02], when <u>WDL Secure Mode Enable</u> [21R/05/13 = 1] and <u>WDL Onboard</u> [22T/05/11 = 1], as documented in the mission store supplement **{sup_6211}**.

The mission store shall **{ss_6884}** set <u>WDL Secure Mode Enable</u> [21T/05/13] status for the IDL indicated in <u>IDL DL Selector</u> [21T/05/00…02], if <u>WDL Onboard</u> [22T/05/11 = 1].

6.21R/T.3.9 <u>PPLI Disable</u> [21R/T/05/14]

Precise Participant Location and Identification (PPLI) is an inflight position reporting feature used by network participants. The type and frequency of PPLI transmissions is preplanned and provided to the store as part of the preplanned mission data as part of the IDL. <u>PPLI Disable</u> [21R/05/14] provides the operator with an IDL-specific control to disable the mission store preplanned post-release PPLI transmissions. A separate discrete control is provided because whether to allow PPLI transmissions or not is often a decision that depends on the tactical situation at the time of store release. If PPLI is not disabled, the store will transmit PPLI as specified in the IDL. This IDL-specific control can be preplanned and provided to the mission store in the <u>MDT-Net Participants</u> [13R-029] file.

Platform Requirements

The platform shall **{ps_6583}** set <u>PPLI Disable</u> [21R/05/14 = 1] to disable the mission store preplanned post-release PPLI transmissions for the IDL indicated in <u>IDL DL Selector</u> [21R/05/00…02], if <u>CDS Network Supports PPLI</u> **{cds_6121}** and <u>WDL Onboard</u> [22T/05/11 = 1].

The platform shall **{ps_6584}** provide the capability to select or enter <u>PPLI Disable</u> [21R/05/14] for the desired IDL, if <u>CDS Network Supports PPLI</u> **{cds_6121}** and <u>WDL Onboard</u> [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6776}** disable preplanned post-release PPLI transmissions for the IDL indicated in <u>IDL DL Selector</u> [21R/05/00…02] when <u>PPLI Disable</u> [21R/05/14 = 1], if <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store shall **{ss_6777}** set <u>PPLI Disable</u> [21T/05/14] status for the IDL indicated in <u>IDL DL Selector</u> [21T/05/00…02], if <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store supplement **{sup_6300}** documents PPLI usage for each supported network type, if the store has a WDL capability.

6.21R/T.3.10 <u>Snapshot Enable</u> [21R/T/05/15]

<u>Snapshot Enable</u> [21R/T/05/15] enables/disables IDL-specific pre-planned post-release sensor imaging operations and transmission of these images via WDL. This IDL-specific

control can be preplanned and provided to the mission store in the MDT-Net Participants [13R-029] file.

Platform Requirements

The platform shall **{ps_6460}** set Snapshot Enable [21R/05/15 = 1] to enable the mission store preplanned post-release snapshot imaging capability for the IDL indicated in IDL DL Selector [21R/05/00…02], if WDL Onboard [22T/05/11 = 1] and CDS Snapshot Enabled **{cds_6123}**.

The platform shall **{ps_6461}** provide the capability to select or enter Snapshot Enable [21R/05/15] for the desired IDL, if WDL Onboard [22T/05/11 = 1] and CDS Snapshot Enabled **{cds_6123}**.

Mission Store Requirements

The mission store shall **{ss_6532}** enable the mission store preplanned post-release snapshot imaging capability for the IDL indicated in IDL DL Selector [21R/05/00…02], when Snapshot Enable [21R/05/15 = 1], if WDL Onboard [22T/05/11 = 1], as documented in the mission store supplement **{sup_6216}**.

The mission store shall **{ss_6533}** set Snapshot Enable [21T/05/15] status for the IDL indicated in IDL DL Selector [21T/05/00…02], if WDL Onboard [22T/05/11 = 1].

6.21R/T.4 IDL DL Settings 2 [21R/T/06]

IDL DL Settings 2 [21R/T/06] provides additional IDL-specific controls and monitoring for the WDL functions. The IDL DL Settings 2 [21R/T/06] apply to the IDL identified in IDL DL Selector [21R/T/05/00…02] and are not associated with any particular mission loaded into that mission store.

Mission Store Requirements

The mission store shall **{ss_6861}** use the equivalent IDL DL settings provided in MDT-Net Participants [13R-029] for each IDL supported until receipt of a WDL Control [21R] with IDL DL Settings 2 [21R/06] that change those IDL DL settings, if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6862}** use IDL DL Settings 2 [21R/06] for the IDL identified in IDL DL Selector [21R/05/00…02] until receipt of a MDT-Net Participants [13R-029] that contains IDL DL settings for that IDL, if WDL Onboard [22T/05/11 = 1].

6.21R/T.4.1 WDL EMCON [21R/T/06/00]

WDL EMCON [21R/T/06/00] is the IDL-specific WDL emissions control that overrides the IDL-specific WDL Transmitter Control [21R/05/04…05] settings and disables all mission store WDL RF transmissions for that IDL. If WDL EMCON [21R/06/00 = 1] (i.e., RF silent) when the mission store detects umbilical disconnect, the mission store remains in EMCON for that IDL until expiration of the WDL EMCON Continuation Time [21T/06/01…04]. At that point, RF transmission control reverts to the settings specified

by WDL Transmitter Control [21R/05/04…05] for that IDL. This IDL-specific control can be preplanned and provided to the mission store in the MDT-Net Participants [13R-029] file. Note: For some types of WDL waveforms, enabling WDL EMCON can disconnect the mission store from the WDL network. Section 6.21R/T.4.2 WDL EMCON Continuation Time [21R/T/06/01…04] provides additional information and requirements.

Platform Requirements

The platform shall **{ps_6424}** set WDL EMCON [21R/06/00 = 1] to disable all mission store WDL RF energy transmissions for the IDL indicated in IDL DL Selector [21R/05/00…02], if WDL Onboard [22T/05/11 = 1].

The platform shall **{ps_6425}** provide the capability to select or enter WDL EMCON [21R/06/00] command for the desired IDL, if WDL Onboard [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6494}** disable WDL RF transmissions for the IDL indicated in IDL DL Selector [21R/05/00…02] when WDL EMCON [21R/06/00 = 1], if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6609}**, if released with WDL EMCON [21R/06/00 = 1], enable WDL RF transmissions IAW WDL Transmitter Control [21R/05/04…05] settings after detection of umbilical disconnect and complying with the WDL EMCON Continuation Time [21R/06/01…04] for the IDL indicated in IDL DL Selector [21R/05/00…02], if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6495}** set WDL EMCON [21T/06/00 = 1] when its EMCON capability is activated and WDL RF transmissions are disabled for the IDL indicated in IDL DL Selector [21T/05/00…02], if WDL Onboard [22T/05/11 = 1].

6.21R/T.4.2 WDL EMCON Continuation Time [21R/T/06/01…04]

WDL EMCON Continuation Time [21R/T/06/01…04] specifies the time, IAW Table 6.21R/T-11, after mission store detection of umbilical disconnect, that the mission waits before enabling WDL RF Transmissions IAW WDL Transmitter Control [21R/05/04…05] settings for the IDL indicated in IDL DL Selector [21R/05/00…02], when WDL EMCON [21R/06/00] is enabled. This IDL-specific time can be preplanned and provided to the mission store in the MDT-Net Participants [13R-029] file. Sections 6.13R-029 MDT-Net Participants [13R-029] and 6.21R/T.4.1 WDL EMCON [21R/T/06/00] provide additional information and requirements.

Table 6.21R/T-11 WDL EMCON Continuation Time [21R/T/06/01…04] Definitions

Value	Definition
0000 (B)	After Umbilical Disconnect EMCON Delay = 0 Seconds (Default)
0001 (B)	After Umbilical Disconnect EMCON Delay = 15 Seconds
0010 (B)	After Umbilical Disconnect EMCON Delay = 30 Seconds
0011 (B)	After Umbilical Disconnect EMCON Delay = 60 Seconds
0100 (B)	After Umbilical Disconnect EMCON Delay = 120 Seconds
0101 (B)	After Umbilical Disconnect EMCON Delay = 180 Seconds

Table 6.21R/T-11 <u>WDL EMCON Continuation Time</u> [21R/T/06/01…04] Definitions

Value	Definition
0110 (B)	After Umbilical Disconnect EMCON Delay = 240 Seconds
0111 (B)	After Umbilical Disconnect EMCON Delay = 300 Seconds
1000 (B)	After Umbilical Disconnect, remain in EMCON until receiving a WDL EMCON State Change command from the controller to enable RF transmissions
All Others	Reserved

Platform Requirements

The platform shall **{ps_6520}** set <u>WDL EMCON Continuation Time</u> [21R/06/01…04] IAW Table 6.21R/T-11 for the IDL indicated in <u>IDL DL Selector</u> [21R/05/00…02], if <u>WDL Onboard</u> [22T/05/11 = 1] as required by the platform mission.

The platform shall **{ps_6521}** provide the capability to select or enter <u>WDL EMCON Continuation Time</u> [21R/06/01…04] for the desired IDL, if <u>WDL Onboard</u> [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6616}** delay activation of WDL transmitter until expiration of <u>WDL EMCON Continuation Time</u> [21R/06/01…04] IAW Table 6.21R/T-11 for the IDL indicated in <u>IDL DL Selector</u> [21R/05/00…02], if released with <u>WDL EMCON</u> [21R/06/00 = 1] for the IDL indicated in <u>IDL DL Selector</u> [21R/05/00…02] and <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store shall **{ss_6617}** set <u>WDL EMCON Continuation Time</u> [21T/06/01…04] status IAW Table 6.21R/T-11 for the IDL indicated in <u>IDL DL Selector</u> [21T/05/00…02], if <u>WDL Onboard</u> [22T/05/11 = 1].

6.21R/T.4.3 <u>Loss of Communications Timeout Period</u> [21R/T/06/05…07]

<u>Loss of Communications Timeout Period</u> [21R/T/06/05…07] is used to enable the IDL-specific Loss of communications check-in function and to define the time period, IAW Table 6.21R/T-12, that the mission store will wait after detecting a loss of WDL communications before attempting to re-establish WDL communications. This IDL-specific time can be preplanned and provided to the mission store in the <u>MDT-Net Participants</u> [13R-029] file.

Table 6.21R/T-12 <u>Loss of Communications Timeout Period</u> [21R/T/06/05…07] Definitions

Value	Definition
000 (B)	Loss of Communications Check-In Function is Disabled (Default)
001 (B)	Wait 12 Seconds Before Attempting to Re-establish Communications
010 (B)	Wait 30 Seconds Before Attempting to Re-establish Communications
011 (B)	Wait 60 Seconds Before Attempting to Re-establish Communications
100 (B)	Wait 150 Seconds Before Attempting to Re-establish Communications
101 (B)	Wait 300 Seconds Before Attempting to Re-establish Communications
110 (B)	Wait 600 Seconds Before Attempting to Re-establish Communications

Table 6.21R/T-12 Loss of Communications Timeout Period [21R/T/06/05…07] Definitions

Value	Definition
111 (B)	Wait 1200 Seconds Before Attempting to Re-establish Communications

Platform Requirements

The platform shall **{ps_6585}** set Loss of Communications Timeout Period [21R/06/05…07] IAW Table 6.21R/T-12 for the IDL indicated in IDL DL Selector [21R/05/00…02], if WDL Onboard [22T/05/11 = 1] and CDS Loss of Communications Select **{cds_6128}**.

The platform shall **{ps_6586}** provide the capability to select or enter Loss of Communications Timeout Period [21R/06/05…07] for the desired IDL, if WDL Onboard [22T/05/11 = 1] and CDS Loss of Communications Select **{cds_6128}**.

Mission Store Requirements

The mission store shall **{ss_6778}** respond to Loss of Communications Timeout Period [21R/06/05…07] commands IAW Table 6.21R/T-12 for the IDL indicated in IDL DL Selector [21R/05/00…02], if WDL Onboard [22T/05/11 = 1], as documented in the mission store supplement **{sup_6301}**.

The mission store shall **{ss_6779}** set Loss of Communications Timeout Period [21T/06/05…07] status IAW Table 6.21R/T-12 for the IDL indicated in IDL DL Selector [21T/05/00…02], if WDL Onboard [22T/05/11 = 1].

6.21R/T.4.4 WDL Growth Function C-E [21R/T/06/08…10]

WDL Growth Function C-E [21R/T/06/08…10] are three (3) IDL-specific, customizable, two-state (i.e., off/on) controls that enable mission store WDL waveform specific growth functions that are documented in the mission store supplement.

Platform Requirements

The platform shall **{ps_6475}** set WDL Growth Function C [21R/06/08 = 1] to enable WDL growth function C for the IDL indicated in IDL DL Selector [21R/05/00…02], if WDL Onboard [22T/05/11 = 1] and CDS WDL Growth Functions Enabled **{cds_6129}**.

The platform shall **{ps_6476}** set WDL Growth Function D [21R/06/09 = 1] to enable WDL growth function D for the IDL indicated in IDL DL Selector [21R/05/00…02], if WDL Onboard [22T/05/11 = 1] and CDS WDL Growth Functions Enabled **{cds_6129}**.

The platform shall **{ps_6477}** set WDL Growth Function E [21R/06/10 = 1] to enable WDL growth function E for the IDL indicated in IDL DL Selector [21R/05/00…02], if WDL Onboard [22T/05/11 = 1] and CDS WDL Growth Functions Enabled **{cds_6129}**.

The platform shall **{ps_6656}** provide the capability to select or enter <u>WDL Growth Function C-E</u> [21R/06/08…10] commands for the desired IDL, if <u>WDL Onboard</u> [22T/05/11 = 1] and <u>CDS WDL Growth Functions Enabled</u> **{cds_6129}**.

Mission Store Requirements

The mission store shall **{ss_6546}** activate WDL growth function C for the IDL indicated in <u>IDL DL Selector</u> [21R/05/00…02] when <u>WDL Growth Function C</u> [21R/06/08 = 1], if <u>WDL Onboard</u> [22T/05/11 = 1], as documented in the mission store supplement **{sup_6225}**.

The mission store shall **{ss_6885}** set <u>WDL Growth Function C</u> [21T/06/08] status for the IDL indicated in <u>IDL DL Selector</u> [21T/05/00…02], if <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store shall **{ss_6547}** activate WDL growth function D for the IDL indicated in <u>IDL DL Selector</u> [21R/05/00…02] when <u>WDL Growth Function D</u> [21R/06/09 = 1], if <u>WDL Onboard</u> [22T/05/11 = 1], as documented in the mission store supplement **{sup_6226}**.

The mission store shall **{ss_6886}** set <u>WDL Growth Function D</u> [21T/06/09] status for the IDL indicated in <u>IDL DL Selector</u> [21T/05/00…02], if <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store shall **{ss_6548}** activate WDL growth function E for the IDL indicated in <u>IDL DL Selector</u> [21R/05/00…02] when <u>WDL Growth Function E</u> [21R/06/10 = 1], if <u>WDL Onboard</u> [22T/05/11 = 1], as documented in the mission store supplement **{sup_6227}**.

The mission store shall **{ss_6887}** set <u>WDL Growth Function E</u> [21T/06/10] status for the IDL indicated in <u>IDL DL Selector</u> [21T/05/00…02], if <u>WDL Onboard</u> [22T/05/11 = 1].

6.21R/T.5 WDL Waveform Control/Monitor Word 1/2 [21R/T/07-08]

<u>WDL Waveform Control/Monitor Word 1/2</u> [21R/T/07-08] is a set of WDL controls that specifies the WDL terminal (e.g., mission store or controller), the waveform, and protocols used by the controller, and a set of WDL controls that specify the waveform and protocols used by the mission store.

6.21R/T.5.1 <u>Controller or Mission Store Terminal Select</u> [21R/T/07/00…02]

<u>Controller or Mission Store Terminal Select</u> [21R/07/00…02] is used to specify which net participant or mission store WDL network/terminal ID Data (#1, #2, or #3) is being configured by <u>WDL Control</u> [21R/07-25] data words IAW Table 6.21R/T-13. Numbering the mission store WDL network/terminal ID data as #1, #2, and #3 is an artificial convention that allows the platform to send up to three sets of configuration data to the mission store WDL terminal(s). This is necessary because some WDL terminals can support multiple types of WDL networks and each of the supported networks needs to be configured. For example, a mission store WDL terminal that supports both Link-16 and UHF networks will need to receive two sets of configuration data, one to configure

for the Link-16 network and one to configure for the UHF network. The mission store terminal will determine which data applies to which network by the WDL Waveform [21R/T/07/03…06] field and not from the Store WDL Data number. The mission store completes its terminal configuration by using the mission store network ID data in conjunction with the identified controller data on the selected waveform.

Note: Controller or Mission Store Terminal Select [21T/07/00…02] status is unused and set to zero.

Table 6.21R/T-13   Controller or Mission Store Terminal Select [21R/T/07/00…02] Definitions

Value	Definition	WDL Control [21R] Description
000 (B)	No Selection	WDL Control [21R/07-25] data words are set to 0000 (H) and do not contain WDL Network/Terminal ID data.
001 (B)	Store WDL Data #1	WDL Control [21R/07-20] data words contain Mission Store Network ID data #1.
010 (B)	Store WDL Data #2	WDL Control [21R/07-20] data words contain Mission Store Network ID data #2.
011 (B)	Store WDL Data #3	WDL Control [21R/07-20] data words contain Mission Store Network ID data #3.
100 (B)	Net Participant WDL Data	WDL Control [21R/07-25] data words contain Net Participant WDL Network/Terminal ID data for the Net Participant identified by Net Participant Index [21R/03/03…07].
101 (B)	Reserved	Reserved
110 (B)	Reserved	Reserved
111 (B)	Reserved	Reserved

Platform Requirements

The platform shall **{ps_6587}** set Controller or Mission Store Terminal Select [21R/07/00…02] IAW Table 6.21R/T-13 to specify the net participant or mission store WDL network/terminal to which the WDL network/terminal ID data in the current WDL Control [21R/07-25] data words is to be assigned, if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

The platform shall **{ps_6588}** provide the capability to select or enter Controller or Mission Store Terminal Select [21R/07/00…02] IAW Table 6.21R/T-13, for the net participant or mission store WDL network/terminal, if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

Mission Store Requirements

The mission store shall **{ss_6780}** use the data in WDL Control [21R/07-25] for the net participant or mission store WDL network/terminal specified in Controller or Mission Store Terminal Select [21R/07/00…02] IAW Table 6.21R/T-13, if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

The mission store shall **{ss_6781}** set Controller or Mission Store Terminal Select [21T/07/00…02 = 000 (B)].

6.21R/T.5.2 WDL Waveform [21R/T/07/03…06]

WDL Waveform [21R/T/07/03…06] identifies weapon data link type, IAW Table 6.21R/T-14 for the terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02] or WDL Monitor Select [21T/03/09…11].

Table 6.21R/T-14 WDL Waveform [21R/T/07/03…06] Definitions

Value	Definition
0000 (B)	None
0001 (B)	WDL Waveform is Link-16
0010 (B)	WDL Waveform is UHF
0011 (B)	WDL Waveform is MSS
0100 (B)	WDL Waveform is MSS Circuit Switched
0101 (B)	WDL Waveform is IP-ATDL
0110 (B)	WDL Waveform Reserved
0111 (B)	WDL Waveform Reserved
1000 (B)	WDL Waveform Reserved
1001 (B)	WDL Waveform Reserved
1010 (B)	WDL Waveform Reserved
1011 (B)	WDL Waveform Reserved
1100 (B)	WDL Waveform Reserved
1101 (B)	WDL Waveform Reserved
1110 (B)	WDL Waveform Reserved
1111 (B)	WDL Waveform Reserved

Platform Requirements

The platform shall **{ps_6589}** set WDL Waveform [21R/07/03…06] IAW Table 6.21R/T-14, for the WDL network/terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02], if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

The platform shall **{ps_6590}** provide the capability to select or enter WDL Waveform [21R/07/03…06] IAW Table 6.21R/T-14 for the WDL network/terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02], if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

Mission Store Requirements

The mission store shall **{ss_6782}** use the WDL Waveform [21R/07/03…06] IAW Table 6.21R/T-14, to configure the WDL network/terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02], if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)], as documented in the mission store supplement **{sup_6302}**.

The mission store shall **{ss_6783}** set WDL Waveform [21T/07/03…06] status IAW Table 6.21R/T-14, for the WDL network/terminal specified by WDL Monitor Select [21T/03/09…11], if WDL Onboard [22T/05/11 = 1].

6.21R/T.5.3 Network Time Sync [21R/T/07/07]

Network Time Sync [21R/07/07] commands the mission store to use the WDL Network Time/TOD Offset [03R/11-12] for synchronization of the mission store WDL terminal with the WDL network identified in Controller or Mission Store Terminal Select [21R/07/00…02] when the mission store WDL transceiver joins that network. Note that this may be immediately if the mission store WDL terminal is powered on and transmitting, or it may be after release for some mission stores which do not power on until after release. The mission store synchronizes with the network using the value in WDL Network Time/TOD Offset [03R/11-12] when the Network Time Sync [21R/07/07] transitions from logic 0 to logic 1. Network Time Sync [21R/07/07] transitioning back to logic 0 results in no action and the mission store retains the commanded WDL Network Time/TOD Offset [03R/11-12] time value for synchronization until a subsequent Network Time Sync [21R/07/07] command is received. Note: Network Time Sync [21R/07/07] is only applicable when configuring the mission store terminal (i.e., when Controller or Mission Store Terminal Select [21R/07/00…02 = 001 (B), 010 (B), or 011 (B)]). Sections 6.03R.3.2 WDL Network Time Reference Type [03R/07/01…02] and 6.03R.7 WDL Network Time/TOD Offset [03R/11-12] provide additional information and requirements.

Platform Requirements

The platform shall **{ps_6465}** set Network Time Sync [21R/07/07 = 1] to command the mission store to synchronize with the network identified in Controller or Mission Store Terminal Select [21R/07/00…02] using WDL Network Time/TOD Offset [03R/11-12], if CDS Network Uses TOD Offset **{cds_6130}** and WDL Onboard [22T/05/11 = 1].

The platform shall **{ps_6466}** provide the capability to select or enter the Network Time Sync [21R/07/07], if CDS Network Uses TOD Offset **{cds_6130}** and WDL Onboard [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6536}** respond to Network Time Sync [21R/07/07] transitioning to logic 1 by using WDL Network Time/TOD Offset [03R/11-12] for synchronization of the mission store WDL terminal with the WDL network identified in Controller or Mission Store Terminal Select [21R/07/00…02], if WDL Onboard [22T/05/11 = 1] and using a WDL network that uses TOD offset, as documented in the mission store supplement **{sup_6219}**.

The mission store shall **{ss_6537}** set Network Time Sync [21T/07/07] to the value used for the WDL network/terminal specified by WDL Monitor Select [21T/03/09…11], if WDL Onboard [22T/05/11 = 1] and using a WDL network that uses TOD offset.

The mission store supplement **{sup_6294}** documents how the mission store synchronizes its WDL terminal to WDL Network Time/TOD Offset [03R/11-12], if released prior to completing a network time synchronization, WDL Onboard [22T/05/11 = 1], and the WDL network uses TOD offset.

6.21R/T.5.4 <u>Obtain External Time Reference</u> [21R/T/07/08]

<u>Obtain External Time Reference</u> [21R/T/07/08] commands the mission store to obtain network time synchronization via an off-platform network time synchronization source IAW Table 6.21R/T-5. Note: Most platforms with internal weapons bays are not capable of providing an off-platform network time synchronization source to mission stores that are carried inside these internal weapons bays.

Table 6.21R/T-5 <u>Obtain External Time Reference</u> [21R/T/07/08]

Value	Description
0 (B)	Do Not Synchronize WDL Transceiver to an External (Off-Platform) Time Synchronization Source.
1 (B)	Synchronize WDL Transceiver to an External (Off-Platform) Time Synchronization Source.

Notes:
1. <u>Obtain External Time Reference</u> [21R/T/07/08] is only used when <u>UHF Terminal Configuration</u> [22T/18/01 = 1].
2. For UHF: When <u>Obtain External Time Reference</u> [21R/07/08] command transitions from logic 0 to logic 1, the mission store sets <u>Obtain External Time Reference</u> [21T/07/08 = 1] and tunes its WDL UHF transceiver to <u>Frequency</u> [21R/22-24] and accepts the first time of day (TOD) signal to perform HAVE QUICK Time of Day (TOD) synchronization. Once the mission store completes HAVE QUICK TOD synchronization, the mission store resets <u>Obtain External Time Reference</u> [21T/07/08 = 0].
3. For UHF: Reference MIL-STD-188-220, MIL-STD-188-243, and JIEO-9120A.

Platform Requirements

The platform may **{pm_6050}** set <u>Obtain External Time Reference</u> [21R/07/08] IAW Table 6.21R/T-5, to command the mission store to obtain a network time synchronization from an off-platform time synchronization source, if <u>WDL Onboard</u> [22T/05/11 = 1] and <u>UHF Terminal Configuration</u> [22T/18/01 = 1].

The platform may **{pm_6051}** provide the capability to select or enter <u>Obtain External Time Reference</u> [21R/07/08], if <u>WDL Onboard</u> [22T/05/11 = 1] and <u>UHF Terminal Configuration</u> [22T/18/01 = 1].

Mission Store Requirements

The mission store shall **{ss_6534}** respond to <u>Obtain External Time Reference</u> [21R/07/08] IAW Table 6.21R/T-5 to obtain the UHF time synchronization from an off-platform time synchronization source, if <u>WDL Onboard</u> [22T/05/11 = 1] and <u>UHF Terminal Configuration</u> [22T/18/01 = 1], as documented in the mission store supplement **{sup_6218}**.

The mission store shall **{ss_6535}** set <u>Obtain External Time Reference</u> [21T/07/08 = 1] when synchronizing the mission store UHF terminal to an External (Off-Platform) Time Synchronization Source, if <u>WDL Onboard</u> [22T/05/11 = 1] and <u>UHF Terminal Configuration</u> [22T/18/01 = 1].

The mission store supplement **{sup_6248}** documents how the mission store obtains a network time synchronization from an off-platform network time synchronization source, if released prior to completing a network time

synchronization, WDL Onboard [22T/05/11 = 1], and UHF Terminal Configuration [22T/18/01 = 1].

6.21R/T.5.5 Key Rollover [21R/T/07/15]

For some networks (UHF as an example), the rollover from the current crypto period to the next crypto period (or next short title depending on the keys loaded at initialization) does not occur at a set time but occurs at various times based on the controlling authority direction (referred to as manual key rollover). Key Rollover [21R/07/15] provides a means for the platform to tell the store terminal to rollover to the next crypto period on a particular network when advised of the rollover by the controlling authority. This function is a one-time (aperiodic), irrevocable action based on the transition of Key Rollover [21R/07/15] from logic 0 to logic 1.

Note: Key Rollover [21R/07/15] is only applicable when configuring the mission store terminal (i.e., when Controller or Mission Store Terminal Select [21R/07/00…02 = 001 (B), 010 (B), or 011 (B)]).

Platform Requirements

The platform shall **{ps_6597}** set Key Rollover [21R/07/15 = 1] to command the mission store WDL terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02] to rollover to the next crypto period or next short title, as applicable, if CDS Network Supports Manual Key Rollover **{cds_6122}**, WDL Onboard [22T/05/11 = 1], and WDL Configuration Select [21R/03/00…02 = 011 (B)].

The platform shall **{ps_6598}** provide the capability to select or enter Key Rollover [21R/07/15] for the mission store WDL terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02], if CDS Network Supports Manual Key Rollover **{cds_6122}**, WDL Onboard [22T/05/11 = 1], and WDL Configuration Select [21R/03/00…02 = 011 (B)].

Mission Store Requirements

The mission store shall **{ss_6788}** cause the mission store WDL terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02] to rollover to the next crypto period or next short title, as applicable, when Key Rollover [21R/07/15] transitions from logic 0 to logic 1, if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

The mission store shall **{ss_6789}** set Key Rollover [21T/07/15] status for the WDL network/terminal specified by WDL Monitor Select [21T/03/09…11], if WDL Onboard [22T/05/11 = 1].

The mission store supplement **{sup_6307}** documents manual Key Rollover usage for each supported network type, if the store has a WDL capability.

6.21R/T.5.6 Network IP Address Type [21R/T/08/00…01]

Network IP Address Type [21R/T/08/00…01] IAW Table 6.21R/T-15, identifies the type of WDL network addressing used in Network IP Address [21R/T/09-16] data words for

the WDL network/terminal specified by <u>Controller or Mission Store Terminal Select</u> [21R/07/00…02] or <u>WDL Monitor Select</u> [21T/03/09…11].

Table 6.21R/T-15 <u>Network IP Address Type</u> [21R/T/08/00…01] Definitions

Value	Definition
00 (B)	<u>Network IP Address</u> [21R/T/09-16] is Not Used (Default)
01 (B)	<u>Network IP Address</u> [21R/T/09-16] is an IPV4 (32-bit) Network IP Address and a (32-bit) Net Mask Number
10 (B)	<u>Network IP Address</u> [21R/T/09-16] is an IPV6 (128-bit) Network IP Address
11 (B)	Reserved

Platform Requirements

The platform shall **{ps_6591}** set <u>Network IP Address Type</u> [21R/08/00…01] IAW Table 6.21R/T-15 for the WDL network/terminal specified by <u>Controller or Mission Store Terminal Select</u> [21R/07/00…02], if <u>CDS Network Uses Network IP Address</u> **{cds_6124}** and <u>WDL Onboard</u> [22T/05/11 = 1] and <u>WDL Configuration Select</u> [21R/03/00…02 = 011 (B)].

The platform shall **{ps_6592}** provide the capability to select or enter <u>Network IP Address Type</u> [21R/08/00…01] IAW Table 6.21R/T-15 for the WDL network/terminal specified by <u>Controller or Mission Store Terminal Select</u> [21R/07/00…02], if <u>CDS Network Uses Network IP Address</u> **{cds_6124}**, <u>WDL Onboard</u> [22T/05/11 = 1], and <u>WDL Configuration Select</u> [21R/03/00…02 = 011 (B)].

The platform shall **{ps_6593}** set <u>Network IP Address Type</u> [21R/08/00…01 = 00 (B)] IAW Table 6.21R/T-15 for the WDL network/terminal specified by <u>Controller or Mission Store Terminal Select</u> [21R/07/00…02], if <u>CDS Network Uses Network IP Address</u> **{cds_6124}** is disabled.

Mission Store Requirements

The mission store shall **{ss_6784}** use the <u>Network IP Address Type</u> [21R/08/00…01] commands IAW Table 6.21R/T-15 to configure the WDL network/terminal specified by <u>Controller or Mission Store Terminal Select</u> [21R/07/00…02], if <u>WDL Onboard</u> [22T/05/11 = 1] and <u>WDL Configuration Select</u> [21R/03/00…02 = 011 (B)], as documented in the mission store supplement **{sup_6303}**.

The mission store shall **{ss_6785}** set <u>Network IP Address Type</u> [21T/08/00…01] status IAW Table 6.21R/T-15, for the WDL network/terminal specified by <u>WDL Monitor Select</u> [21T/03/09…11], if <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store supplement **{sup_6304}** documents Network IP Address usage for each supported network type, if the store has a WDL capability.

6.21R/T.5.7 <u>Terminal ID Type</u> [21R/T/08/02…04]

<u>Terminal ID Type</u> [21R/T/08/02…04] IAW Table 6.21R/T-16, identifies the WDL terminal type in <u>Terminal ID</u> [21R/T/18-19] for the WDL network/terminal specified by <u>Controller</u>

or Mission Store Terminal Select [21R/07/00…02] or WDL Monitor Select [21T/03/09…11].

Table 6.21R/T-16 Terminal ID Type [21R/T/08/02…04]

Value	Description
000 (B)	Terminal ID [21R/T/18-19] is Not Used (Default)
001 (B)	Terminal ID [21R/T/18-19] data words contain a 24-bit Unit Reference Number (URN).
010 (B)	Terminal ID [21R/T/18-19] data words contain a 32-bit MSS Terminal ID (MTID)
011 (B)	Reserved
100 (B)	Reserved
101 (B)	Reserved
110 (B)	Reserved
111 (B)	Reserved

Platform Requirements

The platform shall **{ps_6594}** set Terminal ID Type [21R/08/02…04] IAW Table 6.21R/T-16 for the WDL network/terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02] based on CDS Network Terminal ID **{cds_6125}**, if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

The platform shall **{ps_6595}** provide the capability to select or enter Terminal ID Type [21R/08/02…04] IAW Table 6.21R/T-16, for the WDL network/terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02] based on CDS Network Terminal ID **{cds_6125}**, if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

Mission Store Requirements

The mission store shall **{ss_6786}** use the Terminal ID Type [21R/08/02…04] commands IAW Table 6.21R/T-16, to configure the WDL network/terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02], if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)], as documented in the mission store supplement **{sup_6305}**.

The mission store shall **{ss_6787}** set Terminal ID Type [21T/08/02…04] IAW Table 6.21R/T-16, for the WDL network/terminal specified by WDL Monitor Select [21T/03/09…11], if WDL Onboard [22T/05/11 = 1].

The mission store supplement **{sup_6306}** documents the type of Terminal ID used for each supported network type, if the store has a WDL capability.

6.21R/T.5.8 WDL Terminal IDL Select [21R/T/08/05…07]

The mission store WDL terminal types are initialized using a terminal Initialization Data Load (IDL), where each IDL incorporates unique settings to ensure WDL network compatibility with legacy WDL controller terminal(s). These mission store WDL terminal IDL(s) are generated by the mission planning system and transferred via a Data

Transfer Device (DTD) to the platform, and in-turn are provided to the mission store via MDT-WDL Terminal Initialization [13R-023] message(s). Multiple WDL IDLs are numbered sequentially starting with 1 and are stored in sequential order in mission store memory. Note: The mission store provides the number of WDL terminal IDLs available in WDL Terminal IDL Count [21T/29/09…11]. Sections 6.13R-023 MDT-WDL Terminal Initialization [13R-023] and 6.21R/T.14.2 WDL Terminal IDL Count [21T/29/09…11] provide additional information and requirements.

WDL Terminal IDL Select [21R/08/05…07] provides the capability for the platform (or platform operator) to select the specific available WDL terminal IDL, IAW Table 6.21R/T-17, to use for the net participant specified by Net Participant Index [21R/03/03…07] when WDL Configuration Select [21R/03/00…02 = 011 (B)] and Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)].

Note: WDL Terminal IDL Select [21R/08/05…07] is only applicable when configuring a net participant (i.e., when Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)]).

Table 6.21R/T-17 WDL Terminal IDL Select [21R/T/08/05…07] Definitions

Value	Definition
000 (B)	No IDL Selected (Default).
001 (B)	IDL #1, as generated by the mission planning system.
010 (B)	IDL #2, as generated by the mission planning system.
011 (B)	IDL #3, as generated by the mission planning system.
100 (B)	IDL #4, as generated by the mission planning system.
101 (B)	IDL #5, as generated by the mission planning system.
110 (B)	IDL #6, as generated by the mission planning system.
111 (B)	IDL #7, as generated by the mission planning system.

Platform Requirements

The platform shall **{ps_6565}** set WDL Terminal IDL Select [21R/08/05…07] IAW Table 6.21R/T-17 as limited by WDL Terminal IDL Count [21T/29/09…11], for the net participant specified by Net Participant Index [21R/03/03…07] when Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)], WDL Onboard [22T/05/11 = 1], WDL Configuration Select [21R/03/00…02 = 011 (B)], and CDS WDL Terminal Initialization Select Enabled **{cds_6141}**.

The platform shall **{ps_6564}** provide the capability to select or enter WDL Terminal IDL Select [21R/08/05…07] as limited by WDL Terminal IDL Count [21T/29/09…11], for the mission store WDL terminal specified by Net Participant Index [21R/03/03…07] when Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)], WDL Onboard [22T/05/11 = 1], WDL Configuration Select [21R/03/00…02 = 011 (B)], and CDS WDL Terminal Initialization Select Enabled **{cds_6141}**.

The platform shall **{ps_6596}** set WDL Terminal IDL Select [21R/08/05…07 = 000 (B)] when Controller or Mission Store Terminal Select [21R/07/00…02 ≠ 100 (B)] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

Mission Store Requirements

The mission store shall **{ss_6654}** use the IDL specified in <u>WDL Terminal IDL Select</u> [21R/08/05…07] IAW Table 6.21R/T-17 for the net participant specified by <u>Net Participant Index</u> [21R/03/03…07] when <u>Controller or Mission Store Terminal Select</u> [21R/07/00…02 = 100 (B)], <u>WDL Onboard</u> [22T/05/11 = 1], and <u>WDL Configuration Select</u> [21R/03/00…02 = 011 (B)], as documented in the mission store supplement **{sup_6250}**.

The mission store shall **{ss_6655}** set <u>WDL Terminal IDL Select</u> [21T/08/05…07] IAW Table 6.21R/T-17 for the net participant specified by <u>Net Participant Index</u> [21T/03/03…07] when <u>WDL Monitor Select</u> [21T/03/09…11 = 100 (B)] and <u>WDL Onboard</u> [22T/05/11 = 1].

6.21R/T.6 Network Internet Protocol (IP) Address [21R/T/09-16]

The <u>Network IP Address</u> [21R/T/09-16] is a multi-use field that contains either zeroized data, a 32-bit IPV4 <u>Network IP Address</u> plus a 32-bit Net Mask Number, or a 128-bit IPV6 <u>Network IP Address</u>, as indicated in <u>Network IP Address Type</u> [21R/T/08/00…01] for the WDL network/terminal specified by <u>Controller or Mission Store Terminal Select</u> [21R/07/00…02] or <u>WDL Monitor Select</u> [21T/03/09…11]. Section 6.21R/T.5.6 <u>Network IP Address Type</u> [21R/T/08/00…01] provides additional information and requirements.

6.21R/T.6.1 Internet Protocol (IP) Version 4 (IPV4)

Internet Protocol (IP) Version 4 (IPV4) is the first generation network standard used by electronic devices to exchange data across a packet-switched network. IPV4 addresses are 32-bits long, limiting it to 2^{32} or 4,294,967,295 unique addresses, many of which are reserved for special purposes, limiting the number of available addresses that can used by weapon data link applications. IPV4 addresses are normally written in a dotted-decimal notation (e.g., 207.142.131.235). Table 6.21R/T-18 depicts the other possible IPV4 address formats, for the same IPV4 address.

Table 6.21R/T-18 IPV4 Address Notation Examples

Address Notation	Address Value
Dotted Decimal (Note 1)	207.142.131.235
Dotted Hexadecimal	CF.8E.83.EB
Decimal	3482223595
Hexadecimal (Note 2, 3)	CF8E83EB

Notes:
1. IPV4 addresses are normally provided to and entered by operators in a dotted-decimal notation.
2. IPV4 addresses are provided to/from the mission store, via <u>Network IP Address</u> [21R/T/15-16], as hexadecimal values.
3. The platform is required to convert operator entered or selected IPV4 dotted-decimal notation addresses into hexadecimal values for transmission to the mission store.
4. Leading zeros in a dotted-decimal address group can be omitted. Thus 002.083.000.005 can be shortened to 2.83.0.5.

6.21R/T.6.2 Net Mask Number

Net Mask Number reflects the local area network size and is used for internet protocol addressing supporting classless inter domain routing. It is a 32-bit number that is formatted in the same manner as an IPV4 address.

6.21R/T.6.3 Internet Protocol (IP) Version 6 (IPV6)

Internet Protocol (IP) Version 6 (IPV6) is the second generation network standard used by electronic devices to exchange data across a packet-switched network. It follows IPV4 as the second version of the Internet Protocol to be formally adopted for general use. The primary change from IPV4 to IPV6 is the length of network addresses. IPV6 addresses are 128 bits long, providing 2^{128} or 3.4×10^{38} unique addresses. IPV6 addresses are normally written in a colon-hexadecimal notation as eight groups of four hexadecimal digits (e.g., 2001:0db8:85a3:08d3:1319:8a2e:0370:7334). Table 6.21R/T-19 depicts the other possible IPV6 address formats, for the same IPV6 address.

Table 6.21R/T-19 IPV6 Colon-Hexadecimal Address Notation Examples

IPV6 Address Notation	Address Value
2001:0db8:0000:0000:0000:0000:1428:57ab 2001:0db8:0000:0000:0000::1428:57ab 2001:0db8:0:0:0:0:1428:57ab 2001:0db8:0::0:1428:57ab 2001:0db8::1428:57ab	If any set of consecutive four-digit groups are equal to 0000 (H), the zeros may be omitted, and replaced by a double colon, as long as there is only one double colon used in an IPV6 address. Therefore, all of these IPV6 addresses are valid and equivalent.
2001:0db8:0000:0000:0000:0000:1428:57ab Network Prefix Host-Addressing Suffix	IPV6 addresses are normally composed of two logical parts: a 64-bit network prefix, and a 64-bit host-addressing suffix.
Controller IPV Network Address: 2001:0db8:0000:0000:0000:0000:1428:57ab Mission Store IPV6 Network Address: 2001:0db8:0000:0000:0000:0000:020a:f307	An IPV6 network (or subnet) is a contiguous group of IPV6 addresses the size of which must be a power of two; the initial bits of addresses which are identical for all hosts in the network are called the network's prefix.
0021:0db8:0000:0000:00ab:0000:020a:0007 21:db8:0:0:ab:0:20a:7 21:db8:0::ab:0:20a:7 21:db8::ab:0:20a:7	Leading zeros in a colon-hexadecimal address group can be omitted. Therefore, these IPV6 addresses are valid and equivalent.

Notes:
1. IPV6 addresses are normally provided to and entered by operators in a colon-hexadecimal notation.
2. IPV6 addresses are provided to/from the mission store, via Network IP Address [21R/T/09-16], as hexadecimal values.
3. For weapon data link applications, the platform is required to convert the operator entered colon-hexadecimal IPV6 address into a hexadecimal address for transmission to the mission store.

6.21R/T.6.4 Network IP Address [21R/T/09-16]

Network IP Address [21R/T/09-16] is a multi-use field that contain either all zeroes or a 32-bit IPV4 address plus a 32-bit Net Mask Number, or a 128-bit IPV6 address, as specified by Network IP Address Type [21R/T/08/00…01] for the WDL network/terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02] or WDL Monitor Select [21T/03/09…11].

Table 6.21R/T-20 describes how IPV4, Net Mask Number, and IPV6 Network IP Addresses are mapped into Network IP Address [21R/T/09-16]. Section 6.21R/T.5.6 Network IP Address Type [21R/T/08/00…01] provides additional information and requirements.

Table 6.21R/T-20 Network IP Address [21R/T/09-16] Definitions

Network IP Address Word	Network IP Address Type [21R/T/07/07…08]		
	00 (B) = Not Used	01 (B) = IPV4	10 (B) = IPV6
[21R/T/09]	0000 (H)	0000 (H)	IPV6 Address MSW
[21R/T/10]	0000 (H)	0000 (H)	IPV6 Address Word 2
[21R/T/11]	0000 (H)	0000 (H)	IPV6 Address Word 3
[21R/T/12]	0000 (H)	0000 (H)	IPV6 Address Word 4
[21R/T/13]	0000 (H)	Net Mask Number MSW	IPV6 Address Word 5
[21R/T/14]	0000 (H)	Net Mask Number LSW	IPV6 Address Word 6
[21R/T/15]	0000 (H)	IPV4 Address MSW	IPV6 Address Word 7
[21R/T/16]	0000 (H)	IPV4 Address LSW	IPV6 Address LSW

Platform Requirements

The platform shall **{ps_6599}** set Network IP Address [21R/09-16] IAW Table 6.21R/T-20 for the WDL network/terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02], if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

The platform shall **{ps_6600}** provide the capability to select or enter Network IP Address [21R/09-16] IAW Table 6.21R/T-20, for the WDL network/terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02], if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

Mission Store Requirements

The mission store shall **{ss_6790}** use the Network IP Address [21R/09-16] commands IAW Table 6.21R/T-20, to configure the WDL network/terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02], if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)], as documented in the mission store supplement **{sup_6308}**.

The mission store shall **{ss_6791}** set Network IP Address [21T/09-16] status IAW Table 6.21R/T-20, for the WDL network/terminal specified by WDL Monitor Select [21T/03/09…11], if WDL Onboard [22T/05/11 = 1].

6.21R/T.7 Root Terminal ID [21R/T/17]

Root Terminal ID [21R/T/17] contains a 15-bit JTIDS Unit ID (JUID) which is the root terminal identifier for all waveforms supporting Network Enabled Weapons (NEW). The JUID is a 15-bit numeric group consisting of five three-bit groups, where each three-bit group represents a numeric character of zero through seven.

Note: Some JUID values are not usable. MIL-STD-6016C defines 00077 (Octal) and 07777 (Octal) as illegal values.

Platform Requirements

The platform shall **{ps_6601}** set Root Terminal ID [21R/17] to the JTIDS Unit ID for the WDL network/terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02], if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

The platform shall **{ps_6602}** provide the capability to select or enter Root Terminal ID [21R/17] for the WDL network/terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02], if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

Mission Store Requirements

The mission store shall **{ss_6792}** use the Root Terminal ID [21R/17] to configure the WDL network/terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02], if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)], as documented in the mission store supplement **{sup_6309}**.

The mission store shall **{ss_6793}** set Root Terminal ID [21T/17] to the JTIDS Unit ID for the WDL network/terminal specified by WDL Monitor Select [21T/03/09…11], if WDL Onboard [22T/05/11 = 1].

6.21R/T.8 Terminal ID [21R/T/18-19]

Terminal ID [21R/T/18-19] is a multi-use field that contains either a 24-bit Unit Reference Number (URN) or a 32-bit MSS Terminal ID (MTID) for the WDL network/terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02] or WDL Monitor Select [21T/03/09…11].

Table 6.21R/T-21 describes how a URN or an MTID is mapped into Terminal ID [21R/T/18-19]. Section 6.21R/T.5.7 Terminal ID Type [21R/T/08/02…04] provides additional information and requirements.

Table 6.21R/T-21 Terminal ID [21R/T/18-19] Definitions

Terminal ID Type [21R/T/07/09…11]	Terminal ID (MSW) [21R/T-18]																Terminal ID (LSW) [21R/T-19]															
	MSB 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 LSB	MSB 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 LSB
001 (B) URN	Not Used (8-bits)								Unit Reference Number (URN) (24-bits)																							
									0	1	2	3	4	5	6	7	8	9	10	11	12	11	14	15	16	17	18	19	20	21	22	23
010 (B) MTID	MSS Terminal ID (MTID) (32-bits)																															
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
000 (B) and 011 (B) - 111 (B) Not Used	Not Used (32-bits)																															

Notes:
1. Unit Reference Number (URN) is used with Ultra High Frequency (UHF) Combat Net Radio (CNR) and possibly with other network types.

2. MSS Terminal ID (MTID) is used with Mobile Satellite Service (MSS) Terminal Identifier and possibly with other network types.

Platform Requirements

The platform shall **{ps_6603}** set Terminal ID [21R/18-19] IAW Table 6.21R/T-21 for the WDL network/terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02], if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

The platform shall **{ps_6604}** provide the capability to select or enter Terminal ID [21R/18-19] data IAW Table 6.21R/T-21, for the WDL network/terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02], if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

Mission Store Requirements

The mission store shall **{ss_6794}** use the Terminal ID [21R/18-19] commands IAW Table 6.21R/T-21, to configure the WDL network/terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02], if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

The mission store shall **{ss_6795}** set Terminal ID [21T/18-19] status IAW Table 6.21R/T-21, for the WDL network/terminal specified by WDL Monitor Select [21T/03/09…11], if WDL Onboard [22T/05/11 = 1].

6.21R/T.9 DL Address [21R/T/20]

DL Address [21R/T/20] contains a 7-bit or 16-bit data link address. DL Address is another layer of addressing that is sometimes used with waveforms supporting Network Enabled Weapons (NEW). The 7-bit DL Address is sometimes used with the UHF waveform and could possibly also be used with other waveforms. The 16-bit DL Address is sometimes used with the IP-ATDL waveform and could possibly also be used with other waveforms.

Platform Requirements

The platform shall **{ps_6605}** set DL Address [21R/20] to the appropriate data link address for the WDL network/terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02] based on CDS Network DL Address **{cds_6126}**, if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

The platform shall **{ps_6606}** provide the capability to select or enter DL Address [21R/20] for the WDL network/terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02] based on CDS Network DL Address **{cds_6126}**, if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

Mission Store Requirements

The mission store shall **{ss_6796}** use the DL Address [21R/20] to configure the WDL network/terminal specified by Controller or Mission Store Terminal Select [21R/07/00…02], if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

The mission store shall **{ss_6797}** set DL Address [21T/20] to the appropriate data link address for the WDL network/terminal specified by WDL Monitor Select [21T/03/09…11], if WDL Onboard [22T/05/11 = 1].

The mission store supplement **{sup_6310}** documents DL Address usage for each supported network type, if the store has a WDL capability.

6.21R/T.10 Frequency/Circuit Number [21R/T/21-24] Data Words

The Frequency/Circuit Number [21R/T/21-24] are multi-use data words that contain some WDL frequency/circuit number protocol controls and either a WDL Frequency (in Hz), an Anti-Jam (AJ) Net Number, a 13-digit WDL Circuit Number, or a Frequency/Spectrum Control Code for the net participant specified by Net Participant Index [21R/T/03/03…07] when Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)] or WDL Monitor Select [21T/03/09…11 = 100 (B)].

6.21R/T.10.1 Frequency/Circuit Number Type [21R/T/21/00…02]

Frequency/Circuit Number Type [21R/T/21/00…02] IAW Table 6.21R/T-22, identifies the type of net participant information being provided in Frequency/Circuit Number [21R/T/21-24] data words.

Table 6.21R/T-22 Frequency/Circuit NumberType [21R/T/21/00…02] Definitions

Value	Definition
000 (B)	Frequency/Circuit Number [21R/T/21-24] is Not Used (Default).
001 (B)	Frequency/Circuit Number [21R/T/21-24] contains a WDL Frequency (1 Hz to 999.9 GHz). See Store Supplement for more details.
010 (B)	Frequency/Circuit Number [21R/T/21-24] contains a WDL AJ Net Number (A00.000 to B99.975). See Store Supplement for more details.
011 (B)	Frequency/Circuit Number [21R/T/21-24] contains a Circuit Number (13 digits). See Store Supplement for more details.
100 (B)	Frequency/Circuit Number [21R/T/21-24] contains a Frequency/Spectrum Control Code (0000 to FFFF (H)). See Store Supplement for more details.
All others	Reserved

Platform Requirements

The platform shall **{ps_6607}** set Frequency/Circuit Number Type [21R/21/00…02] IAW Table 6.21R/T-22 for the net participant specified by Net Participant Index [21R/03/03…07] when Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)] and based on CDS Network Frequency/Circuit Number Type **{cds_6127}**, if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

The platform shall **{ps_6608}** provide the capability to select or enter Frequency/Circuit Number Type [21R/21/00…02] data IAW Table 6.21R/T-22, for the net participant specified by Net Participant Index [21R/03/03…07] when Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)] and based on CDS Network Frequency/Circuit Number Type **{cds_6127}**, if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

Mission Store Requirements

The mission store shall **{ss_6798}** use the Frequency/Circuit Number Type [21R/21/00…02] IAW Table 6.21R/T-22, for the net participant specified by Net Participant Index [21R/03/03…07] when Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)], if WDL Onboard [22T/05/11 = 1] and WDL Configuration Select [21R/03/00…02 = 011 (B)].

The mission store shall **{ss_6799}** set Frequency/Circuit Number Type [21T/21/00…02] status IAW Table 6.21R/T-22, for the net participant specified by WDL Monitor Select [21T/03/09…11] and Net Participant Index [21T/03/03…07] as appropriate, if WDL Onboard [22T/05/11 = 1].

The mission store supplement **{sup_6311}** documents Network Frequency/Circuit Number Type usage for each supported network type, if the store has a WDL capability.

6.21R/T.10.2 Uplink/Downlink Protocol [21R/T/21/08…09]

Uplink/Downlink Protocol [21R/T/21/08…09] defines the uplink/downlink protocol specified in Table 6.21R/T-23 for the net participant.

Table 6.21R/T-23 Uplink/Downlink Protocol [21R/T/21/08…09] Definitions

Value	Description	WDL Function
00 (B)	Auto (Default)	Frequency/Circuit Number is a Bi-Directional WDL Link between Mission Store and Controller.
01 (B)	Uplink	Frequency/Circuit Number is a Uni-Directional WDL Uplink from Controller to Mission Store.
10 (B)	Downlink	Frequency/Circuit Number is a Uni-Directional WDL Downlink from Mission Store to Controller.
11 (B)	Reserved	Reserved.

Platform Requirements

The platform shall **{ps_6609}** set Uplink/Downlink Protocol [21R/21/08…09] IAW Table 6.21R/T-23 for the net participant specified by Net Participant Index [21R/03/03…07] when Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)], CDS Network Uses Uplink/Downlink Protocol **{cds_6133}**, WDL Onboard [22T/05/11 = 1], and WDL Configuration Select [21R/03/00…02 = 011 (B)].

The platform shall **{ps_6610}** provide the capability to select or enter Uplink/Downlink Protocol [21R/21/08…09] data IAW Table 6.21R/T-23, for the net participant specified by Net Participant Index [21R/03/03…07] when Controller or

Mission Store Terminal Select [21R/07/00…02 = 100 (B)], CDS Network Uses Uplink/Downlink Protocol **{cds_6133}**, WDL Onboard [22T/05/11 = 1], and WDL Configuration Select [21R/03/00…02 = 011 (B)].

Mission Store Requirements

The mission store shall **{ss_6800}** use the Uplink/Downlink Protocol [21R/21/08…09] commands IAW Table 6.21R/T-23, for the net participant specified by Net Participant Index [21R/03/03…07] when Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)], WDL Onboard [22T/05/11 = 1], and WDL Configuration Select [21R/03/00…02 = 011 (B)], as documented in the mission store supplement **{sup_6312}**.

The mission store shall **{ss_6801}** set Uplink/Downlink Protocol [21T/21/08…09] status IAW Table 6.21R/T-23, for the net participant specified by Net Participant Index [21T/03/03…07] when WDL Monitor Select [21T/03/09…11 = 100 (B)], if WDL Onboard [22T/05/11 = 1].

The mission store supplement **{sup_6325}** documents Uplink/Downlink Protocol usage for each supported network type, if the store has a WDL capability.

6.21R/T.10.3 Frequency [21R/T/22-24]

When Frequency/Circuit Number Type [21R/T/21/00…02] specifies that Frequency/Circuit Number [21R/T/21-24] contains a WDL Frequency, then Frequency/ Circuit Number [21R/T/21-24] is used to specify a frequency from 1 Hertz to 999.9 gigaHertz as described in Table 6.21R/T-24. Downlink Select [21R/T/03/08] determines whether the provided/reported frequency is the downlink frequency, or uplink/both frequency.

Table 6.21R/T-24 Frequency [21R/T/22-24] Description

	Frequency [21R/T/22]				Frequency [21R/T/23]				Frequency [21R/T/24]			
	MSB (0 1 2 3 4 5 6 7)		(8 9 10 11 12 13 14 15) LSB		MSB (0 1 2 3 4 5 6 7)		(8 9 10 11 12 13 14 15) LSB		MSB (0 1 2 3 4 5 6 7)		(8 9 10 11 12 13 14 15) LSB	
WDL Frequency Digit	12	11	10	9	8	7	6	5	4	3	2	1
Frequency (Hz)	100 GHz	10 GHz	1 GHz	100 MHz	10 MHz	1 MHz	100 KHz	10 KHz	1 KHz	100 Hz	10 Hz	1 Hz
Example: UHF 425.275	0	0	0	4	2	5	2	7	5	0	0	0
Example: UHF 367.9	0	0	0	3	6	7	9	0	0	0	0	0

Notes:
1. Unused WDL Frequency Digits are set to 0 (H).

Platform Requirements

The platform shall **{ps_6611}** set Frequency [21R/22-24] IAW Table 6.21R/T-24 for the net participant specified by Net Participant Index [21R/03/03…07] when Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)], Frequency/Circuit Number Type [21R/21/00…02 = 001 (B)], WDL Onboard [22T/05/11 = 1], and WDL Configuration Select [21R/03/00…02 = 011 (B)].

The platform shall **{ps_6612}** provide the capability to select or enter Frequency [21R/22-24] data for the net participant specified by Net Participant Index [21R/03/03…07] when Controller or Mission Store Terminal Select [21R/07/00…02 =

100 (B)], <u>Frequency/Circuit Number Type</u> [21R/21/00…02 = 001 (B)], <u>WDL Onboard</u> [22T/05/11 = 1], and <u>WDL Configuration Select</u> [21R/03/00…02 = 011 (B)].

Mission Store Requirements

The mission store shall **{ss_6802}** use the <u>Frequency</u> [21R/22-24] IAW Table 6.21R/T-24, for the net participant specified by <u>Net Participant Index</u> [21R/03/03…07] when <u>Controller or Mission Store Terminal Select</u> [21R/07/00…02 = 100 (B)], <u>Frequency/Circuit Number Type</u> [21R/21/00…02 = 001 (B)], <u>WDL Onboard</u> [22T/05/11 = 1], and <u>WDL Configuration Select</u> [21R/03/00…02 = 011 (B)], as documented in the mission store supplement **{sup_6313}**.

The mission store shall **{ss_6803}** set <u>Frequency</u> [21T/22-24] status IAW Table 6.21R/T-24, for the net participant specified by <u>Net Participant Index</u> [21T/03/03…07] and <u>Downlink Select</u> [21T/03/08] when <u>WDL Monitor Select</u> [21T/03/09…11 = 100 (B)], <u>Frequency/Circuit Number Type</u> [21T/21/00…02 = 001 (B)], and <u>WDL Onboard</u> [22T/05/11 = 1].

6.21R/T.10.4 <u>AJ Net Number</u> [21R/T/22-24]

Anti-jam radios, such as UHF, can use a frequency hopping scheme to change the channel and/or frequency many times a second. <u>WDL Anti-Jam Enable</u> [21R/T/05/12] is used to enable anti-jam operations. When anti-jam is used, WDL Frequency is replaced by an AJ Net Number. The AJ Net Number is a six digit alpha numeric with values from A00.000 to B99.975 (with the last two digits restricted to 00, 25, 50, or 75) and is described in Table 6.21R/T-25. Note: For radios that require an AJ Net Number to support their anti-jam mode, the <u>AJ Net Number</u> [21R/22-24] needs to be provided in conjunction with issuing the <u>WDL Anti-Jam Enable</u> [21R/T/05/12 = 1] command.

Table 6.21R/T-25 <u>AJ Net Number</u> [21R/T/22-24] Description

	[21R/T/22]						[21R/T/23]						[21R/T/24]					
	MSB					LSB	MSB					LSB	MSB					LSB
	0 1	2 3	4 5	6 7	8 9 10 11	12 13 14 15	0 1	2 3	4 5 6 7	8 9 10 11	12 13 14 15	0 1	2 3	4 5 6 7	8 9 10 11	12 13 14 15
AJ Net Number Digit	Unused	Unused	Unused	Unused	Unused	Unused	6	5	4	3	2	1
Example: A22.325	0	0	0	0	0	0	A	2	2	3	2	5
Example: B89.675	0	0	0	0	0	0	B	8	9	6	7	5

Platform Requirements

The platform shall **{ps_6633}** set <u>AJ Net Number</u> [21R/22-24] IAW Table 6.21R/T-25 for the net participant specified by <u>Net Participant Index</u> [21R/03/03…07] when <u>Controller or Mission Store Terminal Select</u> [21R/07/00…02 = 100 (B)], <u>Frequency/Circuit Number Type</u> [21R/21/00…02 = 010 (B)], <u>WDL Onboard</u> [22T/05/11 = 1], and <u>WDL Configuration Select</u> [21R/03/00…02 = 011 (B)].

The platform shall **{ps_6614}** provide the capability to select or enter the <u>AJ Net Number</u> [21R/22-24] for the net participant indicated by <u>Net Participant Index</u> [21R/03/03…07] when <u>Controller or Mission Store Terminal Select</u> [21R/07/00…02 = 100 (B)], <u>Frequency/Circuit Number Type</u> [21R/21/00…02 = 010 (B)], <u>WDL Onboard</u> [22T/05/11 = 1], <u>WDL Configuration Select</u> [21R/03/00…02 = 011 (B)], and <u>CDS WDL Anti-Jam Select</u> **{cds_6131}**.

Mission Store Requirements

The mission store shall **{ss_6804}** use the AJ Net Number [21R/22-24] IAW Table 6.21R/T-25, for the net participant specified by Net Participant Index [21R/03/03…07] when Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)], Frequency/Circuit Number Type [21R/21/00…02 = 010 (B)], WDL Onboard [22T/05/11 = 1], WDL Configuration Select [21R/03/00…02 = 011 (B)], and the mission store supports anti-jam as documented in the mission store supplement **{sup_6314}**.

The mission store shall **{ss_6805}** set AJ Net Number [21T/22-24] IAW Table 6.21R/T-25, for the net participant specified by Net Participant Index [21T/03/03…07] when WDL Monitor Select [21T/03/09…11 = 100 (B)], Frequency/Circuit Number Type [21T/21/00…02 = 010 (B)], and WDL Onboard [22T/05/11 = 1].

6.21R/T.10.5 Circuit Number [21R/T/21-24]

When Frequency/Circuit Number Type [21R/T/21/00…02] specifies that Frequency/Circuit Number [21R/T/21-24] contains a WDL Circuit Number, then Circuit Number [21R/T/21-24] is used to specify a 13-digit decimal number as described in Table 6.21R/T-26 for a net participant.

Table 6.21R/T-26 Circuit Number [21R/T/21-24] Description

Definition	Word/Bits	Description
Number Digit #13 (MSP)	[21R/T/21/12…15]	Circuit Number Digit #13 (Most Significant Digit)
Number Digit #12	[21R/T/22/00…03]	Circuit Number Digit #12
Number Digit #11	[21R/T/22/04…07]	Circuit Number Digit #11
Number Digit #10	[21R/T/22/08…11]	Circuit Number Digit #10
Number Digit #9	[21R/T/22/12…15]	Circuit Number Digit #9
Number Digit #8	[21R/T/23/00…03]	Circuit Number Digit #8
Number Digit #7	[21R/T/23/04…07]	Circuit Number Digit #7
Number Digit #6	[21R/T/23/08…11]	Circuit Number Digit #6
Number Digit #5	[21R/T/23/12…15]	Circuit Number Digit #5
Number Digit #4	[21R/T/24/00…03]	Circuit Number Digit #4
Number Digit #3	[21R/T/24/04…07]	Circuit Number Digit #3
Number Digit #2	[21R/T/24/08…11]	Circuit Number Digit #2
Number Digit #1 (LSP)	[21R/T/24/12…15]	Circuit Number Digit #1 (Least Significant Digit)

Notes:
1. Unused Circuit Number Digits are set to 0 (H).

Platform Requirements

The platform shall **{ps_6615}** set Circuit Number [21R/21-24] IAW Table 6.21R/T-26 for the net participant specified by Net Participant Index [21R/03/03…07] when Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)], Frequency/Circuit Number Type [21R/21/00…02 = 011 (B)], WDL Onboard [22T/05/11 = 1], and WDL Configuration Select [21R/03/00…02 = 011 (B)].

The platform shall **{ps_6616}** provide the capability to select or enter Circuit Number [21R/21-24] for the net participant specified by Net Participant Index [21R/03/03…07] when Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)], Frequency/Circuit Number Type [21R/21/00…02 = 011 (B)], WDL Onboard [22T/05/11 = 1], and WDL Configuration Select [21R/03/00…02 = 011 (B)].

Mission Store Requirements

The mission store shall **{ss_6806}** use the Circuit Number [21R/21-24] IAW Table 6.21R/T-26 to configure the net participant specified by Net Participant Index [21R/03/03…07] when Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)], Frequency/Circuit Number Type [21R/21/00…02 = 011 (B)], WDL Onboard [22T/05/11 = 1], and WDL Configuration Select [21R/03/00…02 = 011 (B)], as documented in the mission store supplement **{sup_6315}**.

The mission store shall **{ss_6807}** set Circuit Number [21T/21-24] IAW Table 6.21R/T-26, for the net participant specified by Net Participant Index [21T/03/03…07] when WDL Monitor Select [21T/03/09…11 = 100 (B)], Frequency/Circuit Number Type [21T/21/00…02 = 011 (B)], and WDL Onboard [22T/05/11 = 1].

6.21R/T.10.6 Frequency/Spectrum Control Code [21R/T/22-24]

When Frequency/Circuit Number Type [21R/T/21/00…02] specifies that Frequency/Circuit Number [21R/T/21-24] contains a Frequency/Spectrum Control Code, then Frequency/Circuit Number [21R/T/21-24] is used to specify Frequency/Spectrum Control code as described in Table 6.21R/T-27 for the net participant.

Frequency/Spectrum Control Codes are used to support IP-ATDL spectrum management options and could possibly also be used with other waveforms.

Table 6.21R/T-27 Frequency/Spectrum Control Code [21R/T/22-24] Description

	[21R/T/22]				[21R/T/23]				[21R/T/24]			
	MSB 0 1 2 3	4 5 6 7	8 9 10 11	LSB 12 13 14 15	MSB 0 1 2 3	4 5 6 7	8 9 10 11	LSB 12 13 14 15	MSB 0 1 2 3	4 5 6 7	8 9 10 11	LSB 12 13 14 15
Frequency/Spectrum Control Code Hex Digit	Unused	Unused	Unused	Unused	Unused	Unused	Unused	Unused	4	3	2	1
Example: 10E2	0	0	0	0	0	0	0	0	1	0	E	2
Example: FF37	0	0	0	0	0	0	0	0	F	F	3	7

Platform Requirements

The platform shall **{ps_6617}** set Frequency/Spectrum Control Code [21R/22-24] IAW Table 6.21R/T-27 for the net participant specified by Net Participant Index [21R/03/03…07] when Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)], Frequency/Circuit Number Type [21R/21/00…02 = 100 (B)], WDL Onboard [22T/05/11 = 1], and WDL Configuration Select [21R/03/00…02 = 011 (B)].

The platform shall **{ps_6618}** provide the capability to select or enter Frequency/Spectrum Control Code [21R/22-24] for the net participant specified by Net Participant Index [21R/03/03…07] when Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)], Frequency/Circuit Number Type [21R/21/00…02

= 100 (B)], WDL Onboard [22T/05/11 = 1], and WDL Configuration Select
[21R/03/00…02 = 011 (B)].

Mission Store Requirements

The mission store shall **{ss_6808}** use the Frequency/Spectrum Control Code
[21R/22-24] IAW Table 6.21R/T-27, for the net participant specified by Net
Participant Index [21R/03/03…07] when Controller or Mission Store Terminal Select
[21R/07/00…02 = 100 (B)], Frequency/Circuit Number Type [21R/21/00…02 = 100
(B)], WDL Onboard [22T/05/11 = 1], and WDL Configuration Select [21R/03/00…02
= 011 (B)], as documented in the mission store supplement **{sup_6316}**.

The mission store shall **{ss_6809}** set Frequency/Spectrum Control Code [21T/22-
24] IAW Table 6.21R/T-27, for the net participant specified by Net Participant Index
[21T/03/03…07] when WDL Monitor Select [21T/03/09…11 = 100 (B)],
Frequency/Circuit Number Type [21T/21/00…02 = 100 (B)], and WDL Onboard
[22T/05/11 = 1].

6.21R/T.11 NPG and SNN /OPS No. [21R/T/25]

The NPG and SNN / OPS No. [21R/T/25] is a multi-use field that contains either a
JTIDS Network Participation Group (NPG) and a JTIDS Stacked Net Number (SNN) (for
Link-16) or an Operational Parameter Set Number (OPS No.) (for UHF) for a network
participant. Each of these is discussed below.

6.21R/T.11.1 Stacked Net Number [21R/T/25/00…06]

A JTIDS Stacked Net Number (SNN) [21R/T/25/00…06] contains WDL configuration
data for a network participant which is only used with the Link-16 waveform.

Platform Requirements

The platform shall **{ps_6619}** set Stacked Net Number [21R/25/00…06] for the net
participant specified by Net Participant Index [21R/03/03…07] when Controller or
Mission Store Terminal Select [21R/07/00…02 = 100 (B)], WDL Onboard [22T/05/11
= 1], WDL Configuration Select [21R/03/00…02 = 011 (B)], and WDL Waveform
[21R/07/03…06 = 0001 (B) (Link-16)].

The platform shall **{ps_6620}** provide the capability to select or enter Stacked Net
Number [21R/25/00…06] data for the net participant specified by Net Participant
Index [21R/03/03…07] when Controller or Mission Store Terminal Select
[21R/07/00…02 = 100 (B)], WDL Onboard [22T/05/11 = 1], WDL Configuration
Select [21R/03/00…02 = 011 (B)], and WDL Waveform [21R/07/03…06 = 0001 (B)
(Link-16)].

Mission Store Requirements

The mission store shall **{ss_6810}** use the Stacked Net Number [21R/25/00…06]
commands for the net participant specified by Net Participant Index [21R/03/03…07]
when Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)], WDL
Onboard [22T/05/11 = 1], WDL Configuration Select [21R/03/00…02 = 011 (B)], and

WDL Waveform [21R/07/03…06 = 0001 (B) (Link-16)], as documented in the mission store supplement **{sup_6317}**.

The mission store shall **{ss_6811}** set Stacked Net Number [21T/25/00…06] status for the net participant specified by Net Participant Index [21T/03/03…07], when WDL Monitor Select [21T/03/09…11 = 100 (B)] and WDL Onboard [22T/05/11 = 1].

6.21R/T.11.2 Network Participation Group [21R/T/25/07…15]

A JTIDS Network Participation Group (NPG) [21R/T/25/07…15] is a set of Link-16 JTIDS Units assigned to participate as transmitters and/or receivers in the corresponding participation group. Each NPG has an agreed to list of messages specified by label/sublabel that are used to support a particular function, such a surveillance or Network Enabled Weapons control. Messages of the NPG are transmitted in time slots assigned to the JTIDS Unit for the NPG without regard to subscriber identities.

Platform Requirements

The platform shall **{ps_6621}** set Network Participation Group [21R/25/07…15] for the net participant specified by Net Participant Index [21R/03/03…07] when Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)], WDL Onboard [22T/05/11 = 1], WDL Configuration Select [21R/03/00…02 = 011 (B)], and WDL Waveform [21R/07/03…06 = 0001 (B) (Link-16)].

The platform shall **{ps_6622}** provide the capability to select or enter Network Participation Group [21R/25/07…15] data for the net participant specified by Net Participant Index [21R/03/03…07] when Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)], WDL Onboard [22T/05/11 = 1], WDL Configuration Select [21R/03/00…02 = 011 (B)], and WDL Waveform [21R/07/03…06 = 0001 (B) (Link-16)].

Mission Store Requirements

The mission store shall **{ss_6812}** use the Network Participation Group [21R/25/07…15] for the net participant specified by Net Participant Index [21R/03/03…07] when Controller or Mission Store Terminal Select [21R/07/00…02 = 100 (B)], WDL Onboard [22T/05/11 = 1], WDL Configuration Select [21R/03/00…02 = 011 (B)], and WDL Waveform [21R/07/03…06 = 0001 (B) (Link-16)], as documented in the mission store supplement **{sup_6318}**.

The mission store shall **{ss_6813}** set Network Participation Group [21T/25/07…15] status for the net participant specified by Net Participant Index [21T/03/03…07] when WDL Monitor Select [21T/03/09…11 = 100 (B)] and WDL Onboard [22T/05/11 = 1].

6.21R/T.11.3 Operational Parameter Set Number [21R/T/25/08…15]

Operational Parameter Set Number [21R/T/25/08…15] contains WDL configuration data for a network participant. UHF networks have many variables which need to be set correctly in order to communicate with other terminals on the network. To simplify this

process, a limited number of operational parameter sets can be defined which can then be identified by a single Operational Parameter Set Number.

Platform Requirements

The platform shall **{ps_6623}** set <u>Operational Parameter Set Number</u> [21R/25/08…15] for the net participant specified by <u>Net Participant Index</u> [21R/03/03…07] when <u>Controller or Mission Store Terminal Select</u> [21R/07/00…02 = 100 (B)], <u>WDL Onboard</u> [22T/05/11 = 1], <u>WDL Configuration Select</u> [21R/03/00…02 = 011 (B)], and <u>WDL Waveform</u> [21R/07/03…06 = 0010 (B) (UHF)].

The platform shall **{ps_6624}** provide the capability to select or enter <u>Operational Parameter Set Number</u> [21R/25/08…15] data for the net participant specified by <u>Net Participant Index</u> [21R/03/03…07], when <u>Controller or Mission Store Terminal Select</u> [21R/07/00…02 = 100 (B)], <u>WDL Onboard</u> [22T/05/11 = 1], <u>WDL Configuration Select</u> [21R/03/00…02 = 011 (B)], and <u>WDL Waveform</u> [21R/07/03…06 = 0010 (B) (UHF)].

Mission Store Requirements

The mission store shall **{ss_6814}** use the <u>Operational Parameter Set Number</u> [21R/25/08…15] for the net participant specified by <u>Net Participant Index</u> [21R/03/03…07] when <u>Controller or Mission Store Terminal Select</u> [21R/07/00…02 = 100 (B)], <u>WDL Onboard</u> [22T/05/11 = 1], <u>WDL Configuration Select</u> [21R/03/00…02 = 011 (B)], and <u>WDL Waveform</u> [21R/07/03…06 = 0010 (B) (UHF)], as documented in the mission store supplement **{sup_6319}**.

The mission store shall **{ss_6815}** set <u>Operational Parameter Set Number</u> [21T/25/08…15] status for the net participant when <u>WDL Monitor Select</u> [21T/03/09…11 = 100 (B)] and <u>WDL Onboard</u> [22T/05/11 = 1].

6.21R/T.12 <u>WDL Target Reference Number</u> [21R/T/26-27]

Immediate (i.e., time sensitive, emerging, perishable, high-payoff, short dwell, and/or critical-mobile) targets are normally assigned a target reference number in accordance the rules, policies, and procedures established by the Joint Force Commander (JFC) within an specific theater or operational area instead of a target reference identification name.

As far as Network Enabled Weapons (NEW) are concerned, Target Reference Number is a unique number that identifies a specific target. This number can be either the track number of the target (Track Number - Target) or the track number of the source of the target data (Track Number - Source) in combination with an Index Number.

  a. Track Number-Target is a 19-bit alphanumeric group consisting of two five-bit groups and three three-bit groups. A five-bit group represents an alphanumeric character of either an alpha character of A through Z (excluding the alpha characters I and O) or a numeric character of zero through seven. A three-bit group represents a numeric character of zero through seven. Table 6.21R/T-28 depicts Track Number coding for a five-bit field and a three-bit field.

Table 6.21R/T-28 Track Number Coding

Track Number 5-Bit Character Field				Track Number 3-Bit Numberic Field	
Code	**Character**	**Code**	**Character**	**Code**	**Character**
00000	0	10000	J	000	0
00001	1	10001	K	001	1
00010	2	10010	L	010	2
00011	3	10011	M	011	3
00100	4	10100	N	100	4
00101	5	10101	P	101	5
00110	6	10110	Q	110	6
00111	7	10111	R	111	7
01000	A	11000	S	---	---
01001	B	11001	T	---	---
01010	C	11010	U	---	---
01011	D	11011	V	---	---
01100	E	11100	W	---	---
01101	F	11101	X	---	---
01110	G	11110	Y	---	---
01111	H	11111	Z	---	---

b. Track Number-Source is a 15-bit numeric group consisting of five three-bit groups. A three-bit group represents a numeric character of zero through seven. Table 6.21R/T-28 depicts Track Number coding for a three-bit field.

c. An Index Number is used in conjunction with Track Number-Source to provide a unique target reference number. Index Number is a number from 1 to 63 assigned by the source of the target data to differentiate among sensor target reports.

6.21R/T.12.1 WDL Target Reference Number Type [21R/T/26/00…02]

WDL Target Reference Number Type [21R/T/26/00…02] specifies the type of target reference number, IAW Table 6.21R/T-29, that is provided to the mission store WDL terminal in WDL Target Reference Number [21R/T/26/03…15 and 21R/T/27]. Target Reference Number is a unique number that identifies a specific target. This number can be either a track number of the target (Track Number - Target) or the track number of the source of the target data (Track Number - Source) in combination with an Index Number.

Table 6.21R/T-29 WDL Target Reference Number Type [21R/T/26/00…02] Definitions

Value	Description
000 (B)	WDL Target Reference Number [21R/T/26/03…15 and 21R/T/27] is not used. (Default)
001 (B)	WDL Target Reference Number [21R/T/26/03…15 and 21R/T/27] contains a 19-bit track number of the target (Track Number - Target).

Table 6.21R/T-29 WDL Target Reference Number Type [21R/T/26/00…02] Definitions

Value	Description
010 (B)	WDL Target Reference Number [21R/T/26/03…15 and 21R/T/27] contains a 6-bit Index Number (IN) and a 15-bit track number of the source of the target data (Track Number - Source).
All Others	Reserved.

6.21R/T.12.2 WDL Target Reference Number [21R/T/26/03…15 and 21R/T/27]

Table 6.21R/T-30 shows the mapping of Target Number - Target (19-bits) and Index Number plus Track Number - Source to the WDL Target Reference Number [21R/T/26/03…15 and 21R/T/27].

Table 6.21R/T-30 WDL Target Reference Number [21R/T/26/03…15 and 21R/T/27] Mapping

WDL Target Reference Number (MSW) [21R/T/26/03…15]			WDL Target Reference Number (LSW) [21R/T/27]				
MSB ... LSB			MSB ... LSB				
0 1 2	3 4 5 6 7	8 9 10 11 12 13 14 15	0 1 2 3 4 5 6 7	8 9 10	11 12 13	14 15	
WDL Target Ref Number Type	Not Used	Track Number - Target					
		Uppercase Character #1 5-bits	0 0 Uppercase Character #2 5-bits	Numeric #1 3-bits	Numeric #2 3-bits	Numeric #3 3-bits	
	Not Used	Index Number	Track Number - Source				
		6-bits	0 Numeric #1 3-bits	Numeric #2 3-bits	Numeric #3 3-bits	Numeric #4 3-bits	Numeric #5 3-bits

Notes:
1. Index Number is a number from 1 to 63 assigned by the source of the target data to differentiate among sensor target reports.

Platform Requirements

The platform shall **{ps_6625}** set WDL Target Reference Number Type [21R/26/00…02] IAW Table 6.21R/T-29.

The platform shall **{ps_6640}** provide WDL Target Reference Number [21R/26/03…15 and 21R/27], IAW Table 6.21R/T-30, to the mission store Mod Msn Storage Location [22R/08], if WDL Target Reference Number Type [21R/26/00…02 = 001 (B) or 010 (B)] and CDS WDL Target Reference Number Enabled **{cds_6132}**.

The platform shall **{ps_6626}** provide the capability to select or enter WDL Target Reference Number Type [21R/26/00…02] and WDL Target Reference Number [21R/26/03…15 and 21R/27], if CDS WDL Target Reference Number Enabled **{cds_6132}**.

Mission Store Requirements

The mission store shall **{ss_6816}** use WDL Target Reference Number [21R/26-27] for the MDS in Mod Msn Storage Location [22R/08], IAW Table 6.21R/T-29 and Table 6.21R/T-30, if the mission store is WDL Target Reference Number capable, as documented in the store supplement **{sup_6320}**.

The mission store shall **{ss_6817}** set WDL Target Reference Number [21T/26-27] status equal to the value from Mod Msn Storage Location [22T/12], IAW Table 6.21R/T-29 and Table 6.21R/T-30, if the mission store is WDL Target Reference Number capable.

The mission store shall **{ss_6818}** set WDL Target Reference Number [21T/26 = 0000 (H) and 21T/27 = 0000 (H)] if the mission store is not WDL Target Reference Number capable.

6.21R/T.13   WDL Status Word 1 [21R/T/28]

WDL Status Word 1 [21R/T/28] is applicable only to the WDL Monitor [21T] message from the mission store, it has no meaning in the WDL Control [21R] message.

Platform Requirements

The platform shall **{ps_6484}** set WDL Status Word 1 [21R/28 = 0000 (H)], if WDL Onboard [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6550}** ignore WDL Status Word 1 [21R/28] provided in the WDL Control [21R] message, if WDL Onboard [22T/05/11 = 1].

6.21R/T.13.1   WDL Connectivity Status [21T/28/00…01, 02…03, & 04…05]

The three (3) WDL Connectivity Status [21T/28/00…01, 02…03, & 04…05] indications provide current mission store WDL network connectivity status for the Current Controller, Alternate Controller, and Designated Third Party IFTU Source with the mission store, IAW Table 6.21R/T-31. Using WDL Monitor Select [21R/T/03/09…11] the platform can request the mission store to provide the current WDL network configuration for each of the Controllers and the third party IFTU source in subsequent WDL Monitor [21T] messages.

Pre-release network connectivity and/or two-way communications with a controller and/or third party IFTU source does not imply that a controller and/or third party IFTU source can modify controller and/or mission data. Sections 6.21R/T.4.1 WDL EMCON [21R/T/06/00], 6.21R/T.2.5 Pre-Release WDL Update Enable [21R/T/04/03], 6.21R/T.3.3 WDL Transmitter Control [21R/T/05/04…05], and 6.21R/T.3.4 WDL Receiver Control [21R/T/05/06…07] provide additional information and requirements.

Table 6.21R/T-31   WDL Connectivity Status [21T/28/00…01, 02…03, and 04…05] Definitions

Value	Description				
WDL Waveform [21R/T/07/03…06 =]	Link-16 0001 (B)	UHF 0010 (B)	MSS 0011 (B)	MSS-CS 0100 (B)	IP-ATDL 0101 (B)
00 (B)	Mission Store WDL Connection Not Established or Pending (Default)				
01 (B)	Coarse Synchronization	Data Traffic Detected	Reserved		
10 (B)	Fine Synchronization	NEW Data Detected	Reserved		

Table 6.21R/T-31 WDL Connectivity Status [21T/28/00…01, 02…03, and 04…05] Definitions

Value	Description
11 (B)	Mission Store WDL Connection with WDL Network Established and 2-Way Communication with the Controller is Established (Check In or Ping Test Complete)

Note: For Link-16: Reference MIL-STD-6016C, Paragraphs 3.6.8 and 3.6.9.

Mission Store Requirements

The mission store shall **{ss_6551}** set WDL Connectivity Status: Current Controller [21T/28/00…01] IAW Table 6.21R/T-31, if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6552}** set WDL Connectivity Status: Alternate Controller [21T/28/02…03] IAW Table 6.21R/T-31, if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6553}** set WDL Connectivity Status: Third Party IFTU Source [21T/28/04…05] IAW Table 6.21R/T-31, if WDL Onboard [22T/05/11 = 1].

6.21R/T.13.2 Mission/Controller Data Changes via WDL [21T/28/06…12]

Mission/Controller Data Changes via WDL [21T/28/06…12] indicates the mission store has received a mission data and/or controller change via the weapon data link. The following are examples of mission data changes that could cause the mission store to set Mission/Controller Data Change via WDL [21T/28/06…12].

a. A change to mission data was received via WDL affecting the weapon reported LAR (e.g., LAR Control [06R] settings, target location, target velocity, and/or attack parameters provided to the mission store via either Modify Mission [17R] or MDT-Mission [13R-020]).

b. A change to Programmable Fuze setting(s) was received via the WDL (e.g., fuze data provided to the mission store via either Store Control [11R] or MDT-Mission [13R-020]).

c. A change to any GeoZones or GeoZone settings was received via the WDL (e.g., data provided to the mission store via either GeoZone Control [16R] or MDT-GeoZone Data [13R-021]).

d. A change to the MDS specified by Pri Msn Storage Location [22T/06] was received via WDL (e.g., mission data provided to the mission store via either Modify Mission [17R] or MDT-Mission [13R-020]).

e. A change to the Current Controller, Alternate Controller, and/or Designated Third Party IFTU Source to Mission Store configuration is received via WDL (e.g., data provided to the mission store via either WDL Control [21R] or MDT-Mission [13R-020])

f. A change to any target priority list or seeker/sensor settings was received via the WDL (e.g., data provided to the mission store via either Seeker/Sensor Control [24R] or MDT-Mission [13R-020]).

Sections 6.21R/T.2.5 <u>Pre-Release WDL Update Enable</u> [21R/T/04/03], 6.21R/T.2.6 <u>Reset WDL Change Flags</u> [21R/T/04/04], and 6.22T.17.3 <u>Data Change via WDL</u> [22T/18/15] provide additional information and requirements.

Platform Requirements

The platform may **{pm_6047}** set <u>Mod Msn Storage Location</u> [22R/08] = <u>Pri Msn Storage Location</u> [22R/04], send <u>Mission Control</u> [22R], and then request <u>IR LAR Data</u> [05T], <u>IZ LAR Data</u> [06T], <u>Critical Monitor</u> [11T], <u>GeoZone Monitor</u> [16T], <u>Modify Mission</u> [17T], <u>WDL Monitor</u> [21T], <u>Mission Monitor</u> [22T], and/or <u>Seeker/Sensor Monitor</u> [24T] messages to determine what mission data has changed, if <u>WDL Onboard</u> [22T/05/11 = 1] and <u>Mission/Controller Data Changes via WDL</u> [21T/28/06…12 ≠ 0].

Mission Store Requirements

The mission store shall **{ss_6636}** modify the MDS specified by <u>Pri Msn Storage Location</u> [22T/06] if <u>WDL Onboard</u> [22T/05/11 = 1], <u>Pre-Release WDL Update Enable</u> [21T/04/03 = 1], and prior to detecting umbilical disconnect, when an authorized controller modifies mission data via WDL.

The mission store shall **{ss_6637}** set <u>LAR Data Change via WDL</u> [21T/28/06 = 1], if <u>WDL Onboard</u> [22T/05/11 = 1] and <u>Pre-Release WDL Update Enable</u> [21T/04/03 = 1], when mission data is changed via WDL that modifies <u>IR LAR Data</u> [05T] or <u>IZ LAR Data</u> [06T].

The mission store shall **{ss_6638}** set <u>Programmable Fuze Data Change via WDL</u> [21T/28/07 = 1], if <u>WDL Onboard</u> [22T/05/11 = 1], <u>Pre-Release WDL Update Enable</u> [21T/04/03 = 1], and <u>PF Onboard</u> [22T/02/12 = 1], when primary mission data reportable in <u>Critical Monitor</u> [11T] programmable fuze data is changed via WDL.

The mission store shall **{ss_6639}** set <u>GeoZone Data Change via WDL</u> [21T/28/08 = 1], if <u>WDL Onboard</u> [22T/05/11 = 1], <u>Pre-Release WDL Update Enable</u> [21T/04/03 = 1], and the mission store supports GeoZones, when GeoZone data is changed via WDL that modifies <u>GeoZone Monitor</u> [16T].

The mission store shall **{ss_6640}** set <u>Modify Mission Data Change via WDL</u> [21T/28/09 = 1], if <u>WDL Onboard</u> [22T/05/11 = 1] and <u>Pre-Release WDL Update Enable</u> [21T/04/03 = 1], when primary mission data reportable in <u>Modify Mission</u> [17T] is changed via WDL.

The mission store shall **{ss_6641}** set <u>Controller Data Change via WDL</u> [21T/28/10 = 1], if <u>WDL Onboard</u> [22T/05/11 = 1] and <u>Pre-Release WDL Update Enable</u> [21T/04/03 = 1], when WDL configuration data reportable in <u>WDL Monitor</u> [21T] is changed via WDL.

The mission store shall **{ss_6642}** set <u>Mission Monitor Data Change via WDL</u> [21T/28/11 = 1], if <u>WDL Onboard</u> [22T/05/11 = 1] and <u>Pre-Release WDL Update Enable</u> [21T/04/03 = 1], when primary mission data reportable in <u>Mission Monitor</u> [22T] is changed via WDL.

The mission store shall **{ss_6643}** set <u>Seeker/Sensor Data Change via WDL</u> [21T/28/12 = 1], if <u>WDL Onboard</u> [22T/05/11 = 1], <u>Pre-Release WDL Update Enable</u> [21T/04/03 = 1], and <u>Seeker Onboard</u> [22T/05/15 = 1], when mission data reportable in <u>Seeker/Sensor Monitor</u> [24T] is changed via WDL.

6.21R/T.13.3 <u>WDL Inhibit Status</u> [21T/28/13]

<u>WDL Inhibit Status</u> [21T/28/13] provides the mission store weapon data link inhibit status.   Section 6.22R <u>Mission Control</u> [22R] provides additional information and requirements.

Mission Store Requirements

The mission store shall **{ss_6595}** set <u>WDL Inhibit Status</u> [21T/28/13 = 1] when <u>WDL Inhibit</u> [22R/05/08 = 1], if <u>WDL Onboard</u> [22T/05/11 = 1].

6.21R/T.14 <u>WDL Status Word 2</u> [21R/T/29]

<u>WDL Status Word 2</u> [21R/T/29] is applicable only to the <u>WDL Monitor</u> [21T] message from the mission store, it has no meaning in the <u>WDL Control</u> [21R] message.

Platform Requirements

The platform shall **{ps_6485}** set <u>WDL Status Word 2</u> [21R/29 = 0000 (H)], if <u>WDL Onboard</u> [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6556}** ignore <u>WDL Status Word 2</u> [21R/29], if <u>WDL Onboard</u> [22T/05/11 = 1].

6.21R/T.14.1 <u>WDL Key Coverage</u> [21T/29/02…08]

<u>WDL Key Coverage</u> [21T/29/02…08] indicates the number of consecutive days for which the mission store has valid crypto keys from the current date/time. If more than one WDL crypto key is being used (i.e., more than one keyed network is being used), <u>WDL Key Coverage</u> will indicate the minimum coverage for all the keys in use.

Mission Store Requirements

The mission store shall **{ss_6560}** initialize <u>WDL Key Coverage</u> [21T/29/02…08 = 0] at power up, if <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store shall **{ss_6561}** set <u>WDL Key Coverage</u> [21T/29/02…08] to the minimum number of consecutive days for which the mission store has valid WDL keys from the current date/time for all keyed WDL networks being used, after receiving <u>MDT-WDL Key 1-3</u> [13R-025-027], if <u>WDL Onboard</u> [22T/05/11 = 1].

6.21R/T.14.2 <u>WDL Terminal IDL Count</u> [21T/29/09…11]

<u>WDL Terminal IDL Count</u> [21T/29/09…11] provides the number of WDL terminal Initialization Data Loads (IDLs) available for selection. Sections 6.13R-023 <u>MDT-WDL</u>

Terminal Initialization [13R-023] and 6.21R/T.5.8 <u>WDL Terminal IDL Select</u>
[21R/T/08/05…07] provide additional information and requirements.

Mission Store Requirements

The mission store shall **{ss_6660}** set <u>WDL Terminal IDL Count</u> [21T/29/09…11] to
the number of WDL terminal Initialization Data Loads (IDLs) available for selection, if
<u>WDL Onboard</u> [22T/05/11 = 1].

6.21R/T.15 <u>WDL Control/Monitor [21R/T] Data Sheets</u>

Table 6.21R/T-32 shows the notional mapping of <u>WDL Waveform</u> and to <u>WDL
Control/Monitor</u> [21R/T-x] message data sheets. Due to the continuing development of
Network Enabled Weapons data link requirements, changes to this mapping are
possible.

Table 6.21R/T-32 Notional WDL Waveform Data Sheet Mapping

	WDL Waveform [21R/T/07/03…06]	**Link-16 [0001 (B)]**	**UHF [0010 (B)]**	**MSS [0011 (B)]**	**MSS-CS [0100 (B)]**	**IP-ATDL [0101 (B)]**
Word	**Description**					
01	Header	Common	Common	Common	Common	Common
02	Invalidity	Common	Common	Common	Common	Common
03	WDL Control/Monitor Word	Common	Common	Common	Common	Common
04	Store DL Settings	Common	Common	Common	Common	Common
05-06	IDL DL Settings 1 / 2	Common	Common	Common	Common	Common
07-08	WDL Waveform Control/Monitor Word 1 and 2	Common	Common	Common	Common	Common
09-16	Network IP Address	N/A	Not used, IPV4, or IPV6	IPV4 or IPV6	N/A	IPV4, or IPV6
17	Root Terminal ID	JUID	JUID	JUID	JUID	JUID
18-19	Terminal ID	N/A	URN	MTID	N/A	N/A
20	DL Address	N/A	7-bit	N/A	N/A	16-bit
21-24	Frequency/Circuit Number	N/A	Frequency or AJ Net Number	N/A	Circuit Number	Frequency /Spectrum Control Code
25	NPG and SNN/OPS No.	NPG and SNN	OPS No.	N/A	N/A	N/A
26-27	WDL Target Reference Number	Common	Common	Common	Common	Common
28-29	WDL Status Word 1 and 2	Common	Common	Common	Common	Common
30	Checksum	Common	Common	Common	Common	Common

Table 6.21R/T-32 Notional WDL Waveform Data Sheet Mapping

N/A = Not Applicable. Indicates that field is not used for that waveform.
JUID = JTIDS Unit ID
URN = Unit Reference Number
MTID = MSS Terminal ID
SNN = Stacked Net Number
NPG = Network Participation Group
OPS No. = Operational Parameter Set Number

MESSAGE NAME: WDL Control/Monitor
MESSAGE ID: 21R/T TRANSFER TYPE: BC-RT
SOURCE: Platform/Store WORD COUNT: 30
DESTINATION: Store/Platform XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION	
Command Word	CW	Subaddress 10101 (B)	
Status Word	SW	MIL-STD-1553 Status Word	
Header	01	Message Descriptor	
Invalidity	02	Validity of Message Data	
WDL Control/Monitor Word	03	WDL Control/Monitor Word	
Store DL Settings	04	Store DL Settings	
IDL DL Settings 1	05	IDL DL Settings Word 1	
IDL DL Settings 2	06	IDL DL Settings Word 2	
WDL Waveform Control/Monitor Word 1	07	WDL Waveform Control/Monitor Word 1	
WDL Waveform Control/Monitor Word 2	08	WDL Waveform Control/Monitor Word 2	
Network IP Address	09	Network IP Address (MSW)	
	10	Network IP Address (Word 2)	
	11	Network IP Address (Word 3)	
	12	Network IP Address (Word 4)	
	13	Network IP Address (Word 5)	
	14	Network IP Address (Word 6)	
	15	Network IP Address (Word 7)	
	16	Network IP Address (LSW)	
Root Terminal ID	17	JTIDS Unit ID (JUID)	
Terminal ID	18	Terminal ID (MSW)	
	19	Terminal ID (LSW)	
DL Address	20	DL Address	
Frequency/Circuit Number	21	Frequency / Circuit Number Word 1	MSW
	22	Frequency / Circuit Number Word 2	
	23	Frequency / Circuit Number Word 3	
	24	Frequency / Circuit Number Word 4	LSW
NPG and SNN / OPS No.	25	Network Participation Group & Stacked Net Number / Operational Parameter Set No.	
WDL Target Reference Number	26	Track Number - Target or Index Number plus Track Number -	
	27	Source	
WDL Status Word 1	28	WDL Status Word 1	
WDL Status Word 2	29	WDL Status Word 2	
Checksum	30	Checksum Word	
Status Word	SW	MIL-STD-1553 Status Word	

REMARKS/NOTES:

WORD NAME: Header

		CATEGORY:	Header
WORD ID:	21R/T/01	MAX VALUE:	D100 (H)
SOURCE(s):	Platform/Store	MIN VALUE:	D100 (H)
DEST(s):	Store/Platform	RESOLUTION:	1
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^15
SIGNAL TYPE:	Hexadecimal	LSB:	2^0
UNITS:	N/A	FULL SCALE:	FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB ---
	-01-B	
	-02-B	Hex digit #1 value = D (H)
	-03-B	LSB ---
Hex Digit #2	-04-B	MSB ---
	-05-B	
	-06-B	Hex digit #2 value = 1 (H)
	-07-B	LSB ---
Hex Digit #3	-08-B	MSB ---
	-09-B	
	-10-B	Hex digit #3 value = 0 (H)
	-11-B	LSB ---
Hex Digit #4	-12-B	MSB ---
	-13-B	
	-14-B	Hex digit #3 value = 0 (H)
	-15-B	LSB ---

REMARKS/NOTES:

WORD NAME: Invalidity

WORD ID:	21R/T/02	CATEGORY:	N/A
SOURCE(s):	Platform/Store	MAX VALUE:	N/A
DEST(s):	Store/Platform	MIN VALUE:	N/A
COMP RATE:	As Required	RESOLUTION:	N/A
XMIT RATE:	Aperiodic	ACCURACY:	N/A
SIGNAL TYPE:	N/A	MSB:	N/A
UNITS:	N/A	LSB:	N/A
		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Word 3 Invalidity	-00-V	Set to logic 1 when word 03 is invalid
Word 4 Invalidity	-01-V	Set to logic 1 when word 04 is invalid
Word 5 Invalidity	-02-V	Set to logic 1 when word 05 is invalid
Word 6 Invalidity	-03-V	Set to logic 1 when word 06 is invalid
Word 7 Invalidity	-04-V	Set to logic 1 when word 07 is invalid
Word 8 Invalidity	-05-V	Set to logic 1 when word 8 is invalid.
Words 09-16 Invalidity	-06-V	Set to logic 1 when words 09-16 are invalid
Word 17 Invalidity	-07-V	Set to logic 1 when word 17 is invalid
Words 18-19 Invalidity	-08-V	Set to logic 1 when words 18-19 are invalid
Word 20 Invalidity	-09-V	Set to logic 1 when word 20 is invalid
Words 21-24 Invalidity	-10-V	Set to logic 1 when words 21-24 are invalid
Word 25 Invalidity	-11-V	Set to logic 1 when word 25 is invalid
Words 26-27 Invalidity	-12-V	Set to logic 1 when words 26-27 are invalid
Word 28 Invalidity	-13-V	Set to logic 1 when word 28 is invalid
Word 29 Invalidity	-14-V	Set to logic 1 when word 29 is invalid
Word 30 Invalidity	-15-V	Set to logic 1 when word 30 is invalid

REMARKS/NOTES:

WORD NAME: WDL Control/Monitor Word

	CATEGORY:	Special
WORD ID: 21R/T/03	MAX VALUE:	N/A
SOURCE(s): Platform/Store	MIN VALUE:	N/A
DEST(s): Store/Platform	RESOLUTION:	N/A
COMP RATE: As Required	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
WDL Configuration Select	-00-C	MSB : 2^2 --
	-01-C	
	-02-C	LSB : 2^0 --
Net Participant Index	-03-N	MSB : 2^4 --
	-04-N	
	-05-N	
	-06-N	
	-07-N	LSB : 2^0 --
Downlink Select	-08-D	0 = Uplink data selected 1 = Downlink data selected
WDL Monitor Select	-09-C	MSB : 2^2 --
	-10-C	
	-11-C	LSB : 2^0 --
Selected Store	-12-N	MSB : 2^3 --
	-13-N	
	-14-N	Max value = 8
	-15-N	LSB : 2^0 --

REMARKS/NOTES:

WORD NAME: Store DL Settings

		CATEGORY:	Special
WORD ID:	21R/T/04	MAX VALUE:	N/A
SOURCE(s):	Platform/Store	MIN VALUE:	N/A
DEST(s):	Store/Platform	RESOLUTION:	N/A
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
WDL Power Control	-00-D	0 = Power Off, 1 = Power On
Xmit Seeker Image	-01-D	Transition from 0 to 1 = Transmits Current Seeker/Sensor Image (Snapshot) via WDL
Xmit Seeker Video	-02-D	0 = Disable Transmit Seeker Video via WDL
		1 = Enable Transmit Seeker Video via WDL
Pre-Release WDL Update	-03-D	0 = Disable, 1 = Enable
Reset WDL Change Flags	-04-D	1 = Reset all WDL Data Change Flags
Third Party IFTU Source Enable	-05-C	MSB : 2^1--
	-06-C	LSB : 2^0--
WDL Growth Function A	-07-D	0 = Off/Disable, 1 = On/Enable
WDL Growth Function B	-08-D	0 = Off/Disable, 1 = On/Enable
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: IDL DL Settings 1

WORD ID:	21R/T/05
SOURCE(s):	Platform/Store
DEST(s):	Store/Platform
COMP RATE:	As Required
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
IDL DL Selector	-00-C	MSB : 2^2--
	-01-C	
	-02-C	LSB : 2^0--
WDL Transmitter Power	-03-D	0 = Low Power, 1 = High Power
WDL Trasmitter Control	-04-C	MSB : 2^1--
	-05-C	LSB : 2^0--
WDL Receiver Control	-06-C	MSB : 2^1--
	-07-C	LSB : 2^0--
WDL Antenna Pre-Launch Select	-08-C	MSB : 2^1--
	-09-C	LSB : 2^0--
WDL Antenna Post-Launch	-10-C	MSB : 2^1--
	-11-C	LSB : 2^0--
WDL Anti-Jam Enable	-12-D	0 = Off/Disable, 1 = On/Enable
WDL Secure Mode Enable	-13-D	0 = Off/Disable, 1 = On/Enable
PPLI Disable	-14-D	0 = Default per IDL, 1 = Disable
Snapshot Enable	-15-D	0 = Off/Disable, 1 = On/Enable

REMARKS/NOTES:

WORD NAME: IDL DL Settings 2

	CATEGORY:	Special
WORD ID: 21R/T/06	MAX VALUE:	N/A
SOURCE(s): Platform/Store	MIN VALUE:	N/A
DEST(s): Store/Platform	RESOLUTION:	N/A
COMP RATE: As Required	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
WDL EMCON	-00-D	0 = EMCON OFF - Enable WDL Emissions 1 = EMCON ONN - Disable all WDL Emissions
WDL EMCON Continuation Time	-01-C	MSB : 2^3---
	-02-C	
	-03-C	
	-04-0	LSB : 2^0---
Loss of Communications Timeout Period	-05-C	MSB : 2^2---
	-06-C	
	-07-C	LSB : 2^0---
WDL Growth Function C	-08-D	0 = Off/Disable, 1 = On/Enable
WDL Growth Function D	-09-D	0 = Off/Disable, 1 = On/Enable
WDL Growth Function E	-10-D	0 = Off/Disable, 1 = On/Enable
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: WDL Waveform Control/Monitor Word 1

WORD ID:	21R/T/07
SOURCE(s):	Platform/Store
DEST(s):	Store/Platform
COMP RATE:	As Required
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Controller or Mission Store Terminal Select	-00-C	MSB : 2^2--
	-01-C	
	-02-C	LSB : 2^0--
WDL Waveform	-03-C	MSB : 2^3--
	-04-C	
	-05-C	
	-06-C	LSB : 2^0--
Network Time Sync	-07-D	Transition from 0 to 1 = Use the WDL Network Time/TOD Offset [03R/11-12] for synchronization
Obtain External Time Reference	-08-D	0 = Off, 1 = On
Reserved	-09-0	Reserved
Reserved	-10-0	Reserved
Reserved	-11-0	Reserved
Reserved	-12-0	Reserved
Reserved	-13-0	Reserved
Reserved	-14-0	Reserved
Key Rollover	-15-D	Transition from 0 to 1 = Rollover to next crypto period.

REMARKS/NOTES:

WORD NAME: WDL Waveform Control/Monitor Word 2

	CATEGORY: Special
WORD ID: 21R/T/08	MAX VALUE: N/A
SOURCE(s): Platform/Store	MIN VALUE: N/A
DEST(s): Store/Platform	RESOLUTION: N/A
COMP RATE: As Required	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Network IP Address Type	-00-C	MSB : 2^1---
	-01-C	LSB : 2^0---
Terminal ID Type	-02-C	MSB : 2^2---
	-03-C	
	-04-C	LSB : 2^0---
WDL Terminal IDL Select	-05-N	MSB : 2^2---
	-06-N	
	-07-N	LSB : 2^0---
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Network IP Address Words 1/2

	CATEGORY:	Special
WORD ID: 21R/T/09-10	MAX VALUE:	N/A
SOURCE(s): Platform/Store	MIN VALUE:	N/A
DEST(s): Store/Platform	RESOLUTION:	N/A
COMP RATE: As Required	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION	
		IPV4 Address	IPV6 Address
Word 1	MSW -00-N	Set to Logic 0	MSB : 2^{127} -----------------------
Network IP Address	-01-N	Set to Logic 0	
	-02-N	Set to Logic 0	
	-03-N	Set to Logic 0	
	-04-N	Set to Logic 0	
	-05-N	Set to Logic 0	
	-06-N	Set to Logic 0	
	-07-N	Set to Logic 0	IPV6 Network IP Address
	-08-N	Set to Logic 0	Word 1
	-09-N	Set to Logic 0	
	-10-N	Set to Logic 0	
	-11-N	Set to Logic 0	
	-12-N	Set to Logic 0	
	-13-N	Set to Logic 0	
	-14-N	Set to Logic 0	
	-15-N	Set to Logic 0	LSB : 2^{112} -----------------------
Word 2	-00-N	Set to Logic 0	MSB : 2^{111} -----------------------
Network IP Address	-01-N	Set to Logic 0	
	-02-N	Set to Logic 0	
	-03-N	Set to Logic 0	
	-04-N	Set to Logic 0	
	-05-N	Set to Logic 0	
	-06-N	Set to Logic 0	
	-07-N	Set to Logic 0	IPV6 Network IP Address
	-08-N	Set to Logic 0	Word 2
	-09-N	Set to Logic 0	
	-10-N	Set to Logic 0	
	-11-N	Set to Logic 0	
	-12-N	Set to Logic 0	
	-13-N	Set to Logic 0	
	-14-N	Set to Logic 0	
	-15-N	Set to Logic 0	LSB : 2^{96} -------------------------

REMARKS/NOTES:

WORD NAME:　　Network IP Address Words 3/4

WORD ID:	21R/T/11-12	CATEGORY:	Special
SOURCE(s):	Platform/Store	MAX VALUE:	N/A
DEST(s):	Store/Platform	MIN VALUE:	N/A
COMP RATE:	As Required	RESOLUTION:	N/A
XMIT RATE:	Aperiodic	ACCURACY:	N/A
SIGNAL TYPE:	N/A	MSB:	N/A
UNITS:	N/A	LSB:	N/A
		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION	
		IPV4 Address	IPV6 Address
Word 3	-00-N	Set to Logic 0	MSB : 2^95------------------------
Network IP Address	-01-N	Set to Logic 0	
	-02-N	Set to Logic 0	
	-03-N	Set to Logic 0	
	-04-N	Set to Logic 0	
	-05-N	Set to Logic 0	
	-06-N	Set to Logic 0	
	-07-N	Set to Logic 0	IPV6 Network IP Address
	-08-N	Set to Logic 0	Word 3
	-09-N	Set to Logic 0	
	-10-N	Set to Logic 0	
	-11-N	Set to Logic 0	
	-12-N	Set to Logic 0	
	-13-N	Set to Logic 0	
	-14-N	Set to Logic 0	
	-15-N	Set to Logic 0	LSB : 2^80------------------------
Word 4	-00-N	Set to Logic 0	MSB : 2^79------------------------
Network IP Address	-01-N	Set to Logic 0	
	-02-N	Set to Logic 0	
	-03-N	Set to Logic 0	
	-04-N	Set to Logic 0	
	-05-N	Set to Logic 0	
	-06-N	Set to Logic 0	
	-07-N	Set to Logic 0	IPV6 Network IP Address
	-08-N	Set to Logic 0	Word 4
	-09-N	Set to Logic 0	
	-10-N	Set to Logic 0	
	-11-N	Set to Logic 0	
	-12-N	Set to Logic 0	
	-13-N	Set to Logic 0	
	-14-N	Set to Logic 0	
	-15-N	Set to Logic 0	LSB : 2^64------------------------

REMARKS/NOTES:

WORD NAME: Network IP Address Words 5/6

WORD ID: 21R/T/13-14	CATEGORY: Special
SOURCE(s): Platform/Store	MAX VALUE: N/A
DEST(s): Store/Platform	MIN VALUE: N/A
COMP RATE: As Required	RESOLUTION: N/A
XMIT RATE: Aperiodic	ACCURACY: N/A
SIGNAL TYPE: N/A	MSB: N/A
UNITS: N/A	LSB: N/A
	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION	
		IPV4 Address	IPV6 Address
Word 5	-00-N	MSB : 2^31 -------------------------	MSB : 2^63------------------------
Network IP Address	-01-N		
	-02-N		
	-03-N		
	-04-N		
	-05-N		
	-06-N		
	-07-N	Net Mask Number	IPV6 Network IP Address
	-08-N	Word 1	Word 5
	-09-N		
	-10-N		
	-11-N		
	-12-N		
	-13-N		
	-14-N		
	-15-N	LSB : 2^16 -------------------------	LSB : 2^48------------------------
Word 6	-00-N	MSB : 2^15 -------------------------	MSB : 2^47------------------------
Network IP Address	-01-N		
	-02-N		
	-03-N		
	-04-N		
	-05-N		
	-06-N		
	-07-N	Net Mask Number	IPV6 Network IP Address
	-08-N	Word 2	Word 6
	-09-N		
	-10-N		
	-11-N		
	-12-N		
	-13-N		
	-14-N		
	-15-N	LSB : 2^0--------------------------	LSB : 2^32------------------------

REMARKS/NOTES:

WORD NAME: Controller (x): Network IP Address Words 7/8

		CATEGORY:	Special
WORD ID:	21R/T/15-16	MAX VALUE:	N/A
SOURCE(s):	Platform/Store	MIN VALUE:	N/A
DEST(s):	Store/Platform	RESOLUTION:	N/A
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION	
		IPV4 Address	IPV6 Address
Word 7	-00-N	MSB : 2^31 -------------------------	MSB : 2^31------------------------
Network IP Address	-01-N		
	-02-N		
	-03-N		
	-04-N		
	-05-N		
	-06-N		
	-07-N	IPV4 Network IP Address	IPV6 Network IP Address
	-08-N	Word 1	Word 7
	-09-N		
	-10-N		
	-11-N		
	-12-N		
	-13-N		
	-14-N		
	-15-N	LSB : 2^16 -------------------------	LSB : 2^16------------------------
Word 8	LSB -00-N	MSB : 2^15 -------------------------	MSB : 2^15------------------------
Network IP Address	-01-N		
	-02-N		
	-03-N		
	-04-N		
	-05-N		
	-06-N		
	-07-N	IPV4 Network IP Address	IPV6 Network IP Address
	-08-N	Word 2	Word 8
	-09-N		
	-10-N		
	-11-N		
	-12-N		
	-13-N		
	-14-N		
	-15-N	LSB : 2^0-------------------------	LSB : 2^0 ------------------------

REMARKS/NOTES:

WORD NAME: Root Terminal ID

		CATEGORY:	N/A
WORD ID:	21R/T/17	MAX VALUE:	N/A
SOURCE(s):	Platform/Store	MIN VALUE:	N/A
DEST(s):	Store/Platform	RESOLUTION:	N/A
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
	-00-0	Set to logic 0
Root Terminal ID	-01-N	MSB 2^14--
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB 2^0 --

REMARKS/NOTES:

WORD NAME: Terminal ID

		CATEGORY:	Special
WORD ID:	21R/T/18-19	MAX VALUE:	N/A
SOURCE(s):	Platform/Store	MIN VALUE:	N/A
DEST(s):	Store/Platform	RESOLUTION:	N/A
COMP RATE:	As Required	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION	
		URN	MTID
Terminal ID	MSW -00-N	Set to logic 0	MSB : 2^31------------------------
	-01-N	Set to logic 0	
	-02-N	Set to logic 0	
	-03-N	Set to logic 0	
	-04-N	Set to logic 0	
	-05-N	Set to logic 0	
	-06-N	Set to logic 0	
	-07-N	Set to logic 0	
	-08-N	MSB : 2^23 ------------------------	
	-09-N		
	-10-N		
	-11-N		
	-12-N		
	-13-N		
	-14-N		
	-15-N		32-bit MSS Terminal
	LSW -00-N		ID (MTID)
	-01-N		
	-02-N		
	-03-N	24-bit Unit Reference	
	-04-N	Number (URN)	
	-05-N		
	-06-N		
	-07-N		
	-08-N		
	-09-N		
	-10-N		
	-11-N		
	-12-N		
	-13-N		
	-14-N		
	-15-N	LSB : 2^0--------------------------	LSB : 2^0 ------------------------

REMARKS/NOTES:

WORD NAME: DL Address

	CATEGORY:	N/A
WORD ID: 21R/T/20	MAX VALUE:	N/A
SOURCE(s): Platform/Store	MIN VALUE:	N/A
DEST(s): Store/Platform	RESOLUTION:	N/A
COMP RATE: As Required	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION	
		7-bit	16-bit
DL Address	-00-N	Set to logic 0	MSB : 2^{15}------------------------
	-01-N	Set to logic 0	
	-02-N	Set to logic 0	
	-03-N	Set to logic 0	
	-04-N	Set to logic 0	
	-05-N	Set to logic 0	
	-06-N	Set to logic 0	
	-07-N	Set to logic 0	16-bit DL Address
	-08-N	Set to logic 0	
	-09-N	MSB : 2^6--------------------------	
	-10-N		
	-11-N		
	-12-N	7-bit DL Address	
	-13-N		
	-14-N		
	-15-N	LSB 2^0 --------------------------	LSB 2^0--------------------------

REMARKS/NOTES:

WORD NAME: Frequency/Circuit Number Word 1/2
                                              CATEGORY: Special
WORD ID: 21R/T/21-22   MAX VALUE: N/A
SOURCE(s):   Platform/Store   MIN VALUE: N/A
DEST(s):   Store/Platform   RESOLUTION: N/A
COMP RATE: As Required   ACCURACY: N/A
XMIT RATE: Aperiodic   MSB: N/A
SIGNAL TYPE: N/A   LSB: N/A
UNITS: N/A   FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION			
		Frequency	AJ Net Number	Frequency/Spectrum Control Code	Circuit Number
Frequency/Circuit Number	-00-C	MSB : 2^3 ----------			
Type	-01-C				
	-02-C	LSB : 2^0 ----------			
Reserved	-03-0	Set to Logic 0			
Reserved	-04-0	Set to Logic 0			
Reserved	-05-0	Set to Logic 0			
Reserved	-06-0	Set to Logic 0			
Reserved	-07-0	Set to Logic 0 ----------			
Uplink/Downlink Protocol	-08-C	MSB : 2^1 ----------			
	-09-C	LSB : 2^0 ----------			
Reserved	-10-0	Set to Logic 0			
Reserved	-11-0	Set to Logic 0			
Circuit Number Digit #13	-12-N	Set to Logic 0	Set to Logic 0	Set to Logic 0	MSB : 2^3 ------------------
	-13-N	Set to Logic 0	Set to Logic 0	Set to Logic 0	Circuit Number
	-14-N	Set to Logic 0	Set to Logic 0	Set to Logic 0	Digit #13 (MSP)
	-15-N	Set to Logic 0	Set to Logic 0	Set to Logic 0	LSB : 2^0 ------------------
Frequency 100 GHz or	-00-N	MSB : 2^3 ------------------	Set to Logic 0	Set to Logic 0	MSB : 2^3 ------------------
Circuit Number Digit #12	-01-N	100 GHz Digit	Set to Logic 0	Set to Logic 0	Circuit Number
	-02-N		Set to Logic 0	Set to Logic 0	Digit #12
	-03-N	LSB : 2^0 ------------------	Set to Logic 0	Set to Logic 0	LSB : 2^0 ------------------
Frequency 10 GHz or	-04-N	MSB: 2^3 ------------------	Set to Logic 0	Set to Logic 0	MSB : 2^3 ------------------
Circuit Number Digit #11	-05-N	10 GHz Digit	Set to Logic 0	Set to Logic 0	Circuit Number
	-06-N		Set to Logic 0	Set to Logic 0	Digit #11
	-07-N	LSB : 2^0 ------------------	Set to Logic 0	Set to Logic 0	LSB : 2^0 ------------------
Frequency 1 GHz or	-08-N	MSB: 2^3 ------------------	Set to Logic 0	Set to Logic 0	MSB : 2^3 ------------------
Circuit Number Digit #10	-09-N	1 GHz Digit	Set to Logic 0	Set to Logic 0	Circuit Number
	-10-N		Set to Logic 0	Set to Logic 0	Digit #10
	-11-N	LSB : 2^0 ------------------	Set to Logic 0	Set to Logic 0	LSB : 2^0 ------------------
Frequency 100 MHz or	-12-N	MSB: 2^3 ------------------	Set to Logic 0	Set to Logic 0	MSB : 2^3 ------------------
Circuit Number Digit #9	-13-N	100 MHz Digit	Set to Logic 0	Set to Logic 0	Circuit Number
	-14-N		Set to Logic 0	Set to Logic 0	Digit #9
	-15-N	LSB : 2^0 ------------------	Set to Logic 0	Set to Logic 0	LSB : 2^0 ------------------

REMARKS/NOTES:

WORD NAME: Frequency/Circuit Number Word 3/4

WORD ID:	21R/T/23-24
SOURCE(s):	Platform/Store
DEST(s):	Store/Platform
COMP RATE:	As Required
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION			
		Frequency	AJ Net Number	Frequency/Spectrum Control Code	Circuit Number
Frequency 10 MHz or	-00-N	MSB : 2^3 --------------------------	Set to Logic 0	Set to Logic 0	MSB : 2^3 --------------------------
Circuit Number Digit #8	-01-N	10 MHz Digit	Set to Logic 0	Set to Logic 0	Circuit Number
	-02-N		Set to Logic 0	Set to Logic 0	Digit #8
	-03-N	LSB : 2^0 --------------------------	Set to Logic 0	Set to Logic 0	LSB : 2^0 --------------------------
Frequency 1 MHz or	-04-N	MSB : 2^3 --------------------------	Set to Logic 0	Set to Logic 0	MSB : 2^3 --------------------------
Circuit Number Digit #7	-05-N	1 MHz Digit	Set to Logic 0	Set to Logic 0	Circuit Number
	-06-N		Set to Logic 0	Set to Logic 0	Digit #7
	-07-N	LSB : 2^0 --------------------------	Set to Logic 0	Set to Logic 0	LSB : 2^0 --------------------------
Frequency 100 KHz or	-08-N	MSB : 2^3 --------------------------	MSB : 2^3 --------------------------	Set to Logic 0	MSB -------------------- : 2^3
Circuit Number Digit #6 or	-09-N	100 KHz Digit	AJ Net Number	Set to Logic 0	Circuit Number
AJ Net Number Digit #6	-10-N		Digit #6 (MSP)	Set to Logic 0	Digit #6
(Hex)	-11-N	LSB : 2^0 --------------------------	LSB : 2^0 --------------------------	Set to Logic 0	LSB : 2^0 --------------------------
Frequency 10 KHz or	-12-N	MSB : 2^3 --------------------------	MSB : 2^3 --------------------------	Set to Logic 0	MSB : 2^3 --------------------------
Circuit Number Digit #5 or	-13-N	10 KHz Digit	AJ Net Number	Set to Logic 0	Circuit Number
AJ Net Number Digit #5	-14-N		Digit #5	Set to Logic 0	Digit #5
	-15-N	LSB : 2^0 --------------------------	LSB : 2^0 --------------------------	Set to Logic 0	LSB : 2^0 --------------------------
Frequency 1 KHz or	-00-N	MSB : 2^3 --------------------------	MSB : 2^3 --------------------------	MSB : 2^3 --------------------------	MSB : 2^3 --------------------------
Circuit Number Digit #4 or	-01-N	1 KHz Digit	AJ Net Number	Spectrum Control Code	Circuit Number
AJ Net Number Digit #4 or	-02-N		Digit #4	Hex Digit #4 (MSP)	Digit #4
Spectrum Control Code Hex Digit #4	-03-N	LSB : 2^0 --------------------------	LSB : 2^0 --------------------------	LSB : 2^0 --------------------------	LSB : 2^0 --------------------------
Frequency 100 Hz or	-04-N	MSB : 2^3 --------------------------	MSB : 2^3 --------------------------	MSB : 2^3 --------------------------	MSB : 2^3 --------------------------
Circuit Number Digit #3 or	-05-N	100 Hz Digit	AJ Net Number	Spectrum Control Code	Circuit Number
AJ Net Number Digit #3 or	-06-N		Digit #3	Hex Digit #3	Digit #3
Spectrum Control Code Hex Digit #3	-07-N	LSB : 2^0 --------------------------	LSB : 2^0 --------------------------	LSB : 2^0 --------------------------	LSB : 2^0 --------------------------
Frequency 10 Hz or	-08-N	MSB : 2^3 --------------------------	MSB : 2^3 --------------------------	MSB : 2^3 --------------------------	MSB : 2^3 --------------------------
Circuit Number Digit #2 or	-09-N	10 Hz Digit	AJ Net Number	Spectrum Control Code	Circuit Number
AJ Net Number Digit #2 or	-10-N		Digit #2	Hex Digit #2	Digit #2
Spectrum Control Code Hex Digit #2	-11-N	LSB : 2^0 --------------------------	LSB : 2^0 --------------------------	LSB : 2^0 --------------------------	LSB : 2^0 --------------------------
Frequency 1 Hz or	-12-N	MSB : 2^3 --------------------------	MSB : 2^3 --------------------------	MSB : 2^3 --------------------------	MSB : 2^3 --------------------------
Circuit Number Digit #1 or	-13-N	1 Hz Digit	AJ Net Number	Spectrum Control Code	Circuit Number
AJ Net Number Digit #1 or	-14-N		Digit #1 (LSP)	Hex Digit #1 (LSP)	Digit #1
Spectrum Control Code Hex Digit #1	-15-N	LSB : 2^0 --------------------------	LSB : 2^0 --------------------------	LSB : 2^0 --------------------------	LSB : 2^0 --------------------------

REMARKS/NOTES:

WORD NAME: NPG and SNN / OPS No.

WORD ID:	21R/T/25
SOURCE(s):	Platform/Store
DEST(s):	Store/Platform
COMP RATE:	As Required
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION	
		NPG and SNN	OPS No.
Stacked Net Number (SNN)	-00-N	MSB : 2^6 ------------------------- Stacked Net Number	Set to logic 0
	-01-N	(SNN)	Set to logic 0
	-02-N	SIGNAL TYPE: Unsigned UNITS: N/A	Set to logic 0
	-03-N	MAX VALUE: 127 MIN VALUE: 0	Set to logic 0
	-04-N	RESOLUTION: 1 ACCURACY: 1	Set to logic 0
	-05-N	FULL SCALE: 127	Set to logic 0
	-06-N	LSB : 2^0 --------------------------	Set to logic 0
Network Participation Group (NPG)	-07-N	MSB : 2^8 ------------------------- Network Participation	Set to logic 0
Operational Parameter Set Number (OPS No.)	-08-N	Group (NPG)	MSB : 2^7 -------------------------- Operational Parameter
	-09-N		Set Number (OPS No.)
	-10-N	SIGNAL TYPE: Unsigned UNITS: N/A	
	-11-N	MAX VALUE: 511 MIN VALUE: 0	SIGNAL TYPE: Unsigned UNITS: N/A MAX VALUE: 255
	-12-N	RESOLUTION: 1 ACCURACY: 1	MIN VALUE: 0 RESOLUTION: 1
	-13-N	FULL SCALE: 511	ACCURACY: 1 FULL SCALE: 255
	-14-N		
	-15-N	LSB : 2^0 --------------------------	LSB : 2^0 --------------------------

REMARKS/NOTES:

WORD NAME: WDL Target Reference Number

WORD ID:	21R/T/26-27	CATEGORY:	Special
SOURCE(s):	Platform/Store	MAX VALUE:	N/A
DEST(s):	Store/Platform	MIN VALUE:	N/A
COMP RATE:	As Required	RESOLUTION:	N/A
XMIT RATE:	Aperiodic	ACCURACY:	N/A
SIGNAL TYPE:	N/A	MSB:	N/A
UNITS:	N/A	LSB:	N/A
		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION	
Target Reference MSW	-00-N	MSB : 2^2--	
Number Type	-01-N		
	-02-N	LSB : 2^0--	
	-03-0	Set to Logic 0	Set to Logic 0
	-04-0	Set to Logic 0	Set to Logic 0
	-05-0	Set to Logic 0	Set to Logic 0
	-06-0	Set to Logic 0	Set to Logic 0
	-07-0	Set to Logic 0	Set to Logic 0
	-08-0	Set to Logic 0	Set to Logic 0
	-09-0	Set to Logic 0	Set to Logic 0
Index Numbrr (IN)	-10-N	Set to Logic 0 -----------------------	MSB : 2^5 -----------------------------
Track Number - Target	-11-N	MSB : 2^4---------------------------	
(TN-T)	-12-N	TN-T	Index Number
	-13-N	First Character	
	-14-N	(0-7, A-Z)	
	-15-N	LSB : 2^0---------------------------	LSB : 2^0 -----------------------------
LSW	-00-N	Set to logic 0	Set to logic 0
Track Number - Source	-01-N	Set to logic 0	MSB : 2^2 -----------------------------
(TN-S)	-02-N	MSB : 2^4---------------------------	TS-S 1st digit (0-7)
	-03-N		LSB : 2^0 -----------------------------
	-04-N	Second Character	MSB : 2^2 -----------------------------
	-05-N	(0-7, A-7)	2nd digit (0-7)
	-06-N	LSB : 2^0---------------------------	LSB : 2^0 -----------------------------
	-07-N	MSB : 2^2---------------------------	MSB : 2^2 -----------------------------
	-08-N	1st digit (0-7)	3rd digit (0-7)
	-09-N	LSB : 2^0---------------------------	LSB : 2^0 -----------------------------
	-10-N	MSB : 2^2---------------------------	MSB : 2^2 -----------------------------
	-11-N	2nd digit (0-7)	4th digit (0-7)
	-12-N	LSB : 2^0---------------------------	LSB : 2^0 -----------------------------
	-13-N	MSB : 2^2---------------------------	MSB : 2^2 -----------------------------
	-14-N	3rd digit (0-7)	5th digit (0-7)
	-15-N	LSB : 2^0---------------------------	LSB : 2^0 -----------------------------

REMARKS/NOTES:

WORD NAME: WDL Status Word 1

	CATEGORY: Special
WORD ID: 21R/T/28	MAX VALUE: N/A
SOURCE(s): Platform/Store	MIN VALUE: N/A
DEST(s): Store/Platform	RESOLUTION: N/A
COMP RATE: As Required	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
WDL Connectivity Status: Current Controller	-00-C	MSB : 2^1---
	-01-C	LSB : 2^0---
WDL Connectivity Status: Alternate Controller	-02-C	MSB : 2^1---
	-03-C	LSB : 2^0---
WDL Connectivity Status: 3Third Party IFTU Source	-04-C	MSB : 2^1---
	-05-C	LSB : 2^0---
LAR Data Change via WDL	-06-D	Set to logic 1 when a IR LAR Data [05T] or IZ LAR Data [06T] change has resulted from data received via the WDL
Programmable Fuze Data Change via WDL	-07-D	Set to logic 1 When a Critical Monitor [11T] fuze change has been received via the WDL
GeoZone Data Change via WDL	-08-D	Set to logic 1 When a GeoZone Monitor [16T] Change Has Been Received via the WDL
Modify Mission Data Change via WDL	-09-D	Set to logic 1 When a Modify Mission [17T] Change Has Been Received via the WDL
Controller Data Change via WDL	-10-D	Set to logic 1 When a WDL Monitor [21T] Change Has Been Received via the WDL
Mission Monitor Data Change via WDL	-11-D	Set to logic 1 When a Mission Monitor [22T] Change Has Been Received via the WDL.
Seeker/Sensor Data Change via WDL	-12-D	Set to logic 1 When a Seeker/Sensor Monitor [24T] Change Has Been Received via the WDL
WDL Inhibit Status	-13-D	Set to logic 1 when WDL Inhibit [22R/05/08 = 1].
Reserved	-14-0	Set to logic 0.
Reserved	-15-0	Set to logic 0.

REMARKS/NOTES:

1. This is a mission store generated status word [21T/28].

2. The platform always sets this data word [21R/28] to 0000 (H).

WORD NAME: WDL Status Word 2

	CATEGORY:	Special
WORD ID: 21R/T/29	MAX VALUE:	N/A
SOURCE(s): Platform/Store	MIN VALUE:	N/A
DEST(s): Store/Platform	RESOLUTION:	N/A
COMP RATE: As Required	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0
WDL Keys Received	-00-B	1 = Valid MDT-Crypto Data [13R-022] loaded in mission
Reserved	-01-0	Set to logic 0
WDL Key Coverage	-02-N	MSB : 2^6 ---
	-03-N	SIGNAL TYPE: Unsigned UNITS: Days
	-04-N	MAX VALUE: 56 MIN VALUE: 0
	-05-N	RESOLUTION: 1 ACCURACY: 1
	-06-N	FULL SCALE: 127
	-07-N	
	-08-N	LSB : 2^0 ---
WDL Terminal Init File Count	-09-C	MSB : 2^2 ---
	-10-C	
	-11-C	LSB : 2^0 ---
Reserved	-12-0	Set to logic 0.
Reserved	-13-0	Set to logic 0.
Reserved	-14-0	Set to logic 0.
Reserved	-15-0	Set to logic 0.

REMARKS/NOTES:

1. This is a mission store generated status word [21T/29].

2. The platform always sets this data word [21R/29] to 0000 (H).

WORD NAME: Checksum

WORD ID:	21R/T/30	CATEGORY: Number(L)
SOURCE(s):	Platform/Store	MAX VALUE: 65535
DEST(s):	Store/Platform	MIN VALUE: 0
COMP RATE:	As Required	RESOLUTION: N/A
XMIT RATE:	Aperiodic	ACCURACY: N/A
SIGNAL TYPE:	Unsigned	MSB: 2^{15}
UNITS:	N/A	LSB: 2^0
		FULL SCALE: 65535

FIELD NAME	BIT NO.	DESCRIPTION
Checksum	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

6.22R <u>MISSION CONTROL</u> [22R]

<u>Mission Control</u> [22R] controls mission store non-safety critical functions.

6.22R.1 <u>Pri Msn Storage Location</u> [22R/04]

The platform designates the mission to be executed by setting <u>Pri Msn Storage Location</u> [22R/04] equal to the storage location number (one to <u>CDS Max MDS Storage Locations</u> **{cds_6069}**) for the selected mission. <u>Pri Msn Storage Location</u> can be set to 0 to indicate that no mission is selected. Note: Selecting a <u>Pri Msn Storage Location</u> that contains an MDS with programmable fuze settings results in reprogramming the programmable fuze. Section 3.5.12.3 Mission Store Pre-Release: Programmable Fuze provides further information and requirements.

Platform Requirements

The platform shall **{ps_6241}** provide <u>Pri Msn Storage Location</u> [22R/04] to the mission store to designate the primary mission for attack.

Mission Store Requirements

The mission store shall **{ss_6192}** execute the <u>Pri Msn Storage Location</u> [22R/04] mission.

6.22R.2 <u>All Up Round (AUR) Controls 1</u> [22R/05]

<u>AUR Controls 1</u> [22R/05] controls mission store subsystem operations.

6.22R.2.1 <u>GPS RF on HB1</u> [22R/05/01]

For UAI, the only signal on <u>High Bandwidth 1 (HB1)</u> is GPS RF.

Platform Requirements

The platform shall **{ps_6242}** set <u>GPS RF on HB1</u> [22R/05/01 = 1] to inform the store that GPS RF is present on <u>HB1</u> if <u>CDS HB1 GPS RF Available</u> **{cds_3011}** and the platform has the capability of routing GPS RF on <u>HB1</u> to the store.

Mission Store Requirements

The mission store may **{sm_6009}** use GPS RF on <u>HB1</u> when <u>GPS RF on HB1</u> [22R/05/01 = 1].

6.22R.2.2 <u>HB3 Video Enable</u> [22R/05/02]

For UAI, the <u>High Bandwidth 3 (HB3)</u> is mission store seeker/sensor video. <u>HB3 Video Enable</u> [22R/05/02] is used to enable/disable mission store seeker/sensor video.

Platform Requirements

The platform shall **{ps_6243}** set <u>HB3 Video Enable</u> [22R/05/02 = 1] to command the mission store to provide seeker/sensor video on <u>HB3</u>, if <u>CDS HB3 Video</u>

Available **{cds_3025}**, and the platform has the capability of routing HB3 video to platform aircrew display(s).

Mission Store Requirements

The mission store shall **{ss_6193}** provide seeker/sensor video on HB3 only when HB3 Video Enable [22R/05/02 = 1].

6.22R.2.3 Reset Power Dropout [22R/05/04]

Platform Requirements

The platform shall **{ps_6244}** set Reset Power Dropout [22R/05/04 = 1] when Power Interruption [22T/02/14 = 1] and Platform ID Received [22T/05/02 = 1] is reported by the mission store.

The platform shall **{ps_6245}** set Reset Power Dropout [22R/05/04 = 0] in the next Mission Control [22R] after Power Interruption [22T/02/14 = 0].

6.22R.2.4 Crypto Data Zeroize [22R/05/05]

Platform Requirements

The platform may **{pm_6043}** set Crypto Data Zeroize [22R/05/05 = 1], if GPS Capable [22T/05/13 = 1] or WDL Onboard [22T/05/11 = 1] or the mission store uses MDT-Growth Crypto [13R-022], to command the mission store to perform a zeroization on all of its Crypto Data.

Mission Store Requirements

The mission store shall **{ss_6194}** perform the Crypto Data Zeroization process after receipt of Crypto Data Zeroize [22R/05/05 = 1], if GPS Capable [22T/05/13 = 1] or WDL Onboard [22T/05/11 = 1], or the mission store uses MDT-Growth Crypto [13R-022].

6.22R.2.5 Weapon Data Link (WDL) Inhibit [22R/05/08]

WDL Inhibit [22R/05/08] commands the mission store to disable the weapon data link transceiver. To enable the mission store weapon data link, the platform sets WDL Inhibit [22R/05/08 = 0] prior to commanding CTS [11R/04/02]. Section 3.5.21 Weapon Data Link (WDL) provides additional information and requirements.

Platform Requirements

The platform shall **{ps_6246}** set WDL Inhibit [22R/05/08 = 1] to command the mission store to disable the mission store weapon data link, if WDL Onboard [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6195}** inhibit its weapon data link transceiver when of WDL Inhibit [22R/05/08 = 1] if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6196}** disregard changes in WDL Inhibit [22R/05/08] after receipt of CTS [11R/04/02 = 1], if WDL Onboard [22T/05/11 = 1].

6.22R.2.6 Inhibit GPS [22R/05/09]

Inhibit GPS [22R/05/09] provides the platform with the capability to command the mission store to inhibit use of GPS inputs in the store navigation solution. This function is mandatory for GPS-capable mission stores that have an "INS-Only" operational capability. It is not applicable to mission stores that must have GPS-aiding to accomplish their mission.

Platform Requirements

The platform shall **{ps_6247}** set Inhibit GPS [22R/05/09 = 1] to command the mission store to inhibit use of GPS inputs in the store navigation solution if CDS INS-Only Capable **{cds_6010}**.

Mission Store Requirements

The mission store shall **{ss_6197}** inhibit use of GPS inputs in the mission store navigation solution after receipt of Inhibit GPS [22R/05/09 = 1] if the mission store has an "INS-Only" operational capability, as documented in the store supplement **{sup_6283}**.

6.22R.2.7 Power Management [22R/05/11]

Power Management [22R/05/11 = 1], if applicable to the mission store, commands the mission store into a low power consumption mode. Specifics of the low power consumption mode are defined in the store supplement **{sup_6115}**.

Platform Requirements

The platform shall **{ps_6248}** command the mission store into its low power consumption mode by setting Power Management [22R/05/11 = 1] if CDS Power Management Available **{cds_6094}**.

Mission Store Requirements

The mission store shall **{ss_6198}** enable its low power consumption mode on receipt of Power Management [22R/05/11 = 1], as defined in the store supplement **{sup_6116}**.

6.22R.3 Test Controls [22R/06]

This section describes the interface requirements to initiate and control certain designated and user-defined test unique functions during captive carry and free flight tests. See section 3.5.18.1 for further information and requirements.

Platform Requirements

The platform annex **{ann_6009}** defines the user-defined test controls implemented by the platform and enabled by CDS Test Functions **{cds_3023}**.

The platform shall **{ps_6249}** reset <u>Test Controls</u> [22R/06 = 0000 (H)] when <u>Operating Power</u> is cycled.

Mission Store Requirements

The mission store supplement **{sup_6117}** documents which user-defined test controls are implemented by the store.

6.22R.3.1 <u>Telemetry (TM) On</u> [22R/06/00]

Platform Requirements

The platform shall **{ps_6250}** set <u>TM On</u> [22R/06/00 = 1] to command the mission store to activate its telemetry (TM) transmitter if <u>Telemetry Onboard</u> [22T/02/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6199}** activate its telemetry transmitter only when <u>TM On</u> [22R/06/00 = 1] as documented in the mission store supplement **{sup_6118}**.

6.22R.3.2 <u>Flight Termination System (FTS) On</u> [22R/06/01]

This command enables the FTS system without initiating the mission store internal FTS battery.

Platform Requirements

The platform shall **{ps_6251}** set <u>FTS On</u> [22R/06/01 = 1] to command the mission store to activate its Flight Termination System (FTS) if <u>FTS Onboard</u> [22T/02/10 = 1].

Mission Store Requirements

The mission store shall **{ss_6200}** activate its FTS system after receipt of <u>FTS On</u> [22R/06/01 = 1] as documented in the store supplement **{sup_6119}**.

6.22R.3.3 <u>Simulate Release</u> [22R/06/02]

<u>Simulate Release</u> [22R/06/02 = 1] enables the mission store to simulate a release countdown. The platform uses the normal MIL-STD-1760 commands to initiate mission store release, however, the platform is required not to provide <u>28V DC2</u> [Power]. The platform and mission store do not:

1. Initiate launch countdown functions including irreversible squibs (such as batteries, ejector cartridges, and store fin unlock).
2. Cause loss of MIL-STD-1553 address lines or interlock.
3. Initiate normal Power Change Over (Initialization power removal).

<u>Conditioning Power</u> and <u>Operating Power</u> are used by the mission store for power during simulated release operation. Removal of <u>Conditioning Power</u> and <u>Operating Power</u> terminates simulated free flight operation. Mission store battery activation is

prevented during simulated free flight operation by the platform inhibiting launch initiation power and the mission store inhibiting its internal squib activate commands.

Platform Requirements

The platform shall **{ps_6252}** command the mission store into simulated release, if the platform implements this capability, by performing the following:

    a. Set Simulate Release [22R/06/02 = 1].

    b. Inhibit 28V DC2 [Power] and Release Consent [Discrete].

    c. Set CTS [11R/04/02 = 1].

    d. Inhibit activation of the mission store release mechanism (Note: Jettison is not inhibited).

    e. Continue to provide mission store Conditioning Power and Operating Power.

The platform may **{pm_6044}** inhibit MIL-STD-1553 communications after mission store entry into Simulate Release [22R/06/02 = 1].

Mission Store Requirements

The mission store shall **{ss_6202}** do the following after receipt of CTS [11R/04/02 = 1] in the absence of Release Consent [Discrete] and 28V DC2 [Power], when Simulate Release [22R/06/02 = 1]:

    a. Simulate the release and process.

    b. Inhibit activation of its thermal batteries, flight control unlock squib/mechanisms, engine start functions, or any other irreversible or safety critical functions.

    c. Emulate the activation of the mission store battery as needed for setting CTSS [11T/04/02 = 1] within the Max Time to CTSS **{sup_3031}**.

    d. Simulate separation and perform free flight navigation.

    e. Inhibit processing or responding to platform messages other than required MIL-STD-1553 protocol, Erase Command/Authority [11R/06/00], and Abort Release/Launch [11R/06/04].

    f. Provide valid mission store status messages [02T], [03T], [11T] and [22T] when requested.

    g. Not require additional communication with the platform after entering free flight simulation.

The mission store shall **{ss_6203}** exit simulated release when Operating Power is removed.

6.22R.3.4 Immediate Sim Flight [22R/06/03]

Immediate Sim Flight [22R/06/03 = 1] enables the mission store to enable post-release free flight operations, while still captive carried on the platform.

Platform Requirements

The platform shall **{ps_6256}** set Immediate Sim Flight [22R/06/03 = 1] to command the mission store to simulate free flight operation if the platform implements this capability.

The platform shall **{ps_6257}** reset the mission store from the simulated free flight operation by cycling power.

Mission Store Requirements

The mission store shall **{ss_6204}** begin simulating free flight after receipt of Immediate Sim Flight [22R/06/03 = 1].

When in the Immediate Sim Flight function the mission store shall **{ss_6205}**:

   a. Perform free flight navigation.

   b. Inhibit activation of its thermal batteries, flight control unlock squib/mechanisms, engine start functions, or any other irreversible or safety critical functions.

   c. Inhibit processing or responding to platform messages other than required MIL-STD-1553 protocol, Erase Command/Authority [11R/06/00], and Abort Release/Launch [11R/06/04].

   d. Provide valid store status messages [02T], [03T], [11T] and [22T] when requested.

   e. Not require additional communication with the platform after entering free flight simulation.

The mission store shall **{ss_6206}** exit Immediate Sim Flight when Operating Power is removed.

6.22R.3.5 Timeline Intg (TLI) [22R/06/04]

Timeline Intg (TLI) [22R/06/04 = 1] allows for ground timeline integration (box drop) testing of the mission store. The function allows the platform to proceed through a full launch sequence without requiring the mission store to conduct a normal transfer alignment to achieve TXA Good [22T/02/05 = 1].

Platform Requirements

The platform shall **{ps_6258}** set Timeline Intg (TLI) [22R/06/04 = 1] to command the mission store to simulate a time line integration if the platform implements this capability.

The platform shall **{ps_6259}** reset the mission store from the timeline integration operation by cycling power.

Mission Store Requirements

The mission store shall **{ss_6207}** enable simulating a timeline integration after receipt of Timeline Intg (TLI) [22R/06/04 = 1].

When enabled for simulating a timeline integration:

  a. The mission store shall **{ss_6208}** simulate the completion of a normal transfer alignment by setting the TXA indications listed below within 10 minutes after the conditions for setting Min TXA Received [22T/02/02] have been satisfied:

    1. TXA Good [22T02/05 = 1 (B)]

    2. TXA Quality [22T/04/03…06 = 0001 (B)]

    3. Nav Solution Quality [22T/04/13…14 = 10 (B)]

  b. The mission store shall **{ss_6209}** use its internal batteries or an external electrical power source for operational power after PCO. It is preferred that an independent / external electrical power source be utilized by the store if its internal battery is a squib-activated one time device.

  c. The mission store shall **{ss_6210}** simulate the activation of its battery as needed for setting CTSS [11T/04/02 = 1] within the CTSS response time documented in the store supplement **{sup_6257}** following receipt of CTS [11R/04/02 = 1], if an external electrical power source is used.

  d. The mission store shall **{ss_6211}** provide the appropriate response to all platform commands such that AUR Ready [22T/02/04 = 1] is achievable with the simulation of TXA Good [22T02/05 = 1] and a complete release sequence is achievable (through PCO and rack release / cartridge fire) with the simulation of battery activate.

6.22R.3.6 TM/FTS Batt On [22R/06/05]

TM/FTS Batt On [22R/06/05] allows the platform to enable and activate the mission store TM/FTS to transition power from platform power to its internal battery in preparation for a test launch. The store TM/FTS can operate its FTS receiver and TM communication link with a ground station prior to activating the TM/FTS batteries by the platform applying electrical power. TM/FTS Batt On may or may not initiate an irreversible action and is defined in the store supplement **{sup_6120}**. Section 3.5.18.1 provides further information and requirements.

Platform Requirements

The platform shall **{ps_6260}** set TM/FTS Batt On [22R/06/05 = 1] to command the mission store to operate its TM/FTS system using its internal battery system if CDS TM/FTS Batt Capable **{cds_6095}** and FTS Onboard [22T/02/10 = 1] or Telemetry Onboard [22T/02/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6212}** use its internal battery system to operate its TM/FTS system after receipt of TM/FTS Batt On [22R/06/05 = 1] as documented in the store supplement **{sup_6121}**.

6.22R.3.7 Test Function A-J [22R/06/06…15]

Test Function A-J [22R/06/06…15] are mission store customizable user defined commands. The mission store program office/contractor provides definitions of the active Test Function A-J when requested by the platform program office/contractor prior to each test mission.

Platform Requirements

The platform shall **{ps_6261}** set Test Function A-J [22R/06/06…15 = 1] to command the mission store to activate individual Test Function A-J.

The platform shall **{ps_6262}** set Test Function A-J [22R/06/06…15 = 0] to command the mission store to deactivate individual Test Function A-J.

Mission Store Requirements

The mission store shall **{ss_6213}** activate the selected Test Function after receipt of Test Function A-J [22R/06/06…15 = 1], if implemented.

The mission store shall **{ss_6214}** deactivate the selected Test Function after receipt of Test Function A-J [22R/06/06…15 = 0], if implemented.

6.22R.4 28V DC1 On Time [22R/07]

28V DC1 On Time [22R/07] provides the length of time that 28V DC1 [Power] has been applied to the mission store.

Platform Requirements

The platform may **{pm_6045}** set 28V DC1 On Time [22R/07] indicating the length of time that 28V DC1 [Power] has been applied to the mission store.

Mission Store Requirements

The store supplement **{sup_6122}** documents how the mission store uses 28V DC1 On Time [22R/07].

6.22R.5 Mod Msn Storage Location [22R/08]

Mod Msn Storage Location [22R/08] identifies the mission storage location to use for storage of the mission data in the subsequent transmission of Modify Mission [17R] and/or Store Control [11R] fuzing data. Mod Msn Storage Location [22R/08] also identifies the mission storage location to use for modification and reporting of WDL controllers in Set Net Participants [22R/11] and Net Participant Indices [22T/20] and for modification and reporting of WDL Target Reference Number [21R/T/26-27].

Platform Requirements

The platform may **{pm_6064}** set Set Net Participants Invalid [22R/02/07 = 1] when Mod Msn Storage Location [22R/08 ≠ 0] to avoid overwriting mission planned controllers identified within the preplanned mission data set, MDT-Mission [13R-020].

6.22R.6 TA Period [22R/09]

TA Period [22R/09] contains the average time interval between each PTAM [02R].

Platform Requirements

The platform shall **{ps_6264}** set TA Period [22R/09] to the average time between each PTAM [02R].

The platform shall **{ps_6265}** not change TA Period [22R/09] while Operating Power is applied to the store.

Mission Store Requirements

The store supplement **{sup_6123}** documents how the mission store uses TA Period [22R/09].

6.22R.7 AUR Controls 2 [22R/10]

6.22R.7.1 Master Mode Control [22R/10/00…03]

Master Mode Control [22R/10/00…03] provides a means for controlling the mission store master mode, as described by Table 6.22R-1.

A mission store can have predefined modes of operation where each mode has certain functions activated or configured in specific ways. The functions can include, but are not limited to, the following: Flight Mode [17R/T-1/04/02…03], WDL Transmitter Control [21R/T/05/04…05], WDL Receiver Control [21R/T/05/06…07], Third Party IFTU Source Enable [21R/T/04/05…06], Passive Sensor Control [24R/04/04…05], Active Sensor Control [24R/04/06…07], Laser Transmitter Control [24R/12/04…05], Laser Receiver Control [24R/12/08…09], etc. Master Mode Control [22R/10/00…03] provides a way to select a specific mode and activate the functions associated with that mode with a single control.

The activation and configuration of the various functions as a result of a Master Mode Control [22R/10/00…03] setting occurs within the store and the status of those functions is reflected properly in the applicable status message. For example, if the selected master mode activates the Direct Trajectory flight mode and activates the Active Sensor after launch only, the status messages will reflect the actual status as follows: Flight Mode [17T-1/04/02…03 = 11 (Direct Trajectory)] and Active Sensor Monitor [24T/04/02…03 = 11 (Active Sensor On After Launch Only)].

Note: The status of any individual function will reflect the last received command, either a Master Mode Control [22R/10/00…03] or an individual function control.

Table 6.22R-1 Master Mode Control [22R/10/00…03] Definitions

Value	Master Mode Control	Definition
0000 (B)	Not Used	Master Mode Control is not used. All mission store functions are controlled by the individual function controls.
0001 (B)	No statement	No Master Mode command provided. Retain previous setting.

Table 6.22R-1 <u>Master Mode Control</u> **[22R/10/00…03] Definitions**

Value	Master Mode Control	Definition
0010 (B)	Option A	As defined in mission store supplement.
0011 (B)	Option B	As defined in mission store supplement.
0100 (B)	Option C	As defined in mission store supplement.
0101 (B)	Option D	As defined in mission store supplement.
0110 (B)	Option E	As defined in mission store supplement.
0111 (B)	Option F	As defined in mission store supplement.
1000 (B)	Option G	As defined in mission store supplement.
1001 (B)	Option H	As defined in mission store supplement.
1010 (B)	Option I	As defined in mission store supplement.
1011 (B)	Option J	As defined in mission store supplement.
1100 (B)	Option K	As defined in mission store supplement.
1101 (B)	Option L	As defined in mission store supplement.
1110 (B)	Option M	As defined in mission store supplement.
1111 (B)	Option N	As defined in mission store supplement.

Platform Requirements

The platform shall **{ps_6630}** set <u>Master Mode Control</u> [22R/10/00…03] IAW Table 6.22R-1 to select a master mode for the mission store when <u>CDS Master Mode Control Enabled</u> **{cds_6107}**.

The platform shall **{ps_6631}** set <u>Master Mode Control</u> [22R/10/00…03 = 0] when <u>CDS Master Mode Control Enabled</u> **{cds_6107}** is not enabled.

The platform shall **{ps_6632}** provide the capability to select or enter a <u>Master Mode Control</u> [22R/10/00…03] when <u>CDS Master Mode Control Enabled</u> **{cds_6107}**.

Mission Store Requirements

The mission store shall **{ss_6838}** respond to <u>Master Mode Control</u> [22R/10/00…03] IAW Table 6.22R-1 if the mission store supports the master mode control function.

The mission store supplement **{sup_6330}** documents <u>Master Mode Control</u> [22R/10/00…03] usage, including the Master Mode options, functions that are activated, and the specific activation settings associated with each option as defined in Table 6.22R-1.

6.22R.8 <u>Set Net Participants</u> [22R/11]

<u>Set Net Participants</u> [22R/11] specifies the CC, AC, and 3PS from <u>MDT-Net Participants</u> [13R-029] for the MDS indicated by <u>Mod Msn Storage Location</u> [22R/08] if the mission store is WDL capable.

Platform Requirements

The platform shall **{ps_6641}** set Set Net Participants [22R/11 = 0] if WDL Onboard [22T/05/11 = 0].

Store Requirements

The store shall **{ss_6863}** ignore Set Net Participants [22R/11] if WDL Onboard [22T/05/11 = 0].

6.22R.8.1 Set CC Index [22R/11/00…04]

Set CC Index [22R/11/00…04] provides the mission store with an index to identify the current controller for the mission defined by the Mod Msn Storage Location [22R/08]. The index identifies the net participant from within the MDT-Net Participants [13R-029] file.

Platform Requirements

The platform shall **{ps_6654}** set Set CC Index [22R/11/00…04 = 0] to indicate no current controller is assigned for the mission identified by the Mod Msn Storage Location [22R/08], if WDL Onboard [22T/05/11 = 1].

The platform shall **{ps_6642}** set Set CC Index [22R/11/00…04 ≠ 0] to identify the current controller for the mission identified by the Mod Msn Storage Location [22R/08], if WDL Onboard [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6888}** use no current controller in the Mod Msn Storage Location [22R/08] when Set CC Index [22R/11/00…04 = 0], if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6864}** use Set CC Index [22R/11/00…04] or the current controller from MDT-Mission [13R-020], whichever was received last, as the current controller for Mod Msn Storage Location [22R/08], if WDL Onboard [22T/05/11 = 1].

6.22R.8.2 Set AC Index [22R/11/05…09]

Set AC Index [22R/11/05…09] provides the mission store with an index to identify the alternate controller for the mission defined by the Mod Msn Storage Location [22R/08]. The index identifies the net participant from within the MDT-Net Participants [13R-029] file.

Platform Requirements

The platform shall **{ps_6643}** set Set AC Index [22R/11/05…09 = 0] to indicate no alternate controller is assigned for the mission identified by the Mod Msn Storage Location [22R/08], if WDL Onboard [22T/05/11 = 1].

The platform shall **{ps_6644}** set Set AC Index [22R/11/05…09 ≠ 0] to identify the alternate controller for the mission identified by the Mod Msn Storage Location [22R/08], if WDL Onboard [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6865}** use no alternate controller in the Mod Msn Storage Location [22R/08] when Set AC Index [22R/11/05…09 = 0], if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6866}** use Set AC Index [22R/11/05…09] or the alternate controller from MDT-Mission [13R-020], whichever was received last, as the alternate controller for Mod Msn Storage Location [22R/08], if WDL Onboard [22T/05/11 = 1].

6.22R.8.3 Set 3PS Index [22R/11/10…14]

Set 3PS Index [22R/11/10…14] provides the mission store with an index to identify the third Party IFTU Source for the mission defined by the Mod Msn Storage Location [22R/08]. The index identifies the net participant from within the MDT-Net Participants [13R-029] file.

Platform Requirements

The platform shall **{ps_6645}** set Set 3PS Index [22R/11/10…14 = 0] to indicate no third party IFTU source is assigned for the mission identified by the Mod Msn Storage Location [22R/08], if WDL Onboard [22T/05/11 = 1].

The platform shall **{ps_6646}** set Set 3PS Index [22R/11/10…14 ≠ 0] to identify the third party IFTU source for the mission identified by the Mod Msn Storage Location [22R/08], if WDL Onboard [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6867}** use no third party IFTU source in the Mod Msn Storage Location [22R/08] when Set 3PS Index [22R/11/10…14 = 0], if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6868}** use Set 3PS Index [22R/11/10…14] or the third party IFTU source from MDT-Mission [13R-020], whichever was received last, as the third party IFTU source for Mod Msn Storage Location [22R/08], if WDL Onboard [22T/05/11 = 1].

6.22R.9 Growth Provision 1 [22R/12/00…07]

Growth Function A-H [22R/12/00…07] provide eight (8) individually controlled, mission store customizable, binary (off/on) commands that supports limited mission store design growth capability outside the standardized UAI functions and messages for those store functions that cannot be controlled using existing UAI interfaces.

Platform Requirements

The platform shall **{ps_6266}** provide the capability for the aircrew to enable/disable individual Growth Function A-H [22R/12/00…07] commands, when CDS Growth Function A-H Enabled **{cds_6096}**.

The platform shall **{ps_6267}** provide the capability to select (enable/disable) each of the CDS enabled <u>Growth Function A-H</u> [22R/12/00…07] commands.

The platform shall **{ps_6268}** set <u>Growth Function A-H</u> [22R/12/00…07 = 1] to command the store to activate individual Growth Function A-H.

Mission Store Requirements

The mission store shall **{ss_6216}** activate the selected Growth Function after receipt of <u>Growth Function A-H</u> [22R/12/00…07 = 1], as defined in the mission store supplement **{sup_6124}**.

The store supplement **{sup_6125}** documents the <u>Growth Function A-H</u> [22R/12/00…07] functions, states, and capabilities used by the mission store.

6.22R.10 <u>Growth Provision 2 Value [22R/13]</u>

<u>Growth Provision 2 Value</u> [22R/13] is a single data value, customizable by the mission store, that supports limited mission store design growth capability outside the standardized UAI functions and messages for those store functions that cannot be controlled using existing UAI interfaces.

Platform Requirements

The platform shall **{ps_6269}** provide the capability for the aircrew to set the <u>Growth Provision 2 Value</u> [22R/13], when <u>CDS Growth Provision 2 Enabled</u> **{cds_6097}**.

The platform shall **{ps_6270}** set <u>Growth Provision 2 Value</u> [22R/13 = 0000 (H)], until the operator enters a value between the <u>CDS Growth Provision 2 Minimum Value Boundary</u> **{cds_6098}** and <u>CDS Growth Provision 2 Maximum Value Boundary</u> **{cds_6099}**, and then transmit this as <u>Growth Provision 2 Value</u> [22R/13] to the mission store, when <u>CDS Growth Provision 2 Enabled</u> **{cds_6097}**.

Mission Store Requirements

The mission store shall **{ss_6217}** use the platform provided <u>Growth Provision 2 Value</u> [22R/13] as defined in the mission store supplement **{sup_6126}**.

6.22R.11 <u>Sec Msn Storage Location [22R/14]</u>

The platform designates the secondary mission if the primary mission cannot be executed. The platform designates the secondary mission to be executed by setting <u>Sec Msn Storage Location</u> [22R/14] equal to the storage location number (one to <u>CDS Max MDS Storage Locations</u> **{cds_6069}**) for the selected mission. The Mission Data Sets (MDSs) are sent to the store via the Mass Data Transfer (MDT) or non-MDT process prior to selecting the secondary mission.

Platform Requirements

The platform shall **{ps_6271}** provide <u>Sec Msn Storage Location</u> [22R/14] to the store to designate the secondary mission for attack, if <u>CDS Secondary Mission Capable</u> **{cds_6100}**.

Mission Store Requirements

The mission store shall **{ss_6218}** consider <u>Sec Msn Storage Location</u> [22R/14 = valid MDS] as the secondary mission to prosecute as documented in the mission store supplement **{sup_6258}**.

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MESSAGE NAME:	Mission Control		
MESSAGE ID:	22R	TRANSFER TYPE:	BC-RT
SOURCE:	Platform	WORD COUNT:	16
DESTINATION:	Store	XMIT RATE:	Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 10110 binary
Header	01	Message Descriptor
Invalidity	02	Validity of Message Data
Invalidity	03	Validity of Message Data
Pri Msn Storage Location	04	Storage location of the primary MDS
AUR Controls 1	05	Operational controls for the store
Test Controls	06	Test Control to activate specified store functions
28V DC1 On Time	07	28V DC1 [Power] On Time Transfer
Mod Msn Storage Location	08	Storage location of MDS to be modified
TA Period	09	GPS Initialization Data Transfer (Transfer Alignment Period)
AUR Controls 2	10	Operational controls for the store
Set Net Participants	11	Identify the WDL Participants
Growth Provision 1	12	Growth Provision 1 User Defined Commands
Growth Provision 2	13	Growth Provision 2 User Defined Value
Sec Msn Storage Location	14	Storage location of the secondary MDS
Reserved	15-16	Reserved
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Header

		CATEGORY:	Header
WORD ID:	22R/01	MAX VALUE:	1000 (H)
SOURCE(s):	Platform	MIN VALUE:	1000 (H)
DEST(s):	Store	RESOLUTION:	1
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^15
SIGNAL TYPE:	Hexadecimal	LSB:	2^0
UNITS:	N/A	FULL SCALE:	FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB --
	-01-B	
	-02-B	Hex digit #1 value = 1 (H)
	-03-B	LSB --
Hex Digit #2	-04-B	MSB --
	-05-B	
	-06-B	Hex digit #2 value = 0 (H)
	-07-B	LSB --
Hex Digit #3	-08-B	MSB --
	-09-B	
	-10-B	Hex digit #3 value = 0 (H)
	-11-B	LSB --
Hex Digit #4	-12-B	MSB --
	-13-B	
	-14-B	Hex digit #4 value = 0 (H)
	-15-B	LSB --

REMARKS/NOTES:

WORD NAME: Invalidity

	CATEGORY: Validity
WORD ID: 22R/02	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: Binary	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Test Controls Invalid	-00-V	Set to logic 1 if word 6 is invalid.
28V DC1 On Time Invalid	-01-V	Set to logic 1 if word 7 is invalid.
Pri Msn Storage Location Invalid	-02-V	Set to logic 1 if word 4 is invalid.
Mod Msn Storage Location Invalid	-03-V	Set to logic 1 if word 8 is invalid.
AUR Control Invalid	-04-V	Set to logic 1 if word 5 is invalid.
TA Period Invalid	-05-V	Set to logic 1 if word 9 is invalid.
Master Mode Control Invalid	-06-V	Set to logic 1 if Master Mode Control [22R/10/00…03] is invalid.
Set Net Participants Invalid	-07-V	Set to logic 1 if Set Net Participants [22R/11] is invalid.
Sec Msn Storage Location Invalid	-08-V	Set to logic 1 if word 14 is invalid.
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Invalidity

	CATEGORY:	Validity
WORD ID: 22R/03	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: Binary	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0
Reserved	-01-0	Set to logic 0
Reserved	-02-0	Set to logic 0
Reserved	-03-0	Set to logic 0
Reserved	-04-0	Set to logic 0
Reserved	-05-0	Set to logic 0
Reserved	-06-0	Set to logic 0
Reserved	-07-0	Set to logic 0
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Pri Msn Storage Location

		CATEGORY:	Number(L)
WORD ID:	22R/04	MAX VALUE:	255
SOURCE(s):	Platform	MIN VALUE:	0
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^{15}
SIGNAL TYPE:	Unsigned	LSB:	2^0
UNITS:	N/A	FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Pri Msn Storage Location Number	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. This field designates which of the stored MDSs is selected for attack. Pri Msn Storage Location Number 1-255 indicates mission storage location.

2. A Pri Msn Storage Location Number of 0 indicates no primary mission designated.

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WORD NAME: AUR Controls 1

		CATEGORY:	Special
WORD ID:	22R/05	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0.
GPS RF on HB1	-01-D	1 = GPS RF is present on HB1
HB3 Video Enable	-02-D	1 = Enable store seeker/sensor video on HB3
Reserved	-03-0	Set to logic 0.
Reset Power Dropout	-04-D	1 = Reset store indicator for power dropout
Crypto Data Zeroize	-05-D	1 = Command Crypto Data Zeroize.
Reserved	-06-0	Set to logic 0
Reserved	-07-0	Set to logic 0
WDL Inhibit	-08-D	1 = Inhibit WDL
Inhibit GPS	-09-D	1 = Inhibit GPS
Reserved	-10-0	Set to logic 0
Power Management	-11-D	1 = Managed Power
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Test Controls

	CATEGORY: Special
WORD ID: 22R/06	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
TM On	-00-D	Control for Telemetry unit RF radiation.
FTS On	-01-D	Control for the Flight Termination System.
Simulate Release	-02-D	Simulate store launch in captive carriage.
Immediate Sim Flight	-03-D	Simulate store free flight in captive carriage.
Timeline Intg (TLI)	-04-D	Command to initiate timeline integration.
TM/FTS Batt On	-05-D	1 = Activation of TM/FTS Batteries.
Test Function A	-06-D	1 = Activation of user defined Function A.
Test Function B	-07-D	1 = Activation of user defined Function B
Test Function C	-08-D	1 = Activation of user defined Function C
Test Function D	-09-D	1 = Activation of user defined Function D
Test Function E	-10-D	1 = Activation of user defined Function E
Test Function F	-11-D	1 = Activation of user defined Function F
Test Function G	-12-D	1 = Activation of user defined Function G
Test Function H	-13-D	1 = Activation of user defined Function H
Test Function I	-14-D	1 = Activation of user defined Function I
Test Function J	-15-D	1 = Activation of user defined Function J

REMARKS/NOTES:

WORD NAME: 28V DC1 On Time

		CATEGORY:	Time(M)
WORD ID:	22R/07	MAX VALUE:	2.7488E+11
SOURCE(s):	Platform	MIN VALUE:	0.0000E+00
DEST(s):	Store	RESOLUTION:	4.1943E+06
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	2^37
SIGNAL TYPE:	Unsigned	LSB:	2^22
UNITS:	Microseconds	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Time	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. This word provides the time that uninterrupted 28V DC1 [Power] has been applied to the store. Uninterrupted is defined as power that was not intentionally cycled by the avionics or the aircrew.

2. 28V DC1 [Power] dropouts that do not exceed durations specified in MIL-STD-1760 are considered to be uninterrupted.

WORD NAME: Mod Msn Storage Location

WORD ID:	22R/08
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Number(L)
MAX VALUE:	255
MIN VALUE:	0
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	2^{15}
LSB:	2^0
FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Mod Msn Storage Location	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. This field designates the mission storage location to use for storage of the mission data in the next transmission of Modify Mission [17R]
2. A Mod Msn Storage Location Number of 0 indicates no mission storage location is designated.

WORD NAME: TA Period

	CATEGORY:	Time(F)
WORD ID: 22R/09	MAX VALUE:	2.3611E+21
SOURCE(s): Platform	MIN VALUE:	0
DEST(s): Store	RESOLUTION:	Note 1
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: Scientific	LSB:	N/A
UNITS: Microseconds	FULL SCALE:	2.3611E+21

FIELD NAME	BIT NO.	DESCRIPTION
Integer	-00-S	
	-01-N	MSB ---
	-02-N	
	-03-N	SIGNAL TYPE: 2's Compliment
	-04-N	MAX VALUE: 2047
	-05-N	MIN VALUE: 0
	-06-N	RESOLUTION: 1
	-07-N	ACCURACY: N/A
	-08-N	FULL SCALE: 2047
	-09-N	
	-10-N	
	-11-N	LSB ---
Exponent	-12-N	MSB ---
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 15
	-14-N	MIN VALUE: 0, RESOLUTION: 1
	-15-N	LSB ---

REMARKS/NOTES:

1. Resolution equals sixteen raised to the exponent value.
2. The value represented by this format is given by: (Integer) x 16^(Exponent).
3. TA Period is the average time interval between PTAM [02R].

WORD NAME: AUR Controls 2

		CATEGORY:	Special
WORD ID:	22R/10	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	Aperiodic	ACCURACY:	N/A
XMIT RATE:	Aperiodic	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Master Mode Control	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	LSB --
Reserved	-04-0	Set to logic 0
Reserved	-05-0	Set to logic 0
Reserved	-06-0	Set to logic 0
Reserved	-07-0	Set to logic 0
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

1. See Table 6.22R-1 Master Mode Control [22R/10/00…03] Definitions

WORD NAME: Set Net Participants

	CATEGORY: Special
WORD ID: 22R/11	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Set CC Index	-00-N	MSB --
	-01-N	
	-02-N	The Index to identify the Current Controller from
	-03-N	MDT-Net Participants [13R-029]
	-04-N	LSB --
Set AC Index	-05-N	MSB --
	-06-N	
	-07-N	The Index to identify the Alternate Controller from
	-08-N	MDT-Net Participants [13R-029]
	-09-N	LSB --
Set 3PS Index	-10-N	MSB --
	-11-N	
	-12-N	The Index to identify the Third Party IFTU Source from
	-13-N	MDT-Net Participants [13R-029]
	-14-N	LSB --
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Growth Provision 1

	CATEGORY: Special
WORD ID: 22R/12	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: Aperiodic	ACCURACY: N/A
XMIT RATE: Aperiodic	MSB: N/A
SIGNAL TYPE: Discrete	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Growth Function A	-00-D	0 = Disable, 1 = Enable
Growth Function B	-01-D	0 = Disable, 1 = Enable
Growth Function C	-02-D	0 = Disable, 1 = Enable
Growth Function D	-03-D	0 = Disable, 1 = Enable
Growth Function E	-04-D	0 = Disable, 1 = Enable
Growth Function F	-05-D	0 = Disable, 1 = Enable
Growth Function G	-06-D	0 = Disable, 1 = Enable
Growth Function H	-07-D	0 = Disable, 1 = Enable
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Growth Provision 2 Value

WORD ID: 22R/13	CATEGORY: Integer
SOURCE(s): Platform	MAX VALUE: 32767
DEST(s): Store	MIN VALUE: -32768
COMP RATE: Aperiodic	RESOLUTION: N/A
XMIT RATE: Aperiodic	ACCURACY: N/A
SIGNAL TYPE: 2's Compliment	MSB: 2^{14}
UNITS: N/A	LSB: 2^0
	FULL SCALE: 65536

FIELD NAME	BIT NO.	DESCRIPTION
Growth Provision 2 Value	-00-S	
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Sec Msn Storage Location

WORD ID:	22R/14
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	Aperiodic
XMIT RATE:	Aperiodic
SIGNAL TYPE:	Unsigned
UNITS:	N/A

CATEGORY:	Number(L)
MAX VALUE:	255
MIN VALUE:	0
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	2^{15}
LSB:	2^0
FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Sec Msn Storage Location Number	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. This field designates which of the stored MDSs is selected for secondary attack. Sec Msn Storage Location Number 1-255 indicates mission storage location.

2. A Sec Msn Storage Location Number of 0 indicates no secondary mission designated.

WORD NAME: Reserved

	CATEGORY:	N/A
WORD ID: 22R/15-16	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: Aperiodic	ACCURACY:	N/A
XMIT RATE: Aperiodic	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	
	-01-0	
	-02-0	
	-03-0	
	-04-0	
	-05-0	
	-06-0	
	-07-0	
	-08-0	
	-09-0	
	-10-0	
	-11-0	
	-12-0	
	-13-0	
	-14-0	
	-15-0	

REMARKS/NOTES:

6.22T **MISSION MONITOR [22T]**

Mission Monitor [22T] provides mission store status information.

Platform Requirements

The platform shall **{ps_6516}** ignore the following Mission Monitor [22T] status flags when GPS Capable [22T/05/13 = 0].

   a. Min GPS Data [22T/02/06]

   b. Almanac Received [22T/03/03]

   c. Ephemeris Received [22T/03/04]

   d. AS/SV Received [22T/03/05]

   e. GPS Keys Received [22T/03/06]

   f. CNM Received [22T/03/11]

   g. GPS Crypto Data Failed Checksum [22T/03/13]

   h. Improved Accuracy Received [22T/05/01]

   i. GPS Configuration [22T/16/00…02]

   j. Key Coverage [22T/16/03…09]

   k. GUV User [22T/16/10 = 0]

   l. GPS Active Cryptonet [22T/17]

The platform annex **{ann_6010}** documents processing for all Mission Monitor [22T] status, including identification of CDS parameters used in fault processing.

Mission Store Requirements

The mission store shall **{ss_6220}** initialize the Mission Monitor [22T] status IAW Table 6.22T-1.

Table 6.22T-1 Mission Monitor [22T] Initialization

Interface Configuration at Power-On (Store Not Ready to Communicate for Platform Identification [01R] Not Received	
Non-UAI	**UAI**
Header [22T/01 ≠ 1025 (H)] following normal application of Operating Power Header [22T/01] = Legacy 22T Header, following unintentional momentary power drop out and restoration of Operating Power All other Mission Monitor [22T] data words can be set to any value	Header [22T/01 = 1025 (H)] Power Interruption [22T/02/14 = 1] Platform ID Received [22T/05/02 = 0]

6.22T.1 Store Status 1 [22T/02]

Store Status 1 [22T/02] contains summary status information used to determine the All Up Round (AUR) condition of the mission store.

6.22T.1.1 Minimum Mission Capable [22T/02/00]

Mission Store Requirements

The mission store shall **{ss_6221}** set Minimum Mission Capable [22T/02/00 = 1] when all of the following conditions are met:

    a. Critical HW Passed [22T/02/01 = 1]

    b. Min TXA Received [22T/02/02 = 1]

    c. Min MDS Received [22T/02/03 = 1]

    d. Abort Release/Launch Status [11T/05/04 = 0]

    e. Other mission store specific conditions documented in the mission store supplement **{sup_6127}**.

6.22T.1.2 Critical HW Passed [22T/02/01]

Mission Store Requirements

The mission store shall **{ss_6222}** set Critical HW Passed [22T/02/01 = 1] after determining that all critical hardware subsystems have passed BIT.

6.22T.1.3 Min TXA Received [22T/02/02]

Min TXA Received [22T/02/02] indicates the mission store transfer alignment initialization criteria has been satisfied. Section 3.5.6.1 INS Initialization provides additional information and requirements.

Mission Store Requirements

The mission store shall **{ss_6223}** set Min TXA Received [22T/02/02 = 1] and initialize its navigation solution after TXA initialization criteria has been satisfied followed by receipt of one valid PTAM [02R]. TXA initialization criteria includes:

    a. Receipt of one valid Moment Arm [09R].

    b. Receipt of TA Period [22R/09] if required by the store.

    c. IMU Stabilization Time has expired.

If the mission store does not require transfer alignment, the mission store shall **{ss_6224}** set Min TXA Received [22T/02/02 = 1].

The mission store supplement **{sup_6128}** documents:

    a. Whether it requires TA Period [22R/09].

b. <u>IMU Stabilization Time</u> - how long <u>Operating Power</u> must be applied before the IMU is stable and ready to begin transfer alignment processing.

6.22T.1.4 <u>Min MDS Received</u> [22T/02/03]

Mission Store Requirements

The mission store shall **{ss_6225}** set <u>Min MDS Received</u> [22T/02/03 = 1] after receipt of a <u>Pri Msn Storage Location</u> [22R/04] which contains a valid MDS.

If the mission store does not require an MDS, the mission store shall **{ss_6226}** set <u>Min MDS Received</u> [22T/02/03 = 1].

6.22T.1.5 <u>AUR Ready</u> [22T/02/04]

Mission Store Requirements

The mission store shall **{ss_6227}** set <u>AUR Ready</u> [22T/02/04 = 1] when:

a. <u>Minimum Mission Capable</u> [22T/02/00 = 1]

b. <u>TXA Good</u> [22T/02/05 = 1]

c. <u>Min GPS Data</u> [22T/02/06 = 1] (if applicable)

d. <u>Last BIT Passed</u> [22T/02/07 = 1]

e. <u>Conditioning Complete</u> [22T/02/08 = 1]

f. Other mission store specific conditions documented in the mission store supplement **{sup_6331}**.

6.22T.1.6 <u>TXA Good</u> [22T/02/05]

Mission Store Requirements

The mission store shall **{ss_6228}** set <u>TXA Good</u> [22T/02/05 = 1] when transfer alignment is sufficient to meet mission store performance requirements for full mission capability as documented in the mission store supplement **{sup_6129}**.

The mission store shall **{ss_6229}** set <u>TXA Good</u> [22T/02/05 = 1] if the mission store does not require transfer alignment.

6.22T.1.7 <u>Min GPS Data</u> [22T/02/06]

Mission Store Requirements

The mission store shall **{ss_6230}** set <u>Min GPS Data</u> [22T/02/06 = 1], if <u>GPS Capable</u> [22T/05/13 = 1], after receipt of the required data, as documented in the mission store supplement **{sup_6130}**, from the following list:

a. <u>Time</u> [03R]

b. <u>GPS Crypto Key</u> [12R]

c. <u>Almanac</u> [13R-005]

   d. <u>Ephemeris #1</u> [13R-010] and <u>Ephemeris #2</u> [13R-011]

   e. <u>AS Status/SV Configuration</u> [13R-007]

     f. <u>CNM</u> [13R-015]

6.22T.1.8 <u>Last BIT Passed</u> [22T/02/07]

Mission Store Requirements

The mission store shall **{ss_6231}** set <u>Last BIT Passed</u> [22T/02/07] as defined in the following:

   a. IBIT

     1. Set <u>Last BIT Passed</u> [22T/02/07 = 0] when <u>BIT Report</u> [22T/10 ≠ FFFF (H)] to report the IBIT failure.

     2. Set <u>Last BIT Passed</u> [22T/02/07 = 1] when <u>BIT Report</u> [22T/10 = FFFF (H)] to report the IBIT pass.

   b. PBIT

     1. If <u>Last BIT Passed</u> [22T/02/07 = 1] prior to the current PBIT, set <u>Last BIT Passed</u> indication to reflect the results of the current PBIT.

     2. If <u>Last BIT Passed</u> [22T/02/07 = 0] prior to the current PBIT and the fault is cleared during the current PBIT, set <u>Last BIT Passed</u> indication to reflect the results of the current PBIT.

     3. If <u>Last BIT Passed</u> [22T/02/07 = 0] prior to a PBIT and the basis for that fault indication is a test not conducted during the PBIT, keep <u>Last BIT Passed</u> [22T/02/07 = 0].

6.22T.1.9 <u>Conditioning Complete</u> [22T/02/08]

Mission Store Requirements

The mission store shall **{ss_6232}** set <u>Conditioning Complete</u> [22T/02/08 = 1] once all store subsystems have reached a stable operating condition and the store is ready to perform IBIT.

The mission store shall **{ss_6233}** set <u>Conditioning Complete</u> [22T/02/08 = 1] within the maximum conditioning time specified in the mission store supplement **{sup_6131}**.

6.22T.1.10 <u>Release Consent</u> [22T/02/09]

Mission Store Requirements

The mission store shall **{ss_6234}** set <u>Release Consent</u> [22T/02/09 = 1] after detection of <u>Release Consent</u> [Discrete] at the high state.

6.22T.1.11 FTS Onboard [22T/02/10]

Mission Store Requirements

The mission store shall **{ss_6235}** set FTS Onboard [22T/02/10 = 1] to indicate that a flight termination system is onboard the mission store.

6.22T.1.12 Telemetry Onboard [22T/02/11]

Mission Store Requirements

The mission store shall **{ss_6236}** set Telemetry Onboard [22T/02/11 = 1] to indicate that a telemetry package is onboard the mission store.

6.22T.1.13 Programmable Fuze Onboard [22T/02/12]

Programmable Fuze Onboard [22T/02/12] informs the platform that a Programmable Fuze (PF) is onboard and Programmable Fuze ID [22T/08] contains valid programmable fuze identification data.

Mission Store Requirements

The mission store shall **{ss_6237}** set Programmable Fuze Onboard [22T/02/12 = 1] to indicate that a Programmable Fuze (PF) is onboard the mission store.

6.22T.1.14 Sec MDS Received [22T/02/13]

Mission Store Requirements

The mission store shall **{ss_6238}** set Sec MDS Received [22T/02/13 = 1] after receipt of a Sec Msn Storage Location [22R/14] which contains a valid MDS.

6.22T.1.15 Power Interruption [22T/02/14]

Mission Store Requirements

The mission store shall **{ss_6239}** set Power Interruption [22T/02/14 = 1] upon application of Operating Power, and after any subsequent power dropout which may have compromised the integrity of mission store hardware or software processes IAW Table 6.22T-1.

The mission store shall **{ss_6240}** set Power Interruption [22T/02/14 = 0] after receipt of Reset Power Dropout [22R/05/04 = 1].

6.22T.1.16 GeoZone Violation [22T/02/15]

GeoZone Violation [22T/02/15] indicates that the mission store has determined that its pre-planned and/or "if released now" route of flight to the specified target location (or mission endpoint) violates one or more enabled Exclusion GeoZone(s).   Sections 6.16R/T.2.4 Query Selected GeoZone [16R/T/04/05…06] and 6.16R/T.2.5 GeoZone Violation Type [16T/04/07…08] provide additional information and requirements.

Mission Store Requirements

The mission store shall **{ss_6483}** set <u>GeoZone Violation</u> [22T/02/15 = 1] when <u>GeoZone Violation Type</u> [16T/04/07…08 > 00 (B)] indicating a pre-planned and/or "if released now" route of flight violates one or more enabled Exclusion GeoZone(s), if the mission store is GeoZone Enabled.

The mission store shall **{ss_6484}** set <u>GeoZone Violation</u> [22T/02/15 = 0], if the mission store is not GeoZone Enabled.

The mission store shall **{ss_6668}** update <u>GeoZone Violation</u> [22T/02/15] ≤ 500 msec after receipt of a new or modified GeoZone in <u>GeoZone Control</u> [16R], if the mission store is GeoZone Enabled.

6.22T.2 <u>Store Status 2</u> [22T/03]

<u>Store Status 2</u> [22T/03] contains summary status information regarding the transfer of mission data to the mission store.

6.22T.2.1 <u>Mission Data Stored</u> [22T/03/00]

<u>Modify Mission</u> [17R] data and <u>Store Control</u> [11R] programmable fuze data can be stored into <u>volatile</u> and non-volatile memory. The time to validate and store mission data and/or programmable fuze data into memory varies by mission store and can be longer than the standard response time. Additional requirements for response times are specified in Section 3.5.8.1.2 Non-MDT of Mission Data.

Mission Store Requirements

The mission store shall **{ss_6241}** set <u>Mission Data Stored</u> [22T/03/00 = 1] after storing <u>Modify Mission</u> [17R] data and/or <u>Store Control</u> [11R] programmable fuze data.

6.22T.2.2 <u>Almanac Received</u> [22T/03/03]

<u>Almanac</u> [13R-005] data is valid when it is less than 2 weeks old.

Mission Store Requirements

The mission store shall **{ss_6243}** set <u>Almanac Received</u> [22T/03/03 = 1], if <u>GPS Capable</u> [22T/05/13 = 1], when all records for <u>Almanac</u> [13R-005] have been received and stored in memory.

The mission store supplement **{sup_6132}** documents the maximum time to store <u>Almanac</u> [13R-005] data in memory.

6.22T.2.3 <u>Ephemeris Received</u> [22T/03/04]

<u>Ephemeris</u> [13R-010, 13R-011] data is valid when the age of the data is within fit interval defined by <u>Fit Interval Flag</u> [13R-011/09/08].

Mission Store Requirements

The mission store shall **{ss_6244}** set Ephemeris Received [22T/03/04 = 1], if GPS Capable [22T/05/13 = 1], when Ephemeris [13R-010, 13R-011] containing data for at least 4 satellites has been received and stored in memory.

The mission store supplement **{sup_6133}** documents the maximum time to store Ephemeris [13R-010, 13R-011] data in memory.

6.22T.2.4 AS/SV Received [22T/03/05]

Mission Store Requirements

The mission store shall **{ss_6245}** set AS/SV Received [22T/03/05 = 1], if GPS Capable [22T/05/13 = 1], when AS Status/SV Configuration [13R-007] data has been stored in memory.

The mission store supplement **{sup_6134}** documents the maximum time to store AS Status/SV Configuration [13R-007] data in memory.

6.22T.2.5 GPS Keys Received [22T/03/06]

Mission Store Requirements

The mission store shall **{ss_6246}** set GPS Keys Received [22T/03/06 = 1], if GPS Capable [22T/05/13 = 1], within GPS Key Storage Time as documented in the mission store supplement **{sup_6135}**, after loading the last valid GPS Crypto Data [12R] into the mission store GPS Receiver.

6.22T.2.6 Time Received [22T/03/07]

Mission Store Requirements

The mission store shall **{ss_6247}** set Time Received [22T/03/07 = 1] when valid Time [03R] has been received.

6.22T.2.7 GeoZone Received [22T/03/08]

Mission Store Requirements

The mission store shall **{ss_6593}** set GeoZone Received [22T/03/08 = 1], when all records for MDT-GeoZone Data [13R-021] and/or GeoZone Control [16R] have been received and are stored in memory.

The mission store supplement **{sup_6206}** documents the maximum time to store and erase GeoZone Data [13R-021] data in memory.

6.22T.2.8 Net Participants Received [22T/03/09]

Net Participants Received [22T/03/09] indicates the mission store has received MDT-Net Participants [13R-029], and the net participant data is stored in mission store memory.

Mission Store Requirements

The mission store shall **{ss_6889}** set Net Participants Received [22T/03/09 = 1], if WDL Onboard [22T/05/11 = 1], when MDT-Net Participants [13R-029] data is stored in mission store memory.

6.22T.2.9 Other Store Keys Received [22T/03/10]

Other Store Keys Received [22T/03/10] indicates the mission store has received MDT-Other Store Keys [13R-028], the keys are valid, and the keys have been loaded into the mission store subsystem(s) requiring the keys.

Mission Store Requirements

The mission store shall **{ss_6832}** set Other Store Keys Received [22T/03/10 = 1], after loading the last valid MDT-Other Store Keys [13R-028] into the mission store subsystem(s).

The mission store supplement **{sup_6327}** documents the maximum time to store MDT-Other Store Keys [13R-028] data in memory.

6.22T.2.10 CNM Received [22T/03/11]

Mission Store Requirements

The mission store shall **{ss_6248}** set CNM Received [22T/03/11 = 1], if GPS Capable [22T/05/13 = 1], when the last block of Complementary Navigation Message [13R-015] has been stored in memory.

The mission store supplement **{sup_6136}** documents the maximum time to store Complementary Navigation Message [13R-015] data in memory.

6.22T.2.11 WDL Init Data Received [22T/03/12]

Mission Store Requirements

The mission store shall **{ss_6606}** set WDL Init Data Received [22T/03/12 = 1], if WDL Onboard [22T/05/11 = 1], when MDT-WDL Terminal Initialization [13R-023] data is stored in mission store memory.

The mission store supplement **{sup_6246}** documents the maximum time to store MDT-WDL Terminal Initialization [13R-023] data in memory, if WDL Onboard [22T/05/11 = 1].

6.22T.2.12 GPS Crypto Data Failed Checksum [22T/03/13]

Mission Store Requirements

The mission store shall **{ss_6249}** set GPS Crypto Data Failed Checksum [22T/03/13 = 1], if GPS Capable [22T/05/13 = 1], when any of the last received series of GPS Crypto Data [12R] fails a checksum test.

6.22T.2.13 Not Used [22T/03/14]

6.22T.2.14 Growth Crypto Received [22T/03/15]

Growth Crypto Received [22T/03/15] indicates the mission store has received MDT-Growth Crypto [13R-022], the crypto keys are valid, and the crypto keys have been loaded into the mission store subsystem requiring the keys.

Mission Store Requirements

The mission store shall **{ss_6421}** set Growth Crypto Received [22T/03/15 = 1] after loading the last valid MDT-Growth Crypto [13R-022] into the mission store subsystem.

The mission store supplement **{sup_6201}** documents the maximum time to store and zeroize MDT-Growth Crypto [13R-022] data in memory.

6.22T.3 Store Status 3 [22T/04]

Store Status 3 [22T/04] provides additional summary status information regarding advanced GPS operation and the transfer alignment condition of the store.

6.22T.3.1 Satellites in Track [22T/04/00]

Mission Store Requirements

The mission store shall **{ss_6252}** set Satellites in Track [22T/04/00 = 1] when at least 4 GPS satellites are being tracked by the mission store GPS receiver.

6.22T.3.2 IR/IZ Status [22T/04/01…02]

IR Status [22T/04/01] and IZ Status [22T/04/02] indicate whether the mission store is inside or outside the Current In-Range and In-Zone LAR. Valid IR Status and IZ Status are always based on current platform flight conditions and current environmental conditions.

Mission Store Requirements

The mission store shall **{ss_6405}** set IR Status [22T/04/01 = 1] if the platform is inside the Current In-Range LAR.

The mission store shall **{ss_6406}** set IZ Status [22T/04/02 = 1] if the platform is inside the Current In-Zone LAR.

6.22T.3.3 TXA Quality [22T/04/03…06]

TXA Quality is a number from 1-10 that indicates the quality of the store transfer alignment solution (1 = best TXA quality, 10 = worst TXA quality).

Mission Store Requirements

The mission store shall **{ss_6253}** set <u>TXA Quality</u> [22T/04/03…06 = 01-10] to indicate the quality of the store transfer alignment IAW the store supplement **{sup_6138}** when <u>Min TXA Received</u> [22T/02/02 = 1].

The mission store shall **{ss_6254}** set <u>TXA Quality</u> [22T/04/03…06 = 10] when <u>Min TXA Received</u> [22T/02/02 = 0].

6.22T.3.4 <u>WDL Key 1-3 Received</u> **[22T/04/07…09]**

<u>WDL Key 1-3 Received</u> [22T/04/07…09] indicates the mission store has received <u>MDT-WDL Key 1-3</u> [13R-025-027], respectively.

Mission Store Requirements

The mission store shall **{ss_6819}** set <u>WDL Key 1 Received</u> [22T/04/07 = 1] after receipt of <u>MDT-WDL Key 1</u> [13R-025], if <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store shall **{ss_6820}** set <u>WDL Key 2 Received</u> [22T/04/08 = 1] after receipt of <u>MDT-WDL Key 2</u> [13R-026], if <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store shall **{ss_6821}** set <u>WDL Key 3 Received</u> [22T/04/09 = 1] after receipt of <u>MDT-WDL Key 3</u> [13R-027], if <u>WDL Onboard</u> [22T/05/11 = 1].

6.22T.3.5 <u>GeoZone Data Erased</u> **[22T/04/10]**

Sections 3.5.11 Data Erase Processing, 6.16R/T.2.1 <u>Erase All GeoZone Data</u> [16R/T/04/00], and 6.16R/T.2.6 <u>GeoZone Erase in Progress</u> [16T/04/15] provide additional information and requirements.

Mission Store Requirements

The mission store shall **{ss_6669}** set <u>GeoZone Data Erased</u> [22T/04/10 = 1] when the GeoZone Data has been erased, if the mission store is <u>GeoZone Enabled</u>.

The mission store supplement **{sup_6206}** documents the maximum time to store and erase <u>GeoZone</u>.

6.22T.3.6 <u>Crypto Data Zeroized</u> **[22T/04/11]**

Reference Section 3.5.11 for requirements for setting this bit to indicate that the Crypto Data has been zeroized.

Mission Store Requirements

The mission store shall **{ss_6255}** set <u>Crypto Data Zeroized</u> [22T/04/11 = 1], if <u>GPS Capable</u> [22T/05/13 = 1] or the mission store uses <u>MDT-Growth Crypto</u> [13R-022], when the Crypto Data has been zeroized.

The mission store shall **{ss_6256}** set <u>Crypto Data Zeroized</u> [22T/04/11 = 0] after loading any crypto data via <u>GPS Crypto Data</u> [12R] or <u>MDT-Growth Crypto</u> [13R-022].

The mission store supplement **{sup_6139}** documents the maximum time to zeroize Crypto Data in memory.

6.22T.3.7 Mission Data Erased [22T/04/12]

Reference Section 3.5.11 for requirements for setting this bit to indicate that the Mission Data has been erased.

Mission Store Requirements

The mission store shall **{ss_6257}** set Mission Data Erased [22T/04/12 = 1] when all mission data, including MDT-Other Store Keys [13R-028], is erased.

The mission store shall **{ss_6258}** set Mission Data Erased [22T/04/12 = 0] after receipt of Modify Mission [17R] or receipt of one or more valid MDT-Mission [13R-020] or receipt of MDT-Other Store Keys [13R-028].

6.22T.3.8 Nav Solution Quality [22T/04/13…14]

Nav Solution Quality [22T/04/13…14] provides a coarse indication of the mission store navigation solution.

Mission Store Requirements

The mission store shall **{ss_6259}** set Nav Solution Quality [22T/04/13…14] IAW Table 6.22T-2, to indicate the quality of mission store navigation solution as documented in the mission store supplement **{sup_6140}**.

Table 6.22T-2 Nav Solution Quality [22T/04/13…14] Settings

Value	Definition
00 (B)	Unsatisfactory
01 (B)	Marginal
10 (B)	Good
11 (B)	Unused

6.22T.3.9 WDL Key Data Erased [22T/04/15]

WDL Key Data Erased [22T/04/15] indicates the WDL Key Data (data received via MDT-WDL Key 1-3 [13R-025-027]) and WDL Terminal Initialization Data (data received via MDT-Terminal Initialization Data [13R-023]) has been erased. Reference Section 3.5.11 for requirements for setting this bit to indicate that the WDL Key Data has been erased.

Mission Store Requirements

The mission store shall **{ss_6632}** set WDL Key Data Erased [22T/04/15 = 1], if WDL Onboard [22T/05/11 = 1], when WDL Key Data and WDL Terminal Initialization Data has been erased.

6.22T.4 Store Status 4 [22T/05]

Store Status 4 [22T/05] contains additional summary status information for the mission store.

6.22T.4.1 Improved Accuracy Received [22T/05/01]

Mission Store Requirements

The mission store shall **{ss_6260}** set Improved Accuracy Received [22T/05/01 = 1], with DGPS Storage Time as documented in the mission store supplement **{sup_6141}**, after receipt and storage of valid Differential GPS Data [18R].

6.22T.4.2 Platform ID Received [22T/05/02]

Mission Store Requirements

The mission store shall **{ss_6261}** set Platform ID Received [22T/05/02 = 1] after receipt of a valid Platform Description [01R].

6.22T.4.3 Surface Delays Received [22T/05/03]

Mission Store Requirements

The mission store shall **{ss_6262}** set Surface Delays Received [22T/05/03 = 1] after receipt of valid Separation Elements [11R/23] and Surface Delays [11R/24].

6.22T.4.4 Over Temp Caution [22T/05/04]

Mission Store Requirements

The mission store shall **{ss_6263}** set Over Temp Caution [22T/05/04 = 1] to notify the platform that the mission store has a probability of internal component overheating if not launched/released or powered off within 10 minutes.

6.22T.4.5 Over Temp Warning [22T/05/05]

Mission Store Requirements

The mission store shall **{ss_6264}** set Over Temp Warning [22T/05/05 = 1] to notify the platform that the mission store has a probability of internal component overheating if not launched/released or powered off within 1 minute.

6.22T.4.6 Env Data Received [22T/05/06]

Mission Store Requirements

The mission store shall **{ss_6265}** set Env Data Received [22T/05/06 = 1] after receipt of valid Environmental Data [15R].

The mission store shall **{ss_6266}** set Env Data Received [22T/05/06 = 0] if it has not received valid Environmental Data [15R] within the last 6 seconds.

6.22T.4.7 <u>Jammer Onboard</u> [22T/05/07]

Mission Store Requirements

The mission store shall **{ss_6267}** set <u>Jammer Onboard</u> [22T/05/07 = 1] to notify the platform that the mission store contains a jammer.

The mission store supplement **{sup_6142}** documents all modes, frequencies, radiated power, and timing of jammer operation.

6.22T.4.8 <u>Mission Mismatch</u> [22T/05/08]

Mission Store Requirements

The mission store shall **{ss_6268}** set <u>Mission Mismatch</u> [22T/05/08 = 1] after receiving <u>Pri Msn Storage Location</u> [22R/04] containing an MDS that is not compatible with the store configuration as defined in the store supplement **{sup_6143}**.

6.22T.4.9 <u>Jammer Required</u> [22T/05/09]

Mission Store Requirements

The mission store shall **{ss_6269}** set <u>Jammer Required</u> [22T/05/09 = 1] to notify the platform that a jammer is required to complete the selected primary mission.

6.22T.4.10 <u>Programmable Retard Device Onboard</u> [22T/05/10]

Mission Store Requirements

The mission store shall **{ss_6757}** set <u>Programmable Retard Device Onboard</u> [22T/05/10 = 1] to notify the platform that the mission store has a programmable retard device.

6.22T.4.11 <u>WDL Onboard</u> [22T/05/11]

<u>WDL Onboard</u> [22T/05/11] informs the platform that the mission store has a weapon data link (WDL) transceiver and <u>Weapon Data Link ID</u> [22T/18] contains valid weapon data link identification data.

Mission Store Requirements

The mission store shall **{ss_6271}** set <u>WDL Onboard</u> [22T/05/11 = 1] to notify the platform that the mission store has a weapon data link (WDL) transceiver.

6.22T.4.12 <u>Data Recorder Onboard</u> [22T/05/12]

Mission Store Requirements

The mission store shall **{ss_6369}** set <u>Data Recorder Onboard</u> [22T/05/12 = 1] to notify the platform that the mission store has a data recording device.

6.22T.4.13 GPS Capable [22T/05/13]

Mission Store Requirements

The mission store shall **{ss_6273}** set GPS Capable [22T/05/13 = 1] to notify the platform that the mission store has a GPS receiver.

6.22T.4.14 Anti-Jam Capable [22T/05/14]

Mission Store Requirements

The mission store shall **{ss_6274}** set Anti-Jam Capable [22T/05/14 = 1] when GPS Capable [22T/05/13 = 1] to notify the platform that the mission store has an anti-jam capable GPS receiver.

6.22T.4.15 Seeker Onboard [22T/05/15]

Seeker Onboard [22T/05/15] informs the platform that the mission store has Seeker Onboard, Seeker/Sensor ID [22T/09] contains valid seeker/sensor identification data, and Seeker/Sensor Types [24T/03/12…15] identifies the mission store seeker(s) and sensor(s) types.

Mission Store Requirements

The mission store shall **{ss_6275}** set Seeker Onboard [22T/05/15 = 1] to notify the platform that the mission store has seeker and/or sensor onboard as indicated by one or more of the following:

    a. Passive Sensor Onboard [24T/03/12 = 1]

    b. Active Sensor Onboard [24T/03/13 = 1]

    c. Laser Rcvr Onboard [24T/03/14 = 1]

    d. Laser Xmitter Onboard [24T/03/15 = 1]

6.22T.5 Pri Msn Storage Location [22T/06]

Pri Msn Storage Location [22T/06] is used to notify the platform of the selected MDS.

Mission Store Requirements

The mission store shall **{ss_6276}** set Pri Msn Storage Location [22T/06] to the MDS storage location number commanded by the platform in Pri Msn Storage Location [22R/04].

6.22T.6 Mission Data Valid [22T/07]

6.22T.6.1 Msn Data Set X Valid [22T/07/00…08]

Msn Data Set X Valid [22T/07/00…08] where X = 1-9, provides the platform with the validity of up to nine (9) MDS in store memory.

Mission Store Requirements

The mission store shall **{ss_6277}** set the corresponding <u>Msn Data Set X Valid</u> [22T/07/00…08 = 1] after receipt of MDS #X to notify the platform that the MDS for storage location X meets all the mission store MDS validity requirements.

The mission store supplement **{sup_6144}** documents the minimum MDS requirements and validation criteria.

6.22T.6.2 <u>MDS in Mod Msn Storage Location Valid</u> [22T/07/15]

<u>MDS in Mod Msn Storage Location Valid</u> [22T/07/15] provides the platform with the validity of the MDS in <u>Mod Msn Storage Location</u> [22R/08].

Platform Requirements

The platform may **{pm_6046}** use <u>MDS in Mod Msn Storage Location Valid</u> [22T/07/15] in conjunction with <u>Mod Msn Storage Location</u> [22R/08] to verify MDS validity in any MDS storage location from one to <u>CDS Max MDS Storage Locations</u> **{cds_6069}**.

Mission Store Requirements

The mission store shall **{ss_6412}** set <u>MDS in Mod Msn Storage Location Valid</u> [22T/07/15 = 1] to notify the platform that the MDS in <u>Mod Msn Storage Location</u> [22R/08] meets all the mission store MDS validity requirements.

6.22T.7 <u>Programmable Fuze ID</u> [22T/08]

Programmable fuze identification is the process by which the platform determines the identity and configuration of the programmable fuze. <u>Programmable Fuze ID</u> [22T/08] contains two identification elements: <u>Fuze Type</u> [22T/08/00…10] and <u>Fuze Variant</u> [22T/08/11…15].

6.22T.7.1 <u>Fuze Type</u> [22T/08/00…10]

<u>Fuze Type</u> [22T/08/00…10] is a binary code assigned by the UAI SJICWG.

Platform Requirements

The platform shall **{ps_6272}** use <u>Fuze Type</u> [22T/08/00…10] to determine the store programmable fuze type.

Mission Store Requirements

The mission store shall **{ss_6278}** set <u>Fuze Type</u> [22T/08/00…10] to the binary code value assigned to the fuze by the UAI SJICWG, or 0 if a binary code value has not been assigned.

The mission store supplement **{sup_6145}** documents its applicable <u>Fuze Type</u> [22T/08/00…10] values.

6.22T.7.2 Fuze Variant [22T/08/11…15]

Fuze Variant [22T/08/11…15] is a binary code assigned by the UAI SJICWG.

Platform Requirements

The platform shall **{ps_6273}** use Fuze Variant [22T/08/11…15] to determine the store programmable fuze variant.

Mission Store Requirements

The mission store shall **{ss_6279}** set Fuze Variant [22T/08/11…15] to the binary code value assigned to the fuze by the UAI SJICWG, or 0 if a binary code value has not been assigned.

The mission store supplement **{sup_6146}** documents Fuze Variant [22T/08/11…15] values applicable for the mission store.

6.22T.8 Seeker/Sensor ID [22T/09]

Seeker/sensor identification is the process by which the platform determines the identity and configuration of the mission store seeker/sensor. Seeker/Sensor ID [22T/09] contains two identification elements: Seeker/Sensor Type [22T/09/00…10] and Seeker/Sensor Variant [22T/09/11…15].

6.22T.8.1 Seeker/Sensor Type [22T/09/00…10]

Seeker/Sensor Type [22T/09/00…10] is a binary code assigned by the UAI SJICWG.

Platform Requirements

The platform shall **{ps_6274}** use Seeker/Sensor Type [22T/09/00…10] to determine the store seeker/sensor type.

Mission Store Requirements

The mission store shall **{ss_6280}** set Seeker/Sensor Type [22T/09/00…10] to the binary code value assigned by the UAI SJICWG, or 0 if a binary code value has not been assigned to the mission store.

The mission store supplement **{sup_6147}** documents its applicable Seeker/Sensor Type [22T/09/00…10] values.

6.22T.8.2 Seeker/Sensor Variant [22T/09/11…15]

Seeker/Sensor Variant [22T/09/11…15] is a binary code assigned by the UAI SJICWG.

Platform Requirements

The platform shall **{ps_6275}** use Seeker/Sensor Variant [22T/09/11…15] to determine the store programmable seeker/sensor variant.

Mission Store Requirements

The mission store shall **{ss_6281}** set Seeker/Sensor Variant [22T/09/11…15] to the binary code value assigned by the UAI SJICWG, or 0 if a binary code value has not been assigned to the mission store.

The mission store supplement **{sup_6148}** documents its applicable Seeker/Sensor Variant [22T/09/11…15] values.

6.22T.9 BIT Report [22T/10]

Mission Store Requirements

The mission store shall **{ss_6282}** update BIT Report [22T/10] with the results of the most recently completed Built-in-Test performed by the mission store.

The mission store shall **{ss_6283}** set all unused bits in BIT Report [22T/10] to logic 1.

The mission store supplement **{sup_6149}** documents the name and description for each BIT Report [22T/10] bit.

6.22T.10 Test Control Status [22T/11]

Test Control Status [22T/11] provides feedback to the platform on Test Controls [22R/06] commands.

6.22T.10.1 TM On [22T/11/00]

Mission Store Requirements

The mission store shall **{ss_6284}** set TM On [22T/11/00 = 0] when Telemetry Onboard [22T/02/11 = 0].

The mission store shall **{ss_6285}** set TM On [22T/11/00 = 1] when its telemetry transmitter is radiating RF energy.

6.22T.10.2 FTS On [22T/11/01]

Mission Store Requirements

The mission store shall **{ss_6286}** set FTS On [22T/11/01 = 0] when FTS Onboard [22T/02/10 = 0].

The mission store shall **{ss_6287}** set FTS On [22T/11/01 = 1] when flight termination system is powered on.

6.22T.10.3 In Simulated Release [22T/11/02]

Mission Store Requirements

The mission store shall **{ss_6288}** set In Simulated Release [22T/11/02 = 1] after receiving Simulate Release [22R/06/02 = 1].

6.22T.10.4 In Immediate Sim Flight [22T/11/03]

Mission Store Requirements

The mission store shall **{ss_6289}** set In Immediate Sim Flight [22T/11/03 = 1] after receiving Immediate Sim Flight [22R/06/03 = 1].

6.22T.10.5 In Timeline Integ [22T/11/04]

Mission Store Requirements

The mission store shall **{ss_6290}** set In Timeline Integ [22T/11/04 = 1] after receipt of Timeline Intg (TLI) [22R/06/04 = 1].

6.22T.10.6 TM/FTS Batteries Activated [22T/11/05]

Mission Store Requirements

The mission store shall **{ss_6291}** set TM/FTS Batteries Activated [22T/11/05 = 1] when TM/FTS batteries are activated.

6.22T.10.7 Test Function A-J Status [22T/11/06…15]

Test Function A-J Status [22T/11/06…15] are store customizable test commands. The store program office/contractor provides definitions of the active Test Function A-J Status when requested by the platform program office/contractor prior to each test mission.

Mission Store Requirements

The mission store shall **{ss_6292}** set Test Function A-J Status [22T/11/06…15] equal to the Test Function A-J [22R/06/06…15] command.

The mission store supplement **{sup_6150}** documents the Test Functions (A-J) used by the mission store.

6.22T.11 Mod Msn Storage Location [22T/12]

Mod Msn Storage Location [22T/12] contains the feedback of Mod Msn Storage Location [22R/08] to provide the MDS storage location to be modified.

Mission Store Requirements

The mission store shall **{ss_6293}** set Mod Msn Storage Location [22T/12] equal to the storage location that Modify Mission [17R] and Store Control [11R] data will be applied.

6.22T.12 Selected Primary Msn Num [22T/13]

Selected Primary Msn Num [22T/13] provides the platform with the mission number of the MDS selected as the primary mission.

Mission Store Requirements

The mission store shall **{ss_6294}** set Selected Primary Msn Num [22T/13] equal to the mission number of the MDS selected as the primary mission.

6.22T.13 Secondary Msn Storage Location [22T/14]

Secondary Msn Storage Location [22T/14] is used to notify the platform of the selected MDS.

Mission Store Requirements

The mission store shall **{ss_6295}** set Secondary Msn Storage Location [22T/14] to the MDS storage location number of the secondary mission commanded by the platform in Sec Msn Storage Location [22R/14].

6.22T.14 Selected Secondary Msn Num [22T/15]

Selected Secondary Msn Num [22T/15] provides the platform with the mission number of the MDS selected as the secondary mission.

Mission Store Requirements

The mission store shall **{ss_6296}** set Selected Secondary Msn Num [22T/15] equal to the mission number of the MDS selected as the secondary mission.

6.22T.15 GPS Configuration [22T/16]

GPS Configuration [22T/16] notifies the platform of the GPS configuration contained in the store as well as information about the GPS Crypto Key.

6.22T.15.1 GPS Configuration [22T/16/00…02]

Mission Store Requirements

The mission store shall **{ss_6297}** set GPS Configuration [22T/16/00…02], if GPS Capable [22T/05/13 = 1], IAW Table 6.22T-3.

Table 6.22T-3 GPS Configuration

Value	Definition
000 (B)	PPS-SM/SSASM OPSW 0.9
001 (B)	SAASM OPSW 1.0 or greater
010 (B)	M-code
011 (B)	Combined SAASM OPSW 1.0 or greater/M-Coded
Others	Reserved

6.22T.15.2 Key Coverage [22T/16/03…09]

Mission Store Requirements

The mission store shall **{ss_6298}** initialize Key Coverage [22T/16/03…09 = 0000000 (B)] at power up.

The mission store shall **{ss_6299}** set Key Coverage [22T/16/03…09], if GPS Capable [22T/05/13 = 1], to the number of consecutive days for which the store GPS receiver has daily keys from the current date/time and all non-zero GPS Crypto 1 [12R/02-09] and GPS Crypto 2 [12R/10-17] loaded, pass format, and parity checks within the store GPS receiver.

The mission store shall **{ss_6300}** set Key Coverage [22T/16/03…09 = 1] if a GUV/Yearly key was provided and the number of sequential days of keys coverage reported by store GPS receiver is greater than 1.

The mission store shall **{ss_6301}** set Key Coverage [22T/16/03…09] simultaneously with setting GPS Keys Received [22T/03/06 = 1].

6.22T.15.3 GUV User [22T/16/10]

Mission Store Requirements

The mission store shall **{ss_6302}** set GUV User [22T/16/10 = 1], if GPS Capable [22T/05/13 = 1], when the store GPS Receiver is loaded with a GUV Key.

6.22T.16 GPS Active Cryptonet [22T/17]

GPS Active Cryptonet [22T/17] is used to notify the platform of the GPS crypto net that is being used by a SAASM equipped store.

Mission Store Requirements

The mission store shall **{ss_6303}** initialize GPS Active Cryptonet [22T/17] to zero at power up.

The mission store shall **{ss_6304}** set GPS Active Cryptonet [22T/17], if GPS Capable [22T/05/13 = 1] and GPS Configuration [22T/16/00…02 = '001' or '011' (B)] (i.e. a SAASM GPS receiver), to the active crypto net code used by the store GPS receiver.

The mission store shall **{ss_6305}** set GPS Active Cryptonet [22T/17] simultaneously with setting GPS Keys Received [22T/03/06 = 1].

6.22T.17 Weapon Data Link ID [22T/18]

6.22T.17.1 Weapon Data Link Terminal Configuration [22T/18/00…04]

The mission store uses Weapon Data Link Terminal Configuration [22T/18/00…04] to identify the types of WDL network/terminal ID configuration(s) that are supported by the mission store's WDL terminal.   Note: Mission stores WDL terminals that support UHF and MSS WDL enhanced capabilities, such as Network IP Address IPV6 capabilities, are required to be backward compatible and support legacy Network IP Address IPV4 WDL networks.

Platform Requirements

The platform shall **{ps_6276}** use <u>Weapon Data Link Terminal Configuration</u> [22T/18/00…04] to determine which WDL network/terminal ID configuration(s) are supported by the mission store WDL terminal, if <u>WDL Onboard</u> [22T/05/11 = 1].

Mission Store Requirements

The mission store shall **{ss_6633}** set <u>Link-16 Terminal Configuration</u> [22T/18/00 = 1] if the mission store WDL terminal supports a Link-16 WDL network/terminal ID and <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store shall **{ss_6634}** set <u>UHF Terminal Configuration</u> [22T/18/01 = 1] if the mission store WDL terminal supports a UHF WDL network/terminal ID and <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store shall **{ss_6635}** set <u>MSS Terminal Configuration</u> [22T/18/02 = 1] if the mission store WDL terminal supports an MSS WDL network/terminal ID and <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store shall **{ss_6824}** set <u>MSS-CS Terminal Configuration</u> [22T/18/03 = 1], if the mission store WDL terminal supports an MSS Circuit Switched WDL network/terminal ID and <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store shall **{ss_6825}** set <u>IP-ATDL Terminal Configuration</u> [22T/18/04 = 1], if the mission store WDL terminal supports an IP-ATDL WDL network/terminal ID and <u>WDL Onboard</u> [22T/05/11 = 1].

6.22T.17.2 <u>Store WDL Data #1, #2, #3 Invalid [22T/18/12…14]</u>

The platform can send up to three sets of configuration data to the mission store WDL terminal in order to configure the terminal to support multiple types of WDL networks. If the mission store is unable to properly configure its terminal as directed because the data provided (including WDL keys) is incomplete, inconsistent, or ambiguous, the mission store notifies the platform using <u>Store WDL Data #1, #2, #3 Invalid</u> [22T/18/12…14].

Platform Requirements

The platform shall **{ps_6627}** provide the capability to notify the operator that one or more of the mission store WDL terminal types has not been configured properly, if <u>WDL Onboard</u> [22T/05/11 = 1] and:

   a. <u>Store WDL Data #1 Invalid</u> [22T/18/12 = 1], or

   b. <u>Store WDL Data #2 Invalid</u> [22T/18/13 = 1], or

   c. <u>Store WDL Data #3 Invalid</u> [22T/18/14 = 1].

Mission Store Requirements

The mission store shall **{ss_6826}** set Store WDL Data #1 Invalid [22T/18/12 = 1], when Store WDL Data #1 cannot be used to properly configure the mission store WDL terminal and WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6827}** set Store WDL Data #2 Invalid [22T/18/13 = 1], when Store WDL Data #2 cannot be used to properly configure the mission store WDL terminal and WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6828}** set Store WDL Data #3 Invalid [22T/18/14 = 1], when Store WDL Data #3 cannot be used to properly configure the mission store WDL terminal and WDL Onboard [22T/05/11 = 1].

The mission store supplement **{sup_6322}** defines the WDL network/terminal ID data element(s), by Weapon Data Link type, that are required for a valid mission store WDL network/terminal ID data configuration.

6.22T.17.3 Data Change via WDL [22T/18/15]

Data Change Via WDL [22T/18/15] informs the platform that the mission store has received a mission data and/or controller change via WDL, Section 6.21R/T.13.2 Mission/Controller Data Changes via WDL [21T/28/06…12] provides additional information and requirements.

Mission Store Requirements

The mission store shall **{ss_6665}** set Data Change Via WDL [22T/18/15 = 1], if WDL Onboard [22T/05/11 = 1], when Mission/Controller Data Changes via WDL [21T/28/06…12 ≠ 0], if WDL Onboard [22T/05/11 = 1].

6.22T.18 Store Status 5 [22T/19]

6.22T.18.1 Master Mode Status [22T/19/00…03]

The mission store reports the current Master Mode Status [22T/19/00…03] setting per Table 6.22T-7, regardless of whether the Master Mode was invoked by using Master Mode Control [22R/10/00…03], by setting the applicable combination of individual function controls, or by selecting a primary MDS provided via MDT-Mission [13R-020]. The mission store reports Master Mode Status [22T/19/00…03 = 0000 (B)] if not in any defined Master Mode per Table 6.22T-7.

Table 6.22T-7 Master Mode Status [22T/19/00…03] Definitions

Value	Master Mode Status	Definition
0000 (B)	None	Master Mode Control is not used or no defined Master Mode has been invoked.
0001 (B)	Reserved	Not used in Master Mode Status [22T/19/00…03].
0010 (B)	Option A	As defined in mission store supplement.
0011 (B)	Option B	As defined in mission store supplement.

Table 6.22T-7 <u>Master Mode Status</u> [22T/19/00…03] Definitions

Value	Master Mode Status	Definition
0100 (B)	Option C	As defined in mission store supplement.
0101 (B)	Option D	As defined in mission store supplement.
0110 (B)	Option E	As defined in mission store supplement.
0111 (B)	Option F	As defined in mission store supplement.
1000 (B)	Option G	As defined in mission store supplement.
1001 (B)	Option H	As defined in mission store supplement.
1010 (B)	Option I	As defined in mission store supplement.
1011 (B)	Option J	As defined in mission store supplement.
1100 (B)	Option K	As defined in mission store supplement.
1101 (B)	Option L	As defined in mission store supplement.
1110 (B)	Option M	As defined in mission store supplement.
1111 (B)	Option N	As defined in mission store supplement.

Mission Store Requirements

The mission store shall **{ss_6839}** set <u>Master Mode Status</u> [22T/19/00…03] status IAW Table 6.22T-7.

The mission store shall **{ss_6840}** set <u>Master Mode Status</u> [22T/19/00…03 = 0000 (B)] if the mission store does not support <u>Master Mode Control</u> [22R/10/00…03] or in a configuration not defined in Table 6.22T-7.

6.22T.19 <u>Net Participant Indices</u> [22T/20]

<u>Net Participant Indices</u> [22T/20] reports the assigned CC, AC, and 3PS from <u>MDT-Net Participants</u> [13R-029] for the MDS indicated by <u>Mod Msn Storage Location</u> [22T/12] if the mission store is WDL capable.

Mission Store Requirements

The mission store shall **{ss_6869}** set <u>Net Participant Indices</u> [22T/20 = 0] if <u>WDL Onboard</u> [22T/05/11 = 0].

6.22T.19.1 <u>CC Index</u> [22T/20/00…04]

<u>CC Index</u> [22T/20/00…04] identifies the Current Controller for the MDS indicated by <u>Mod Msn Storage Location</u> [22T/12]. The index identifies the net participant from within the <u>MDT-Net Participants</u> [13R-029] file.

Mission Store Requirements

The mission store shall **{ss_6870}** set <u>CC Index</u> [22T/20/00…04 = 0] to indicate current controller is undefined or invalid for the mission identified by the <u>Mod Msn Storage Location</u> [22T/12], if <u>WDL Onboard</u> [22T/05/11 = 1].

The mission store shall **{ss_6871}** set CC Index [22T/20/00…04] to the current controller for the mission identified by the Mod Msn Storage Location [22T/12], if WDL Onboard [22T/05/11 = 1].

6.22T.19.2 AC Index [22T/20/05…09]

AC Index [22T/20/05…09] identifies the Alternate Controller for the MDS indicated by Mod Msn Storage Location [22T/12]. The index identifies the net participant from within the MDT-Net Participants [13R-029] file.

Mission Store Requirements

The mission store shall **{ss_6872}** set AC Index [22T/20/05…09 = 0] to indicate alternate controller is undefined or invalid for the mission identified by the Mod Msn Storage Location [22T/12], if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6873}** set AC Index [22T/20/05…09] to the alternate controller for the mission identified by the Mod Msn Storage Location [22T/12], if WDL Onboard [22T/05/11 = 1].

6.22T.19.3 3PS Index [22T/20/10…14]

3PS Index [22T/20/10…14] identifies the Third Party IFTU Source for the MDS indicated by Mod Msn Storage Location [22T/12]. The index identifies the net participant from within the MDT-Net Participants [13R-029] file.

Mission Store Requirements

The mission store shall **{ss_6874}** set 3PS Index [22T/20/10…14 = 0] to indicate the 3PS is undefined or invalid for the mission identified by the Mod Msn Storage Location [22T/12], if WDL Onboard [22T/05/11 = 1].

The mission store shall **{ss_6875}** set 3PS Index [22T/20/10…14] to the 3PS for the mission identified by the Mod Msn Storage Location [22T/12], if WDL Onboard [22T/05/11 = 1].

6.22T.20 Growth Provision 1 Status [22T/28/00…07]

Growth Function A-H Status [22T/28/00…07] is used by the mission store to provide the status of each of the eight (8) growth provision 1 functions.

Platform Requirements

The platform shall **{ps_6278}** display the Growth Function A-H Status [22T/28/00…07] to the aircrew, if CDS Growth Provision A-H Enabled **{cds_6096}**.

Mission Store Requirements

The mission store shall **{ss_6308}** disable Growth Function A-H and set Growth Function A-H Status [22T/28/00…07 = 0], on initial power up or after a power interruption.

The mission store shall **{ss_6309}** set <u>Growth Function A-H Status</u> [22T/28/00…07] equal to the associated <u>Growth Function A-H</u> [22R/12/00…07].

6.22T.21 <u>Growth Provision 2 Status</u> [22T/29]

<u>Growth Provision 2 Status</u> [22T/29] provides the value used by the store for the <u>Growth Provision 2</u> function.

Platform Requirements

The platform shall **{ps_6279}** display the <u>Growth Function 2 Status</u> [22T/29] when <u>CDS Growth Provision 2 Enabled</u> **{cds_6097}**.

Mission Store Requirements

The mission store shall **{ss_6310}** disable <u>Growth Provision 2</u> and set <u>Growth Provision 2 Status</u> [22T/29 = 0000 (H)], on initial power up or after a power interruption.

The mission store shall **{ss_6311}** set <u>Growth Provision 2 Status</u> [22T/29] to the value that the store is using for the <u>Growth Provision 2</u> function, when the mission store supports a <u>Growth Provision 2</u> capability.

MESSAGE NAME:	Mission Monitor		
MESSAGE ID:	22T	TRANSFER TYPE:	RT-BC
SOURCE:	Store	WORD COUNT:	30
DESTINATION:	Platform	XMIT RATE:	0.167 to 32 Hz

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 10110 (B)
Status Word	SW	MIL-STD-1553 Status Word
Header	01	Message Descriptor
Store Status 1	02	Store status information
Store Status 2	03	Store status information
Store Status 3	04	Store status information
Store Status 4	05	Store status information
Pri Msn Storage Location	06	Primary Mission numeric storage location
Mission Data Valid	07	Validity of Mission data
Programmable Fuze ID	08	Store Programmable Fuze ID Code
Seeker/Sensor ID	09	Store Seeker/Sensor ID Code
BIT Report	10	Built In Test Report
Test Control Status	11	Status of test controls
Mod Msn Storage Location	12	Modify Mission Numeric Storage Location
Selected Primary Msn Num	13	Selected Primary Mission Number
Secondary Msn Storage Location	14	Secondary Mission numeric storage location
Selected Secondary Msn Num	15	Selected Secondary Mission Number
GPS Configuration	16	Indicates GPS receiver configuration/information
GPS Active Cryptonet	17	Indicates the active crypto net for SAASM receiver
Weapon Data Link ID	18	Weapon Data Link ID Code
Store Status 5	19	Store status information
Net Participants Indices	20	WDL store controllers
Reserved	21-27	Reserved
Growth Provision 1 Status	28	Growth Provision 1 Status
Growth Provision 2 Status	29	Growth Provision 2 Status
Reserved	30	Reserved

REMARKS/NOTES:

WORD NAME: Header

WORD ID:	22T/01	CATEGORY: Header
SOURCE(s):	Store	MAX VALUE: 1025 (H)
DEST(s):	Platform	MIN VALUE: 1025 (H)
COMP RATE:	32 Hz (max)	RESOLUTION: 1
XMIT RATE:	0.167 to 32 Hz	ACCURACY: N/A
SIGNAL TYPE:	Hexadecimal	MSB: 2^{15}
UNITS:	N/A	LSB: 2^0
		FULL SCALE: FFFF (H)

CATEGORY: Header
MAX VALUE: 1025 (H)
MIN VALUE: 1025 (H)
RESOLUTION: 1
ACCURACY: N/A
MSB: 2^{15}
LSB: 2^0
FULL SCALE: FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB ---
	-01-B	
	-02-B	Hex digit #1 value = 1 (H)
	-03-B	LSB ---
Hex Digit #2	-04-B	MSB ---
	-05-B	
	-06-B	Hex digit #2 value = 0 (H)
	-07-B	LSB ---
Hex Digit #3	-08-B	MSB ---
	-09-B	
	-10-B	Hex digit #3 value = 2 (H)
	-11-B	LSB ---
Hex Digit #4	-12-B	MSB ---
	-13-B	
	-14-B	Hex digit #4 value = 5 (H)
	-15-B	LSB ---

REMARKS/NOTES:

WORD NAME: Store Status 1

		CATEGORY:	Special
WORD ID:	22T/02	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	32 Hz (max)	ACCURACY:	N/A
XMIT RATE:	0.167 to 32 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Minimum Mission Capable	-00-D	Set to logic 1 when store is minimally effective.
Critical HW Passed	-01-D	Set to logic 1 when critical components pass BIT
Min TXA Received	-02-D	Set to logic 1 when alignment initialization data is received.
Min MDS Received	-03-D	Set to logic 1 when primary MDS is executable.
AUR Ready	-04-D	Set to logic 1 when mission is fully capable
TXA Good	-05-D	Set to logic 1 when transfer alignment is complete.
Min GPS Data	-06-D	Set to logic 1 when GPS data received.
Last BIT Passed	-07-D	Set to logic 1 when most current BIT (IBIT or PBIT) passes.
Conditioning Complete	-08-D	Set to logic 1 when avionics subsystems are stable.
Release Consent	-09-D	Set to logic 1 when RC detected.
FTS Onboard	-10-D	Set to logic 1 when a FTS is onboard.
Telemetry Onboard	-11-D	Set to logic 1 when a TM subsystem is onboard.
PF Onboard	-12-D	Set to logic 1 if Programmable fuze is onboard
Sec MDS Received	-13-D	Set to logic 1 when secondary MDS is valid
Power Interruption	-14-D	Note 1.
GeoZone Violation	-15-D	Set to logic 1 when mission store route of flight violates an Exclusion Zone.

REMARKS/NOTES:

1. Set to logic 1 when initialization power is first applied to the store or when the store has detected an initialization power dropout.

WORD NAME: Store Status 2

CATEGORY: Special

WORD ID: 22T/03
SOURCE(s): Store
DEST(s): Platform
COMP RATE: 32 Hz (max)
XMIT RATE: 0.167 to 32 Hz
SIGNAL TYPE: N/A
UNITS: N/A

MAX VALUE: N/A
MIN VALUE: N/A
RESOLUTION: N/A
ACCURACY: N/A
MSB: N/A
LSB: N/A
FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Mission Data Stored	-00-D	Set to logic 1 when Mission Data message passes checksum
Reserved	-01-0	Set to logic 0.
Reserved	-02-0	Set to logic 0.
Almanac Received	-03-D	Set to logic 1 when GPS Almanac data is stored in memory.
Ephemeris Received	-04-D	Set to logic 1 when valid GPS Ephemeris data for at least four SVs have been stored in memory.
AS/SV Received	-05-D	Set to logic 1 when AS Status/SV Configuration message received.
GPS Keys Received	-06-D	Set to logic 1 when valid GPS Crypto Key is available in the store.
Time Received	-07-D	Set to logic 1 when the store has established current date and time.
GeoZone Received	-08-D	Set to logic 1 when GeoZone data is stored in memory.
Net Participants Received	-09-D	Set to logic 1 when Network Participants [13R-029] is to the mission store.
Other Store Keys Received	-10-D	Set to logic 1 when keys from MDT-Other Store Keys [13R-028] are available to the store
CNM Received	-11-D	Set to logic 1 when CNM [13R-015] received
WDL Init Data Received	-12-D	Set to logic 1 when WDL Terminal Initialization [13R-023] data is available to the store.
GPS Crypto Data Failed Checksum	-13-D	Set to logic 1 when the last received message [12R] fails the checksum test.
Not Used	-14-X	Not Used
Growth Crypto Received	-15-D	Set to logic 1 when valid crypto keys from MDT-Growth Crypto [13R-022] are available to the store.

REMARKS/NOTES:

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WORD NAME: Store Status 3

		CATEGORY:	Special
WORD ID:	22T/04	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	32 Hz (max)	ACCURACY:	N/A
XMIT RATE:	0.167 to 32 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Satellites in Track	-00-D	Set to logic 1 when at least 4 GPS satellites tracked
IR Status	-01-D	0 = Not In-Range, 1 = In-Range
IZ Status	-02-D	0 = Not In-Zone, 1 = In-Zone
TXA Quality	-03-N	MSB --
	-04-N	SIGNAL TYPE: Unsigned, MAX VALUE: 10
	-05-N	MIN VALUE: 1, RESOLUTION: 1, FULL SCALE: 15
	-06-N	LSB --
WDL Key 1 Received	-07-B	1 = Valid <u>MDT-WDL Key 1</u> [13R-025] loaded in mission store WDL transceiver
WDL Key 2 Received	-08-B	1 = Valid <u>MDT-WDL Key 1</u> [13R-026] loaded in mission store WDL transceiver
WDL Key 3 Received	-09-B	1 = Valid <u>MDT-WDL Key 1</u> [13R-027] loaded in mission store WDL transceiver
GeoZone Data Erased	-10-0	Set to logic 1 when all GeoZone data is erased.
GPS Crypto Data Zeroized	-11-D	Set to logic 1 when GPS crypto data has been zeroized
Mission Data Erased	-12-D	Set to logic 1 when the mission data set is erased
Nav Solution Quality	-13-N	MSB --
	-14-N	LSB --
WDL Key Data Erased	-15-D	Set to logic 1 when WDL key data and WDL terminal initialization data has been erased.

REMARKS/NOTES:

WORD NAME: Store Status 4

	CATEGORY:	Special
WORD ID: 22T/05	MAX VALUE:	N/A
SOURCE(s): Store	MIN VALUE:	N/A
DEST(s): Platform	RESOLUTION:	N/A
COMP RATE: 32 Hz (max)	ACCURACY:	N/A
XMIT RATE: 0.167 to 32 Hz	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0
Improved Accuracy Received	-01-D	Set to logic 1 when Improved Accuracy received
Platform ID Received	-02-D	Set to logic 1 when Platform ID [01R] received
Surface Delays Received	-03-D	Set to logic 1 when Surface Delays received
Over Temp Caution	-04-D	Set to logic 1 when Over Temp Caution temp reached
Over Temp Warning	-05-D	Set to logic 1 when Over Temp Warning temp reached
Env Data Received	-06-D	Set to logic 1 when Platform Env Data received
Jammer Onboard	-07-D	Set to logic 1 when Jammer Onboard
Mission Mismatch	-08-D	Set to logic 1 when Mission Mismatch detected
Jammer Required	-09-D	Set to logic 1 when Jammer Required
Programmable Retard Device Onboard	-10-D	Set to logic 1 when Programmable Retard Device Onboard
WDL Onboard	-11-D	Set to logic 1 when Weapon Data Link Onboard
Data Recorder Onboard	-12-D	Set to logic 1 when Data Recorder Onboard
GPS Capable	-13-D	Set to logic 1 when store GPS Capable
Anti-Jam Capable	-14-D	Set to logic 1 when store Anti-jam Capable
Seeker Onboard	-15-D	Set to logic 1 when Seeker Onboard

REMARKS/NOTES:

WORD NAME: Pri Msn Storage Location

WORD ID:	22T/06
SOURCE(s):	Store
DEST(s):	Platform
COMP RATE:	32 Hz (max)
XMIT RATE:	0.167 to 32 Hz
SIGNAL TYPE:	Unsigned
UNITS:	N/A

CATEGORY:	Number(L)
MAX VALUE:	255
MIN VALUE:	0
RESOLUTION:	1
ACCURACY:	N/A
MSB:	2^15
LSB:	2^0
FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Pri Msn Storage Location Number	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. This word contains the primary mission number as selected via the Mission Control [22R]. The store memory can hold a previous primary mission selection upon store power-up.

2. A Pri Msn Storage Location Number of 0 indicates no primary mission designated.

WORD NAME: Mission Data Valid

		CATEGORY:	Special
WORD ID:	22T/07	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	32 Hz (max)	ACCURACY:	N/A
XMIT RATE:	0.167 to 32 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Msn Data Set 1 Valid	-00-V	Set to logic 1 when Mission Data set 1 Valid
Msn Data Set 2 Valid	-01-V	Set to logic 1 when Mission Data set 2 Valid
Msn Data Set 3 Valid	-02-V	Set to logic 1 when Mission Data set 3 Valid
Msn Data Set 4 Valid	-03-V	Set to logic 1 when Mission Data set 4 Valid
Msn Data Set 5 Valid	-04-V	Set to logic 1 when Mission Data set 5 Valid
Msn Data Set 6 Valid	-05-V	Set to logic 1 when Mission Data set 6 Valid
Msn Data Set 7 Valid	-06-V	Set to logic 1 when Mission Data set 7 Valid
Msn Data Set 8 Valid	-07-V	Set to logic 1 when Mission Data set 8 Valid
Msn Data Set 9 Valid	-08-V	Set to logic 1 when Mission Data set 9 Valid
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
MDS in Mod Msn Storage Location Valid	-15-V	Set to logic 1 when the MDS in Mod Msn Storage Location [22R/08] is Valid

REMARKS/NOTES:

WORD NAME: Programmable Fuze ID

	CATEGORY: Special
WORD ID: 22T/08	MAX VALUE: N/A
SOURCE(s): Store	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: 32 Hz (max)	ACCURACY: N/A
XMIT RATE: 0.167 to 32 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Fuze Type	-00-N	MSB : 2^{10} ---
	-01-N	
		SIGNAL TYPE: Unsigned
	-02-N	UNITS: N/A
		MAX VALUE: 2047
	-03-N	MIN VALUE:0
		RESOLUTION: 1
	-04-N	ACCURACY: N/A
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	LSB : 2^0---
Fuze Variant	-11-N	MSB : 2^4---
	-12-N	SIGNAL TYPE: Unsigned, UNITS: N/A
	-13-N	MAX VALUE: 31, MIN VALUE:0
	-14-N	RESOLUTION: 1, ACCURACY: N/A
	-15-N	LSB : 2^0---

REMARKS/NOTES:

WORD NAME: Seeker/Sensor ID

		CATEGORY:	Special
WORD ID:	22T/09	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION	N/A
COMP RATE:	32 Hz (max)	ACCURACY:	N/A
XMIT RATE:	0.167 to 32 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Seeker/Sensor Type	-00-N	MSB : 2^{10} ---
	-01-N	
	-02-N	SIGNAL TYPE: Unsigned UNITS: N/A MAX VALUE: 2047
	-03-N	MIN VALUE:0 RESOLUTION: 1
	-04-N	ACCURACY: N/A
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	LSB : 2^0 ---
Seeker/Sensor Variant	-11-N	MSB : 2^4 ---
	-12-N	SIGNAL TYPE: Unsigned, UNITS: N/A
	-13-N	MAX VALUE: 31, MIN VALUE:0
	-14-N	RESOLUTION: 1, ACCURACY: N/A
	-15-N	LSB : 2^0 ---

REMARKS/NOTES:

WORD NAME: BIT Report

	CATEGORY: Special
WORD ID: 22T/10	MAX VALUE: N/A
SOURCE(s): Store	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: 32 Hz (max)	ACCURACY: N/A
XMIT RATE: 0.167 to 32 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Store Subsystem A	-00-D	Set to logic 1 when subsystem passes BIT
Store Subsystem B	-01-D	Set to logic 1 when subsystem passes BIT
Store Subsystem C	-02-D	Set to logic 1 when subsystem passes BIT
Store Subsystem D	-03-D	Set to logic 1 when subsystem passes BIT
Store Subsystem E	-04-D	Set to logic 1 when subsystem passes BIT
Store Subsystem F	-05-D	Set to logic 1 when subsystem passes BIT
Store Subsystem G	-06-D	Set to logic 1 when subsystem passes BIT
Store Subsystem H	-07-D	Set to logic 1 when subsystem passes BIT
Store Subsystem I	-08-D	Set to logic 1 when subsystem passes BIT
Store Subsystem J	-09-D	Set to logic 1 when subsystem passes BIT
Store Subsystem K	-10-D	Set to logic 1 when subsystem passes BIT
Store Subsystem L	-11-D	Set to logic 1 when subsystem passes BIT
Store Subsystem M	-12-D	Set to logic 1 when subsystem passes BIT
Store Subsystem N	-13-D	Set to logic 1 when subsystem passes BIT
Store Subsystem O	-14-D	Set to logic 1 when subsystem passes BIT
Store Subsystem P	-15-D	Set to logic 1 when subsystem passes BIT

REMARKS/NOTES:

WORD NAME: Test Control Status

		CATEGORY:	Special
WORD ID:	22T/11	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	32 Hz (max)	ACCURACY:	N/A
XMIT RATE:	0.167 to 32 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
TM On	-00-D	Set to logic 1 when Telemetry RF is radiating
FTS On	-01-D	Set to logic 1 when Flight Termination System is active
In Simulated Release	-02-D	Set to logic 1 when in Simulated Release.
In Immediate Sim Flight	-03-D	Set to logic 1 when in Immediate Sim Flight.
In Timeline Integ	-04-D	Set to logic 1 when store is in Timeline Integration
TM/FTS Batteries Activated	-05-D	Set to logic 1 when TM/FTS Batteries have been activated
Test Function A Status	-06-D	Set to logic 1 when user defined function A is active
Test Function B Status	-07-D	Set to logic 1 when user defined function B is active
Test Function C Status	-08-D	Set to logic 1 when user defined function C is active
Test Function D Status	-09-D	Set to logic 1 when user defined function D is active
Test Function E Status	-10-D	Set to logic 1 when user defined function E is active
Test Function F Status	-11-D	Set to logic 1 when user defined function F is active
Test Function G Status	-12-D	Set to logic 1 when user defined function G is active
Test Function H Status	-13-D	Set to logic 1 when user defined function H is active
Test Function I Status	-14-D	Set to logic 1 when user defined function I is active
Test Function J Status	-15-D	Set to logic 1 when user defined function J is active

REMARKS/NOTES:

WORD NAME: Mod Msn Storage Location

WORD ID:	22T/12
SOURCE(s):	Store
DEST(s):	Platform
COMP RATE:	32 Hz (max)
XMIT RATE:	0.167 to 32 Hz
SIGNAL TYPE:	Unsigned
UNITS:	N/A

CATEGORY:	Number(L)
MAX VALUE:	255
MIN VALUE:	0
RESOLUTION:	1
ACCURACY:	N/A
MSB:	2^15
LSB:	2^0
FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Msn Storage Location Number	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Selected Primary Msn Num

WORD ID:	22T/13
SOURCE(s):	Store
DEST(s):	Platform
COMP RATE:	32 Hz (max)
XMIT RATE:	0.167 to 32 Hz
SIGNAL TYPE:	Unsigned
UNITS:	N/A

CATEGORY:	Number(L)
MAX VALUE:	65535
MIN VALUE:	0
RESOLUTION:	1
ACCURACY:	N/A
MSB:	2^{15}
LSB:	2^0
FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Selected Primary Msn Num	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. This word contains the mission number associated with the storage location selected as the Primary Mission via the Mission Control [22R]. Prior to the selection of a primary mission the store defaults to mission number zero (0) (i.e., no mission selected).

WORD NAME: Secondary Msn Storage Location

		CATEGORY:	Number(L)
WORD ID:	22T/14	MAX VALUE:	255
SOURCE(s):	Store	MIN VALUE:	0
DEST(s):	Platform	RESOLUTION:	1
COMP RATE:	32 Hz (max)	ACCURACY:	N/A
XMIT RATE:	0.167 to 32 Hz	MSB:	2^{15}
SIGNAL TYPE:	Unsigned	LSB:	2^0
UNITS:	N/A	FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Sec Msn Storage Location Number	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. This word contains the secondary mission number as selected via the Mission Control [22R]. The store memory can hold a previous secondary mission selection upon store power-up.

2. A Secondary Msn Storage Location Number of 0 indicates no secondary mission designated.

WORD NAME: Selected Secondary Msn Num

WORD ID:	22T/15
SOURCE(s):	Store
DEST(s):	Platform
COMP RATE:	32 Hz (max)
XMIT RATE:	0.167 to 32 Hz
SIGNAL TYPE:	Unsigned
UNITS:	N/A

CATEGORY:	Number(L)
MAX VALUE:	65535
MIN VALUE:	0
RESOLUTION:	1
ACCURACY:	N/A
MSB:	2^{15}
LSB:	2^0
FULL SCALE:	65535

FIELD NAME	BIT NO.	DESCRIPTION
Selected Secondary Msn Num	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. This word contains the mission number associated with the storage location selected as the Secondary Mission via the Mission Control [22R]. Prior to the selection of a secondary mission the store defaults to mission number zero (0) (i.e., no mission selected).

WORD NAME: GPS Configuration

	CATEGORY:	Special
WORD ID: 22T/16	MAX VALUE:	N/A
SOURCE(s): Store	MIN VALUE:	N/A
DEST(s): Platform	RESOLUTION:	N/A
COMP RATE: 32 Hz (max)	ACCURACY:	N/A
XMIT RATE: 0.167 to 32 Hz	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
GPS Configuration	-00-C	MSB ---
	-01-C	
	-02-C	LSB ---
Key Coverage	-03-N	MSB ---
	-04-N	SIGNAL TYPE: Unsigned, UNITS: Days
	-05-N	MAX VALUE: 56, MIN VALUE: 0
	-06-N	RESOLUTION: 1, ACCURACY: 1
	-07-N	FULL SCALE: 127
	-08-N	
	-09-N	LSB ---
GUV User	-10-D	Set to logic 1 indicating GUV key loaded
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: GPS Active Cryptonet

	CATEGORY:	Special
WORD ID: 22T/17	MAX VALUE:	N/A
SOURCE(s): Store	MIN VALUE:	N/A
DEST(s): Platform	RESOLUTION:	N/A
COMP RATE: 32 Hz (max)	ACCURACY:	N/A
XMIT RATE: 0.167 to 32 Hz	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
GPS Active Cryptonet	-00-C	MSB --
	-01-C	
	-02-C	
	-03-C	
	-04-C	
	-05-C	
	-06-C	
	-07-C	
	-08-C	
	-09-C	
	-10-C	
	-11-C	
	-12-C	
	-13-C	
	-14-C	
	-15-C	LSB --

REMARKS/NOTES:

1. Set to 0 when GPS Configuration [22T/16/00-02 = 000] (PPS-SM/SAASM OPSW 0.9)

WORD NAME: Weapon Data Link ID

		CATEGORY:	Special
WORD ID:	22T/18	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	32 Hz (max)	ACCURACY:	N/A
XMIT RATE:	0.167 to 32 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Link-16 Terminal Configuration	-00-D	Set to logic 1 when Mission Store WDL Terminal is Link-16 Compatible.
UHF Terminal Configuration	-01-D	Set to logic 1 when Mission Store WDL Terminal is UHF Compatible.
MSS Terminal Configuration	-02-D	Set to logic 1 when Mission Store WDL Terminal is MSS Compatible.
MSS-CS Terminal Configuration	-03-D	Set to logic 1 when Mission Store WDL Terminal is MSS-CS Compatible.
IP-ATDL Terminal Configuration	-04-D	Set to logic 1 when Mission Store WDL Terminal is IP-ATDL Compatible.
Reserved	-05-0	Set to logic 0.
Reserved	-06-0	Set to logic 0.
Reserved	-07-0	Set to logic 0.
Reserved	-08-0	Set to logic 0.
Reserved	-09-0	Set to logic 0.
Reserved	-10-0	Set to logic 0.
Reserved	-11-0	Set to logic 0.
Store WDL Data #1 Invalid	-12-D	Set to logic 1 when Store WDL Data #1 is Invalid.
Store WDL Data #2 Invalid	-13-D	Set to logic 1 when Store WDL Data #2 is Invalid.
Store WDL Data #3 Invalid	-14-D	Set to logic 1 when Store WDL Data #3 is Invalid.
Data Change Via WDL	-15-0	Set to logic 1 when mission data has been changed via WDL.

REMARKS/NOTES:

WORD NAME: Store Status 5

		CATEGORY:	Special
WORD ID:	22T/19	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	32 Hz (max)	ACCURACY:	N/A
XMIT RATE:	0.167 to 32 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Master Mode Control Status	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	LSB --
Reserved	-04-0	
Reserved	-05-0	
Reserved	-06-0	
Reserved	-07-0	
Reserved	-08-0	
Reserved	-09-0	
Reserved	-10-0	
Reserved	-11-0	
Reserved	-12-0	
Reserved	-13-0	
Reserved	-14-0	
Reserved	-15-0	

REMARKS/NOTES:

WORD NAME: Net Participant Indices

	CATEGORY: Special
WORD ID: 22T/20	MAX VALUE: N/A
SOURCE(s): Store	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: 32 Hz (max)	ACCURACY: N/A
XMIT RATE: 0.167 to 32 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Set CC Index	-00-N	MSB --
	-01-N	
	-02-N	The Index to identify the Current Controller from within the <u>MDT-Net Participants</u> [13R-029] file
	-03-N	
	-04-N	LSB --
Set AC Index	-05-N	MSB --
	-06-N	
	-07-N	The Index to identify the Alternate Controller from within the <u>MDT-Net Participants</u> [13R-029] file
	-08-N	
	-09-N	LSB --
Set 3PS Index	-10-N	MSB --
	-11-N	
	-12-N	The Index to identify the Third Party IFTU Source from within the <u>MDT-Net Participants</u> [13R-029] file
	-13-N	
	-14-N	LSB --
Reserved	-15-0	

REMARKS/NOTES:

WORD NAME: Reserved

WORD ID:	22T/21-27
SOURCE(s):	Store
DEST(s):	Platform
COMP RATE:	32 Hz (max)
XMIT RATE:	0.167 to 32 Hz
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	N/A
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	
	-01-0	
	-02-0	
	-03-0	
	-04-0	
	-05-0	
	-06-0	
	-07-0	
	-08-0	
	-09-0	
	-10-0	
	-11-0	
	-12-0	
	-13-0	
	-14-0	
	-15-0	

REMARKS/NOTES:

WORD NAME: Growth Provision 1 Status

WORD ID:	22T/28	CATEGORY:	N/A	
SOURCE(s):	Store	MAX VALUE:	N/A	
DEST(s):	Platform	MIN VALUE:	N/A	
COMP RATE:	32 Hz (max)	RESOLUTION:	N/A	
XMIT RATE:	0.167 to 32 Hz	ACCURACY:	N/A	
SIGNAL TYPE:	N/A	MSB:	N/A	
UNITS:	N/A	LSB:	N/A	
		FULL SCALE:	N/A	

FIELD NAME	BIT NO.	DESCRIPTION
Growth Function A Status	-00-D	0 = Disabled, 1 = Enabled
Growth Function B Status	-01-D	0 = Disabled, 1 = Enabled
Growth Function C Status	-02-D	0 = Disabled, 1 = Enabled
Growth Function D Status	-03-D	0 = Disabled, 1 = Enabled
Growth Function E Status	-04-D	0 = Disabled, 1 = Enabled
Growth Function F Status	-05-D	0 = Disabled, 1 = Enabled
Growth Function G Status	-06-D	0 = Disabled, 1 = Enabled
Growth Function H Status	-07-D	0 = Disabled, 1 = Enabled
Reserved	-08-0	Set to logic 0
Reserved	-09-0	Set to logic 0
Reserved	-10-0	Set to logic 0
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Growth Provision 2 Status

		CATEGORY:	Integer
WORD ID:	22T/29	MAX VALUE:	32767
SOURCE(s):	Store	MIN VALUE:	-32768
DEST(s):	Platform	RESOLUTION:	1
COMP RATE:	32 Hz (max)	ACCURACY:	N/A
XMIT RATE:	0.167 to 32 Hz	MSB:	2^14
SIGNAL TYPE:	2's Compliment	LSB:	2^0
UNITS:	N/A	FULL SCALE:	65536

FIELD NAME	BIT NO.	DESCRIPTION	
Growth Provision 2 Value	-00-S	Sign	
	-01-N	MSB	---
	-02-N		
	-03-N		
	-04-N		
	-05-N		
	-06-N		
	-07-N		
	-08-N		
	-09-N		
	-10-N		
	-11-N		
	-12-N		
	-13-N		
	-14-N		
	-15-N	LSB	---

REMARKS/NOTES:

WORD NAME: Reserved

	CATEGORY: N/A
WORD ID: 22T/30	MAX VALUE: N/A
SOURCE(s): Store	MIN VALUE: N/A
DEST(s): Platform	RESOLUTION: N/A
COMP RATE: 32 Hz (max)	ACCURACY: N/A
XMIT RATE: 0.167 to 32 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	
	-01-0	
	-02-0	
	-03-0	
	-04-0	
	-05-0	
	-06-0	
	-07-0	
	-08-0	
	-09-0	
	-10-0	
	-11-0	
	-12-0	
	-13-0	
	-14-0	
	-15-0	

REMARKS/NOTES:

6.24R **SEEKER/SENSOR CONTROL [24R]**

Seeker/Sensor Control [24R] is used by the platform to control mission stores with seekers and/or sensors. UAI categorizes mission store seeker/sensors into four types:

a. A Passive seeker/sensor is a non-transmitting seeker/sensor (e.g., Imaging Infrared (IIR), Electro-Optical (EO), Ultra-Violet (UV), etc.) that is not capable of transmitting electromagnetic energy.

b. An Active seeker/sensor is a transmitting seeker/sensor (e.g., RADAR, LIDAR, MMW, LADAR, etc.) that transmits, receives, and processes electromagnetic energy.

c. A Laser Receiver is a special form of a passive seeker/sensor designed to receive laser energy.

d. A Laser Transmitter is a special form of an active seeker/sensor designed to transmit laser energy. Laser transmitters can be used to illuminate, designate, image, range, etc.

Mission stores with seeker/sensors have the ability to image, detect, acquire, designate, and/or track targets. Additionally, some mission store sensor/seekers also provide the capability for the platform to control/monitor the seeker/sensor LOS. Seeker/Sensor Control [24R] provides the platform with the capability to select, control, and monitor mission store seeker/sensors functions.

The mission store can define MDT-Mission [13R-020] MiDEF file to include data equivalent to that provided in the Seeker/Sensor Control [24R] (e.g., Laser Code [24R/13], Active Seeker Frequency Code [24R/16], Target Priority Control [24R/19/00…01]). These settings can be defined on a mission-by-mission basis or apply to all missions.

Note: Regardless of the option selected by the mission store, changes to the seeker/sensor data received by the mission store via Seeker/Sensor Control [24R] override the preplanned mission data and apply to the store (that is, they are independent of MDS). Once a seeker/sensor data item is changed via Seeker/Sensor Control [24R], the change applies to each mission in the store (not just to the selected mission data set) and the change stays in effect until revised with another Seeker/Sensor Control [24R] or until MDT-Mission [13R-020] is reloaded into the mission store to "reinitialize" the store.

Platform Requirements

The platform shall **{ps_6280}** control mission store seekers/sensors using Seeker/Sensor Control [24R] when Seeker Onboard [22T/05/15 = 1].

The platform shall **{ps_6317}** control mission store data recording using Seeker/Sensor Control [24R] when Data Recorder Onboard [22T/05/12 = 1].

The platform shall **{ps_6318}** control store passive sensor using Seeker/Sensor Control [24R] when Passive Sensor Onboard [24T/03/12 = 1].

The platform shall **{ps_6319}** control store active sensor using Seeker/Sensor Control [24R] when Active Sensor Onboard [24T/03/13 = 1].

The platform shall **{ps_6281}** control store laser receiver using Seeker/Sensor Control [24R] when Laser Rcvr Onboard [24T/03/14 = 1].

The platform shall **{ps_6282}** control store laser transmitter using Seeker/Sensor Control [24R] when Laser Xmitter Onboard [24T/03/15 = 1].

Mission Store Requirements

The mission store shall **{ss_6841}** use seeker/sensor data received via MDT-Mission [13R-020] until receipt of a Seeker/Sensor Control [24R] modifying the data.

The mission store shall **{ss_6842}** use the seeker/sensor data provided in Seeker/Sensor Control [24R] for all missions in place of the corresponding seeker/sensor data previously received via MDT-Mission [13R-020].

The mission store shall **{ss_6843}** erase/invalidate any corresponding Seeker/Sensor Control [24R] data upon receipt of seeker/sensor data provided in a subsequently downloaded MDT-Mission [13R-020].

The mission store supplement **{sup_6153}** documents the seeker/sensor passive sensor, active sensor, laser transmitter, laser receiver, and data recording functionality.

6.24R.1 Seeker/Sensor Control 1 [24R/03]

6.24R.1.1 Seeker/Sensor Mode Command [24R/03/00…02]

The platform can control the operational mode for mission store seeker/sensor using Seeker/Sensor Mode Command [24R/03/00…02], as described by Table 6.24R-1. Seeker/sensor operation can be used to generate an alternative target handover to the mission store.

Table 6.24R-1 Seeker/Sensor Mode Command [24R/03/00…02] Definitions

Seeker/Sensor Mode Command [24R/03/00…02]	Definition	Description
000 (B)	Store Boresight (Default)	Platform is commanding the mission store seeker/sensor LOS to be aligned with the x-axis of the mission store body coordinate frame.
001 (B)	Slave	Platform is commanding the mission store seeker/sensor to slave to a LOS, using either Slave Azimuth/Elevation Commands [24R/07-08], or Slave Command X, Y, and Z [24R/09-11], or the target coordinates specified by the MDS stored in Pri Msn Storage Location [22T/06] as specified by Seeker LOS Source [24R/04/02…03].
010 (B)	Point Track	Platform is commanding the mission store seeker/sensor to track a sensor detectable object/target in the center of the mission store seeker/sensor image and/or LOS.

Table 6.24R-1 <u>Seeker/Sensor Mode Command</u> [24R/03/00…02] Definitions

Seeker/Sensor Mode Command [24R/03/00…02]	Definition	Description
011 (B)	Area Track	Platform is commanding the mission store seeker/sensor to track an area about the mission store seeker/sensor image and/or LOS.
100 (B)	Offset Track	Platform is commanding the mission store seeker/sensor to track an object/target point that is not in the center of the mission store seeker/sensor image and/or LOS.
101 (B)	Scan	Platform is commanding the store seeker/sensor to search a volume centered on the slave LOS using either <u>Slave Azimuth/Elevation Commands</u> [24R/07-08] or <u>Slave Command X, Y, and Z</u> [24R/09-11], or the target coordinates specified by the MDS stored in <u>Pri Msn Storage Location</u> [22T/06] specified by <u>Seeker LOS Source</u> [24R/04/02…03].
110 (B)	Spare	See Store Supplement.
111 (B)	Spare	See Store Supplement.

Platform Requirements

The platform shall **{ps_6283}** set <u>Seeker/Sensor Mode Command</u> [24R/03/00…02] IAW Table 6.24R-1 and <u>CDS Seeker/Sensor Modes</u> **{cds_6104}**, when <u>Seeker Onboard</u> [22T/05/15 = 1].

The platform shall **{ps_6284}** provide the capability to select or enter <u>Seeker/Sensor Mode Command</u> [24R/03/00…02].

Mission Store Requirements

The mission store shall **{ss_6312}** respond to <u>Seeker/Sensor Mode Command</u> [24R/03/00…02] IAW Table 6.24R-1 when <u>Seeker Onboard</u> [22T/05/15 = 1] for the mission store seeker/sensor modes documented in the store supplement **{sup_6154}**.

6.24R.1.2 <u>Seeker/Sensor Polarity Command</u> [24R/03/03…04]

The platform controls the polarity mode of a mission store seeker/sensor video polarity using <u>Seeker/Sensor Polarity Command</u> [24R/03/03…04].

Platform Requirements

The platform shall **{ps_6285}** set <u>Seeker/Sensor Polarity Command</u> [24R/03/03…04] to command the mission store seeker/sensor into the desired polarity, if <u>CDS Polarity Capable</u> **{cds_6105}**, IAW Table 6.24R-2.

The platform shall **{ps_6286}** provide the capability to select or enter <u>Seeker/Sensor Polarity Command</u> [24R/03/03…04] when <u>CDS Polarity Capable</u> **{cds_6105}**.

Table 6.24R-2 Seeker/Sensor Polarity Command [24R/03/03…04] Definitions

Value	Definition
00 (B)	Auto (Default)
01 (B)	Black Hot
10 (B)	White Hot
11 (B)	Reserved

Mission Store Requirements

The mission store shall **{ss_6313}** respond to the Seeker/Sensor Polarity Command [24R/03/03…04] IAW Table 6.24R-2, as documented in the store supplement **{sup_6155}**.

6.24R.1.3 Seeker/Sensor Zoom Command [24R/03/05…06]

The platform controls the mission store seeker/sensor zoom capability using Seeker/Sensor Zoom Command [24R/03/05…06].

Platform Requirements

The platform shall **{ps_6287}** set Seeker/Sensor Zoom Command [24R/03/05…06] as desired, if CDS Zoom Capable **{cds_6106}** IAW Table 6.24R-3.

The platform shall **{ps_6288}** provide the capability to select or enter Seeker/Sensor Zoom Command [24R/03/05…06] when CDS Zoom Capable **{cds_6106}**.

Table 6.24R-3 Seeker/Sensor Zoom Command [24R/03/05…06] Definitions

Value	Definition
00 (B)	Auto (Default)
01 (B)	Zoom In
10 (B)	Zoom Out
11 (B)	Reserved

Mission Store Requirements

The mission store shall **{ss_6314}** respond to the Seeker/Sensor Zoom Command [24R/03/05…06] IAW Table 6.24R-3, as documented in the store supplement **{sup_6156}**.

6.24R.1.4 Coordinate System References [24R/03/07…10]

The platform informs the mission store of the coordinate system it is using for slew commands and/or slave commands. The platform provides slew commands and/or slave commands referenced to the coordinate systems defined in Table 6.24R-4. The mission store in turn provides seeker/sensor position to the platform in the same coordinate system. Section 6.24T Seeker/Sensor Monitor [24T] provides further information and requirements.

Platform Requirements

The platform shall **{ps_6289}** set Slew Coordinate System Reference
[24R/03/07…08] IAW Table 6.24R-4to the coordinate system used for the Slew
Azimuth/Elevation Commands [24R/05-06].

The platform shall **{ps_6290}** set Slave Coordinate System Reference
[24R/03/09…10] IAW Table 6.24R-4 to the coordinate system used for the Slave
Azimuth/Elevation Commands [24R/07-08] and Slave Command X, Y, and Z
[24R/09-11].

Table 6.24R-4 Coordinate System Reference Definitions

Value	Definition
00 (B)	Mission Store Seeker/Sensor Coordinate System (Default)
01 (B)	Platform Body Coordinate System
10 (B)	Local Level Wander Azimuth Coordinate System
11 (B)	Reserved

Mission Store Requirements

The mission store shall **{ss_6315}** respond to Slew Coordinate System Reference
[24R/03/07…08] IAW Table 6.24R-4, as documented in the store supplement
{sup_6157}.

The mission store shall **{ss_6316}** respond to Slave Coordinate System Reference
[24R/03/09…10] IAW Table 6.24R-4, as documented in the store supplement
{sup_6158}.

6.24R.1.5 Reserved

6.24R.1.6 Selected Store [24R/03/12…15]

Selected Store [24R/03/12…15] provides the capability to select a mission store on a
carriage system or submunition within a store for transfer of Seeker/Sensor Control
[24R] commands (Embedded Protocol). The Type 2 carriage system receives the data
and, based on the value in Selected Store, forwards the data to the corresponding
mission store. The Selected Store corresponds to the mission store release order
number. Section 3.8.5.2.2, Embedded Protocol, provides further information and
requirements.

Platform Requirements

The platform shall **{ps_6291}** set Selected Store [24R/03/12…15 = 1-8] (Embedded
Protocol) to indicate that the Seeker/Sensor Control [24R] commands are intended
for a particular mission store in the release order.

The platform shall **{ps_6292}** set Selected Store [24R/03/12…15 = 0] to indicate that
Embedded Protocol is not being used for transfer of Seeker/Sensor Control [24R]
commands to a mission store.

Carriage System Requirements

A Type 2 carriage system shall **{css_6144}** transfer Seeker/Sensor Control [24R] commands (Embedded Protocol) to the corresponding mission store whose release order number equals the value in Selected Store [24R/03/12…15].

A Type 2 carriage system shall **{css_6145}** route the Seeker/Sensor Control [24R] commands to the mission store selected in Store Number [10R/02/08…11] (Directed Protocol) when Selected Store [24R/03/12…15 = 0].

6.24R.2 Seeker/Sensor Control 2 [24R/04]

6.24R.2.1 Reserved [24R/04/00…01]

6.24R.2.2 Seeker LOS Source [24R/04/02…03]

The platform uses Seeker LOS Source [24R/04/02…03] IAW Table 6.24R-5 to specify the slaving command source for the mission store to use in aligning its seeker/sensor LOS.

Platform Requirements

The platform shall **{ps_6320}** set Seeker LOS Source [24R/04/02…03] IAW Table 6.24R-5 to specify the slaving command source the mission store uses to align its seeker/sensor LOS.

The platform shall **{ps_6321}** provide the capability to select or enter Seeker LOS Source [24R/04/02…03].

Table 6.24R-5 Seeker LOS Source [24R/04/02…03] Definitions

Value	Definition
00 (B)	Align the seeker/sensor to the LOS specified by the Slave Azimuth/Elevation Commands [24R/07-08] (Default)
01 (B)	Align the seeker/sensor to the LOS specified by the unit vector Slave Command X, Y, and Z [24R/09-11],
10 (B)	Align the seeker/sensor LOS to the target coordinates specified by the MDS stored in Pri Msn Storage Location [22T/06].
11 (B)	Reserved (as defined in the mission store supplement (if applicable).

Mission Store Requirements

The mission store shall **{ss_6370}** respond to the Seeker LOS Source [24R/04/02…03] IAW Table 6.24R-5 to align its seeker/sensor LOS, as documented in the mission store supplement **{sup_6174}**.

6.24R.2.3 Passive Sensor Control [24R/04/04…05]

Platform Requirements

The platform shall **{ps_6322}** set Passive Sensor Control [24R/04/04…05] IAW Table 6.24R-6 to control the mission store passive sensor if Passive Sensor Onboard [24T/03/12 = 1].

The platform shall **{ps_6323}** provide the capability to select or enter <u>Passive Sensor Control</u> [24R/04/04…05] commands when <u>Passive Sensor Onboard</u> [24T/03/12 = 1].

<p align="center">Table 6.24R-6 <u>Passive Sensor Control</u> [24R/04/04…05] Definitions</p>

Value	Definition
00 (B)	Passive Sensor Off (Default)
01 (B)	Passive Sensor Standby
10 (B)	Passive Sensor On Before and After Launch
11 (B)	Passive Sensor On After Launch Only

Mission Store Requirements

The mission store shall **{ss_6371}** respond to <u>Passive Sensor Control</u> [24R/04/04…05] commands IAW Table 6.24R-6 to enable its passive sensor, when <u>Passive Sensor Onboard</u> [24T/03/12 = 1], as documented in the mission store supplement **{sup_6175}**.

6.24R.2.4 <u>Active Sensor Control</u> [24R/04/06…07]

Platform Requirements

The platform shall **{ps_6324}** set <u>Active Sensor Control</u> [24R/04/06…07] IAW Table 6.24R-8 to control the mission store active sensor if <u>Active Sensor Onboard</u> [24T/03/13 = 1].

The platform shall **{ps_6613}** provide the capability to select or enter <u>Active Sensor Control</u> [24R/04/06…07] command when <u>Active Sensor Onboard</u> [24T/03/13 = 1].

<p align="center">Table 6.24R-7 <u>Active Sensor Control</u> [24R/04/06…07] Definitions</p>

Value	Definition
00 (B)	Active Sensor Off (Default)
01 (B)	Active Sensor Standby
10 (B)	Active Sensor On Before and After Launch
11 (B)	Active Sensor On After Launch Only

Mission Store Requirements

The mission store shall **{ss_6372}** respond to <u>Active Sensor Control</u> [24R/04/06…07] commands IAW Table 6.24R-7 to enable its active sensor, when <u>Active Sensor Onboard</u> [24T/03/13 = 1], as documented in the mission store supplement **{sup_6176}**.

6.24R.2.5 <u>LOBL/LOAL Control</u> [24R/04/08…09]

The platform controls the mission store Lock-On Before Launch (LOBL) and Lock-On After Launch (LOAL) functions using <u>LOBL/LOAL Control</u> [24R/04/08…09] IAW Table 6.24R-8.

Platform Requirements

The platform shall **{ps_6326}** set LOBL/LOAL Control [24R/04/08…09] IAW Table 6.24R-8 to control the mission store LOBL and LOAL functions if CDS LOBL/LOAL Control Enabled **{cds_6109}**.

The platform shall **{ps_6327}** provide the capability to select or enter LOBL/LOAL Control [24R/04/08…09] commands when CDS LOBL/LOAL Control Enabled **{cds_6109}**.

Table 6.24R-8 LOBL/LOAL Control [24R/04/08…09] Definitions

Value	Definition
00 (B)	Not Enabled
01 (B)	Only LOBL Enabled
10 (B)	Only LOAL Enabled
11 (B)	LOBL and LOAL Enabled

Mission Store Requirements

The mission store shall **{ss_6373}** respond to LOBL/LOAL Control [24R/04/08…09] IAW Table 6.24R-8 if it supports LOBL/LOAL Control Enabled, as documented in the mission store supplement **{sup_6177}**.

6.24R.2.6 Target Designate [24R/04/10]

Platform Requirements

The platform shall **{ps_6328}** set Target Designate [24R/04/10 = 1] to command the mission store to designate the current seeker/sensor track point as a target, if CDS Target Designate Enabled **{cds_6110}**.

The platform shall **{ps_6329}** provide the capability to select or enter Target Designate [24R/04/10] command when CDS Target Designate Enabled **{cds_6110}**.

Mission Store Requirements

The mission store shall **{ss_6374}** respond to Target Designate [24R/04/10 = 1] by designating the current seeker/sensor track point as a target, if it supports Target Designate Enable as documented in the mission store supplement **{sup_6178}**.

6.24R.2.7 Slew Enable [24R/04/11]

Slew Enable [24R/04/11] commands the mission store to respond to azimuth/elevation slewing adjustments to the current mission store seeker/sensor LOS using the Slew Azimuth/Elevation Commands [24R/05-06]. Slew Enable overrides the Seeker/Sensor Mode Command [24R/03/00…02]. When Slew Enable is set, the platform provides slew azimuth/elevation rate commands to adjust the mission store seeker/sensor LOS to align the LOS with the point of interest. When the platform subsequently clears Slew Enable, the mission store uses the current LOS and returns to the seeker/sensor mode commanded by Seeker/Sensor Mode Command [24R/03/00…02].

Platform Requirements

The platform shall **{ps_6330}** set Slew Enable [24R/04/11 = 1] to command the mission store to use the Slew Azimuth/Elevation Commands [24R/05-06] to adjust the current seeker/sensor LOS, if CDS Slew Enabled **{cds_6111}**.

Mission Store Requirements

The mission store shall **{ss_6375}** respond to Slew Azimuth/Elevation Commands [24R/05-06] to adjust the current seeker/sensor LOS, when Slew Enable [24R/04/11 = 1], as documented in the mission store supplement **{sup_6179}**.

6.24R.2.8 Mask Zone Enable [24R/04/12]

Mask Zone Enable [24R/04/12] commands the mission store to use the platform provided Mask Zone [24R/17-18] limits to provide mask zone status/warnings in Mask Zone Monitor [24T/04/07…08] and automatically disable the mission store active sensor transmissions and laser transmitter output, as applicable, when the current seeker/sensor LOS exceeds the mask zone limits.

Platform Requirements

The platform shall **{ps_6331}** set Mask Zone Enable [24R/04/12 = 1] to command the mission store to use the platform provided Mask Zone [24R/17-18], limits, if CDS Mask Zone Enabled **{cds_6112}**.

Mission Store Requirements

The mission store shall **{ss_6376}** use platform provided Mask Zone [24R/17-18] limits when Mask Zone Enable [24R/04/12 = 1], as documented in the mission store supplement **{sup_6180}**.

6.24R.2.9 Data Recorder Command [24R/04/13…15]

Platform Requirements

The platform shall **{ps_6293}** set Data Recorder Command [24R/04/13…15] IAW Table 6.24R-9 to control the mission store recorder, if Data Recorder Onboard [22T/05/12 = 1].

The platform shall **{ps_6294}** provide the capability to select or enter Data Recorder Command [24R/04/13…15] when Data Recorder Onboard [22T/05/12 = 1].

Table 6.24R-9 Data Recorder Command [24R/04/13…15] Definitions

Value	Definition
000 (B)	Stop (Default)
001 (B)	Record
010 (B)	Play
011 (B)	Rewind
100 (B)	Fast Forward
101 (B)	Pause

Value	Definition
110 (B)	Reserved
111 (B)	Reserved

Mission Store Requirements

The mission store shall **{ss_6317}** respond to the Data Recorder Command [24R/04/13…15] IAW Table 6.24R-9, when Data Recorder Onboard [22T/05/12 = 1], as documented in the mission store supplement **{sup_6159}**.

6.24R.3 Slew Azimuth Command [24R/05]

The Slew Azimuth Command [24R/05] provides azimuth slewing adjustment, as a slew rate, to the mission store current seeker/sensor LOS.

Platform Requirements

The platform shall **{ps_6295}** set Slew Azimuth Command [24R/05] to the azimuth slew rate to be used by the mission store when Slew Enable [24R/04/11 = 1], if CDS Slew Enabled **{cds_6111}**.

Mission Store Requirements

The mission store shall **{ss_6318}** respond to Slew Azimuth Command [24R/05] when Slew Enable [24R/04/11 = 1] as documented in the mission store supplement **{sup_6160}**.

6.24R.4 Slew Elevation Command [24R/06]

The Slew Elevation Command [24R/06] provides elevation slewing adjustment, as a slew rate, to the mission store current seeker/sensor LOS.

Platform Requirements

The platform shall **{ps_6296}** set Slew Elevation Command [24R/06] to the elevation slew rate to be used by the mission store when Slew Enable [24R/04/11 = 1] if CDS Slew Enabled **{cds_6111}**.

Mission Store Requirements

The mission store shall **{ss_6319}** respond to Slew Elevation Command [24R/06] when Slew Enable [24R/04/11 = 1], as documented in the mission store supplement **{sup_6160}**.

6.24R.5 Slave Azimuth Command [24R/07]

The Slave Azimuth Command [24R/07] provides the azimuth command as an angle for mission store seeker/sensor use.

Platform Requirements

The platform shall **{ps_6297}** set <u>Slave Azimuth Command</u> [24R/07] to azimuth angle to be used by the mission store, when <u>Seeker LOS Source</u> [24R/04/02…03 = 00 (B)] and <u>Seeker/Sensor Mode Command</u> [24R/03/00…02 = Slave or Scan] IAW Table 6.24R-1.

Mission Store Requirements

The mission store shall **{ss_6320}** respond to <u>Slave Azimuth Command</u> [24R/07] when <u>Seeker LOS Source</u> [24R/04/02…03 = 00 (B)] and <u>Seeker/Sensor Mode Command</u> [24R/03/00…02 = Slave or Scan] IAW Table 6.24R-1, as documented in the mission store supplement **{sup_6162}**.

6.24R.6 <u>Slave Elevation Command</u> **[24R/08]**

The <u>Slave Elevation Command</u> [24R/08] provides the elevation command as an angle for mission store seeker/sensor use.

Platform Requirements

The platform shall **{ps_6298}** set <u>Slave Elevation Command</u> [24R/08] to elevation angle to be used by the mission store when <u>Seeker LOS Source</u> [24R/04/02…03 = 00 (B)] and <u>Seeker/Sensor Mode Command</u> [24R/03/00…02 = Slave or Scan] IAW Table 6.24R-1.

Mission Store Requirements

The mission store shall **{ss_6321}** respond to <u>Slave Elevation Command</u> [24R/08] when <u>Seeker LOS Source</u> [24R/04/02…03 = 00 (B)] and <u>Seeker/Sensor Mode Command</u> [24R/03/00…02 = Slave or Scan] IAW Table 6.24R-1, as documented in the mission store supplement **{sup_6162}**.

6.24R.7 <u>Slave Command X, Y, and Z</u> **[24R/09-11]**

The <u>Slave Command X</u> [24R/09], <u>Slave Command Y</u> [24R/10], and <u>Slave Command Z</u> [24R/11], provides the slaving command in a unit vector format for mission store seeker/sensor use.

Platform Requirements

The platform shall **{ps_6299}** set <u>Slave Command X, Y, and Z</u> [24R/09-11] to the slaving command unit vector to be used by the mission store when <u>Seeker LOS Source</u> [24R/04/02…03 = 01 (B)] and <u>Seeker/Sensor Mode Command</u> [24R/03/00…02 = Slave or Scan] IAW Table 6.24R-1.

Mission Store Requirements

The mission store shall **{ss_6322}** respond to <u>Slave Command X, Y, and Z</u> [24R/09-11] when <u>Seeker LOS Source</u> [24R/04/02…03 = 01 (B)] and <u>Seeker/Sensor Mode Command</u> [24R/03/00…02 = Slave or Scan] IAW Table 6.24R-1, as documented in the mission store supplement **{sup_6164}**.

6.24R.8 Laser Control [24R/12]

6.24R.8.1 Laser Mode Command [24R/12/00…02]

The platform controls the operational mode for mission store laser transmitter/receiver using Laser Mode Command [24R/12/00…02].

Platform Requirements

The platform shall **{ps_6300}** set Laser Mode Command [24R/12/00…02] IAW Table 6.24R-10 and CDS Laser Modes **{cds_6108}**, when either Laser Rcvr Onboard [24T/03/14 = 1] and/or Laser Xmitter Onboard [24T/03/15 = 1].

The platform shall **{ps_6301}** provide the capability to select or enter Laser Mode Command [24R/12/00…02] IAW CDS Laser Modes **{cds_6108}**, when either Laser Rcvr Onboard [24T/03/14 = 1] and/or Laser Xmitter Onboard [24T/03/15 = 1].

Table 6.24R-10 Laser Mode Command [24R/12/00…02] Definitions

Value	Definition	Description
000 (B)	Reserved	See Store Supplement (if applicable)
001 (B)	Reserved	See Store Supplement (if applicable)
010 (B)	Reserved	See Store Supplement (if applicable)
011 (B)	Reserved	See Store Supplement (if applicable)
100 (B)	Reserved	See Store Supplement (if applicable)
101 (B)	Reserved	See Store Supplement (if applicable)
110 (B)	Reserved	See Store Supplement (if applicable)
111 (B)	Reserved	See Store Supplement (if applicable)

Mission Store Requirements

The mission store shall **{ss_6323}** respond to Laser Mode Command [24R/12/00…02] IAW Table 6.24R-10 when either Laser Rcvr Onboard [24T/03/14 = 1] and/or Laser Xmitter Onboard [24T/03/15 = 1] for the mission store laser modes documented in the mission store supplement **{sup_6165}**.

6.24R.8.2 Laser Transmitter Control [24R/12/04…05]

The platform controls the store laser transmitter using Laser Transmitter Control [24R/12/04…05] IAW Table 6.24R-11. Note: The platform must also set Laser Arm [24R/12/06 = 1] before the mission store laser transmitter can radiate.

Platform Requirements

The platform shall **{ps_6303}** set Laser Transmitter Control [24R/12/04…05] IAW Table 6.24R-11 when Laser Xmitter Onboard [24T/03/15 = 1].

The platform shall **{ps_6332}** provide the capability to select or enter Laser Transmitter Control [24R/12/04…05] when Laser Xmitter Onboard [24T/03/15 = 1].

Table 6.24R-11 Laser Transmitter Control [24R/12/04…05] Definitions

Value	Definition
00 (B)	Laser Transmitter Off
01 (B)	Laser Transmitter Standby
10 (B)	Laser Transmitter On Before and After Launch (Note 1)
11 (B)	Laser Transmitter On After Launch Only (Note 1)

Note:

1. Laser Arm [24R/12/06 = 1] and Laser Transmitter Control [24R/12/04…05 > 01 (B)] before the mission store laser transmitter can radiate.

Mission Store Requirements

The mission store shall **{ss_6325}** respond to Laser Transmitter Control [24R/12/04…05] IAW Table 6.24R-11 when Laser Xmitter Onboard [24T/03/15 = 1], as documented in the mission store supplement **{sup_6168}**.

6.24R.8.3 Laser Arm [24R/12/06]

The platform arms the mission store laser using Laser Arm [24R/12/06]. Note: The platform must also set Laser Transmitter Control [24R/12/04…05 = > 01 (B)] before the mission store laser transmitter can radiate.

Platform Requirements

The platform shall **{ps_6306}** set Laser Arm [24R/12/06 = 1] to arm the mission store laser when Laser Xmitter Onboard [24T/03/15 = 1].

The platform shall **{ps_6333}** provide the capability to select or enter Laser Arm [24R/12/06] command if CDS Laser Arming Enabled **{cds_6113}**.

Mission Store Requirements

The mission store shall **{ss_6613}** arm its laser transmitter when Laser Arm [24R/12/06 = 1].

6.24R.8.4 Laser Transmitter Output [24R/12/07]

The platform controls the mission store laser transmitter output using Laser Transmitter Output [24R/12/07]. The tactical operation is the full power, tactical wavelength, laser mode used for combat operations. The eye safe/training mode is a reduced power, eye safe wavelength, laser mode intended for training use.

Platform Requirements

The platform shall **{ps_6304}** set Laser Transmitter Output [24R/12/07 = 0] to enable mission store laser transmitter eye-safe/training operation when Laser Xmitter Onboard [24T/03/15 = 1].

The platform shall **{ps_6305}** set Laser Transmitter Output [24R/12/07 = 1] to enable laser transmitter tactical operation when Laser Xmitter Onboard [24T/03/15 = 1].

Mission Store Requirements

The mission store shall **{ss_6326}** respond Laser Transmitter Output [24R/12/07 = 0] to enable mission store laser transmitter eye-safe/training operation when Laser Xmitter Onboard [24T/03/15 = 1].

The mission store shall **{ss_6327}** respond Laser Transmitter Output [24R/12/07 = 1] to enable laser transmitter tactical operation when Laser Xmitter Onboard [24T/03/15 = 1].

6.24R.8.5 Laser Receiver Control [24R/12/08…09]

The platform controls the mission store laser receiver using Laser Receiver Control [24R/12/08…09] IAW Table 6.24R-12.

Platform Requirements

The platform shall **{ps_6334}** set Laser Receiver Control [24R/12/08…09] IAW Table 6.24R-12 when Laser Rcvr Onboard [24T/03/14 = 1].

The platform shall **{ps_6335}** provide the capability to select or enter Laser Receiver Control [24R/12/08…09] when Laser Rcvr Onboard [24T/03/14 = 1].

Table 6.24R-12 Laser Receiver Control [24R/12/08…09] Definitions

Value	Definition
00 (B)	Laser Receiver Off
01 (B)	Laser Receiver Standby
10 (B)	Laser Receiver On Before and After Launch
11 (B)	Laser Receiver On After Launch Only

Mission Store Requirements

The mission store shall **{ss_6324}** respond to Laser Receiver Control [24R/12/08…09] IAW Table 6.24R-12 when Laser Rcvr Onboard [24T/03/14 = 1], as documented in the mission store supplement **{sup_6181}**.

6.24R.9 Laser Code [24R/13]

Laser Code [24R/13] contains the store laser code. For systems that require additional data, it is provided via MDT, and then the configuration data is selected using Laser Code. The available laser code combinations are defined in Table 6.24R-13. The mission store sets Laser Code Monitor [24T/11] to the Laser Code it is using. Additionally, the mission store sets Laser Code Valid [24T/10/10 = 1] when Laser Code Monitor [24T/11] contains a supported laser code for that store.

Table 6.24R-13 Laser Code [24R/13] Combinations

Laser Digit 1 [24R/13/00…03]	Laser Digit 2 [24R/13/04…07]	Laser Digit 3 [24R/13/08…11]	Laser Digit 4 [24R/13/12…15]
1 PRF	1-7	1-8	1-8
2 US Short PIM	1-8	1-8	1-8
3	1-8	1-8	1-8

Table 6.24R-13 Laser Code [24R/13] Combinations

Laser Digit 1 [24R/13/00…03]	Laser Digit 2 [24R/13/04…07]	Laser Digit 3 [24R/13/08…11]	Laser Digit 4 [24R/13/12…15]
4 US Long PIM	1-8	1-8	1-8
5	1-8	1-8	1-8
6	1-8	1-8	1-8
7	1-8	1-8	1-8
8	1-8	1-8	1-8

Notes:
1. The store supplement documents valid Laser Code [24R/13] combinations.
2. The store supplement documents Laser Digit 1 [24R/13/00…03] special meanings.

Platform Requirements

The platform shall **{ps_6307}** set Laser Code [24R/13] IAW Table 6.24R-13 to command the mission store to use the specified laser code, when either Laser Rcvr Onboard [24T/03/14 = 1] and/or Laser Xmitter Onboard [24T/03/15 = 1].

The platform shall **{ps_6308}** provide the capability to select or enter Laser Code [24R/13] IAW Table 6.24R-13, when either Laser Rcvr Onboard [24T/03/14 = 1] and/or Laser Xmitter Onboard [24T/03/15 = 1].

Mission Store Requirements

The mission store shall **{ss_6328}** use Laser Code [24R/13] for its laser transmitter and/or laser receiver IAW Table 6.24R-13, when either Laser Rcvr Onboard [24T/03/14 = 1] and/or Laser Xmitter Onboard [24T/03/15 = 1], as documented in the mission store supplement **{sup_6169}**.

The mission store supplement **{sup_6169}** documents the laser code combinations supported.

6.24R.10 Time at Reset [24R/14]

Time at Reset [24R/14] is set to the maximum value attained by the platform clock (prior to being reset) that is used to generate Synchronize with Data Word [MC17R] mode commands and time tag time stamp words (see section 3.5.17.1). This word is set to full scale if the platform clock is not reset but instead rolls over. The total error budget associated with establishing time of data validity through time stamping is +/- 10.0 msec. Time at Reset [24R/14] platform and store requirements are defined in section 3.5.17.1.

6.24R.11 Seeker Control Time Stamp [24R/15]

Seeker Control Time Stamp [24R/15] contains the time tag of the data contained in Seeker/Sensor Control [24R] (see section 3.5.17.1). The total error budget associated with establishing time of data validity through time stamping is +/- 10.0 msec. Seeker Control Time Stamp [24R/15] platform and store requirements are defined in section 3.5.17.1.

6.24R.12 Active Seeker Frequency Code [24R/16]

Active Seeker Frequency Code [24R/16] is used to specify the mission store active seeker frequency (RADAR, LIDAR, MMW, LADAR, etc.). The platform, when simultaneously enabling the active seekers on multiple mission stores, sends a unique Active Seeker Frequency Code [24R/16] to each mission store to de-conflict active seeker frequencies. Active Seeker Frequency Code [24R/16] consists of Freq Code Prefix [24R/16/00…07] character and Freq Code Suffix [24R/16/08…08] number. The Freq Code Prefix character is defined in ANSI X3.4 American Standard for Information Interchange (ASCII) where only upper case alphabetic characters are used. In standard 7-bit ASCII the first bit of each 8-bit character field (MSB) is set to logic zero (0), and the 7-bit ASCII code occupies the remaining seven bits of the field and this convention is used for all ASCII characters.

Platform Requirements

The platform shall **{ps_6336}** set the Active Seeker Frequency Code [24R/16] to select the active seeker transmission frequency, when Active Sensor Onboard [24T/03/13 = 1] and CDS Active Seeker Frequency Selectable **{cds_6114}**.

The platform shall **{ps_6337}** provide the capability to select or enter Active Seeker Frequency Code [24R/16] when CDS Active Seeker Frequency Selectable **{cds_6114}**.

Mission Store Requirements

The mission store shall **{ss_6615}** use Active Seeker Frequency Code [24R/16] to select the active seeker transmission frequency as documented in the mission store supplement **{sup_6182}**.

6.24R.13 Mask Zone Limits [24R/17-18]

For active sensors and laser transmitters, as applicable, the platform provides Mask Zone Limits [24R/17-18] to specify the angular region where the mission store active sensor and laser transmitter is not allowed to radiate because either the platform and/or other stores could be obstructing the mission store seeker/sensor LOS. The platform specifies active seeker and laser transmitters mask zone limits (i.e., the region where mission store disables transmission) with Left Mask Zone Limit [24R/17/00…07], Right Mask Zone Limit [24R/17/08…15], Up Mask Zone Limit [24R/18/00…07], and Down Mask Zone Limit [24R/18/08…15] as depicted in Figure 6.24R-1.
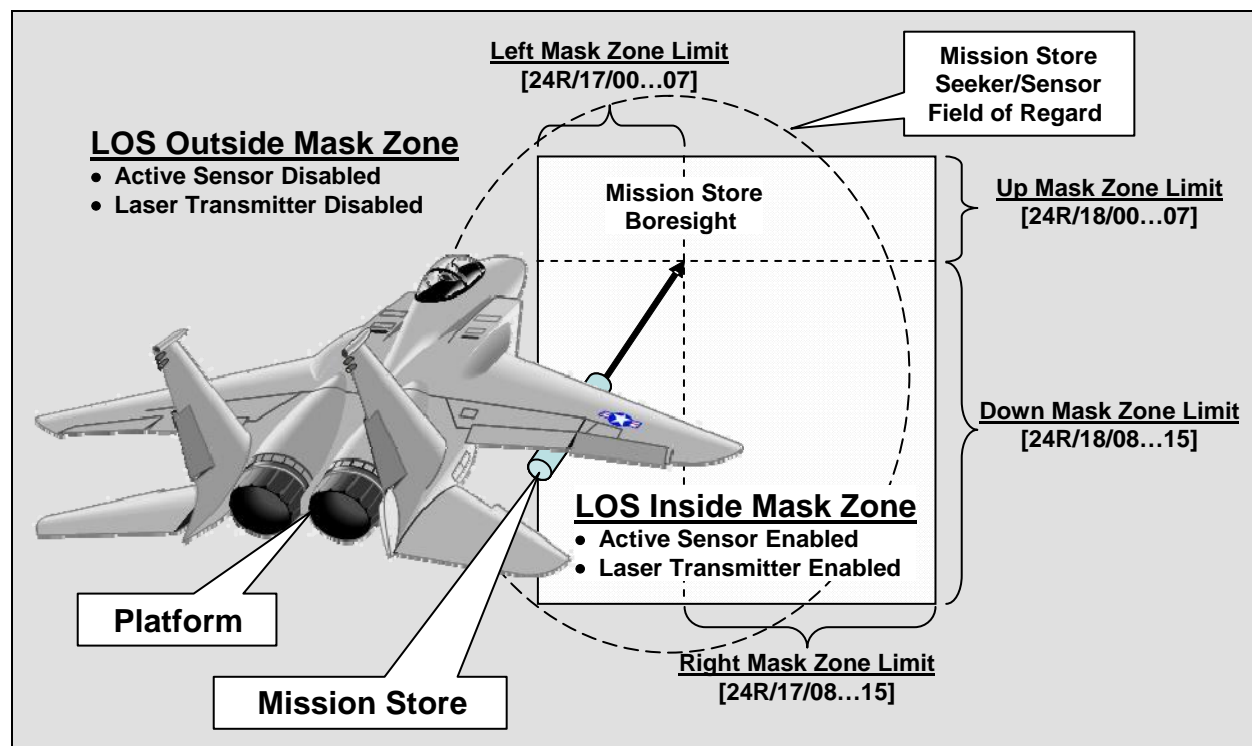
Figure 6.24R-1 Mask Zone Limits [24R/17-18]

When Mask Zone Enable [24R/04/12 = 1], the mission store uses the platform provided Mask Zone Limits [24R/17-18] to enable/disable active sensor and laser transmitter output as applicable. When the mission store seeker/sensor current LOS is inside the Mask Zone Limits the active sensor and laser transmitter is allowed to radiate. When the mission store seeker/sensor current LOS is outside of any of the Mask Zone Limits the mission store disables active sensor and laser transmitter output. The mission store provides masking status indications to the platform in Mask Zone Monitor [24T/04/07…08].

Platform Requirements

The platform shall **{ps_6338}** provide Mask Zone Limits [24R/17-18] IAW Figure 6.24R-1 to define the LOS angular limits the mission store uses to enable/disable the mission store active sensor transmissions and laser transmitter output as applicable, when either Active Sensor Onboard [24T/03/13 = 1] and/or Laser Xmitter Onboard [24T/03/15 = 1], and Mask Zone Enable [24R/04/12 = 1].

Mission Store Requirements

The mission store shall **{ss_6377}**, use Mask Zone Limits [24R/17-18] IAW Figure 6.24R-1 to enable/disable its active sensor transmissions and laser transmitter output, when either Active Sensor Onboard [24T/03/13 = 1] and/or Laser Xmitter Onboard [24T/03/15 = 1], and Mask Zone Enable [24R/04/12 = 1].

6.24R.14 Target Prioritization Lists

Target prioritization list(s), when employed, arrange target classifications from highest to lowest priority, IAW Table 6.17R/T-1-2 Target Class Definitions. The mission store prioritizes targets detected within its seeker/sensor field of regard at the supplied coordinates, IAW the specified target prioritization list, and engages the highest priority target. Table 6.24R-14 defines the rules that apply to target prioritization lists.

Table 6.24R-14 Target Prioritization List Rules

Rule #	Description
1	Default mission store target prioritization list(s) are allowed, and can be a part of the mission store software, as documented in the mission store supplement.
2	Preplanned target prioritization list(s) can be created on a mission planning system, and provided to the mission store as part of an MDT-Mission [13R-020] data file.
3	Operator created target prioritization list(s) are provided to the mission store using Target Priority 1 [24R/19/04…09] (highest priority), Target Priority 2 [24R/19/10…15], and Target Priority 3 [24R/20/10…15] (lowest priority).
4	Preplanned target prioritization list(s) are provided to the mission store as part of an MDT-Mission [13R-020] data file, and can be a minimum of one (1) target priority entry to a maximum number of target priority entries as documented in the mission store supplement.
5	Operator entered Target Priority 1 [24R/19/04…09] (highest priority), Target Priority 2 [24R/19/10…15], and Target Priority 3 [24R/20/10…15] (lowest priority) prioritization list(s) can be a minimum of one (1) and maximum of three (3) target priority entries in length.
6	Unused target prioritization list entry(s) are identified by Target Class value = No Target Class Provided (Default), and are placed at the end of the target prioritization list, after all of the other non-zero target priority entries.
7	If a target prioritization list is not selected and/or is not provided, the mission store performs its mission as documented in the mission store supplement.
8	If the mission store cannot classify a target on the selected target prioritization list and Abort on Target Priority [24R/19/02 = 0] the mission store performs its mission as documented in the mission store supplement.

Mission Store Requirements

The mission store shall **{ss_6605}** be capable of supporting two preplanned Target Prioritization Lists (i.e., List A and List B), as provided to the mission store as part of MDT-Mission [13R-020] data file, when Seeker Onboard [22T/05/15 = 1] and the mission store supports target prioritization lists, as documented in the mission store supplement **{sup_6252}**.

6.24R.14.1 Target Priority Control [24R/19/00…01]

Target Priority Control [24R/19/00…01] specifies the target prioritization list that the mission store uses IAW Table 6.24R-15. Target Priority Control [24R/19/00…01] provides the capability to select between two preplanned Target Prioritization Lists or an operator entered target priority list loaded in mission store memory.

Platform Requirements

The platform shall **{ps_6339}** set Target Priority Control [24R/19/00…01] IAW Table 6.24R-15, prior to setting CTS [11R/04/02 = 1], to specify the target prioritization list to be used by the mission store for its post-release mission, when Seeker Onboard [22T/05/15 = 1] and CDS Target Priority Control Enabled **{cds_6115}**.

The platform shall **{ps_6340}** provide the capability to select or enter Target Priority Control [24R/19/00…01] command IAW Table 6.24R-15, when Seeker Onboard [22T/05/15 = 1] and CDS Target Priority Control Enabled **{cds_6115}**.

Table 6.24R-15 Target Priority Control [24R/19/00…01] Definitions

Value	Definition
00 (B)	(Default) No target prioritization list specified mission store performs the mission specified by either the selected MDT-Mission [13R-020] or the Modify Mission [17R/T] MDS.
01 (B)	Mission store engages the target having the highest priority as specified by Target Priority 1 [24R/19/04…09], Target Priority 2 [24R/19/10…15], and/or Target Priority 3 [24R/20/10…15].
10 (B)	Mission store engages the target having the highest priority as specified by MDT-Mission [13R-020] preplanned mission store Target Prioritization List A if Target Prioritization List A Received [24T/21/02 = 1].
11 (B)	Mission store engages the target having the highest priority as specified by MDT-Mission [13R-020] preplanned mission store Target Prioritization List B if Target Prioritization List B Received [24T/21/03 = 1]

Notes
1. When Target Priority Control [24R/04/00…01 > 00 (B)], Target Class [17R/T-1/04/05…10] provided in Modify Mission: Target [17R-1] is superseded. 2. Refer to mission store supplement for additional information when an empty target priority list is selected (all entries = 0 = No Target Class Provided (Default).

Mission Store Requirements

The mission store shall **{ss_6378}** use the target prioritization list specified by the Target Priority Control [24R/19/00…01] IAW Table 6.24R-15, for its post release mission, when Seeker Onboard [22T/05/15 = 1] and the mission store supports target prioritization lists, as documented in the mission store supplement **{sup_6183}**.

6.24R.14.2 Abort on Target Priority [24R/19/02]

Abort on Target Priority [24R/19/02] commands a mission store to abort its post-release mission prior to impact, if it is unable to classify a target (IAW Table 6.17R/T-1-2 Target Class Definitions) which is on the selected Target Prioritization List.

Platform Requirements

The platform shall **{ps_6351}** set Abort on Target Priority [24R/19/02 = 1] prior to setting CTS [11R/04/02 = 1], to command the mission store to abort its post-release mission prior to impact, if it is unable to classify a target that is on the selected

Target Prioritization List when <u>Target Priority Control</u> [24R/19/00…01 > 00 (B)], <u>Seeker Onboard</u> [22T/05/15 = 1], and <u>CDS Target Priority Abort Capable</u> **{cds_6118}**.The platform shall **{ps_6352}** provide the capability to select or enter <u>Abort on Target Priority</u> [24R/19/02] command, when <u>Seeker Onboard</u> [22T/05/15 = 1] and <u>CDS Target Priority Abort Capable</u> **{cds_6118}**.

Mission Store Requirements

The mission store shall **{ss_6420}** abort its post-release mission prior to impact, if it is unable to classify a target in the selected Target Prioritization List when <u>Abort on Target Priority</u> [24R/19/02 = 1] and <u>Target Priority Control</u> [24R/19/00…01 > 00 (B)], when <u>Seeker Onboard</u> [22T/05/15 = 1] and the mission store supports target prioritization lists, as documented in the mission store supplement **{sup_6200}**.

6.24R.14.3 <u>Target Priority 1, 2, and 3</u> [24R/19/04…09], [24R/19/10…15], and [24R/20/10…15]

<u>Target Priority 1</u> [24R/19/04…09] (highest priority), <u>Target Priority 2</u> [24R/19/10…15], and <u>Target Priority 3</u> [24R/20/10…15] (lowest priority) allow the selection of one, two, or three (3) prioritized <u>Target Class</u> values for the mission store. <u>Target Class</u> parameter specifies what type of target to be attacked by the mission store, as documented in Table 6.17R/T-1-2.

Platform Requirements

The platform shall **{ps_6341}** assign a <u>Target Class</u> IAW Table 6.17R/T-1-2 to <u>Target Priority 1</u> [24R/19/04…09], <u>Target Priority 2</u> [24R/19/10…15], and/or <u>Target Priority 3</u> [24R/20/10…15] for the mission store post-release mission, prior to setting <u>CTS</u> [11R/04/02 = 1], when <u>Target Priority Control</u> [24R/19/00…01 = 01 (B)], <u>Seeker Onboard</u> [22T/05/15 = 1], and <u>CDS Target Priority Control Enabled</u> **{cds_6115}**.

The platform shall **{ps_6342}** provide the capability to select or enter <u>Target Class</u> IAW Table 6.17R/T-1-2, to <u>Target Priority 1</u> [24R/19/04…09] <u>Target Priority 2</u> [24R/19/10…15], and <u>Target Priority 3</u> [24R/20/10…15] commands, when <u>Seeker Onboard</u> [22T/05/15 = 1] and <u>CDS Target Priority Control Enabled</u> **{cds_6115}**.

Mission Store Requirements

The mission store shall **{ss_6379}** prioritize targets based upon <u>Target Priority 1</u> [24R/19/04…09] <u>Target Priority 2</u> [24R/19/10…15], and <u>Target Priority 3</u> [24R/20/10…15] IAW Table 6.17R/T-1-2, for its post-release mission, when <u>Target Priority Control</u> [24R/19/00…01 = 01 (B)], <u>Seeker Onboard</u> [22T/05/15 = 1], and the mission store supports target prioritization lists, as documented in the mission store supplement **{sup_6184}**.

6.24R.15 Seeker/Sensor Control 3 [24R/20]

6.24R.15.1 Boresight Correction

Boresight Correction is used by the platform to correct for mission store seeker/sensor boresight misalignment. The Boresight Correction Enable [24R/20/00] and Apply Boresight Correction [24R/20/01] commands are used to perform a correction of the boresight of the mission store seeker/sensor LOS. The platform annex, mission store supplement and platform/mission store addendum document the boresight correction procedure.

Platform Requirements

The platform shall **{ps_6343}** set Boresight Correction Enable [24R/20/00 = 1] to command the mission store to calculate a boresight bias, if CDS Boresight Correction Enabled **{cds_6116}**.

The platform shall **{ps_6344}** set Apply Boresight Correction [24R/20/01 = 1] to command the mission store to apply the boresight bias to the seeker/sensor LOS, if CDS Boresight Correction Enabled **{cds_6116}**.

The platform shall **{ps_6345}** provide the capability to select or enter Boresight Correction Enable [24R/20/00] and Apply Boresight Correction [24R/20/01] commands, when Seeker Onboard [22T/05/15 = 1] and CDS Boresight Correction Enabled **{cds_6116}**.

The platform annex **{ann_6012}** and the platform/mission store addendum **{add_6003}** document platform boresight correction usage and procedures.

Mission Store Requirements

The mission store shall **{ss_6380}** calculate a boresight bias, when Boresight Correction Enable [24R/20/00 = 1], as documented in the mission store supplement **{sup_6185}**.

The mission store shall **{ss_6381}** apply the boresight bias to the seeker/sensor LOS, when Apply Boresight Correction [24R/20/01 = 1], as documented in the mission store supplement **{sup_6186}**.

MESSAGE NAME: Seeker/Sensor Control
MESSAGE ID: 24R   TRANSFER TYPE: BC-RT
SOURCE: Platform   WORD COUNT: 30
DESTINATION: Store   XMIT RATE: Aperiodic to 32 Hz

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 11000 (B)
Header	01	Message Descriptor
Invalidity	02	Validity of Message Data
Seeker/Sensor Control 1	03	Seeker/Sensor Control Word 1
Seeker/Sensor Control 2	04	Seeker/Sensor Control Word 2
Slew Azimuth Command	05	Slew Azimuth Command
Slew Elevation Command	06	Slew Elevation Command
Slave Azimuth Command	07	Slave Azimuth Command
Slave Elevation Command	08	Slave Elevation Command
Slave Command X	09	Slave Command Unit Vector X Component
Slave Command Y	10	Slave Command Unit Vector Y Component
Slave Command Z	11	Slave Command Unit Vector Z Component
Laser Control	12	Laser Control Word
Laser Code	13	Laser Code Word
Time at Reset	14	Time at Reset Word
Seeker Control Time Stamp	15	Seeker/Sensor Control Time Stamp Word
Active Seeker Frequency Code	16	Active Seeker Frequency Code
Left/Right Mask Zone Limits	17	Left/Right Mask Zone Limits
Up/Down Mask Zone Limits	18	Up/Down Mask Zone Limits
Target Priority	19	Target Priority Word
Seeker/Sensor Control 3	20	Seeker/Sensor Control Word 3
Reserved	21	Reserved
Reserved	22	Reserved
Reserved	23	Reserved
Reserved	24	Reserved
Reserved	25	Reserved
Reserved	26	Reserved
Reserved	27	Reserved
Reserved	28	Reserved
Reserved	29	Reserved
Checksum	30	Checksum
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Header

	CATEGORY:	Header
WORD ID: 24R/01	MAX VALUE:	2802 (H)
SOURCE(s): Platform	MIN VALUE:	2802 (H)
DEST(s): Store	RESOLUTION:	1
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE: Aperiodic to 32 Hz	MSB:	2^{15}
SIGNAL TYPE: N/A	LSB:	2^0
UNITS: N/A	FULL SCALE:	FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB --
	-01-B	
	-02-B	Hex digit #1 value = 2 (H)
	-03-B	LSB --
Hex Digit #2	-04-B	MSB --
	-05-B	
	-06-B	Hex digit #2 value = 8 (H)
	-07-B	LSB --
Hex Digit #3	-08-B	MSB --
	-09-B	
	-10-B	Hex digit #3 value = 0 (H)
	-11-B	LSB --
Hex Digit #4	-12-B	MSB --
	-13-B	
	-14-B	Hex digit #4 value = 2 (H)
	-15-B	LSB --

REMARKS/NOTES:

WORD NAME: Invalidity

	CATEGORY: Validity
WORD ID: 24R/02	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY: N/A
XMIT RATE: Aperiodic to 32 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Seeker/Sensor Control 1 Invalid	-00-V	Set to logic 1 if word 03 is invalid.
Seeker/Sensor Control 2 Invalid	-01-V	Set to logic 1 if word 04 is invalid.
Slew AZ/EL Command Invalid	-02-V	Set to logic 1 if words 05-06 are invalid.
Slave AZ/EL Command Invalid	-03-V	Set to logic 1 if words 07-08 are invalid.
Slave X, Y, Z Command Invalid	-04-V	Set to logic 1 if words 09-11 are invalid.
Laser Control Invalid	-05-V	Set to logic 1 if word 12 is invalid.
Time at Reset Invalid	-06-V	Set to logic 1 if word 14 is invalid.
Time Stamp Invalid	-07-V	Set to logic 1 if word 15 is invalid.
Active Seeker Freq Code Invalid	-08-V	Set to logic 1 if word 16 is invalid.
Mask Zone Limits Invalid	-09-V	Set to logic 1 if words 17-18 are invalid.
Target Priority Invalid	-10-V	Set to logic 1 if word 19 is invalid.
Seeker/Sensor Control 3 Invalid	-11-V	Set to logic 1 if word 20 is invalid.
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Seeker/Sensor Control 1

		CATEGORY:	Special
WORD ID:	24R/03	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	0.167 Hz to 64Hz	ACCURACY:	N/A
XMIT RATE:	Aperiodic to 32 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Seeker/Sensor Mode Command	-00-N	MSB --
	-01-N	Note 1
	-02-N	LSB --
Seeker/Sensor Polarity Command	-03-N	MSB Note 2
	-04-N	LSB
Seeker/Sensor Zoom Command	-05-N	MSB Note 3
	-06-N	LSB
Slew Coordinate System Reference	-07-N	MSB Note 4
	-08-N	LSB
Slave Coordinate System Reference	-09-N	MSB Note 4
	-10-N	LSB
Reserved	-11-0	Set to logic 0
Selected Store	-12-N	MSB --
	-13-N	SIGNAL TYPE: Unsigned, MAX VALUE: 8
	-14-N	MIN VALUE: 0, RESOLUTION: 1
	-15-N	LSB --

REMARKS/NOTES:

1. See Table 6.24R-1 Seeker/Sensor Mode Command [24R/03/00…02].
2. See Table 6.24R-2 Seeker/Sensor Polarity Command [24R/03/03…04].
3. See Table 6.24R-3 Seeker/Sensor Zoom Command [24R/03/05…06].
4. See Table 6.24R-4 Coordinate System Reference Definitions.

WORD NAME: Seeker/Sensor Control 2

		CATEGORY:	Special
WORD ID:	24R/04	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE:	Aperiodic to 32 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION	
Reserved	-00-0		Set to logic 0.
Reserved	-01-0		Set to logic 0.
Seeker LOS Source	-02-N	MSB	Note 1.
	-03-N	LSB	
Passive Sensor Control	-04-N	MSB	Note 2.
	-05-N	LSB	
Active Sensor Control	-06-N	MSB	Note 3.
	-07-N	LSB	
LOBL/LOAL Control	-08-N	MSB	Note 4.
	-09-N	LSB	
Target Designate	-10-D		0 = No Target, 1 = Designate Target
Slew Enable	-11-D		0 = Disable Slew, 1 = Enable Slew
Mask Zone Enable	-12-D		0 = Disable, 1 = Enable
Data Recorder Command	-13-N	MSB	---
	-14-N		Note 5.
	-15-N	LSB	---

REMARKS/NOTES:

1. See Table 6.24R-5 <u>Seeker LOS Source</u> [24R/04/02…03] definitions.
2. See Table 6.24R-6 <u>Passive Sensor Control</u> [24R/04/04…05] definitions.
3. See Table 6.24R-7 <u>Active Sensor Control</u> [24R/04/06…07] definitions.
4. See Table 6.24R-8 <u>LOBL / LOAL Control</u> [24R/04/08…09] definitions.
5. See Table 6.24R-9 <u>Data Recorder Command</u> [24R/04/13…15] definitions.

WORD NAME: Slew Azimuth Command

	CATEGORY:	Rate
WORD ID: 24R/05	MAX VALUE:	Note 1
SOURCE(s): Platform	MIN VALUE:	Note 1
DEST(s): Store	RESOLUTION:	2^-15
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE: Aperiodic to 32 Hz	MSB:	2^-1
SIGNAL TYPE: 2's Complement	LSB:	2^-15
UNITS: Semicircles/Second	FULL SCALE:	0.99996

FIELD NAME	BIT NO.	DESCRIPTION
Slew Azimuth Command	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. Minimum and maximum values are defined in the store supplement.

WORD NAME: Slew Elevation Command

	CATEGORY:	Rate
WORD ID: 24R/06	MAX VALUE:	Note 1
SOURCE(s): Platform	MIN VALUE:	Note 1
DEST(s): Store	RESOLUTION:	2^-15
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE: Aperiodic to 32 Hz	MSB:	2^-1
SIGNAL TYPE: 2's Complement	LSB:	2^-15
UNITS: Semicircles/Second	FULL SCALE:	0.99996

FIELD NAME	BIT NO.	DESCRIPTION
Slew Elevation Command	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Minimum and maximum values are defined in the store supplement.

WORD NAME: Slave Azimuth Command

		CATEGORY:	Angle
WORD ID:	24R/07	MAX VALUE:	Note 1
SOURCE(s):	Platform	MIN VALUE:	Note 1
DEST(s):	Store	RESOLUTION:	2^-15
COMP RATE:	0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE:	Aperiodic to 32 Hz	MSB:	2^-1
SIGNAL TYPE:	2's Complement	LSB:	2^-15
UNITS:	Semicircles	FULL SCALE:	0.99996

FIELD NAME	BIT NO.	DESCRIPTION
Slave Azimuth Command	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Minimum and maximum values are defined in the store supplement.

WORD NAME: Slave Elevation Command

	CATEGORY: Angle
WORD ID: 24R/08	MAX VALUE: Note 1
SOURCE(s): Platform	MIN VALUE: Note 1
DEST(s): Store	RESOLUTION: 2^-15
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY: N/A
XMIT RATE: Aperiodic to 32 Hz	MSB: 2^-1
SIGNAL TYPE: 2's Complement	LSB: 2^-15
UNITS: Semicircles	FULL SCALE: 0.50000

FIELD NAME	BIT NO.	DESCRIPTION
Slave Elevation Command	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1.   Minimum and maximum values are defined in the store supplement.

WORD NAME: Slave Command X

	CATEGORY: Fraction(M)
WORD ID: 24R/09	MAX VALUE: 9.9997E-01
SOURCE(s): Platform	MIN VALUE: -1.0000E+00
DEST(s): Store	RESOLUTION: 2^-15
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY: N/A
XMIT RATE: Aperiodic to 32 Hz	MSB: 2^-1
SIGNAL TYPE: 2's Complement	LSB: 2^-15
UNITS: Unit Vector	FULL SCALE: 2.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Slave Command X	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Slave Command Y

	CATEGORY: Fraction(M)
WORD ID: 24R/10	MAX VALUE: 9.9997E-01
SOURCE(s): Platform	MIN VALUE: -1.0000E+00
DEST(s): Store	RESOLUTION: 2^-15
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY: N/A
XMIT RATE: Aperiodic to 32 Hz	MSB: 2^-1
SIGNAL TYPE: 2's Complement	LSB: 2^-15
UNITS: Unit Vector	FULL SCALE: 2.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Slave Command Y	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Slave Command Z

	CATEGORY: Fraction(M)
WORD ID: 24R/11	MAX VALUE: 9.9997E-01
SOURCE(s): Platform	MIN VALUE: -1.0000E+00
DEST(s): Store	RESOLUTION: 2^-15
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY: N/A
XMIT RATE: Aperiodic to 32 Hz	MSB: 2^-1
SIGNAL TYPE: 2's Complement	LSB: 2^-15
UNITS: Unit Vector	FULL SCALE: 2.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Slave Command Z	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Laser Control

WORD ID:	24R/12
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	0.167 Hz to 64 Hz
XMIT RATE:	Aperiodic to 32 Hz
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Laser Mode Command	-00-N	MSB --
	-01-N	Note 1
	-02-N	LSB --
Reserved	-03-0	Set to logic 0.
Laser Transmitter Control	-04-N	MSB Note 2 ---
	-05-N	LSB --
Laser Arm	-06-D	0 = Laser Safe, 1 = Laser Armed
Laser Transmitter Output	-07-0	0 = Eye Safe/Training, 1 = Tactical
Laser Receiver Control	-08-N	MSB Note 3 ---
	-09-N	LSB --
Reserved	-10-0	Set to logic 0.
Reserved	-11-0	Set to logic 0.
Reserved	-12-0	Set to logic 0.
Reserved	-13-0	Set to logic 0.
Reserved	-14-0	Set to logic 0.
Reserved	-15-0	Set to logic 0.

REMARKS/NOTES:

1. See Store Supplement.
2. See Table 6.24R-11 Laser Transmitter Control [24R/12/04…05] definitions.
3. See Table 6.24R-12 Laser Receiver Control [24R/12/08…09] definitions.

WORD NAME: Laser Code

WORD ID:	24R/13	CATEGORY:	Special
SOURCE(s):	Platform	MAX VALUE:	N/A
DEST(s):	Store	MIN VALUE:	N/A
COMP RATE:	0.167 Hz to 64 Hz	RESOLUTION:	N/A
XMIT RATE:	Aperiodic to 32 Hz	ACCURACY:	N/A
SIGNAL TYPE:	N/A	MSB:	N/A
UNITS:	N/A	LSB:	N/A
		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Laser Digit 1	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	LSB ---
Laser Digit 2	-04-N	MSB ---
	-05-N	
	-06-N	
	-07-N	LSB ---
Laser Digit 3	-08-N	MSB ---
	-09-N	
	-10-N	
	-11-N	LSB ---
Laser Digit 4	-12-N	MSB ---
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. See Table 6.24R-13 and store supplement for additional information.

WORD NAME: Time at Reset

WORD ID:	24R/14	CATEGORY:	Time(L)
SOURCE(s):	Platform	MAX VALUE:	4.1942E+06
DEST(s):	Store	MIN VALUE:	0.0000E+00
COMP RATE:	0.167 Hz to 64 Hz	RESOLUTION:	6.4000E+01
XMIT RATE:	Aperiodic to 32 Hz	ACCURACY:	See Note 1
SIGNAL TYPE:	Unsigned	MSB:	2^{21}
UNITS:	Microseconds	LSB:	2^{6}
		FULL SCALE:	4.1942E+06

FIELD NAME	BIT NO.	DESCRIPTION
Platform Time at Reset	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. The total platform error budget associated with establishing time of data validity is +/- 10.0 msec.

WORD NAME: Seeker Control Time Stamp

CATEGORY:	Time(L)
WORD ID:	24R/15	MAX VALUE:	4.1942E+06
SOURCE(s):	Platform	MIN VALUE:	0.0000E+00
DEST(s):	Store	RESOLUTION:	6.4000E+01
COMP RATE:	0.167 Hz to 64 Hz	ACCURACY:	See Note 1
XMIT RATE:	Aperiodic to 32 Hz	MSB:	2^21
SIGNAL TYPE:	Unsigned	LSB:	2^6
UNITS:	Microseconds	FULL SCALE:	4.1942E+06

FIELD NAME	BIT NO.	DESCRIPTION
Platform Time (Time Tag)	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. The total platform error budget associated with establishing time of data validity is +/- 10.0 msec.

WORD NAME: Active Seeker Frequency Code

		CATEGORY:	Special
WORD ID:	24R/16	MAX VALUE:	N/A
SOURCE(s):	Platform	MIN VALUE:	N/A
DEST(s):	Store	RESOLUTION:	N/A
COMP RATE:	0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE:	Aperiodic to 32 Hz	MSB:	N/A
SIGNAL TYPE:	ASCII	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Freq Code Prefix	-00-0	MSB --
	-01-A	
	-02-A	
	-03-A	Active Seeker Frequency Code ASCII Character
	-04-A	
	-05-A	
	-06-A	
	-07-A	LSB --
Freq Code Suffix	-08-B	MSB : 2^7--
	-09-B	SIGNAL TYPE: Unsigned UNITS: N/A
	-10-B	MAX VALUE: 255 MIN VALUE: 0
	-11-B	RESOLUTION: 1 ACCURACY: N/A
	-12-B	FULL SCALE: 255
	-13-B	
	-14-B	
	-15-B	LSB : 2^0---

REMARKS/NOTES:

WORD NAME: Left/Right Mask Zone Limits

WORD ID:	24R/17	CATEGORY:	Special
SOURCE(s):	Platform	MAX VALUE:	N/A
DEST(s):	Store	MIN VALUE:	N/A
COMP RATE:	0.167 Hz to 64 Hz	RESOLUTION:	N/A
XMIT RATE:	Aperiodic to 32 Hz	ACCURACY:	N/A
SIGNAL TYPE:	N/A	MSB:	N/A
UNITS:	N/A	LSB:	N/A
		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Left Mask Zone Limit	-00-S	Sign
	-01-N	MSB 2^1 --
	-02-N	SIGNAL TYPE: 2's Complement UNITS: Semicircles
	-03-N	MAX VALUE: 9.9219E-01 MIN VALUE: -1.0000E+00
	-04-N	RESOLUTION: 7.8125E-03 ACCURACY: 7.8125E-03
	-05-N	FULL SCALE: 9.9219E-01
	-06-N	
	-07-N	LSB 2^-7 ---
Right Mask Zone Limit	-08-S	Sign
	-09-N	MSB 2^1 --
	-10-N	SIGNAL TYPE: 2's Complement UNITS: Semicircles
	-11-N	MAX VALUE: 9.9219E-01 MIN VALUE: -1.0000E+00
	-12-N	RESOLUTION: 7.8125E-03 ACCURACY: 7.8125E-03
	-13-N	FULL SCALE: 9.9219E-01
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Up/Down Mask Zone Limits

WORD ID:	24R/18
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	0.167 Hz to 64 Hz
XMIT RATE:	Aperiodic to 32 Hz
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Up Mask Zone Limit	-00-S	Sign
	-01-N	MSB 2^-1 ---
	-02-N	SIGNAL TYPE: 2's Complement
		UNITS: Semicircles
	-03-N	MAX VALUE: 9.9219E-01
		MIN VALUE: -1.0000E+00
	-04-N	RESOLUTION: 7.8125E-03
		ACCURACY: 7.8125E-03
	-05-N	FULL SCALE: 9.9219E-01
	-06-N	
	-07-N	LSB 2^-7 ---
Down Mask Zone Limit	-08-S	Sign
	-09-N	MSB 2^-1 ---
	-10-N	SIGNAL TYPE: 2's Complement
		UNITS: Semicircles
	-11-N	MAX VALUE: 9.9219E-01
		MIN VALUE: -1.0000E+00
	-12-N	RESOLUTION: 7.8125E-03
		ACCURACY: 7.8125E-03
	-13-N	FULL SCALE: 9.9219E-01
	-14-N	
	-15-N	LSB -2^-7 ---

REMARKS/NOTES:

WORD NAME: Target Priority

WORD ID:	24R/19
SOURCE(s):	Platform
DEST(s):	Store
COMP RATE:	0.167 Hz to 64 Hz
XMIT RATE:	Aperiodic to 32 Hz
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Special
MAX VALUE:	N/A
MIN VALUE:	N/A
RESOLUTION:	N/A
ACCURACY:	N/A
MSB:	N/A
LSB:	N/A
FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Target Priority Control	-00-N	MSB --
	-01-N	LSB --
Abort on Target Priority	-02-D	Set to logic 1 to enable Abort on Target Priority.
Reserved	-03-0	Set to logic 0.
Target Priority 1	-04-B	MSB : 2^5--
	-05-B	SIGNAL TYPE: Unsigned UNITS: N/A
	-06-B	MAX VALUE: 63 MIN VALUE: 0
	-07-B	RESOLUTION: 1 ACCURACY: N/A
	-08-B	FULL SCALE: 63
	-09-B	LSB : 2^0--
Target Priority 2	-10-B	MSB : 2^5--
	-11-B	SIGNAL TYPE: Unsigned UNITS: N/A
	-12-B	MAX VALUE: 63 MIN VALUE: 0
	-13-B	RESOLUTION: 1 ACCURACY: N/A
	-14-B	FULL SCALE: 63
	-15-B	LSB : 2^0--

REMARKS/NOTES:

1. For Target Priority Control [24R/19/00…01], refer to Table 6.24R-15 Target Priority Control Definitions.

2. For Target Priority 1/2 [24R/19/04…15], refer to Table 6.17R/T-1-2 Target Class Definitions.

WORD NAME: Seeker/Sensor Control 3

	CATEGORY:	Special
WORD ID: 24R/20	MAX VALUE:	N/A
SOURCE(s): Platform	MIN VALUE:	N/A
DEST(s): Store	RESOLUTION:	N/A
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE: Aperiodic to 32 Hz	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Boresight Correction Enable	-00-D	0 = Disable, 1 = Enable.
Apply Boresight Correction	-01-D	0 = Not Apply, 1 = Apply Correction.
Reserved	-02-0	Set to logic 0.
Reserved	-03-0	Set to logic 0.
Reserved	-04-0	Set to logic 0.
Reserved	-05-0	Set to logic 0.
Reserved	-06-0	Set to logic 0.
Reserved	-07-0	Set to logic 0.
Reserved	-08-0	Set to logic 0.
Reserved	-09-0	Set to logic 0.
Target Priority 3	-10-B	MSB : 2^5---
	-11-B	SIGNAL TYPE: Unsigned UNITS: N/A
	-12-B	MAX VALUE: 63 MIN VALUE: 0
	-13-B	RESOLUTION: 1 ACCURACY: N/A
	-14-B	FULL SCALE: 63
	-15-B	LSB : 2^0---

REMARKS/NOTES:

1. For <u>Target Priority 3</u> [24R/20/10…15], refer to Table 6.17R/T-1-2 Target Class Definitions.

WORD NAME: Reserved

	CATEGORY: N/A
WORD ID: 24R/21-29	MAX VALUE: N/A
SOURCE(s): Platform	MIN VALUE: N/A
DEST(s): Store	RESOLUTION: N/A
COMP RATE: N/A	ACCURACY: N/A
XMIT RATE: Aperiodic to 32 Hz	MSB: N/A
SIGNAL TYPE: N/A	LSB: N/A
UNITS: N/A	FULL SCALE: N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	
	-01-0	
	-02-0	
	-03-0	
	-04-0	
	-05-0	
	-06-0	
	-07-0	
	-08-0	
	-09-0	
	-10-0	
	-11-0	
	-12-0	
	-13-0	
	-14-0	
	-15-0	

REMARKS/NOTES:

WORD NAME: Checksum

	CATEGORY: Number (L)

WORD ID: 24R/30   MAX VALUE: 65535
SOURCE(s):   Platform   MIN VALUE: 0
DEST(s):   Store   RESOLUTION: 1
COMP RATE: 0.167 Hz to 64 Hz   ACCURACY: 1
XMIT RATE: Aperiodic to 32 Hz MSB: 32768
SIGNAL TYPE: Unsigned   LSB: 1
UNITS: N/A   FULL SCALE: 65535

FIELD NAME	BIT NO.	DESCRIPTION
Checksum	-00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	

REMARKS/NOTES:

6.24T   <u>SEEKER/SENSOR MONITOR</u> **[24T]**

<u>Seeker/Sensor Monitor</u> [24T] allows the platform to monitor the mission store seeker(s) and sensor(s), and data recorder status.

Carriage System Requirements

A Type 1 carriage system shall **{css_6146}** set all <u>Seeker/Sensor Monitor</u> Invalidity [24T/02] bits to logic 1 (invalid).

A Type 2 carriage system shall **{css_6147}** update <u>Seeker/Sensor Monitor</u> [24T], at a minimum rate of 25 Hz, to reflect the data from the next mission store to be released, when the mission store is reporting <u>Seeker Onboard</u> [22T/05/15 = 1].

6.24T.1   <u>Seeker/Sensor Status</u> 1 **[24T/03]**

<u>Seeker/Sensor Status 1</u> [24T/03] allows the platform to monitor the seeker(s) and sensor(s) of a mission store.

6.24T.1.1   <u>Seeker/Sensor Mode</u> **[24T/03/00…02]**

Section 6.24R <u>Seeker/Sensor Control</u> [24R] provides further information and requirements for <u>Seeker/Sensor Mode Command</u> [24R/03/00…02].

Mission Store Requirements

The mission store shall **{ss_6329}** set <u>Seeker/Sensor Mode</u> [24T/03/00…02] IAW Table 6.24R-1 to reflect the seeker/sensor mode status of the selected mission store when <u>Seeker Onboard</u> [22T/05/15 = 1], as documented in the mission store supplement **{sup_6154}**.

6.24T.1.2   <u>Laser Receiver Tracking</u> **[24T/03/03]**

Mission Store Requirements

The mission store shall **{ss_6330}** set <u>Laser Receiver Tracking</u> [24T/03/03 = 1] when acquiring properly coded laser energy.

6.24T.1.3   <u>Passive Sensor Tracking</u> **[24T/03/04]**

Mission Store Requirements

The mission store shall **{ss_6331}** set <u>Passive Sensor Tracking</u> [24T/03/04 = 1] indicating that the passive sensor is tracking a target.

6.24T.1.4   <u>Active Sensor Tracking</u> **[24T/03/05]**

Mission Store Requirements

The mission store shall **{ss_6332}** set <u>Active Sensor Tracking</u> [24T/03/05 = 1] indicating that the active sensor is tracking a target.

6.24T.1.5 Reserved

6.24T.1.6 Range Status [24T/03/07…08]

Mission Store Requirements

The mission store shall **{ss_6334}** set Range Status [24T/03/07…08] IAW Table 6.24T-1.

Table 6.24T-1 Range Status [24T/03/07…08] Definitions

Value	Definition
00 (B)	Not Valid - Range [24T/12-13] and Range Rate [24T/12-13] are not valid.
01 (B)	Measured - Best Range Quality. The mission store is providing a measurement for Range [24T/12-13] and Range Rate [24T/12-13].
10 (B)	Computed - Medium Range Quality. The mission store is providing a computed value for Range [24T/12-13] and Range Rate [24T/12-13].
11 (B)	Estimated - Worst Range Quality. The mission store is providing a estimate for Range [24T/12-13] and Range Rate [24T/12-13].

6.24T.1.7 Abort on Target Priority Status [24T/03/10]

Mission Store Requirements

The mission store shall **{ss_6335}** set Abort on Target Priority Status [24T/03/10 = 1] when Abort on Target Priority [24R/04/02 = 1] and Target Priority Control [24R/19/00…01 > 00 (B)].

6.24T.1.8 Slew Enable Status [24T/03/11]

Mission Store Requirements

The mission store shall **{ss_6614}** set Slew Enable Status [24T/03/11 = 1] when Slew Enable [24R/04/11 = 1] and the seeker/sensor is responding to Slew Azimuth/Elevation Commands [24R/05-06].

6.24T.1.9 Seeker/Sensor Types [24T/03/12…15]

Seeker/Sensor Types [24T/03/12…15] allows the platform to determine the mission store seeker(s) and sensor(s) types.

Mission Store Requirements

The mission store shall **{ss_6382}** set Passive Sensor Onboard [24T/03/12 = 1] to notify the platform that the mission store has a passive sensor onboard.

The mission store shall **{ss_6383}** set Active Sensor Onboard [24T/03/13 = 1] to notify the platform that the mission store has an active sensor onboard.

The mission store shall **{ss_6384}** set Laser Rcvr Onboard [24T/03/14 = 1] to notify the platform that the mission store has a laser receiver onboard.

The mission store shall **{ss_6385}** set Laser Xmitter Onboard [24T/03/15 = 1] to notify the platform that the mission store has a laser transmitter onboard.

6.24T.2 Seeker/Sensor Status 2 [24T/04]

6.24T.2.1 Passive Sensor Monitor [24T/04/00…01]

Mission Store Requirements

The mission store shall **{ss_6386}** set Passive Sensor Monitor [24T/04/00…01] IAW Table 6.24R-6 to reflect the passive sensor status when Passive Sensor Onboard [24T/03/12 = 1].

The mission store shall **{ss_6387}** set Passive Sensor Monitor [24T/04/00…01 > 01 (B)] only when passive sensor thermal conditioning is complete (if needed), as documented in the mission store supplement **{sup_6187}**, is complete.

6.24T.2.2 Active Sensor Monitor [24T/04/02…03]

Mission Store Requirements

The mission store shall **{ss_6388}** set Active Sensor Monitor [24T/04/02…03] IAW Table 6.24R-7 to reflect the active sensor status, when Active Sensor Onboard [24T/03/13 = 1], as documented in the mission store supplement **{sup_6176}**.

The mission store shall **{ss_6389}** set Active Sensor Monitor [24T/04/02…03 > 01 (B)] only when active sensor thermal conditioning is complete (if needed), as documented in the mission store supplement **{sup_6188}**.

6.24T.2.3 LOBL/LOAL Monitor [24T/04/04…05]

Mission Store Requirements

The mission store shall **{ss_6390}** set LOBL/LOAL Monitor [24T/04/04…05] IAW Table 6.24R-8 to reflect the Lock-On Before Launch (LOBL) and Lock-On-After Launch (LOAL) function status.

6.24T.2.4 Target Designate Monitor [24T/04/06]

Mission Store Requirements

The mission store shall **{ss_6391}** set Target Designate Monitor [24T/04/06] to reflect the target designation status.

6.24T.2.5 Mask Zone Monitor [24T/04/07…08]

The mission store sets Mask Zone Monitor [24T/04/07…08] IAW Table 6.24T-2 to provide current seeker/sensor LOS position WRT the platform provided mask zone limits [24R/17-18]. Section 6.24R Seeker/Sensor Control [24R] provides further information and requirements on mask zone limits.

Table 6.24T-2 Mask Zone Monitor [24T/04/07…08] Definitions

Value	Definition
00 (B)	Clear - Current LOS is within and greater than 5.0 degrees from the platform provided mask zone limits.
01 (B)	Warning - Current LOS is within and less than 5.0 degrees from the platform provided mask zone limits.
10 (B)	Mask - Current LOS is outside of the platform provided mask zone limits.
11 (B)	Not Used.

Mission Store Requirements

The mission store shall **{ss_6392}** set Mask Zone Monitor [24T/04/07…08 = 00 (B)] if Mask Zone Enabled [24R/04/12 = 0].

The mission store shall **{ss_6393}** set the Mask Zone Monitor [24T/04/07…08] status IAW Table 6.24T-2, when either Active Sensor Onboard [24T/03/13 = 1] and/or Laser Xmitter Onboard [24T/03/15 = 1].

The mission store shall **{ss_6394}** disable active sensor transmissions (if applicable) and laser transmitter output (if applicable) when either Active Sensor Onboard [24T/03/13 = 1] and/or Laser Xmitter Onboard [24T/03/15 = 1], and Mask Zone Monitor [24T/04/07…08 = 10 (B)] IAW Table 6.24T-2.

6.24T.2.6 Data Recorder Monitor [24T/04/09…11]

Mission Store Requirements

The mission store shall **{ss_6395}** set Data Recorder Monitor [24T/04/09…11] IAW Table 6.24R-9 to reflect the data recorder status of the selected mission store, when Data Recorder Onboard [22T/05/12 = 1].

6.24T.3 Seeker/Sensor Azimuth Angle [24T/05]

Section 6.24R Seeker/Sensor Control [24R] provides further information and requirements for Slave Coordinate System Reference [24R/03/09…10].

Mission Store Requirements

The mission store shall **{ss_6336}** set Azimuth Angle [24T/05] to the azimuth angle of the seeker/sensor position in the coordinate system specified by Slave Coordinate System Reference [24R/03/09…10], as documented in the mission store supplement **{sup_6170}**.

6.24T.4 Seeker/Sensor Elevation Angle [24T/06]

Section 6.24R Seeker/Sensor Control [24R] provides further information and requirements for Slave Coordinate System Reference [24R/03/09…10].

Mission Store Requirements

The mission store shall **{ss_6338}** set <u>Elevation Angle</u> [24T/06] to the elevation angle of the seeker/sensor position in the coordinate system specified by <u>Slave Coordinate System Reference</u> [24R/03/09…10], as documented in the mission store supplement **{sup_6170}**.

6.24T.5 <u>Seeker/Sensor Position X, Y, and Z</u> [24T/07-09]

Section 6.24R <u>Seeker/Sensor Control</u> [24R] provides further information and requirements for <u>Slave Coordinate System Reference</u> [24R/03/09…10].

Mission Store Requirements

The mission store shall **{ss_6340}** set <u>Seeker/Sensor Position X, Y, and Z</u> [24R/09-11] to the seeker/sensor position unit vector in the coordinate system specified by <u>Slave Coordinate System Reference</u> [24R/03/09…10], as documented in the store supplement **{sup_6170}**.

6.24T.6 <u>Laser Control Monitor</u> [24T/10]

6.24T.6.1 <u>Laser Mode</u> [24T/10/00…02]

Mission Store Requirements

The mission store shall **{ss_6342}** set <u>Laser Mode</u> [24T/10/00…02] to the laser settings being used by the mission store, when either <u>Laser Rcvr Onboard</u> [24T/03/14 = 1] and/or <u>Laser Xmitter Onboard</u> [24T/03/15 = 1], as documented in the store supplement **{sup_6171}**.

6.24T.6.2 Reserved

6.24T.6.3 <u>Laser Transmitter Monitor</u> [24T/10/04…05]

Mission Store Requirements

The mission store shall **{ss_6644}** set <u>Laser Transmitter Monitor</u> [24T/10/04…05] status IAW Table 6.24R-11 when <u>Laser Xmitter Onboard</u> [24T/03/15 = 1].

The mission store shall **{ss_6396}** set <u>Laser Transmitter Monitor</u> [24T/10/04…05 > 01 (B)] only when laser transmitter thermal conditioning is complete (if needed) and <u>Laser Xmitter Onboard</u> [24T/03/15 = 1], as documented in the store supplement **{sup_6189}**.

6.24T.6.4 <u>Laser Arm Monitor</u> [24T/10/06]

Mission Store Requirements

The mission store shall **{ss_6346}** set <u>Laser Arm Monitor</u> [24T/10/06 = 1] when the laser transmitter is armed.

6.24T.6.5 Laser Transmitter Output [24T/10/07]

Mission Store Requirements

The mission store shall **{ss_6397}** set <u>Laser Transmitter Output</u> [24T/10/07 = 1] when laser transmitter tactical operation is enabled.

6.24T.6.6 <u>Laser Receiver Monitor</u> [24T/10/08…09]

Mission Store Requirements

The mission store shall **{ss_6398}** set <u>Laser Receiver Monitor</u> [24T/10/08…09] status IAW Table 6.24R-12, when <u>Laser Rcvr Onboard</u> [24T/03/14 = 1].

The mission store shall **{ss_6399}** set <u>Laser Receiver Monitor</u> [24T/10/08…09 > 01 (B)] only when laser receiver thermal conditioning is complete (if needed) and <u>Laser Rcvr Onboard</u> [24T/03/14 = 1], as documented in the store supplement **{sup_6190}**.

6.24T.6.7 <u>Laser Code Valid</u> [24T/10/10]

Mission Store Requirements

The mission store shall **{ss_6344}** set <u>Laser Code Valid</u> [24T/10/10 = 1] to indicate that <u>Laser Code</u> [24R/13] contains a supported laser code, when either <u>Laser Rcvr Onboard</u> [24T/03/14 = 1] and/or <u>Laser Xmitter Onboard</u> [24T/03/15 = 1], as documented in the mission store supplement **{sup_6169}**.

6.24T.7 <u>Laser Code Monitor</u> [24T/11]

Mission Store Requirements

The mission store shall **{ss_6347}** set <u>Laser Code Monitor</u> [24T/11] to the laser code being used by the mission store IAW Table 6.24R-13, when either <u>Laser Rcvr Onboard</u> [24T/03/14 = 1] and/or <u>Laser Xmitter Onboard</u> [24T/03/15 = 1], as documented in the mission store supplement **{sup_6169}**.

The mission store shall **{ss_6400}** set <u>Laser Code Monitor</u> [24T/11 = 0000 (H)] when the laser code is invalid or unsupported and either <u>Laser Rcvr Onboard</u> [24T/03/14 = 1] and/or <u>Laser Xmitter Onboard</u> [24T/03/15 = 1], as documented in the mission store supplement **{sup_6169}**.

6.24T.8 <u>Range</u> [24T/12-13]

The mission store provides the slant range from the mission store sensor to the object (e.g., target) in the seeker/sensor field-of-view.

Mission Store Requirements

The mission store shall **{ss_6348}** set <u>Range</u> [24T/12-13] when it is equipped with a range detecting sensor, as documented in the mission store supplement **{sup_6172}**.

6.24T.9 Range Rate [24T/14]

The mission store provides the rate of change of slant range from the mission store sensor to the object (e.g., target) in the seeker/sensor field-of-view.

> **Mission Store Requirements**
>
> The mission store shall **{ss_6350}** set Range Rate [24T/14] when it is not equipped with a range rate detecting sensor, as documented in the mission store supplement **{sup_6173}**.

6.24T.10 Passive Sensor Azimuth Error [24T/15]

The mission store provides passive sensor azimuth error information to the platform for use in determining the accuracy of Seeker/Sensor Azimuth Angle [24T/05] the target being tracked by the mission store passive sensor.

> **Mission Store Requirements**
>
> The mission store shall **{ss_6352}** set Passive Sensor Azimuth Error [24T/15] to the passive sensor azimuth error estimate when Passive Sensor Tracking [24T/03/04 = 1].

6.24T.11 Passive Sensor Elevation Error [24T/16]

The mission store provides passive sensor elevation error information to the platform for use in determining the accuracy of the mission store passive Seeker/Sensor Elevation Angle [24T/06].

> **Mission Store Requirements**
>
> The mission store shall **{ss_6354}** set Passive Sensor Elevation Error [24T/16] to the passive sensor elevation error estimate when Passive Sensor Tracking [24T/03/04 = 1].

6.24T.12 Active Sensor Azimuth Error [24T/17]

The mission store provides the active sensor azimuth error information to the platform for use in determining the accuracy of the mission store active Seeker/Sensor Azimuth Angle [24T/05].

> **Mission Store Requirements**
>
> The mission store shall **{ss_6356}** set Active Sensor Azimuth Error [24T/17] to the active sensor azimuth error estimate when Active Sensor Tracking [24T/03/05 = 1].

6.24T.13 Active Sensor Elevation Error [24T/18]

The mission store provides the active sensor elevation error information to the platform for use in determining the accuracy of the mission store active Seeker/Sensor Elevation Angle [24T/06].

Mission Store Requirements

The mission store shall **{ss_6358}** set Active Sensor Elevation Error [24T/18] to the active sensor elevation error estimate when Active Sensor Tracking [24T/03/05 = 1].

6.24T.14 Seeker/Sensor Azimuth Rate [24T/19]

The store provides the seeker/sensor azimuth rate information to the platform.

Mission Store Requirements

The mission store shall **{ss_6360}** set Seeker/Sensor Azimuth Rate [24T/19] to the active sensor azimuth rate, as documented in the mission store supplement **{sup_6170}**.

6.24T.15 Seeker/Sensor Elevation Rate [24T/20]

The mission store provides the seeker/sensor elevation rate information to the platform.

Mission Store Requirements

The mission store shall **{ss_6362}** set Seeker/Sensor Elevation Rate [24T/20] to the active sensor elevation rate, as documented in the mission store supplement **{sup_6170}**.

6.24T.16 Seeker/Sensor Status 3 and 4 [24T/21-22]

6.24T.16.1 Target Priority Status [24T/21/00…01]

Target Priority Status [24T/21/00…01] specifies the target prioritization list that the mission store is using IAW Table 6.24R-15. Section 6.24R.14.1 Target Priority Control [24R/19/00…01] provides additional information and requirements.

Mission Store Requirements

The mission store shall **{ss_6645}** set Target Priority Status [24T/21/00…01] to the target prioritization list specified by the Target Priority Control [24R/19/00…01] IAW Table 6.24R-15, when Seeker Onboard [22T/05/15 = 1], and the mission store supports target prioritization lists, as documented in the mission store supplement **{sup_6184}**.

6.24T.16.2 Target Prioritization List A/B Received [24T/21/02…03]

Target Prioritization List A Received [24T/21/02] and Target Prioritization List B Received [24T/21/03] indicate mission store receipt of preplanned target prioritization list A and B respectively. Section 6.24R.14 Target Prioritization Lists provides additional information and requirements.

Mission Store Requirements

The mission store shall **{ss_6646}** set Target Prioritization List A Received [24T/21/02 = 1], when preplanned target prioritization list A has been received and is

available for selection, <u>Seeker Onboard</u> [22T/05/15 = 1], and the mission store supports target prioritization lists, as documented in the mission store supplement **{sup_6184}**.

The mission store shall **{ss_6647}** set <u>Target Prioritization List B Received</u> [24T/21/03 = 1], when preplanned target prioritization list B has been received and is available for selection, <u>Seeker Onboard</u> [22T/05/15 = 1], and the mission store supports target prioritization lists, as documented in the mission store supplement **{sup_6184}**.

6.24T.16.3 <u>Target Priority 1, 2, and 3</u> [24T/21/04…15] & [24T/22/10…15]

<u>Target Priority 1</u> [24T/21/04…09] (highest priority), <u>Target Priority 2</u> [24T/21/10…15], and <u>Target Priority 3</u> [24T/22/10…15] (lowest priority) echo the target priorities received from the platform. Section 6.24R.14.3 <u>Target Priority 1, 2, and 3</u> [24R/19/04…09], [24R/19/10…15], and [24R/20/10…15] provides additional information and requirements.

Mission Store Requirements

The mission store shall **{ss_6648}** set the following, when <u>Seeker Onboard</u> [22T/05/15 = 1] and the mission store supports target prioritization lists, as documented in the mission store supplement **{sup_6184}**:

a. <u>Target Priority 1</u> [24T/21/04…09] = <u>Target Priority 1</u> [24R/19/04…09],

b. <u>Target Priority 2</u> [24T/21/10…15] = <u>Target Priority 2</u> [24R/19/10…15],

c. <u>Target Priority 3</u> [24T/22/10…15] = <u>Target Priority 3</u> [24R/20/10…15].

6.24T.17 <u>Seeker/Sensor Monitor Time Stamp</u> [24T/29]

This word contains the time tag of the seeker/sensor monitor data contained in the <u>Seeker/Sensor Monitor</u> [24T] message. See section 3.5.17.1 for a description of the Time Tag method of time stamping. The platform synchronizes the store clock with the platform clock via <u>Synchronize with Data Word</u> [MC17R] when using the time tagged data in the <u>Seeker/Sensor Monitor</u>. The total error budget associated with establishing time of data validity through time stamping is +/- 10.0 msec.

Carriage System Requirements

A Type 2 carriage system shall **{css_6214}** provide an accurate time stamp for <u>Seeker/Sensor Monitor</u> [24T] to the platform.

The Type 2 carriage system store supplement **{sup_6284}** documents the method(s) used to provide an accurate time stamp and any additional uncertainty added to the time stamp of the time stamped messages provided to the platform.

Note: An accurate time stamp is defined as one that maintains the mission store's time stamp such that when the time stamp for the data is determined/resolved by the platform in the platform's timeline that it is at the same relative time in the mission store's timeline when the data was time stamped by the mission store.

Mission Store Requirements

The mission store shall **{ss_6364}** determine the time of data validity reference to the mission store clock which has been synchronized to the platform/Type 2 carriage system clock (compensated for known delays between the true time of validity and the actual time the time tag was established) and use the value as the time tag.

The mission store shall **{ss_6365}** set Time Stamp [24T/29] to the time tag of the Seeker/Sensor Monitor [24T] data.

MESSAGE NAME: Seeker/Sensor Monitor
MESSAGE ID: 24T TRANSFER TYPE: RT-BC
SOURCE: Store WORD COUNT: 30
DESTINATION: Platform XMIT RATE: 0.167 Hz to 32 Hz

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 11000 (B)
Status Word	SW	MIL-STD-1553 Status Word-Transmit
Header	01	Message Descriptor
Invalidity	02	Validity of Message Data
Seeker/Sensor Status 1	03	Seeker/Sensor Mode Word 1
Seeker/Sensor Status 2	04	Seeker/Sensor Mode Word 2
Seeker/Sensor Azimuth Angle	05	Azimuth Angle
Seeker/Sensor Elevation Angle	06	Elevation Angle
Seeker/Sensor Position X	07	Slave Command Unit Vector X Component
Seeker/Sensor Position Y	08	Slave Command Unit Vector Y Component
Seeker/Sensor Position Z	09	Slave Command Unit Vector Z Component
Laser Control Monitor	10	Laser Control Word Monitor
Laser Code Monitor	11	Laser Code Word Monitor
Range	12	Sensor Measured Range (MSW)
	13	Sensor Measured Range (LSW)
Range Rate	14	Sensor Measured Range Rate
Passive Sensor Azimuth Error	15	Azimuth Error from Passive Sensor
Passive Sensor Elevation Error	16	Elevation Error from Passive Sensor
Active Sensor Azimuth Error	17	Active Sensor Azimuth Error
Active Sensor Elevation Error	18	Active Sensor Elevation Error
Seeker/Sensor Azimuth Rate	19	Seeker/Sensor Azimuth Rate
Seeker/Sensor Elevation Rate	20	Seeker/Sensor Elevation Rate
Seeker/Sensor Status 3	21	Seeker/Sensor Status 3
Seeker/Sensor Status 4	22	Seeker/Sensor Status 4
Reserved	23	Reserved
Reserved	24	Reserved
Reserved	25	Reserved
Reserved	26	Reserved
Reserved	27	Reserved
Reserved	28	Reserved
Seeker/Sensor Time Stamp	29	Seeker/Sensor Monitor Time Stamp Word
Checksum	30	Checksum
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

WORD NAME: Header

WORD ID:	24T/01
SOURCE(s):	Store
DEST(s):	Platform
COMP RATE:	0.167 Hz to 64 Hz
XMIT RATE:	0.167 Hz to 32 Hz
SIGNAL TYPE:	N/A
UNITS:	N/A

CATEGORY:	Header
MAX VALUE:	2801 (H)
MIN VALUE:	2801 (H)
RESOLUTION:	1
ACCURACY:	N/A
MSB:	2^15
LSB:	2^0
FULL SCALE:	FFFF (H)

FIELD NAME	BIT NO.	DESCRIPTION
Hex Digit #1	-00-B	MSB ---
	-01-B	
	-02-B	Hex digit #1 value=2
	-03-B	LSB ---
Hex Digit #2	-04-B	MSB ---
	-05-B	
	-06-B	Hex digit #2 value=8
	-07-B	LSB ---
Hex Digit #3	-08-B	MSB ---
	-09-B	
	-10-B	Hex digit #3 value=0
	-11-B	LSB ---
Hex Digit #4	-12-B	MSB ---
	-13-B	
	-14-B	Hex digit #4 value=1
	-15-B	LSB ---

REMARKS/NOTES:

WORD NAME: Invalidity

		CATEGORY:	Validity
WORD ID:	24T/02	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 32 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Seeker/Sensor Status 1 Invalid	-00-V	Set to logic 1 if word 03 is invalid
Seeker/Sensor Status 2 Invalid	-01-V	Set to logic 1 if word 04 is invalid
Seeker/Sensor Angles Invalid	-02-V	Set to logic 1 if words 05-06 are invalid
Seeker/Sensor Position Invalid	-03-V	Set to logic 1 if words 07-09 are invalid
Laser Control Monitor Invalid	-04-V	Set to logic 1 if word 10 is invalid
Laser Code Monitor Invalid	-05-V	Set to logic 1 if word 11 is invalid
Range Invalid	-06-V	Set to logic 1 if words 12-13 are invalid
Range Rate Invalid	-07-V	Set to logic 1 if word 14 is invalid
Passive Sensor Angle Errors Invalid	-08-V	Set to logic 1 if words 15-16 are invalid
Active Sensor Angle Errors Invalid	-09-V	Set to logic 1 if words 17-18 are invalid
Az/El Rates Invalid	-10-V	Set to logic 1 if words 19-20 are invalid
Seeker/Sensor Status 3 & 4 Invalid	-11-V	Set to logic 1 if words 21-22 are invalid.
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Seeker/Sensor Status 1

		CATEGORY:	Special
WORD ID:	24T/03	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 32 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Seeker/Sensor Mode	-00-N	MSB --
	-01-N	
	-02-N	LSB --
Laser Receiver Tracking	-03-D	1 = Laser Receiver Acquiring Properly Coded Laser Energy
Passive Sensor Tracking	-04-D	1 = Passive Sensor Tracking a Target
Active Sensor Tracking	-05-D	1 = Active Sensor Tracking a Target.
Reserved	-06-0	Set to logic 0
Range Status	-07-N	MSB --
	-08-N	LSB --
Reserved	-09-0	Set to logic 0.
Abort on Target Priority Status	-10-D	Set to logic 1 when Abort on Target Priority is enabled.
Slew Enable Status	-11-D	0 = Slew Disabled, 1 = Slew Enabled
Passive Sensor Onboard	-12-D	Set to logic 1 when Passive Sensor is Onboard.
Active Sensor Onboard	-13-D	Set to logic 1 when Active Sensor is Onboard.
Laser Rcvr Onboard	-14-D	Set to logic 1 when Laser Receiver is Onboard.
Laser Xmitter Onboard	-15-D	Set to logic 1 when Laser Transmitter is Onboard.

REMARKS/NOTES:

WORD NAME: Seeker/Sensor Status 2

WORD ID:	24T/04	CATEGORY:	Special
SOURCE(s):	Store	MAX VALUE:	N/A
DEST(s):	Platform	MIN VALUE:	N/A
COMP RATE:	0.167 Hz to 64 Hz	RESOLUTION	N/A
XMIT RATE:	0.167 Hz to 32 Hz	ACCURACY:	N/A
SIGNAL TYPE:	N/A	MSB:	N/A
UNITS:	N/A	LSB:	N/A
		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Passive Sensor Monitor	-00-N	MSB --
	-01-N	LSB --
Active Sensor Monitor	-02-N	MSB --
	-03-N	LSB --
LOBL/LOAL Monitor	-04-N	--
	-05-N	--
Target Designate Monitor	-06-D	0 = Not Designated, 1 = Target Designated
Mask Zone Monitor	-07-N	MSB --
	-08-N	LSB --
Data Recorder Monitor	-09-N	MSB --
	-10-N	
	-11-N	--
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Seeker/Sensor Azimuth Angle

		CATEGORY:	Angle(M)
WORD ID:	24T/05	MAX VALUE:	Note 2
SOURCE(s):	Store	MIN VALUE:	Note 2
DEST(s):	Platform	RESOLUTION:	2^-15
COMP RATE:	0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 32 Hz	MSB:	2^-1
SIGNAL TYPE:	2's Complement	LSB:	2^-15
UNITS:	Semicircles	FULL SCALE:	0.99996948

FIELD NAME	BIT NO.	DESCRIPTION
Azimuth Angle	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. This word contains the store seeker azimuth angle in the store coordinate frame.
2. Maximum and minimum values are defined in store supplement.

WORD NAME: Seeker/Sensor Elevation Angle

	CATEGORY:	Angle(M)
WORD ID: 24T/06	MAX VALUE:	Note 2
SOURCE(s): Store	MIN VALUE:	Note 2
DEST(s): Platform	RESOLUTION:	2^-15
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE: 0.167 Hz to 32 Hz	MSB:	2^-1
SIGNAL TYPE: 2's Complement	LSB:	2^-15
UNITS: Semicircles	FULL SCALE:	0.99996948

FIELD NAME	BIT NO.	DESCRIPTION
Elevation Angle	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. This contains the store seeker elevation angle in the store local coordinate frame.
2. Maximum and minimum values are defined in the store supplement.

WORD NAME: Seeker/Sensor Position X

	CATEGORY:	Fraction(M)
WORD ID: 24T/07	MAX VALUE:	9.9997E-01
SOURCE(s): Store	MIN VALUE:	-1.0000E+00
DEST(s): Platform	RESOLUTION:	2^-15
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE: 0.167 Hz to 32 Hz	MSB:	2^-1
SIGNAL TYPE: 2's Complement	LSB:	2^-15
UNITS: Unit Vector	FULL SCALE:	2.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Seeker/Sensor Position X	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

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WORD NAME: Seeker/Sensor Position Y

	CATEGORY: Fraction(M)
WORD ID: 24T/08	MAX VALUE: 9.9997E-01
SOURCE(s): Store	MIN VALUE: -1.0000E+00
DEST(s): Platform	RESOLUTION: 2^-15
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY: N/A
XMIT RATE: 0.167 Hz to 32 Hz	MSB: 2^-1
SIGNAL TYPE: 2's Complement	LSB: 2^-15
UNITS: Unit Vector	FULL SCALE: 2.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Seeker/Sensor Position Y	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

WORD NAME: Seeker/Sensor Position Z

	CATEGORY:	Fraction(M)
WORD ID: 24T/09	MAX VALUE:	9.9997E-01
SOURCE(s): Store	MIN VALUE:	-1.0000E+00
DEST(s): Platform	RESOLUTION:	2^-15
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE: 0.167 Hz to 32 Hz	MSB:	2^-1
SIGNAL TYPE: 2's Complement	LSB:	2^-15
UNITS: Unit Vector	FULL SCALE:	2.0000E+00

FIELD NAME	BIT NO.	DESCRIPTION
Seeker/Sensor Position Z	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

WORD NAME: Laser Control Monitor

			CATEGORY:	Special
WORD ID:	24T/10		MAX VALUE:	N/A
SOURCE(s):	Store		MIN VALUE:	N/A
DEST(s):	Platform		RESOLUTION:	N/A
COMP RATE:	0.167 Hz to 64 Hz		ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 32 Hz		MSB:	N/A
SIGNAL TYPE:	N/A		LSB:	N/A
UNITS:	N/A		FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Laser Mode	-00-N	LSB --
	-01-N	Note 1.
	-02-N	LSB --
Reserved	-03-D	Set to logic 0.
Laser Transmitter Monitor	-04-N	MSB --
	-05-N	LSB --
Laser Arm Monitor	-06-D	0 = Laser Safe, 1 = Laser Armed
Laser Transmitter Output	-07-D	0 = Eye Safe/Training, 1 = Tactical.
Laser Receiver Monitor	-08-N	MSB --
	-09-N	LSB --
Laser Code Valid	-10-D	0 = Code Invalid, 1 = Code Valid.
Reserved	-11-0	Set to logic 0
Reserved	-12-0	Set to logic 0
Reserved	-13-0	Set to logic 0
Reserved	-14-0	Set to logic 0
Reserved	-15-0	Set to logic 0

REMARKS/NOTES:

1. The values for Laser Mode [24T/10/00…02] are defined in store supplement.

WORD NAME: Laser Code Monitor

	CATEGORY:	Special
WORD ID: 24T/11	MAX VALUE:	N/A
SOURCE(s): Store	MIN VALUE:	N/A
DEST(s): Platform	RESOLUTION:	N/A
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE: 0.167 Hz to 32 Hz	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Laser Digit 1	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	LSB --
Laser Digit 2	-04-N	MSB --
	-05-N	
	-06-N	
	-07-N	LSB --
Laser Digit 3	-08-N	MSB --
	-09-N	
	-10-N	
	-11-N	LSB --
Laser Digit 4	-12-N	MSB --
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. See Table 6.24R-13 and store supplement for additional information.

WORD NAME: Range

	CATEGORY: Distance (D)
WORD ID: 24T/12…13	MAX VALUE: Note 2
SOURCE(s): Store	MIN VALUE: Note 2
DEST(s): Platform	RESOLUTION: 1
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY: N/A
XMIT RATE: 0.167 Hz to 32 Hz	MSB: 2^30
SIGNAL TYPE: 2's Complement	LSB: 2^0
UNITS: Meters	FULL SCALE: 2^31-1

FIELD NAME	BIT NO.	DESCRIPTION
Range	MSW -00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	
	LSW -00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. This word contains the store sensor range measurement in the store seeker/sensor coordinate frame.

2. Maximum and minimum values are defined in the store supplement.

WORD NAME: Range Rate

	CATEGORY: Rate
WORD ID: 24T/14	MAX VALUE: Note 1
SOURCE(s): Store	MIN VALUE: Note 1
DEST(s): Platform	RESOLUTION: 0.5
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY: N/A
XMIT RATE: 0.167 Hz to 32 Hz	MSB: 2^13
SIGNAL TYPE: 2's Complement	LSB: 2^-1
UNITS: Meters/Second	FULL SCALE: 1.6383E+04

FIELD NAME	BIT NO.	DESCRIPTION
Range Rate	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Maximum and minimum values are defined in the store supplement.

WORD NAME: Passive Sensor Azimuth Error

	CATEGORY:	Angle
WORD ID: 24T/15	MAX VALUE:	Note 2
SOURCE(s): Store	MIN VALUE:	Note 2
DEST(s): Platform	RESOLUTION:	2^-15
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE: 0.167 Hz to 32 Hz	MSB:	2^-1
SIGNAL TYPE: 2's Complement	LSB:	2^-15
UNITS: Semicircles	FULL SCALE:	0.99996948

FIELD NAME	BIT NO.	DESCRIPTION
Passive Sensor Azimuth Error	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. This word contains the store passive sensor azimuth error in the store local coordinate frame.
2. Maximum and minimum values are defined in the store supplement.

WORD NAME: Passive Sensor Elevation Error

	CATEGORY:	Angle
WORD ID: 24T/16	MAX VALUE:	Note 2
SOURCE(s): Store	MIN VALUE:	Note 2
DEST(s): Platform	RESOLUTION:	2^-15
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE: 0.167 Hz to 32 Hz	MSB:	2^-1
SIGNAL TYPE: 2's Complement	LSB:	2^-15
UNITS: Semicircles	FULL SCALE:	0.99996948

FIELD NAME	BIT NO.	DESCRIPTION
Passive Sensor Elevation Error	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. This contains the store passive sensor elevation error in the store local coordinate frame.
2. Maximum and minimum values are defined in the store supplement.

WORD NAME: Active Sensor Azimuth Error

		CATEGORY:	Angle
WORD ID:	24T/17	MAX VALUE:	Note 2
SOURCE(s):	Store	MIN VALUE:	Note 2
DEST(s):	Platform	RESOLUTION:	2^-15
COMP RATE:	0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 32 Hz	MSB:	2^-1
SIGNAL TYPE:	2's Complement	LSB:	2^-15
UNITS:	Semicircles	FULL SCALE:	0.99996948

FIELD NAME	BIT NO.	DESCRIPTION
Active Sensor Azimuth Error	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. This word contains the store active sensor azimuth error in the store local coordinate frame.
2. Maximum and minimum values are defined in the store supplement.

WORD NAME: Active Sensor Elevation Error

	CATEGORY:	Angle
WORD ID: 24T/18	MAX VALUE:	Note 2
SOURCE(s): Store	MIN VALUE:	Note 2
DEST(s): Platform	RESOLUTION:	2^-15
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE: 0.167 Hz to 32 Hz	MSB:	2^-1
SIGNAL TYPE: 2's Complement	LSB:	2^-15
UNITS: Semicircles	FULL SCALE:	0.99996948

FIELD NAME	BIT NO.	DESCRIPTION
Active Sensor Elevation Error	-00-S	Sign
	-01-N	MSB ---
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. This contains the store active sensor elevation error in the store local coordinate frame.
2. Maximum and minimum values are defined in the store supplement.

WORD NAME: Seeker/Sensor Azimuth Rate

	CATEGORY:	Angular Rate(M)
WORD ID: 24T/19	MAX VALUE:	Note 1
SOURCE(s): Store	MIN VALUE:	Note 1
DEST(s): Platform	RESOLUTION:	2^{-13}
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE: 0.167 Hz to 32 Hz	MSB:	2^1
SIGNAL TYPE: 2's Complement	LSB:	2^{-13}
UNITS: Semicircles/Second	FULL SCALE:	3.99987792

FIELD NAME	BIT NO.	DESCRIPTION
Azimuth Rate	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Maximum and minimum values for rate are defined in the store supplement.

WORD NAME: Seeker/Sensor Elevation Rate

			CATEGORY:	Angular Rate(M)
WORD ID:	24T/20		MAX VALUE:	Note 1
SOURCE(s):	Store		MIN VALUE:	Note 1
DEST(s):	Platform		RESOLUTION:	2^-13
COMP RATE:	0.167 Hz to 64 Hz		ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 32 Hz		MSB:	2^1
SIGNAL TYPE:	2's Complement		LSB:	2^-13
UNITS:	Semicircles/Second		FULL SCALE:	3.99987792

FIELD NAME	BIT NO.	DESCRIPTION
Elevation Rate	-00-S	Sign
	-01-N	MSB --
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. Maximum and minimum values are defined in the store supplement.

WORD NAME: Seeker/Sensor Status 3

	CATEGORY:	Special
WORD ID: 24T/21	MAX VALUE:	N/A
SOURCE(s): Store	MIN VALUE:	N/A
DEST(s): Platform	RESOLUTION:	N/A
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE: 0.167 Hz to 32 Hz	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Target Priority Status	-00-N	MSB ---
	-01-N	LSB ---
Target Prioritization List A Received	-02-D	0 = Not Received, 1 = Received
Target Prioritization List B Received	-03-D	0 = Not Received, 1 = Received
Target Priority 1	-04-B	MSB : 2^5--
	-05-B	SIGNAL TYPE: Unsigned UNITS: N/A
	-06-B	MAX VALUE: 63 MIN VALUE: 0
	-07-B	RESOLUTION: 1 ACCURACY: N/A
	-08-B	FULL SCALE: 63
	-09-B	LSB : 2^0--
Target Priority 2	-10-B	MSB : 2^5--
	-11-B	SIGNAL TYPE: Unsigned UNITS: N/A
	-12-B	MAX VALUE: 63 MIN VALUE: 0
	-13-B	RESOLUTION: 1 ACCURACY: N/A
	-14-B	FULL SCALE: 63
	-15-B	LSB : 2^0--

REMARKS/NOTES:

WORD NAME: Seeker/Sensor Status 4

		CATEGORY:	Special
WORD ID:	24T/22	MAX VALUE:	N/A
SOURCE(s):	Store	MIN VALUE:	N/A
DEST(s):	Platform	RESOLUTION:	N/A
COMP RATE:	0.167 Hz to 64 Hz	ACCURACY:	N/A
XMIT RATE:	0.167 Hz to 32 Hz	MSB:	N/A
SIGNAL TYPE:	N/A	LSB:	N/A
UNITS:	N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0.
Reserved	-01-0	Set to logic 0.
Reserved	-02-0	Set to logic 0.
Reserved	-03-0	Set to logic 0.
Reserved	-04-0	Set to logic 0.
Reserved	-05-0	Set to logic 0.
Reserved	-06-0	Set to logic 0.
Reserved	-07-0	Set to logic 0.
Reserved	-08-0	Set to logic 0.
Reserved	-09-0	Set to logic 0.
Target Priority 3	-10-B	MSB : 2^5---
	-11-B	SIGNAL TYPE: Unsigned UNITS: N/A
	-12-B	MAX VALUE: 63 MIN VALUE: 0
	-13-B	RESOLUTION: 1 ACCURACY: N/A
	-14-B	FULL SCALE: 63
	-15-B	LSB : 2^0---

REMARKS/NOTES:

WORD NAME: Reserved

	CATEGORY:	N/A
WORD ID: 24T/23-28	MAX VALUE:	N/A
SOURCE(s): Store	MIN VALUE:	N/A
DEST(s): Platform	RESOLUTION:	N/A
COMP RATE: N/A	ACCURACY:	N/A
XMIT RATE: 0.167 Hz to 32 Hz	MSB:	N/A
SIGNAL TYPE: N/A	LSB:	N/A
UNITS: N/A	FULL SCALE:	N/A

FIELD NAME	BIT NO.	DESCRIPTION
Reserved	-00-0	Set to logic 0
	-01-0	Set to logic 0
	-02-0	Set to logic 0
	-03-0	Set to logic 0
	-04-0	Set to logic 0
	-05-0	Set to logic 0
	-06-0	Set to logic 0
	-07-0	Set to logic 0
	-08-0	Set to logic 0
	-09-0	Set to logic 0
	-10-0	Set to logic 0
	-11-0	Set to logic 0
	-12-0	Set to logic 0
	-13-0	Set to logic 0
	-14-0	Set to logic 0
	-15-0	Set to logic 0

REMARKS/NOTES:

WORD NAME: Seeker/Sensor Time Stamp

	CATEGORY:	Time(L)
WORD ID: 24T/29	MAX VALUE:	4.1942E+06
SOURCE(s): Store	MIN VALUE:	0.0000E+00
DEST(s): Platform	RESOLUTION:	6.4000E+01
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY:	See Note 1
XMIT RATE: 0.167 Hz to 32 Hz	MSB:	2^21
SIGNAL TYPE: Unsigned	LSB:	2^6
UNITS: Microseconds	FULL SCALE:	4.1942E+06

FIELD NAME	BIT NO.	DESCRIPTION
Platform Time (Time Tag)	-00-N	MSB ---
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB ---

REMARKS/NOTES:

1. The total error budget associated with establishing time of data validity is +/- 10.0 msec.

WORD NAME: Checksum

	CATEGORY: Number (L)
WORD ID: 24T/30	MAX VALUE: 65535
SOURCE(s): Store	MIN VALUE: 0
DEST(s): Platform	RESOLUTION: 1
COMP RATE: 0.167 Hz to 64 Hz	ACCURACY: 1
XMIT RATE: 0.167 Hz to 32 Hz	MSB: 32768
SIGNAL TYPE: Unsigned	LSB: 1
UNITS: N/A	FULL SCALE: 65535

FIELD NAME	BIT NO.	DESCRIPTION
Checksum	-00-N	
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	

REMARKS/NOTES:

6.MC17R <u>SYNCHRONIZE WITH DATA WORD</u> [MC17R]

This MIL-STD-1553 mode command is used to synchronize the store clock with the platform clock. <u>Synchronize with Data Word</u> [MC17R] is transmitted as required to ensure that no more than a single platform clock discontinuity can exist between the synchronize time and time tag value (typically once per platform clock cycle). The platform will always allow the clock used to generate time tag information to increment to greater than 300 msec prior to a reset to zero. This allows the store to determine if time at reset is significant to a specific time tag and synchronization time pair. See 3.5.17.1 for a description of the Time Tag method of time stamping.

Platform Requirements

The platform shall **{ps_6311}** synchronize the store clock with the platform clock using <u>Synchronize with Data Word</u> [MC17R] before sending time tagged data.

Store Requirements

The store shall **{ss_6366}** synchronize with the platform clock using <u>Synchronize with Data Word</u> [MC17R].

MESSAGE NAME: Synchronize with Data Word
MESSAGE ID: MC17R   TRANSFER TYPE: BC-RT
SOURCE: Platform   WORD COUNT: 1
DESTINATION: Store   XMIT RATE: Aperiodic

WORD NAME	WORD NO	DESCRIPTION
Command Word	CW	Subaddress 00000 binary (Note 1)
Synch Time	01	Synchronize Time
Status Word	SW	MIL-STD-1553 Status Word

REMARKS/NOTES:

1. The platform can specify subaddress 00000 binary or 11111 binary in the subaddress field of the MIL-STD-1553 Command Word.

2. The command word T/R bit for this mode code is indeterminate and can be set to either 0 or 1.

WORD NAME: Synch Time

		CATEGORY:	Time(L)
WORD ID:	MC17R	MAX VALUE:	4.1942E+06
SOURCE(s):	Platform	MIN VALUE:	0.0000E+00
DEST(s):	Store	RESOLUTION:	6.4000E+01
COMP RATE:	Aperiodic	ACCURACY:	See Note 1
XMIT RATE:	Aperiodic	MSB:	2^21
SIGNAL TYPE:	Unsigned	LSB:	2^6
UNITS:	Microseconds	FULL SCALE:	4.1942E+06

FIELD NAME	BIT NO.	DESCRIPTION
Platform Time	-00-N	MSB --
	-01-N	
	-02-N	
	-03-N	
	-04-N	
	-05-N	
	-06-N	
	-07-N	
	-08-N	
	-09-N	
	-10-N	
	-11-N	
	-12-N	
	-13-N	
	-14-N	
	-15-N	LSB --

REMARKS/NOTES:

1. The total platform error budget associated with establishing time of data validity is +/- 10.0 msec.

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7.0 POST-RELEASE INFORMATION SHEETS

The UAI PSICD addresses platform/mission store requirements prior to mission store release. If the platform and/or mission store have a requirement to communicate post mission store release, then the platform and/or mission store need to implement the requirements documented in the WDLN ICD.

7.1 Post-Release Information Format Sheets

Refer to WDLN ICD, listed in the PSICD Section 2.0.

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