

# Asterix category 011 - Transmission of A-SMGCS Data

**category:** 011

**edition:** 1.3

**date:** 2020-05-11

## Preamble

Surveillance data exchange.

## Description of standard data items

### I011/000 - Message Type

definition: This Data Item allows for a more convenient handling of the messages at the receiver side by further defining the type of transaction.

Element

bit size: 8

Values:

- 1: Target reports, flight plan data and basic alerts
- 2: Manual attachment of flight plan to track
- 3: Manual detachment of flight plan to track
- 4: Insertion of flight plan data
- 5: Suppression of flight plan data
- 6: Modification of flight plan data
- 7: Holdbar status

### I011/010 - Data Source Identifier

definition: Identification of the radar station from which the data are received.

Group

#### I011/010/SAC - System Area Code Fixed to Zero

Element

bit size: 8

Raw Content

#### I011/010/SIC - System Identification Code

Element

bit size: 8

Raw Content

**Note:** The SAC is fixed to zero to indicate a data flow local to the airport.

### I011/015 - Service Identification

definition: Identification of the service provided to one or more users.

Element

bit size: 8

Raw Content

**Note:** The service identification is allocated by the A-SMGCS

## **I011/041 - Position in WGS-84 Coordinates**

definition: Position of a target in WGS-84 Coordinates.

Group

### **I011/041/LAT - Latitude in WGS-84 in Two's Complement**

Element  
bit size: 32  
Signed quantity  
 $\text{LSB} = 180/2^{31} \text{ }^\circ \approx 8.381903171539306640625e-8 \text{ }^\circ$   
unit: "°"  
 $\geq -90.0$   
 $\leq 90.0$

### **I011/041/LON - Longitude in WGS-84 in Two's Complement**

Element  
bit size: 32  
Signed quantity  
 $\text{LSB} = 180/2^{31} \text{ }^\circ \approx 8.381903171539306640625e-8 \text{ }^\circ$   
unit: "°"  
 $\geq -180.0$   
 $< 180.0$

## **I011/042 - Calculated Position in Cartesian Co-ordinates**

definition: Calculated position of a target in Cartesian co-ordinates (two's complement form).

Group

### **I011/042/X - X-Component**

Element  
bit size: 16  
Signed quantity  
 $\text{LSB} = 1 \text{ m} \approx 1.0 \text{ m}$   
unit: "m"  
 $\geq -32768.0$   
 $\leq 32768.0$

### **I011/042/Y - Y-Component**

Element  
bit size: 16  
Signed quantity  
 $\text{LSB} = 1 \text{ m} \approx 1.0 \text{ m}$   
unit: "m"  
 $\geq -32768.0$   
 $\leq 32768.0$

## **I011/060 - Mode-3/A Code in Octal Representation**

definition: Track Mode-3/A code converted into Octal Representation.

Group

Spare bits: 4

### **I011/060/MOD3A - Mode-3/A Reply in Octal Representation**

Element  
bit size: 12  
Octal string (3-bits per char)

## **I011/090 - Measured Flight Level**

definition: Last valid and credible flight level used to update the track, in two's complement representation.

Element

bit size: 16

Signed quantity

LSB =  $1/2^2$  FL  $\approx$  0.25 FL

unit: "FL"

$\geq -12.0$

$\leq 1500.0$

**Note:** The criteria to determine the credibility of the flight level are Tracker dependent. Credible means: within reasonable range of change with respect to the previous detection.

## **I011/092 - Calculated Track Geometric Altitude**

definition: Calculated geometric vertical distance above mean sea level, not related to barometric pressure.

Element

bit size: 16

Signed quantity

LSB =  $25/2^2$  ft  $\approx$  6.25 ft

unit: "ft"

$\geq -1500.0$

$\leq 150000.0$

**Note:** The source of altitude is identified in bits (SRC) of item I011/170 Track Status.

## **I011/093 - Calculated Track Barometric Altitude**

definition: Calculated Barometric Altitude of the track.

Group

### **I011/093/QNH - QNH Correction Applied**

Element

bit size: 1

Values:

**0:** No QNH Correction Applied

**1:** QNH Correction Applied

### **I011/093/CTBA - Calculated Track Barometric Altitude**

Element

bit size: 15

Signed quantity

LSB =  $1/2^2$  FL  $\approx$  0.25 FL

unit: "FL"

$\geq -15.0$

$\leq 1500.0$

## **I011/140 - Time of Track Information**

definition: Absolute time stamping expressed as UTC.

Element  
bit size: 24  
Unsigned quantity  
 $\text{LSB} = 1/2^7 \text{ s} \approx 7.8125e - 3 \text{ s}$   
unit: "s"

**Note:** The Time of Track Information value is reset to zero each day at midnight.

### **I011/161 - Track Number**

definition: Identification of a fusion track (single track number).

Group

Spare bits: 1

#### **I011/161/FTN - Fusion Track Number**

Element  
bit size: 15  
Raw Content

### **I011/170 - Track Status**

definition: Status of track.

Extended

#### **I011/170/MON**

Element  
bit size: 1  
Values:  
**0:** Multisensor Track  
**1:** Monosensor Track

#### **I011/170/GBS**

Element  
bit size: 1  
Values:  
**0:** Transponder Ground bit not set or unknown  
**1:** Transponder Ground bit set

#### **I011/170/MRH**

Element  
bit size: 1  
Values:  
**0:** Barometric altitude (Mode C) more reliable  
**1:** Geometric altitude more reliable

#### **I011/170/SRC**

Element  
bit size: 3  
Values:  
**0:** No source  
**1:** GPS  
**2:** 3d radar  
**3:** Triangulation  
**4:** Height from coverage  
**5:** Speed look-up table  
**6:** Default height  
**7:** Multilateration

**I011/170/CNF**

Element

bit size: 1

Values:

**0:** Confirmed track

**1:** Tentative track

*(FX) - extension bit*

**I011/170/SIM**

Element

bit size: 1

Values:

**0:** Actual Track

**1:** Simulated track

**I011/170/TSE**

Element

bit size: 1

Values:

**0:** Default value

**1:** Track service end (i.e. last message transmitted to the user for the track)

**I011/170/TSB**

Element

bit size: 1

Values:

**0:** Default value

**1:** Track service begin (i.e. first message transmitted to the user for the track)

**I011/170/FRIFOE**

Element

bit size: 2

Values:

**0:** No Mode 4 interrogationt

**1:** Friendly target

**2:** Unknown target

**3:** No reply

**I011/170/ME**

Element

bit size: 1

Values:

**0:** Default value

**1:** Military Emergency present in the last report received from a sensor capable of decoding this data

**I011/170/MI**

Element

bit size: 1

Values:

**0:** End of Data Item

**1:** Military Identification present in the last report received from a sensor capable of decoding this data

*(FX) - extension bit*

**I011/170/AMA**

Element

bit size: 1

Values:

- 0: Track not resulting from amalgamation process
- 1: Track resulting from amalgamation process

#### **I011/170/SPI**

Element

bit size: 1

Values:

- 0: Default value
- 1: SPI present in the last report received from a sensor capable of decoding this data

#### **I011/170/CST**

Element

bit size: 1

Values:

- 0: Default value
- 1: Age of the last received track update is higher than system dependent threshold (coasting)

#### **I011/170/FPC**

Element

bit size: 1

Values:

- 0: Not flight-plan correlated
- 1: Flight plan correlated

#### **I011/170/AFF**

Element

bit size: 1

Values:

- 0: Default value
- 1: ADS-B data inconsistent with other surveillance information

Spare bits: 2

*(FX) - extension bit*

Spare bits: 1

#### **I011/170/PSR**

Element

bit size: 1

Values:

- 0: Default value
- 1: Age of the last received PSR track update is higher than system dependent threshold

#### **I011/170/SSR**

Element

bit size: 1

Values:

- 0: Default value
- 1: Age of the last received SSR track update is higher than system dependent threshold

#### **I011/170/MDS**

Element

bit size: 1

Values:

- 0: Default value
- 1: Age of the last received Mode S track update is higher than system dependent threshold

### **I011/170/ADS**

Element

bit size: 1

Values:

**0:** Default value

**1:** Age of the last received ADS track update is higher than system dependent threshold

### **I011/170/SUC**

Element

bit size: 1

Values:

**0:** Default value

**1:** Special Used Code (Mode A codes to be defined in the system to mark a track with special interest)

### **I011/170/AAC**

Element

bit size: 1

Values:

**0:** Default value

**1:** Assigned Mode A Code Conflict (same individual Mode A Code assigned to another track)

*(FX) - extension bit*

Track type and coasting can also be derived from Data Item I011/290 System Track Update Ages

## **I011/202 - Calculated Track Velocity in Cartesian Coordinates**

definition: Calculated track velocity expressed in Cartesian co-ordinates.

Group

### **I011/202/VX - V<sub>x</sub>**

Element

bit size: 16

Signed quantity

LSB =  $1/2^2$  m/s  $\approx$  0.25 m/s

unit: "m/s"

$\geq -8192.0$

$\leq 8192.0$

### **I011/202/VY - V<sub>y</sub>**

Element

bit size: 16

Signed quantity

LSB =  $1/2^2$  m/s  $\approx$  0.25 m/s

unit: "m/s"

$\geq -8192.0$

$\leq 8192.0$

## **I011/210 - Calculated Acceleration**

definition: Calculated Acceleration of the target, in two's complement form.

Group

### **I011/210/AX - A<sub>x</sub>**

Element  
bit size: 8  
Signed quantity  
 $\text{LSB} = 1/2^2 \text{ m/s}^2 \approx 0.25 \text{ m/s}^2$   
unit: "m/s<sup>2</sup>"  
 $\geq -31.0$   
 $\leq 31.0$

#### **I011/210/AY - Ay**

Element  
bit size: 8  
Signed quantity  
 $\text{LSB} = 1/2^2 \text{ m/s}^2 \approx 0.25 \text{ m/s}^2$   
unit: "m/s<sup>2</sup>"  
 $\geq -31.0$   
 $\leq 31.0$

#### **I011/215 - Calculated Rate Of Climb/Descent**

definition: Calculated rate of Climb/Descent of an aircraft, in two's complement form.

Element  
bit size: 16  
Signed quantity  
 $\text{LSB} = 25/2^2 \text{ ft/min} \approx 6.25 \text{ ft/min}$   
unit: "ft/min"  
 $\geq -204800.0$   
 $\leq 204800.0$

#### **I011/245 - Target Identification**

definition: Target (aircraft or vehicle) identification in 8 characters.

Group

##### **I011/245/STI**

Element  
bit size: 2  
Values:  
    **0**: Callsign or registration downlinked from transponder  
    **1**: Callsign not downlinked from transponder  
    **2**: Registration not downlinked from transponder

Spare bits: 6

##### **I011/245/TID - Target Identification**

Element  
bit size: 48  
ICAO string (6-bits per char)

**Note:** Characters 1-8 (coded on 6 bits each) defining target identification

#### **I011/270 - Target Size and Orientation**

definition: Target size defined as length and with of the detected target, and orientation.

Extended

##### **I011/270/LENGTH - Length**



Element  
bit size: 7  
Unsigned quantity  
LSB = 1 m  $\approx$  1.0 m  
unit: "m"

(FX) - extension bit

#### **I011/270/ORIENTATION - Orientation**

Element  
bit size: 7  
Unsigned quantity  
LSB =  $360/2^7$  °  $\approx$  2.8125 °  
unit: "°"

(FX) - extension bit

#### **I011/270/WIDTH - Width**

Element  
bit size: 7  
Unsigned quantity  
LSB = 1 m  $\approx$  1.0 m  
unit: "m"

(FX) - extension bit

**Note:** The orientation gives the direction to which the aircraft nose is pointing, relative to the Geographical North.

### **I011/290 - System Track Update Ages**

definition: Ages of the last plot/local track, or the last valid mode-A/mode-C, used to update the system track.

Compound

#### **I011/290/PSR - Age of the Last Primary Report Used to Update the Track**

Element  
bit size: 8  
Unsigned quantity  
LSB =  $1/2^2$  s  $\approx$  0.25 s  
unit: "s"

#### **I011/290/SSR - Age of the Last Secondary Report Used to Update the Track**

Element  
bit size: 8  
Unsigned quantity  
LSB =  $1/2^2$  s  $\approx$  0.25 s  
unit: "s"

#### **I011/290/MDA - Age of the Last Valid Mode A Report Used to Update the Track**

Element  
bit size: 8  
Unsigned quantity  
LSB =  $1/2^2$  s  $\approx$  0.25 s  
unit: "s"

#### **I011/290/MFL - Age of the Last Valid and Credible Mode C Used to Update the Track**

Element  
bit size: 8  
Unsigned quantity  
 $\text{LSB} = 1/2^2 \text{ s} \approx 0.25 \text{ s}$   
unit: "s"

**I011/290/MDS - Age of the Last Mode S Report Used to Update the Track**

Element  
bit size: 8  
Unsigned quantity  
 $\text{LSB} = 1/2^2 \text{ s} \approx 0.25 \text{ s}$   
unit: "s"

**I011/290/ADS - Age of the Last ADS Report Used to Update the Track**

Element  
bit size: 16  
Unsigned quantity  
 $\text{LSB} = 1/2^2 \text{ s} \approx 0.25 \text{ s}$   
unit: "s"

**I011/290/ADB - Age of the Last ADS-B Report Used to Update the Track**

Element  
bit size: 8  
Unsigned quantity  
 $\text{LSB} = 1/2^2 \text{ s} \approx 0.25 \text{ s}$   
unit: "s"

**I011/290/MD1 - Age of the Last Valid Mode 1 Used to Update the Track**

Element  
bit size: 8  
Unsigned quantity  
 $\text{LSB} = 1/2^2 \text{ s} \approx 0.25 \text{ s}$   
unit: "s"

**I011/290/MD2 - Age of the Last Valid Mode 2 Used to Update the Track**

Element  
bit size: 8  
Unsigned quantity  
 $\text{LSB} = 1/2^2 \text{ s} \approx 0.25 \text{ s}$   
unit: "s"

**I011/290/LOP - Age of the Last Magentic Loop Detection**

Element  
bit size: 8  
Unsigned quantity  
 $\text{LSB} = 1/2^2 \text{ s} \approx 0.25 \text{ s}$   
unit: "s"

**I011/290/TRK - Actual Track Age Since First Occurrence**

Element  
bit size: 8  
Unsigned quantity  
 $\text{LSB} = 1/2^2 \text{ s} \approx 0.25 \text{ s}$   
unit: "s"

**I011/290/MUL - Age of the Last Multilateration Detection**

Element  
bit size: 8  
Unsigned quantity  
 $\text{LSB} = 1/2^2 \text{ s} \approx 0.25 \text{ s}$   
unit: "s"

**Note:** The ages are counted from Data Item I011/140, Time Of Track Information, using the following formula: Age = Time of track information - Time of last (valid) update If the computed age is greater than the maximum value or if the data has never been received, then the corresponding subfield is not sent.

### **I011/300 - Vehicle Fleet Identification**

definition: Vehicle fleet identification number.

Element

bit size: 8

Values:

- 0:** Flyco (follow me)
- 1:** ATC equipment maintenance
- 2:** Airport maintenance
- 3:** Fire
- 4:** Bird scarer
- 5:** Snow plough
- 6:** Runway sweeper
- 7:** Emergency
- 8:** Police
- 9:** Bus
- 10:** Tug (push/tow)
- 11:** Grass cutter
- 12:** Fuel
- 13:** Baggage
- 14:** Catering
- 15:** Aircraft maintenance
- 16:** Unknown

### **I011/310 - Pre-programmed Message**

definition: Number related to a pre-programmed message that can be transmitted by a vehicle.

Group

#### **I011/310/TRB - In Trouble**

Element

bit size: 1

Values:

- 0:** Default
- 1:** In Trouble

#### **I011/310/MSG - Message**

Element

bit size: 7

Values:

- 1:** Towing aircraft
- 2:** FOLLOW-ME operation
- 3:** Runway check
- 4:** Emergency operation (fire, medical...)
- 5:** Work in progress (maintenance, birds scarer, sweepers...)

### **I011/380 - Mode-S / ADS-B Related Data**

definition: Data specific to Mode-S ADS-B.

Compound

## **I011/380/MB - BDS**

Repetitive

Regular, 1 byte(s) REP field size.

Element

bit size: 64

BDS register with address

## **I011/380/ADR - 24 Bits Aircraft Address**

Element

bit size: 24

Raw Content

*Spare*

## **I011/380/COMACAS - Communications/ACAS Capability and Flight Status**

Group

### **I011/380/COMACAS/COM - Communications Capability of the Transponder**

Element

bit size: 3

Values:

- 0:** No communications capability (surveillance only)
- 1:** Comm. A and Comm. B capability
- 2:** Comm. A, Comm. B and Uplink ELM
- 3:** Comm. A, Comm. B, Uplink ELM and Downlink ELM
- 4:** Level 5 Transponder capability
- 5:** Not assigned
- 6:** Not assigned
- 7:** Not assigned

### **I011/380/COMACAS/STAT - Flight Status**

Element

bit size: 4

Values:

- 0:** No alert, no SPI, aircraft airborne
- 1:** No alert, no SPI, aircraft on ground
- 2:** Alert, no SPI, aircraft airborne
- 3:** Alert, no SPI, aircraft on ground
- 4:** Alert, SPI, aircraft airborne or on ground
- 5:** No alert, SPI, aircraft airborne or on ground
- 6:** General Emergency
- 7:** Lifeguard / medical
- 8:** Minimum fuel
- 9:** No communications
- 10:** Unlawful interference

Spare bits: 1

### **I011/380/COMACAS/SSC - Specific Service Capability**

Element

bit size: 1

Values:

- 0:** No
- 1:** Yes

### **I011/380/COMACAS/ARC - Altitude Reporting Capability**

Element

bit size: 1

Values:

- 0:** 100 ft resolution

1: 25 ft resolution

**I011/380/COMACAS/AIC - Aircraft Identification Capability**

Element  
bit size: 1  
Values:  
0: No  
1: Yes

**I011/380/COMACAS/B1A - BDS 1,0 Bit 16**

Element  
bit size: 1  
Raw Content

**I011/380/COMACAS/B1B - BDS 1,0 Bit 37/40**

Element  
bit size: 4  
Raw Content

**I011/380/COMACAS/AC - ACAS Operational**

Element  
bit size: 1  
Values:  
0: No  
1: Yes

**I011/380/COMACAS/MN - Multiple Navigational Aids Operating**

Element  
bit size: 1  
Values:  
0: No  
1: Yes

**I011/380/COMACAS/DC - Differential Correction**

Element  
bit size: 1  
Values:  
0: Yes  
1: No

Spare bits: 5

*Spare*

*Spare*

*Spare*

**I011/380/ACT - Aircraft Derived Aircraft Type**

Element  
bit size: 32  
Ascii string (8-bits per char)

**I011/380/ECAT - Emitter Category**

Element  
bit size: 8  
Values:  
1: Light aircraft <= 7000 kg  
2: Reserved  
3: 7000 kg <= medium aircraft <= 136000 kg  
4: Reserved  
5: 136000 kg <= heavy aircraft  
6: Highly manoeuvrable (5g acceleration capability) and high speed (>400 knots cruise)  
7: Reserved

- 8: Reserved
- 9: Reserved
- 10: Rotocraft
- 11: Glider / sailplane
- 12: Lighter-than-air
- 13: Unmanned aerial vehicle
- 14: Space / transatmospheric vehicle
- 15: Ultralight / handglider / paraglider
- 16: Parachutist / skydiver
- 17: Reserved
- 18: Reserved
- 19: Reserved
- 20: Surface emergency vehicle
- 21: Surface service vehicle
- 22: Fixed ground or tethered obstruction
- 23: Reserved
- 24: Reserved

*Spare*

### **I011/380/AVTECH - Available Technologies**

Group

#### **I011/380/AVTECH/VDL - VDL Mode 4**

Element

bit size: 1

Values:

- 0: VDL Mode 4 available
- 1: VDL Mode 4 not available

#### **I011/380/AVTECH/MDS - Mode S**

Element

bit size: 1

Values:

- 0: Mode S available
- 1: Mode S not available

#### **I011/380/AVTECH/UAT - UAT**

Element

bit size: 1

Values:

- 0: UAT available
- 1: UAT not available

Spare bits: 5

### **I011/390 - Flight Plan Related Data**

definition: All flight plan related information.

Compound

#### **I011/390/FPPSID - FPPS Identification Tag**

Group

##### **I011/390/FPPSID/SAC - System Area Code**

Element

bit size: 8

Raw Content

##### **I011/390/FPPSID/SIC - System Identity Code**

Element

bit size: 8

Raw Content

## **I011/390/CSN - Callsign**

Element

bit size: 56

Ascii string (8-bits per char)

## **I011/390/IFPSFLIGHTID - IFPS\_FLIGHT\_ID**

Group

### **I011/390/IFPSFLIGHTID/TYP - IFPS Flight ID Type**

Element

bit size: 2

Values:

- 0:** Plan number
- 1:** Unit 1 internal flight number
- 2:** Unit 2 internal flight number
- 3:** Unit 3 internal flight number

Spare bits: 3

### **I011/390/IFPSFLIGHTID/NBR - IFPS Flight ID Number**

Element

bit size: 27

Raw Content

## **I011/390/FLIGHTCAT - Flight Category**

Group

### **I011/390/FLIGHTCAT/GATOAT - Flight Type**

Element

bit size: 2

Values:

- 0:** Unknown
- 1:** General Air Traffic
- 2:** Operational Air Traffic
- 3:** Not applicable

### **I011/390/FLIGHTCAT/FR1FR2 - Flight Rules**

Element

bit size: 2

Values:

- 0:** Instrument Flight Rules
- 1:** Visual Flight Rules
- 2:** Not applicable
- 3:** Controlled Visual Flight Rules

### **I011/390/FLIGHTCAT/RVSM - RVSM**

Element

bit size: 2

Values:

- 0:** Unknown
- 1:** Approved
- 2:** Exempt
- 3:** Not Approved

### **I011/390/FLIGHTCAT/HPR - Flight Priority**

Element

bit size: 1

Values:

- 0:** Normal Priority Flight
- 1:** High Priority Flight

Spare bits: 1

## **I011/390/TOA - Type of Aircraft**

Element  
bit size: 32  
Ascii string (8-bits per char)

#### **I011/390/WTC - Wake Turbulence Category**

Element  
bit size: 8  
Values:  
    **76:** Light  
    **77:** Medium  
    **72:** Heavy  
    **74:** Super

#### **I011/390/ADEP - Departure Airport**

Element  
bit size: 32  
Ascii string (8-bits per char)

#### **I011/390/ADES - Destination Airport**

Element  
bit size: 32  
Ascii string (8-bits per char)

#### **I011/390/RWY - Runway Designation**

Element  
bit size: 24  
Ascii string (8-bits per char)

#### **I011/390/CFL - Current Cleared Flight Level**

Element  
bit size: 16  
Unsigned quantity  
LSB =  $1/2^2$  FL  $\approx$  0.25 FL  
unit: "FL"

#### **I011/390/CCP - Current Control Position**

Group

##### **I011/390/CCP/CENTRE - 8-bit Group Identification Code**

Element  
bit size: 8  
Raw Content

##### **I011/390/CCP/POSITION - 8-bit Control Position Identification Code**

Element  
bit size: 8  
Raw Content

#### **I011/390/TOD - Time of Departure**

Repetitive  
Regular, 1 byte(s) REP field size.  
Group

##### **I011/390/TOD/TYP - Time Type**

Element  
bit size: 5  
Values:  
    **0:** Scheduled off-block time  
    **1:** Estimated off-block time  
    **2:** Estimated take-off time  
    **3:** Actual off-block time  
    **4:** Predicted time at runway hold  
    **5:** Actual time at runway hold



- 6: Actual line-up time
- 7: Actual take-off time
- 8: Estimated time of arrival
- 9: Predicted landing time
- 10: Actual landing time
- 11: Actual time off runway
- 12: Predicted time to gate
- 13: Actual on-block time

#### **I011/390/TOD/DAY - Day**

Element  
bit size: 2  
Values:

- 0: Today
- 1: Yesterday
- 2: Tomorrow

Spare bits: 4

#### **I011/390/TOD/HOR - Hours, from 0 to 23**

Element  
bit size: 5  
Unsigned integer  
>= 0.0  
≤ 23.0

Spare bits: 2

#### **I011/390/TOD/MIN - Minutes, from 0 to 59**

Element  
bit size: 6  
Unsigned integer  
>= 0.0  
≤ 59.0

#### **I011/390/TOD/AVS - Seconds Available**

Element  
bit size: 1  
Values:  
0: Seconds available  
1: Seconds not available

Spare bits: 1

#### **I011/390/TOD/SEC - Seconds, from 0 to 59**

Element  
bit size: 6  
Unsigned integer  
>= 0.0  
≤ 59.0

#### **I011/390/AST - Aircraft Stand**

Element  
bit size: 48  
Ascii string (8-bits per char)

#### **I011/390/STS - Stand Status**

Group

##### **I011/390/STS/EMP - Stand Empty**

Element  
bit size: 2  
Values:  
0: Empty  
1: Occupied  
2: Unknown

##### **I011/390/STS/AVL - Stand Available**

Element  
bit size: 2  
Values:  
    **0:** Available  
    **1:** Not available  
    **2:** Unknown  
Spare bits: 4

### **I011/430 - Phase of Flight**

definition: Current phase of the flight.

Element  
bit size: 8  
Values:  
    **0:** Unknown  
    **1:** On stand  
    **2:** Taxiing for departure  
    **3:** Taxiing for arrival  
    **4:** Runway for departure  
    **5:** Runway for arrival  
    **6:** Hold for departure  
    **7:** Hold for arrival  
    **8:** Push back  
    **9:** On finals

### **I011/500 - Estimated Accuracies**

definition: Overview of all important accuracies (standard deviations).

Compound

#### **I011/500/APC - Estimated Accuracy Of Track Position (Cartesian)**

Group

##### **I011/500/APC/X - Estimated Accuracy of the Calculated Position of X Component**

Element  
bit size: 8  
Unsigned quantity  
 $LSB = 1/2^2 \text{ m} \approx 0.25 \text{ m}$   
unit: "m"

##### **I011/500/APC/Y - Estimated Accuracy of the Calculated Position of Y Component**

Element  
bit size: 8  
Unsigned quantity  
 $LSB = 1/2^2 \text{ m} \approx 0.25 \text{ m}$   
unit: "m"

#### **I011/500/APW - Estimated Accuracy Of Track Position (WGS84)**

Group

##### **I011/500/APW/LAT - APW Latitude Component Accuracy**

Element  
bit size: 16  
Signed quantity  
 $LSB = 180/2^{31} \text{ }^\circ \approx 8.381903171539306640625e - 8 \text{ }^\circ$   
unit: "°"

**I011/500/APW/LON - APW Longitude Component Accuracy**

Element  
bit size: 16  
Signed quantity  
 $\text{LSB} = 180/2^31 \text{ }^\circ \approx 8.381903171539306640625e - 8 \text{ }^\circ$   
unit: "°"

**I011/500/ATH - Estimated Accuracy Of Track Height**

Element  
bit size: 16  
Signed quantity  
 $\text{LSB} = 1/2 \text{ m} \approx 0.5 \text{ m}$   
unit: "m"

**I011/500/AVC - Estimated Accuracy Of Track Velocity (Cartesian)**

Group

**I011/500/AVC/X - Estimated Accuracy of the Calculated Velocity of X Component**

Element  
bit size: 8  
Unsigned quantity  
 $\text{LSB} = 1/10 \text{ m/s} \approx 0.1 \text{ m/s}$   
unit: "m/s"

**I011/500/AVC/Y - Estimated Accuracy of the Calculated Velocity of Y Component**

Element  
bit size: 8  
Unsigned quantity  
 $\text{LSB} = 1/10 \text{ m/s} \approx 0.1 \text{ m/s}$   
unit: "m/s"

**I011/500/ARC - Estimated Accuracy Of Rate Of Climb / Descent**

Element  
bit size: 16  
Signed quantity  
 $\text{LSB} = 1/10 \text{ m/s} \approx 0.1 \text{ m/s}$   
unit: "m/s"

**I011/500/AAC - Estimated Accuracy Of Acceleration (Cartesian)**

Group

**I011/500/AAC/X - Estimated Accuracy Of Acceleration of X Component**

Element  
bit size: 8  
Unsigned quantity  
 $\text{LSB} = 1/100 \text{ m/s}^2 \approx 1.0e - 2 \text{ m/s}^2$   
unit: "m/s²"

**I011/500/AAC/Y - Estimated Accuracy Of Acceleration of Y Component**

Element  
bit size: 8  
Unsigned quantity  
 $\text{LSB} = 1/100 \text{ m/s}^2 \approx 1.0e - 2 \text{ m/s}^2$   
unit: "m/s²"

**I011/600 - Alert Messages**

definition: Alert involving the targets indicated in I011/605.

Group

### **I011/600/ACK - Alert Acknowledged**

Element

bit size: 1

Values:

**0:** Alert acknowledged

**1:** Alert not acknowledged

### **I011/600/SVR - Alert Severity**

Element

bit size: 2

Values:

**0:** End fo alert

**1:** Pre-alarm

**2:** Severe alert

Spare bits: 5

### **I011/600/AT - Alert Type**

Element

bit size: 8

Raw Content

### **I011/600/AN - Alert Number**

Element

bit size: 8

Raw Content

## **I011/605 - Tracks in Alert**

definition: List of track numbers of the targets concerned by the alert described in I011/600.

Repetitive

Regular, 1 byte(s) REP field size.

Group

Spare bits: 4

### **I011/605/FTN - Fusion Track Number**

Element

bit size: 12

Raw Content

## **I011/610 - Holdbar Status**

definition: Status of up to sixteen banks of twelve indicators.

Repetitive

Regular, 1 byte(s) REP field size.

Group

### **I011/610/BKN - Bank Number**

Element

bit size: 4

Raw Content

### **I011/610/I1 - Indicator 1**

Element

bit size: 1

Values:

**0:** Indicator on

1: Indicator off

**I011/610/I2 - Indicator 2**

Element

bit size: 1

Values:

0: Indicator on

1: Indicator off

**I011/610/I3 - Indicator 3**

Element

bit size: 1

Values:

0: Indicator on

1: Indicator off

**I011/610/I4 - Indicator 4**

Element

bit size: 1

Values:

0: Indicator on

1: Indicator off

**I011/610/I5 - Indicator 5**

Element

bit size: 1

Values:

0: Indicator on

1: Indicator off

**I011/610/I6 - Indicator 6**

Element

bit size: 1

Values:

0: Indicator on

1: Indicator off

**I011/610/I7 - Indicator 7**

Element

bit size: 1

Values:

0: Indicator on

1: Indicator off

**I011/610/I8 - Indicator 8**

Element

bit size: 1

Values:

0: Indicator on

1: Indicator off

**I011/610/I9 - Indicator 9**

Element

bit size: 1

Values:

0: Indicator on

1: Indicator off

**I011/610/I10 - Indicator 10**

Element

bit size: 1

Values:

0: Indicator on  
1: Indicator off

#### **I011/610/I11 - Indicator 11**

Element  
bit size: 1  
Values:

0: Indicator on  
1: Indicator off

#### **I011/610/I12 - Indicator 12**

Element  
bit size: 1  
Values:

0: Indicator on  
1: Indicator off

### **I011/SP - Special Purpose Field**

definition: Special Purpose Field  
Explicit (SpecialPurpose)

### **I011/RE - Reserved Expansion Field**

definition: Expansion  
Explicit (ReservedExpansion)

## **User Application Profile**

- 1: I011/010 - Data Source Identifier
- 2: I011/000 - Message Type
- 3: I011/015 - Service Identification
- 4: I011/140 - Time of Track Information
- 5: I011/041 - Position in WGS-84 Coordinates
- 6: I011/042 - Calculated Position in Cartesian Co-ordinates
- 7: I011/202 - Calculated Track Velocity in Cartesian Coordinates
- (FX) - Field extension indicator
- 8: I011/210 - Calculated Acceleration
- 9: I011/060 - Mode-3/A Code in Octal Representation
- 10: I011/245 - Target Identification
- 11: I011/380 - Mode-S / ADS-B Related Data
- 12: I011/161 - Track Number
- 13: I011/170 - Track Status
- 14: I011/290 - System Track Update Ages
- (FX) - Field extension indicator
- 15: I011/430 - Phase of Flight
- 16: I011/090 - Measured Flight Level
- 17: I011/093 - Calculated Track Barometric Altitude
- 18: I011/092 - Calculated Track Geometric Altitude
- 19: I011/215 - Calculated Rate Of Climb/Descent
- 20: I011/270 - Target Size and Orientation
- 21: I011/390 - Flight Plan Related Data
- (FX) - Field extension indicator
- 22: I011/300 - Vehicle Fleet Identification
- 23: I011/310 - Pre-programmed Message
- 24: I011/500 - Estimated Accuracies
- 25: I011/600 - Alert Messages
- 26: I011/605 - Tracks in Alert

- 27: I011/610 - Holdbar Status
- 28: I011/SP - Special Purpose Field
- (FX) - Field extension indicator
- 29: I011/RE - Reserved Expansion Field
- *Spare*
- *Spare*
- *Spare*
- *Spare*
- *Spare*
- *Spare*
- (FX) - Field extension indicator