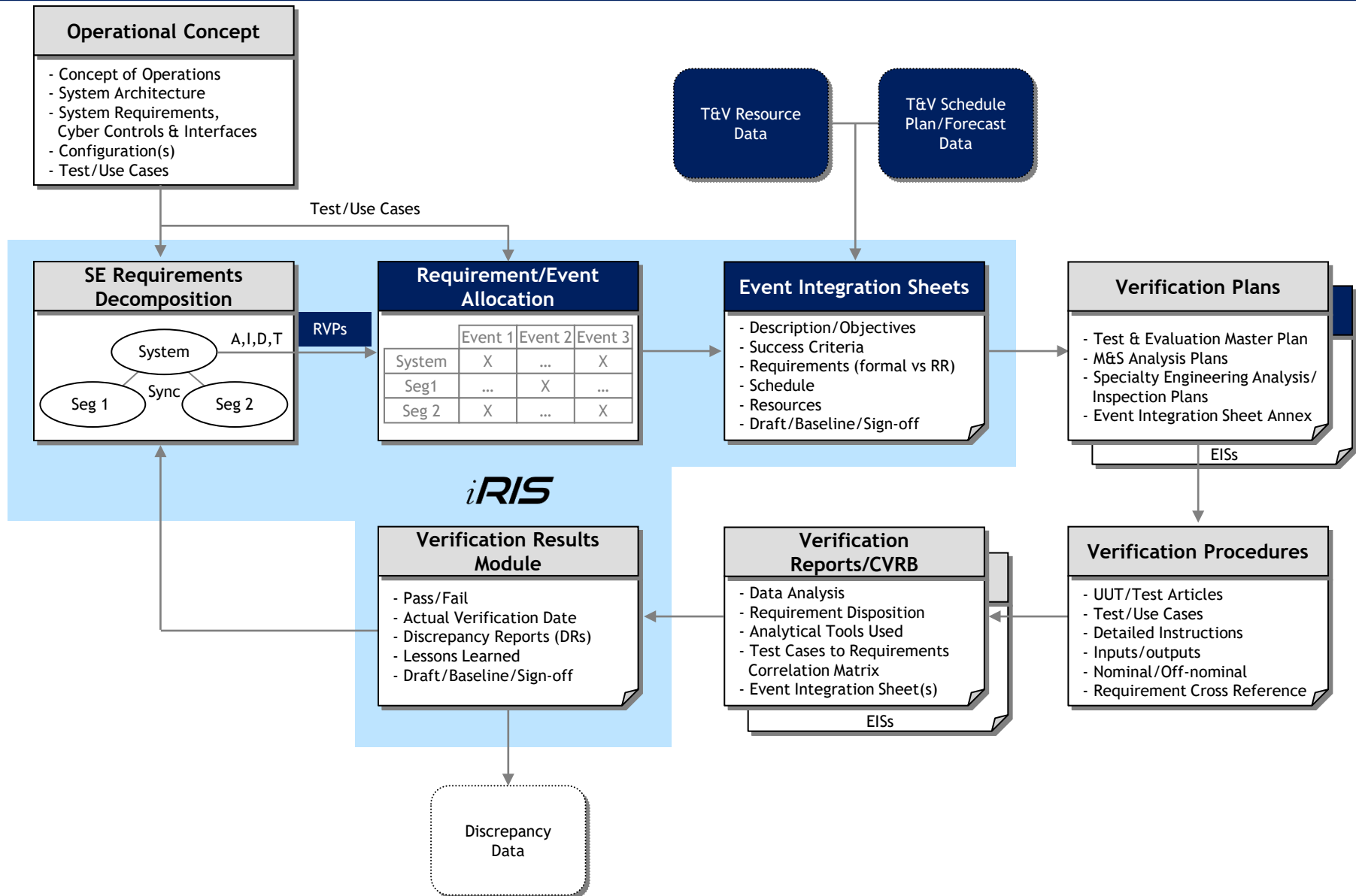




Module 3: Requirements Verification Planning

Celeris Systems Inc.
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Anaheim, California 92806
www.celeris-systems.com/iris

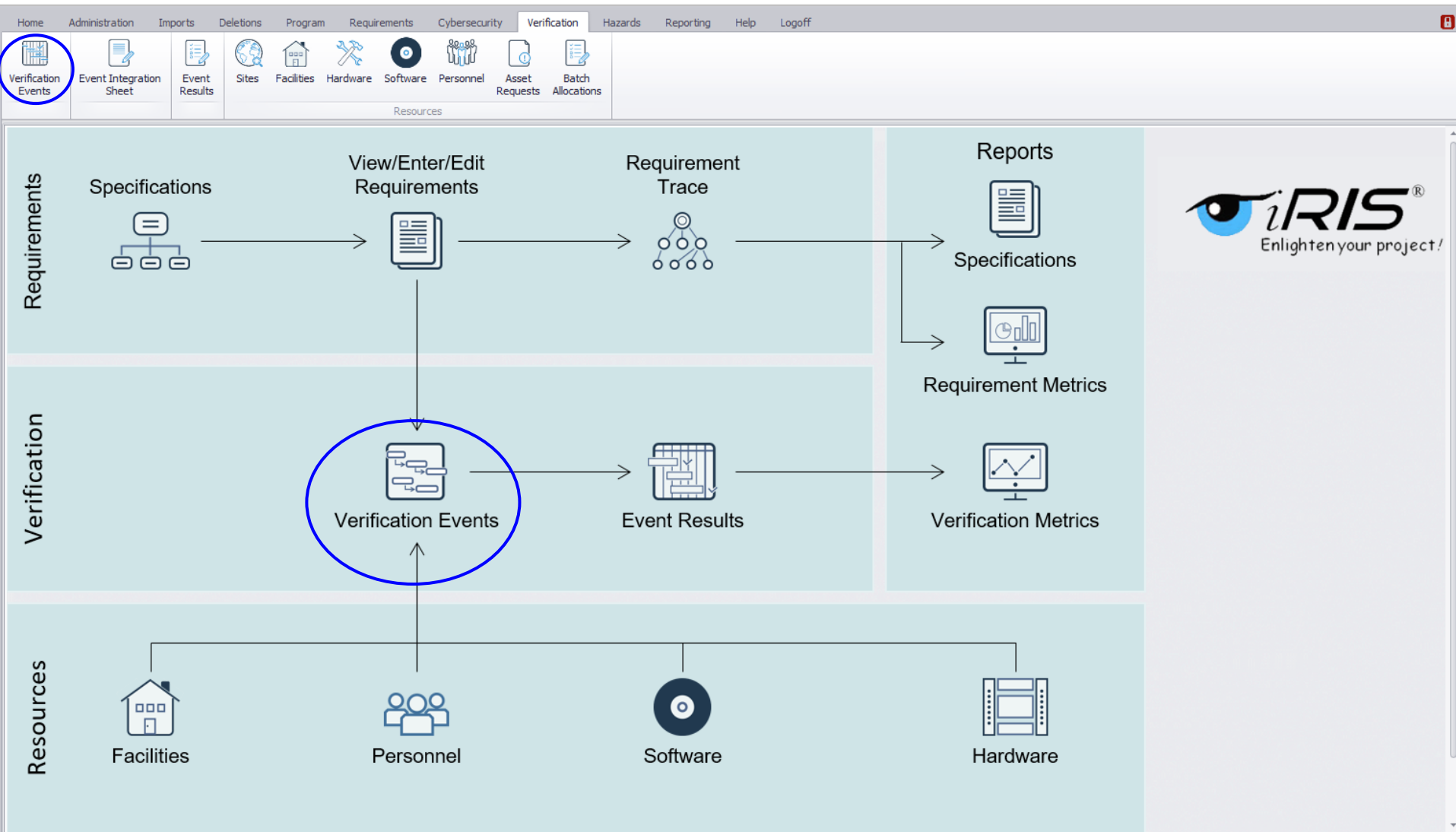
iRIS in the Verification Planning Workflow



Module Objective: Understand how to use EBP/iRIS to support verification planning

- EIS Creation & Updates
 - Event IDs
 - How to assign team member EIS responsibilities
 - How to research requirements
 - How to allocate/remove requirements to/from an EIS
 - Test/Use Case Requirement Allocation
 - How to allocate resources to an EIS
 - Facilities/hardware/software/personnel
 - Working with gantt view of events
- EIS Configuration Management
 - How to lock an event and manage changes
 - Electronic Signature Approval

Entering the Requirements Verification Planning Workspace



Verification Event List View

Home Administration Imports Deletions Program Requirements Cybersecurity Verification Hazards Reporting Help Logoff

Requirements

ation

Resources

View/Enter/Edit

Requirement

Reports

Event IDs

Click on an Event to edit it.

Drag a column header here to group by that column

Locked	Configuration Item	Verification Number	Title	EIS Developer	Plan End	Forecast Start	Forecast End
<input type="checkbox"/>	Stg 2	1000-IMU	IMU Mass Properties	Jessica, Ferkula	2/3/2020	4/13/2020	4/30/2020
<input type="checkbox"/>	Stg 2	1001-IMU	IMU Design and Construction	Dunn, Joe	2/24/2020	4/26/2020	5/29/2020
<input type="checkbox"/>	Stg 2	1002-IMU	IMU Load Deflection	Jonas, Judy	3/6/2020	5/10/2020	5/29/2020
<input type="checkbox"/>	Stg 2	1003-IMU	IMU Reliability Analysis	Martin, Craig	3/19/2020	5/17/2020	6/4/2020
<input type="checkbox"/>	Stg 2	1004-IMU	IMU Load Dynamics Test	Greco, Gordon	3/26/2020	5/24/2020	6/11/2020
<input type="checkbox"/>	Stg 2	1005-IMU	IMU End-to-End Test	Ford, Gerry	3/27/2020	5/24/2020	6/12/2020
<input type="checkbox"/>	Stg 2	1006-Batt	Battery Mass Properties	Garcia, Bob	4/1/2020	5/31/2020	6/18/2020
<input type="checkbox"/>	Stg 2	1007-Batt	Battery Design and Construction	Hass, Andy	4/13/2020	6/7/2020	6/26/2020
<input type="checkbox"/>	Stg 2	1008-Batt	Battery Load Deflection	Martin, Craig	4/23/2020	6/14/2020	7/9/2020
<input type="checkbox"/>	Stg 2	1009-Batt	Battery Reliability Analysis	Greco, Gordon	5/1/2020	6/21/2020	8/14/2020
<input type="checkbox"/>	Stg 2	1010-Batt	Battery Load Dynamics Test	Ford, Gerry	5/8/2020	6/21/2020	8/7/2020
<input type="checkbox"/>	Stg 2	1011-Batt	Vendor Battery Test	Ho, Jay			8/15/2020
<input type="checkbox"/>	Stg 2	1012-FTS	FTS Mass Properties	Cartwright, J			8/31/2020
<input type="checkbox"/>	Stg 2	1013-FTS	FTS Design and Construction	Garcia, Bob			9/30/2020
<input type="checkbox"/>	Stg 2	1014-FTS	FTS Load Deflection	Greco, Gordon		7/19/2020	8/6/2020
<input type="checkbox"/>	Stg 2	1015-FTS	FTS Reliability Analysis	Cartwright, Jerr	7/17/2020	7/26/2020	8/17/2020
<input type="checkbox"/>	Stg 2	1016-FTS	FTS Electrical Interface Test	Garcia, Bob	7/24/2020	8/2/2020	8/21/2020
<input type="checkbox"/>	Stg 2	1017-FTS	Flight Termination System Performance Test	Garcia, Bob	7/24/2020	8/2/2020	8/28/2020

Double-click row to open EIS

Only Administrators can create an event

Click the column button to insert additional attributes as columns

Facilities

Personnel

Software

Hardware

Assigning EIS Responsibilities

- Assigned by iRIS Admin
- Can update any Module of the EIS, including assigning Prime Team Members, Customers & Stakeholders below

1005-IMU IMU End-to-End Test

EIS Engineers:

Event Conductors:

EIS Owners

Hass, Andy

Ford, Gerry

Jonas, Judy

Responsible Team:

Systems Engineering

Prime Team Members:

selected	Name	Phone	email_govt	email_company	team_group	company	event_lead	team_member	prime	stakeholder
<input checked="" type="checkbox"/>	Coors, Joey	123-908-9888			System Integration		Y	Y	Y	Y
<input checked="" type="checkbox"/>	Haan, Brian				System Integration		Y	Y	Y	Y
<input checked="" type="checkbox"/>	Martinez, Angel	123-092-0333			T&V	Company ABC	Y	Y	Y	Y
<input checked="" type="checkbox"/>	Schwartz, Jenny						Y	Y	Y	Y
<input type="checkbox"/>	Chadil, Bob	999-999-9999	b.chadil@celeris-sy...	b.chadil@celeris-sy...	Engineering	Celeris	Y	Y	Y	Y
<input type="checkbox"/>	Della, Ray	123-098-2292		ray.della@celeris-s...	Logistics	Company ABC	Y	Y	Y	N
<input type="checkbox"/>	Enrico, Rob	999-999-9999	rob.enrico@celeris-...	rob.enrico@celeris-...	Cybersecurity	Celeris	Y	Y	Y	Y
<input type="checkbox"/>	Fiamenno, Vincent	999-999-9999	v@v.com	v@v.com		999-999-9999	Y	Y	Y	Y

Customer / Stakeholder Team Members:

selected	Name	Phone	email_govt	email_company	team_group	company	event_lead	team_member	prime	stakeholder
<input checked="" type="checkbox"/>	Coors, Joey	123-908-9888			System Integration		Y	Y	Y	Y
<input checked="" type="checkbox"/>	Haan, Brian				System Integration		Y	Y	Y	Y
<input checked="" type="checkbox"/>	Martinez, Angel	123-092-0333			T&V	Company ABC	Y	Y	Y	Y
<input checked="" type="checkbox"/>	Schwartz, Jenny						Y	Y	Y	Y

Update Changes

- The iRIS Requirements Module Helps Identify Requirements that may need to be allocated to an EIS:

Key Word Searches

The screenshot shows the iRIS Requirements Module interface. The 'Requirements' tab is selected, and the 'Key Word Search' button is highlighted. A search for 'power' has been performed, resulting in a list of requirements. The 'Requirement Contextual Search' window is open, showing details for requirement SYS-010.

Requirement Number	Name	Description
SYS-010	Special Considerations for Electroexplosive Subsystem Exposure to RF Radiation.	RF power at the EED shall not exceed 20 dB below the pin-to-pin direct current.
SYS-011	Special Considerations for Electroexplosive Subsystem Exposure to RF Radiation.	The siting of ground-based RF emitters in proximity to electroexplosive subsystems shall be in accordance with Table 2-5, "Recommended EED Safe Separation Distances and Power Densities" in AFMAN 91-201, Explosives Safety Standards, and DoD 6055.9-STD, DoD Ammunition and Explosives Safety Standards.
SYS-012	Special Considerations for Electroexplosive Subsystem Exposure to RF Radiation.	The siting of ground-based RF emitters in proximity to electroexplosive subsystems shall be in accordance with Table 2-5, "Recommended EED Safe Separation Distances and Power Densities", Explosives Safety Standards, and 9-STD, DoD Ammunition and Explosives Safety Standards.
BVICD-003	Terminations	Terminations are used when you want a device to "see" a proper load at its inputs or outputs. Most terminations used in the RF telemetry world are low power 50 ohm loads. Terminations are used on the unused ports of directional couplers and on hybrid couplers. Terminations, also known as dummy loads, are also used on the outputs of transmitters during laboratory tests. The main considerations when specifying terminations are impedance and power dissipation. Terminations are usually purely resistive.
BVICD-015	Power Capability	This capability is the maximum amount of continuous or peak power that the antenna can handle without causing damage to itself. For most telemetry applications, a maximum of 10 watts is adequate.
GS-004	Power Utilization	The S1GS shall utilize no more than 80 watts of electrical power.
GS-005	Power Transfer Capability	The S1GS shall have the capability of transferring at least 18 amperes of current from the 28V_POWER lines to the 28V_POS_EXT lines with a drop of no more than 1.5 volts.
GS-006	GS Power Xrf Capability	The S1GS shall have the capability of transferring at least 7 amperes of current from the 28V_POWER lines to the 27V_POS_BATT_VD lines with a drop of no more than 1.5 volts.
GS-008	Discrete signal noise immun.	The S1GS shall provide noise immunity such that a 40 volt noise spike of 50 microseconds duration on the GTD_BOOSTER, SAFETY_ENABLE, and/or GS_POWER_ENABLE signal lines does not cause a state change.
GS-012	GS Power Enable	Upon receipt of a valid logic high signal on the GS_POWER_ENABLE signal line, the S1GS shall irreversibly apply power to the 27V_POS_BATT_VD output (GS sub power).
GS-016	28 VDC Output Power	With input power to the S1GS as specified in the following table and a load of 18 amps, the voltage drop between the 28V input to the S1GS and the 28V_POS_EXT output from the S1GS shall be no more than 1.5V and the noise on the output shall not exceed the noise limit for the input power.
GS-017	Adapter Avionics Power	The S1GS shall generate +5 and +15 Vdc power for use by adapter avionics with the following characteristics:
GS-018	Avionics Power turn-on Transient	The +5 and +15 Vdc power forms shall remain within ± 10% of their respective nominal output voltage and shall recover to their specified limits within 20 mSseconds whenever input power is applied.
GS-024	Operating Life	The S1GS shall have an operating life of not less than 100 hours. Operating life is defined as that period of time prior to launch when the power is applied to the S1GS.
AP-004	Power Utilization	The AP shall utilize no more than 80 watts of electrical power.
AP-005	Power Transfer Capability	The AP shall have the capability of transferring at least 18 amperes of current from the 28V_POWER lines to the 28V_POS_EXT lines with a drop of no more than 1.5 volts.
AP-006	AP Power Xrf Capability	The AP shall have the capability of transferring at least 7 amperes of current from the 28V_POWER lines to the 27V_POS_BATT_VD lines with a drop of no more than 1.5 volts.

Parent/child Traceability

The screenshot shows the iRIS Requirements Module interface. The 'Requirements' tab is selected, and the 'Requirement Trace' button is highlighted. A search for 'power' has been performed, resulting in a list of requirements. The 'Requirement Trace' window is open, showing details for requirement SYS-002.

Requirement N...	Spec Name	Name
AP-002	06) BoosterAutopilot	Bus Com. 1553 AP Lock
BATT-002	10) +28V Battery	Characteristics
CA-001	08) Booster TVC Actuators	Nozzle Control Actuator Power
BST1-002	07) Rocket Motor Specification	Booster TVC Performance
BVICD-002	03) Ground Support System ICD	GSS Backwards Compatibility
CA-002	08) Booster TVC Actuators	Nozzle Control Actuator Sizing
GS-002	05) Booster Guidance Section	Bus Com. 1553 GS Lock
IMU-002	09) Inertial Measurement Unit	Input power
SYS-002	02) System Specification	Field Terminal Data Transmission
SYS-013	02) System Specification	System Ka-band Emitter Requirements
SYS-014	02) System Specification	System Ka-band Emitter Requirements
SYS-015	02) System Specification	System Ka-band Emitter Requirements
SYS-017	02) System Specification	System Ka-band Emitter RF Requirements
GS-007	05) Booster Guidance Section	GS Ka-band Antenna Characteristics
BVICD-003	03) Ground Support System ICD	Booster Ka-band Antenna Characteristics
BVICD-003	03) Ground Support System ICD	Booster Ka-band Antenna Pattern
JPSS_0	04) Payload Specification	Payload Ka-band Data Transmission
JPSS_0	04) Payload Specification	Payload Ka-band Emitter Data Requirements

Allocating Requirements to an EIS

• Search by key words or requirement IDs
• Paste transposed column of requirement IDs for batch searches

1 Available Requirements: 279

☒ All Requirements ☐ By Assessment

Category Subcategory

2 Enter text to search... Find

Spec Name	Requirement Nu...	Name	Description	cat1	cat2	RN	Assigned Events
01) RCC-319	RCC-001	Flight Termination...	Ensure the flight...	Blk I	0	0	1
01) RCC-319	RCC-002	FTS Functional R...	Render each pro...	Blk I	0	0	1
01) RCC-319	RCC-003	FTS Functional R...	Terminate the fi...	Blk I	0	0	1
01) RCC-319	RCC-004	FTS Functional R...	Destroy the pres...	Blk I	0	0	1
01) RCC-319	RCC-005	FTS Functional R...	Disperse any liqu...	Blk I	0	0	1

3 Add Requirements

Assigned Requirements: 14

verid	Spec Name	Requirement N...	Name	Description	cat1	cat2	RN	Assigned Events
1064-GSS	03) Ground Su...	BVICD-012	Operating Fre...	Operating freq...	ICBM 1-4	0	0	4
1064-GSS	03) Ground Su...	BVICD-013	Impedance	The impedance...	ICBM 1-4	0	0	4
1064-GSS	03) Ground Su...	BVICD-014	Voltage Standi...	As mentioned ...	ICBM 1-4	0	0	5
1064-GSS	03) Ground Su...	BVICD-015	Power Capability	This capability i...	ICBM 1-4	0	0	2

Remove Requirements

Close

Legend:

Status
Met
Met
Met
Open
Open
Open
Open
Open
Open
Open
Open
Open

Link Requirements

Update Changes

Removing Requirements from an EIS

EventID:1064-GSS -Requirements

Available Requirements: 279

☒ All Requirements ☐ By Assessment

Category Subcategory

Drag a column header here

Enter text to search... Find

Spec Name	Req	cat1	cat2	RN	Assigned Events
01) RCC-319	RCC-001	Blk I	0	0	1
01) RCC-319	RCC-002	Blk I	0	0	1
01) RCC-319	RCC-003	Blk I	0	0	1
01) RCC-319	RCC-004	Blk I	0	0	1
01) RCC-319	RCC-005	Blk I	0	0	1

Add Requirements

Assigned Requirements: 14

Drag a column header here to group by that column

verid	Spec Name	Requirement N...	Name	Description	cat1	cat2	RN	Assigned Events
1064-GSS	03) Ground Su...	BVCD-012	Operating Fre...	Operating freq...	1-4	0	0	4
1064-GSS	03) Ground Su...	BVCD-013	Impedance	The impedance...	ICBM 1-4	0	0	4
1064-GSS	03) Ground Su...	BVCD-014	Voltage Standi...	As mentioned ...	ICBM 1-4	0	0	5
1064-GSS	03) Ground Su...	BVCD-015	Power Capability	This capability i...	ICBM 1-4	0	0	2

1

2

Remove Requirements

Close

Data Acquisition Requirements

Location Reservations Hardware / Software Reservations

Success Criteria

Legend:

Status
Met
Met
Met
Open
Open
Open
Open
Open
Open
Open
Open
Open

Link Requirements

Update Changes

CelerisSystemsSM

- Test/use cases are configured by the iRIS administrator
- Requirements in this list are linked to the test/use case

Requirement/Event Formal Tagging

Home Requirements **Verification** Reporting Help Logoff

Verification Events Event Integration Sheet Event Results

Event Integration Sheet 0-IMU IMU Mass Properties

Select Event:

Constraints	Open Issues	Predecessors / Successors	Resources	Technical Assumptions	Data Acquisition Requirements
Models And Simulations	Evidence for Closure	Hyperlinks	Comments / Supporting Information	Changes to Draft	Personnel / Location Reservations
Schedule	Objectives	Description	Responsibility Coordination	Requirements	Success Criteria

Legend:

Spec Name	Verification Result	Description	Status
09) Inertial Measurement Unit	IMU-013	Mass Properties	Met
02) System Specification	SYS-004	Seeker Cooldown Time	Open
02) System Specification	SYS-006	System Probability of Detection	Open
02) System Specification	SYS-010	Special Considerations for Electroexplosive Subsystem Exposure to RF Radiation.	Open
02) System Specification	SYS-013	System Ka-band Emitter Requirements	Open

Drag a column header

Assign as Final Verification

Right-click

iRIS Resource Coordination Module Overview

Test Plans & Procedures

Inventory Database

Test Configuration Diagrams

Master Resource List

- Labs/Facilities
- Personnel
- Hardware
- Software

Component	Owner	Controlling Document	LRT-2	Rehearsal	Pre-ctrl	C&I	Cape MRC	P-L CS	MDR	Launch
LOC Ops Center	LM		Full Cap	Full to Qual	Qual	Qual	Qual	Qual	Qual	Qual
LOS Servers	LM		Full Cap	Full to Qual	Qual	Qual	Qual	1.5	1.5	1.5
LOS SW-GCC			Full Cap	Full to Qual	Qual	Qual	Qual	1.5- Final	1.5- Final	1.5- Final
LOC DB-CML										
Upload Generation Tool (UGT)										
Exercise and Rehearsal Tool (ERTT)										
VPER										
GPS II HW								SV01	SV01	
Nuclear Detection System (NDS)										
LRA										
MDU PSW								V3.0	V3.0	
OBC PSW								V3.0	V3.0	
TGU PSW								V3.0	V3.0	
GPS System Simulator (GSYS)										
GPS Non-Flight Spacecraft Tie-In Tool (GST)	LM									
SABR Ground Control Center (GCC)	USAF		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

iRIS Inventory Module

- Managed by SE&I T&V
- Unique Resource IDs
- Resource Source Information
- Operational Status
- Usage Constraints

Reservations & Requests

SE&I T&V Event Defined

Event Owner Assigned

Test Site Identified

Lab/Facility

Personnel

Hardware

Software

iRIS Reservation Module

- Event Owner Reserves Resources
- Resource Reservation Start/End Dates
- Real time Conflict Notification
 - Event Owners De-conflict
- Resource Requests

Sample Resource Management Workflow

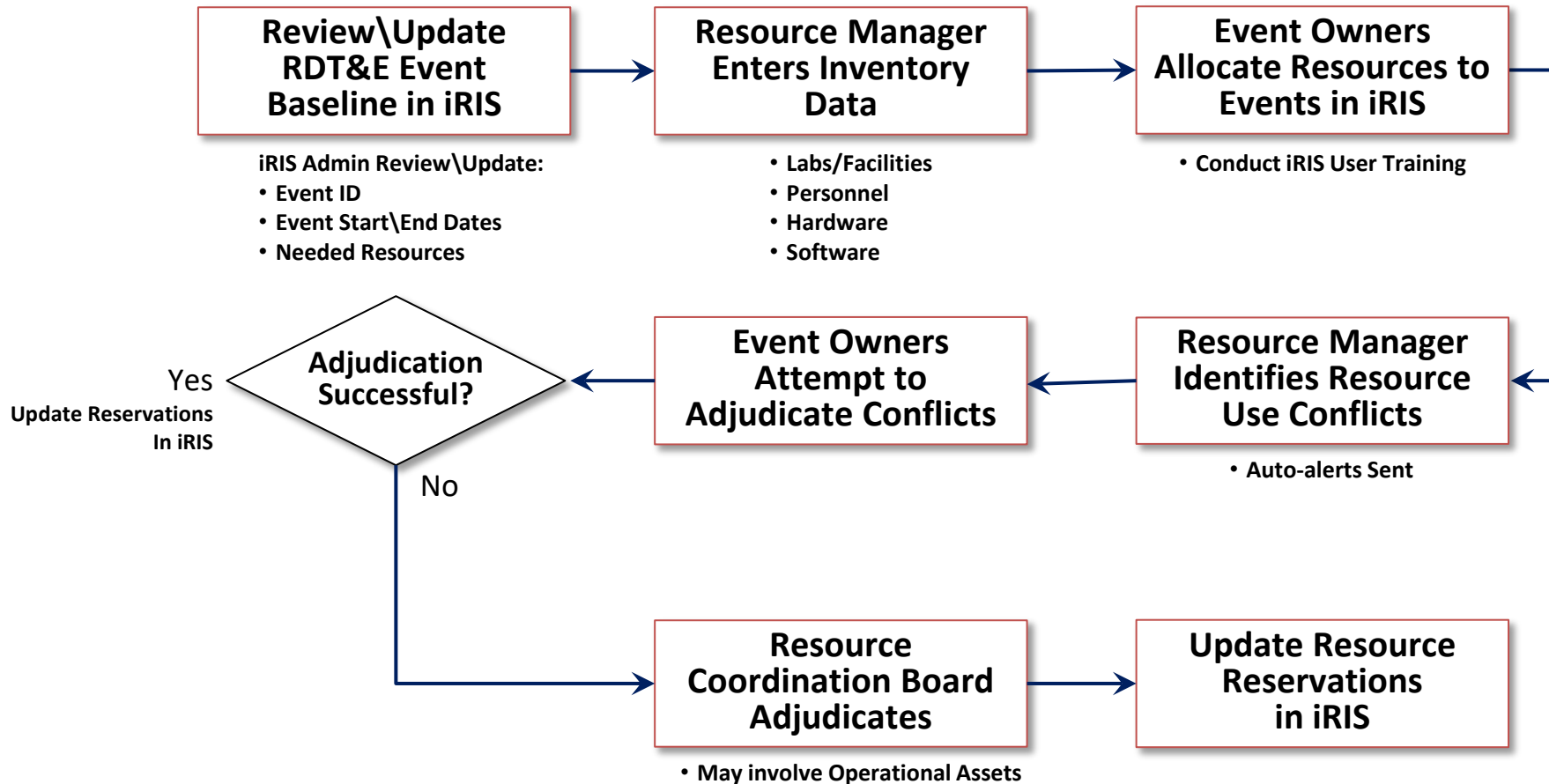
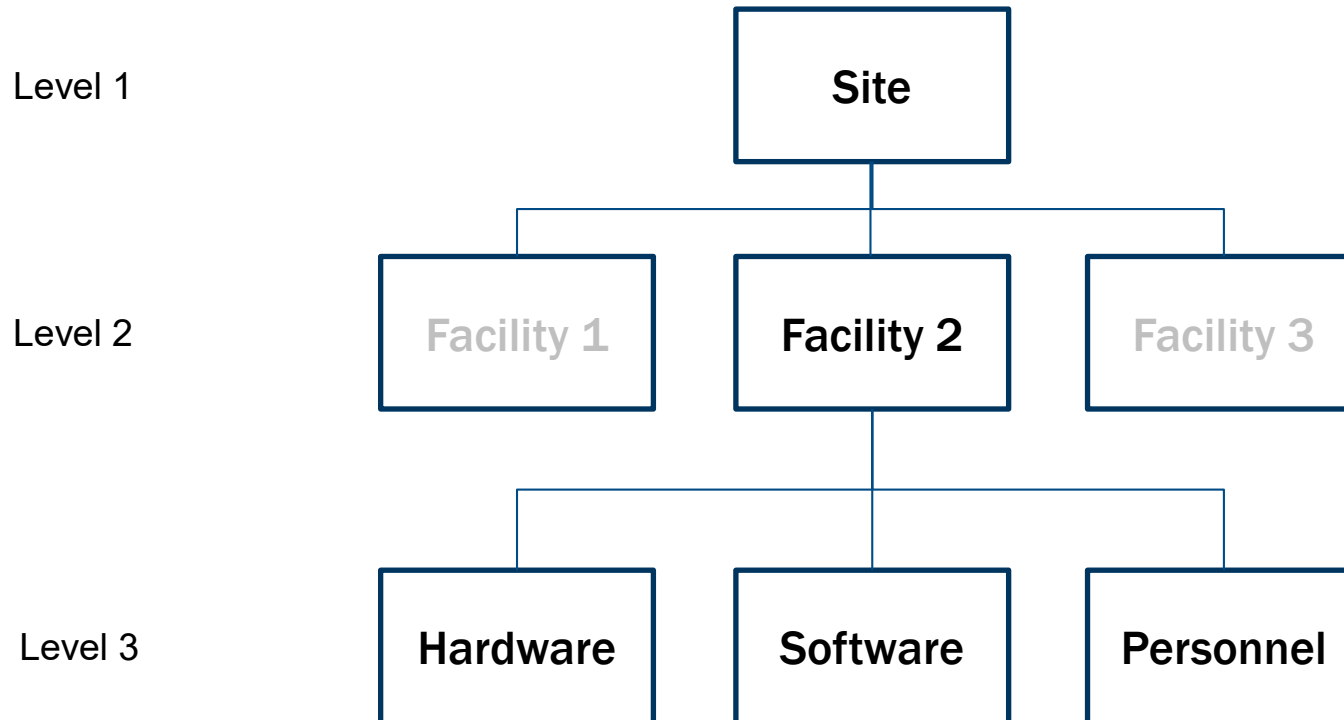


Figure 2. Generic RCM Workflow



Accessing Facilities Resource Module

Hello, Angel Martinez. Welcome to iRIS Version 5.2 Build: 287 - R

Home Administration Imports Deletions Program Requirements Cybersecurity Verification Hazards Reporting Help Logoff

Verification Events Event Integration Sheet Event Results Sites Facilities Hardware Software Personnel Asset Requests Batch Allocations

Facilities

Drag a column header here to group by that column

Building ID	Building Name	Warehouse	Facility	Address	Contact	Created By	Created Date	Modified By	Modified Date	Conflicts
Fac-000	HSVS: Antenna Test Facility	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Ray Delia	3/10/2022	Delia, Ray	3/10/2022	0
Fac-001	HSVS: Arc-Jet Testing Facility	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Ray Delia	3/9/2022	Delia, Ray	3/10/2022	0
Fac-002	HSVS: Audio Development Laboratory	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Ray Delia	3/9/2022	Delia, Ray	3/10/2022	0
Fac-003	HSVS: Communication Systems Simulation Laboratory (CSSL)	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Ray Delia	3/9/2022	Delia, Ray	3/10/2022	0
Fac-004	HSVS: Computational Electromagnetics Laboratory	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Ray Delia	3/10/2022	Delia, Ray	3/10/2022	0
Fac-005	HSVS: ESTA Battery Systems Test Facility	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Ray Delia	3/9/2022	Delia, Ray	3/10/2022	0
Fac-006	HSVS: ESTA Energy Systems Test Area	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Ray Delia	3/9/2022	Delia, Ray	3/10/2022	0
Fac-007	HSVS: ESTA Exploration Electrical Systems Testbed	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Ray Delia	3/10/2022	Delia, Ray	3/10/2022	0
Fac-008	HSVS: ESTA Fluid Systems Test Facility and Component Process...	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Ray Delia	3/10/2022	Delia, Ray	3/10/2022	0
Fac-009	HSVS: ESTA Pyrotechnics Test Facility	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Ray Delia	3/9/2022	Delia, Ray	3/10/2022	0
Fac-010	HSVS: ESTA Resource Conversion Test Facility	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Ray Delia	3/10/2022	Delia, Ray	3/10/2022	0
Fac-011	HSVS: ESTA Thermal-Vacuum Test Facility	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Ray Delia	3/9/2022	Delia, Ray	3/10/2022	0
Fac-012	HSVS: ESTL Electronic Systems Test Laboratory	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Ray Delia	3/9/2022	Delia, Ray	3/10/2022	0
Fac-013	HSVS: Materials Evaluation Laboratories	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Ray Delia	3/9/2022	Delia, Ray	3/10/2022	0
Fac-014	HSVS: Radiant Heat Testing	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Ray Delia	3/9/2022	Delia, Ray	3/10/2022	0
Fac-015	HSVS: Structures Test Laboratory	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Ray Delia	3/9/2022	Delia, Ray	3/10/2022	0
Fac-016	HSVS: Vibration & Acoustics Test Facility	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Ray Delia	3/9/2022	Delia, Ray	3/10/2022	0
Fac-017	FD: Active Response Gravity Offload System	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Ray Delia	3/10/2022	Delia, Ray	3/10/2022	0
Fac-018	FD: Advanced GN&C Development Laboratory	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Ray Delia	3/9/2022	Delia, Ray	3/10/2022	0
Fac-019	FD: Aerospace and Computational Fluid Dynamics Laboratory	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Ray Delia	3/9/2022	Delia, Ray	3/10/2022	0

Export Print Columns Best Fit Columns

New Resource New Reservation Edit Delete Close

Resources

Facilities Personnel Software Hardware

Editing an Existing Facilities Resource

Hello, Angel Martinez. Welcome to iRIS Version 5.2 Build: 287 - R

Home Administration Imports Deletions Program Requirements Cybersecurity Verification Hazards Reporting Help Logoff

Verification Events Event Integration Sheet Event Results Sites Facilities Hardware Software Personnel Asset Batch

Facilities

Drag a column header here to group by that column

Building ID	Building Name
Fac-000	HSV: Antenna Test Facility
Fac-001	HSV: Arc-Jet Testing Facility
Fac-002	HSV: Audio Development Lab
Fac-003	HSV: Communication System
Fac-004	HSV: Computational Electromagnetics Laboratory
Fac-005	HSV: ESTA Battery Systems
Fac-006	HSV: ESTA Energy Systems
Fac-007	HSV: ESTA Exploration Elect
Fac-008	HSV: ESTA Fluid Systems Test
Fac-009	HSV: ESTA Pyrotechnics Test
Fac-010	HSV: ESTA Resource Conver
Fac-011	HSV: ESTA Thermal-Vacuum
Fac-012	HSV: ESTL Electronic System
Fac-013	HSV: Materials Evaluation La
Fac-014	HSV: Radiant Heat Testing
Fac-015	HSV: Structures Test Labora
Fac-016	HSV: Vibration & Acoustics T
Fac-017	FD: Active Response Gravity
Fac-018	FD: Advanced GN&C Develop
Fac-019	FD: Aeroscience and Computa

Fac-004: HSVS: Computational Electromagnetics Laboratory

Buildings

BuildingID: Fac-004

Building Name: HSVS: Computational Electromagnetics Laboratory

Building Description:

Location of this Building Site: NASA Johnson Space Center

Address:

Contact:

Note: Used for full-wave, frequency domain electromagnetic simulations. Support Shuttle, ISS, Constellation, and commercial entities such as SpaceX and Orbital Sciences Corporation.

Modified Date: 3/10/2022 Facility ☒

Created Date: 3/10/2022

Warehouse ☐

User Operations

Save View History Save and Close Close

Export Print Columns Best Fit Columns

New Resource New Reservation Edit Delete Close

Resources

Facilities Personnel Software Hardware

Adding a New Facilities Resource

Home Administration Imports Deletions Program Requirements Cybersecurity Verification Hazards Reporting Help Logoff

Verification Events Event Integration Sheet Event Results

Facilities

Drag a column header here to get

Building ID	Building
Fac-000	HSVS:
Fac-001	HSVS:
Fac-002	HSVS:
Fac-003	HSVS:
Fac-004	HSVS:
Fac-005	HSVS:
Fac-006	HSVS:
Fac-007	HSVS:
Fac-008	HSVS:
Fac-009	HSVS:
Fac-010	HSVS:
Fac-011	HSVS:
Fac-012	HSVS:
Fac-013	HSVS:
Fac-014	HSVS:
Fac-015	HSVS:
Fac-016	HSVS:
Fac-017	FD: Ac
Fac-018	FD: Ac
Fac-019	FD: Ac

[[No Object ID Given]]: [[No Object Name Given]]

Buildings

BuildingID

Building Name

Building Description

Location of this Building Site:

Address

Contact

Note

Modified Date

Created Date 3/2

Warehouse

Facility

User Operations

Save View History Save and Close Close

Export Print Columns Best Fit Columns

New Resource New Reservation Edit Delete Close

Facilities Personnel Software Hardware

Editing an Existing Facility Reservation

The screenshot displays the CelerisSystems Facility Reservations interface. On the left, a list of facilities is shown, with 'Fac-053 IE: In-Space Propulsion Systems' selected. A blue box highlights the 'Expand icon' (a small square with a plus sign) next to this facility. A blue box also highlights the 'Double-click' instruction next to the 'Project-11-001' reservation in the 'Reservations' table. A grey arrow points from the 'Expand icon' to the 'Double-click' instruction.

The main window, titled 'Facility Reservations [[No Object ID Given]]: [[No Object Name Given]]', shows the details for the selected reservation. The 'Building Reservations' tab is active. The form includes fields for 'Reservation ID', 'UID', 'Reservation Name', 'Reservation Description', 'Resource Location' (Site: NASA Johnson Space Center), 'Contact', 'Start Date' (3/22/2022 4:37:24 AM), 'End Date' (3/22/2022 4:37:24 AM), 'Reserved By' (Ma), and 'Reserved Date' (3/2...). A 'Note' field is also present.

At the bottom, the 'User Operations' section contains buttons for 'Save', 'View History', 'Save and Close', and 'Close'. The 'Save' and 'Save and Close' buttons are highlighted with blue boxes. Below this, a row of buttons includes 'Export', 'Print', 'Columns', 'Best Fit Columns', 'New Resource', 'New Reservation', 'Edit', 'Delete', and 'Close'. The 'Edit' button is highlighted with a blue box.

Facility	Reservation	Verification Num	Event Lock	Event
Fac-052 IE: Human Space Environment Test Facility Space Station (ISS) Air...	Project-11-001		<input type="checkbox"/>	Propuls
Fac-053 IE: In-Space Propulsion Systems	Project-12-003		<input type="checkbox"/>	Propuls
	Project-11-003		<input type="checkbox"/>	Propuls

Adding a New Facility Reservation

Facility Reservations [[No Object ID Given]]: [[No Object Name Given]]

[[No Object ID Given]]: [[No Object Name Given]]

Building Reservations

Reservation ID UID

Reservation Name

Reservation Description

Resource Location Site: +

Location:

Contact

Event ID:

Forecast Date: Forecast End:

Start Date

End Date

Reserved By Reserved Date

Note

User Operations

Save View History Save and Close Close

New Reservation

Batch Reservations

Administration Imports Deletions Program Requirements Cybersecurity Verification Hazards Reporting Help Logoff

Event Integration Sheet Event Results Sites Facilities Hardware Software Personnel Asset Requests Batch Allocations

Resources

Batch Reservations

Batch Reservation Editor

Verifications

Verification Numb...	Title	EIS Devel...	Forecast ...	Forecast E...
1069-SYS	Range Missile Communic...	Mills, Ron	1/1/2022	2/19/2022
1070-SYS	Test Range Power-up T...	Hass, Andy	8/2/2021	11/1/2021
1071-SYS	Range Countdown Rehe...	Greco, G...	2/25/2022	3/22/2022
1072-SYS	Post-Mission Data Analy...	Greco, G...	11/14/20...	1/2/2022
Project-11-001	Propulsion System Physi...		3/16/2022	4/28/2022
Project-11-002	Propulsion System Initial...		3/16/2022	4/30/2022
Project-11-003	Propulsion System Comp...		8/17/2022	10/1/2022
Project-11-004	Propulsion System Perfo...		5/16/2022	6/30/2022
Project-11-005	Propulsion System Wear...		9/16/2022	10/31/2022
Project-11-006	Propulsion System Plasm...		7/16/2022	8/31/2022
Project-11-007	Propulsion System Struc...		8/16/2022	9/30/2022
Project-11-008	Propulsion Systems Test		9/16/2022	10/31/2022
Project-12-001	Thrust Vector Measurem...		4/15/2022	5/30/2022

Resource Type: ☐ Hardware ☐ Software ☐ Personnel ☒ Facilities

Resource ID	Resource Name
Fac-000	HSVS: Antenna Test Facility
Fac-001	HSVS: Arc-Jet Testing Facility
Fac-002	HSVS: Audio Development Laboratory
Fac-003	HSVS: Communication Systems Simulation Laboratory (CSSL)
Fac-004	HSVS: Computational Electromagnetics Laboratory
Fac-005	HSVS: ESTA Battery Systems Test Facility
Fac-006	HSVS: ESTA Energy Systems Test Area
Fac-007	HSVS: ESTA Exploration Electrical Systems Testbed
Fac-008	HSVS: ESTA Fluid Systems Test Facility and Component Processing Facility

Start Date: 8/17/2022 9:10:00 AM

End Date: 10/1/2022 9:10:00 AM

Add Reservations

Assigned Resource Reservations

Resource ID	Resource Name	Verification Num...	Event Locked	Event Name	Event Owner	Start Date	End Date	Conflicts
Fac-053	IE: In-Space Propulsion Systems	Project-11-003	<input type="checkbox"/>	Propulsion Syste...		8/17/2022	10/1/2022	0

Delete Reservations

Close

EIS Resource Reservations

The screenshot displays the Celeris Systems EIS Resource Reservations interface. The main window has a menu bar with options: Home, Administration, Imports, Deletions, Program, Requirements, Cybersecurity, Verification, Hazards, Reporting, Help, and Logoff. Below the menu is a sidebar with a tree view showing a list of hardware resources (HW-001 to HW-011). The main area shows a table of hardware resources with columns for Hardware ID, Hardware Name, and Conflicts. The table lists several resources, including HW-001 (I-Ka-band Ground Terminal Interface Emulator), HW-016 (3DOF Simulator), HW-005 (Booster Interface Emulator test Unit), and HW-047 (BV 3rd stage test adapter assy). A red arrow points to the 'BV 3rd stage test adapter assy' resource in the table, labeled '2 Select Item'. A modal window titled 'Hardware Reservation' is open, showing a form for creating a reservation. The form includes fields for Reservation ID, UID, Reservation Name, Reservation Description, Hardware Resource (set to 'BV 3rd stage test adapter assy'), Resource Location, Event ID, Start Date, End Date, Reserved Date, Contact, Hours, Note, Created By (Dunn, Joe), and Modified By. A red arrow points to the 'Add Hardware Reservation' button in the sidebar, labeled '1'. The modal window also has a 'User Operations' section with buttons for Save, View History, Save and Close, and Close. A red arrow points to the 'Save' button, labeled '4'. A red arrow points to the 'Add Hardware Reservation' button, labeled '3 Fill out reservation form'. The sidebar also contains buttons for 'Add Software Reservation' and 'Add Hardware Reservation'. The bottom of the window has an 'Update Changes' button.

Hardware ID	Hardware Name	Conflicts
HW-001	I-Ka-band Ground Terminal Interface Emulator	6
HW-016	3DOF Simulator	2
HW-005	Booster Interface Emulator test Unit	0
	BV 3rd stage test adapter assy	0
	BV ground I/F test emulator	0
	C2 System I/F emulator	0

Hardware Reservation Form Fields:

- Reservation ID:
- UID:
- Reservation Name:
- Reservation Description:
- Hardware Resource: BV 3rd stage test adapter assy
- Resource Location:
- Event ID:
- Start Date: 11/24/2020 5:34:15 PM
- End Date: 11/24/2020 5:34:15 PM
- Reserved Date: 11/24/202...
- Contact:
- Hours:
- Note:
- Created By: Dunn, Joe
- Modified By:

User Operations:

- Save
- View History
- Save and Close
- Close

Working with Gantt Views

Event IDs

Click on an Event to edit it.

Drag a column header

2

- Gantt views are configured by the iRIS administrator
- Select view from list

3

Open

1

GanttView

File

Caption	Forecast Date
All Events	11/24/2020 5:46:03 PM
IMU End-to-End Test	9/18/2019 8:00:00 AM
IMU Design and Construction	9/22/2019 8:00:00 AM
IMU Load Dynamics Test	10/20/2019 8:00:00 AM
IMU Reliability Analysis	10/21/2019 8:00:00 AM
Battery Load Deflection	11/8/2019 8:00:00 AM
Battery Design and Construction	11/27/2019 8:00:00 AM
Battery Mass Properties	11/30/2019 8:00:00 AM
Battery Reliability Analysis	12/1/2019 8:00:00 AM
Battery Load Dynamics Test	12/9/2019 8:00:00 AM
Battery End-to-End Test	12/10/2019 8:00:00 AM
IMU Load Deflection	1/20/2020 8:00:00 AM
Booster Thermal Test	2/7/2020 8:00:00 AM
FTS Reliability Analysis	2/10/2020 8:00:00 AM
FTS Mass Properties	2/11/2020 8:00:00 AM
FTS Design and Construction	2/14/2020 8:00:00 AM
FTS Electrical Interface Test	2/26/2020 8:00:00 AM
FTS Load Deflection	2/29/2020 8:00:00 AM
Trajectory Analysis	3/10/2020 8:00:00 AM

September 1, 2019 - June

2019

Q3 Q4

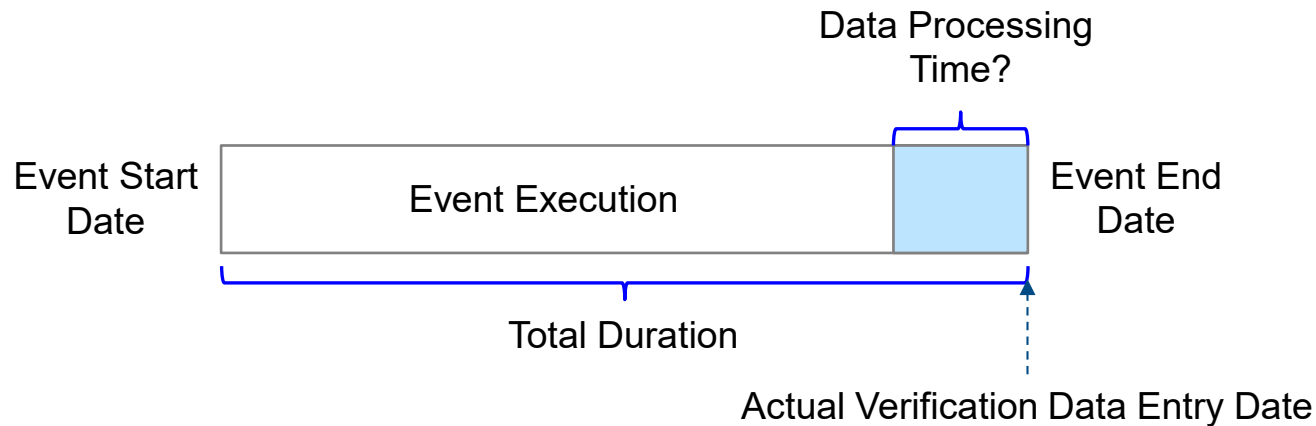
Sept... October Nove...

• Event dates are the iRIS forecast dates

• Event owners can modify dates in this interface

1005-IM... 1001-IM... 1004-IM... 1003-IM... 1008-Bat... 1007-Bat... 1006-Bat... 1009-Bat... 1010-Bat... 1011-Batt - 100% 1002-IM... 1021-S1BST - 100% 1015-FT... 1012-FT... 1013-FT... 1016-FT... 1014-FT... 1026-S1...

Plan/Forecast Dates



**iRIS Plots Time-phased Requirement Verification Metrics Based on the Actual day the Verification Data is Entered so Make Sure Plan/Forecast End Dates Factor in Data Processing Time:
Done = All Requirements Dispositioned**

Event Locking

Event IDs

Click on an Event to edit it.

Drag a column header here to group by that column

Locked	Configuration Item	Verification Number	Title
<input checked="" type="checkbox"/>	FTV-1	1000-IMU	
<input type="checkbox"/>	FTV-1	1001-IMU	
<input type="checkbox"/>	FTV-1	1002-IMU	
<input type="checkbox"/>	FTV-1	1003-IMU	
<input type="checkbox"/>	FTV-1	1004-IMU	
<input type="checkbox"/>	FTV-1	1005-IMU	
<input type="checkbox"/>	FTV-1	1006-Batt	
<input type="checkbox"/>	FTV-1	1007-Batt	
<input type="checkbox"/>	FTV-1	1008-Batt	
<input type="checkbox"/>	FTV-1	1009-Batt	
<input type="checkbox"/>	FTV-1	1010-Batt	
<input type="checkbox"/>	FTV-1	1011-Batt	

Print Export

Event Integration Sheet

Find an EIS Number:
1000-IMU IMU Mass Properties

Event Schedule
Objectives
Event Description
Event Responsibility Coordination
Requirements
Success Criteria
Constraints
Open Items
Predecessors / Successors
Event Resources
Technical Assumptions
Event Data Acquisition Requirements
Models And Simulations
Evidence For Closure
Hyperlinks
Comments / Supporting Information
Changes to Draft

Event Change Proposal

New Disposition History

Select an Item

- Planned Schedule
- Forecast Schedule
- Primary Objectives
- Secondary Objectives
- Verification Method
- Summary Description
- Detailed Description
- Event Configuration Description
- Event responsibility/coordination
- Event Conductor
- EIS Developer
- Responsible SE
- Responsible Team
- Prime Team Members
- Customer / Stakeholder Team M
- Allocated Requirements
- Event Success Criteria
- Event Constraints

Proposed By: Joe Dunn
When: Today: Tuesday, 11/24/2020 at 05:57 PM

Proposed Change

Rationale

Note

Save

Close

Create a Change Request

• All users can propose changes which get dispositioned and tracked for each change requested

• iRIS admin locks events by direction from EIS owners

Event Integration Sheet

Find an EIS Number:
1000-IMU IMU Mass Properties Select an EIS: 1000-IMU Sign Off:

Event Schedule
Objectives
Event Description
Event Responsibility Coordination
Requirements
Success Criteria
Constraints
Open Items
Predecessors / Successors
Event Resources
Technical Assumptions
Event Data Acquisition Requirements
Models And Simulations

Drag a column header here to group by that column

ECS Signatures

Signatures

1000-IMU

Event Developer EIS Approval:

Sign Off

Customer EIS Approval:

Sign Off

Event Conductor EIS Approval:

Sign Off

?

Close

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