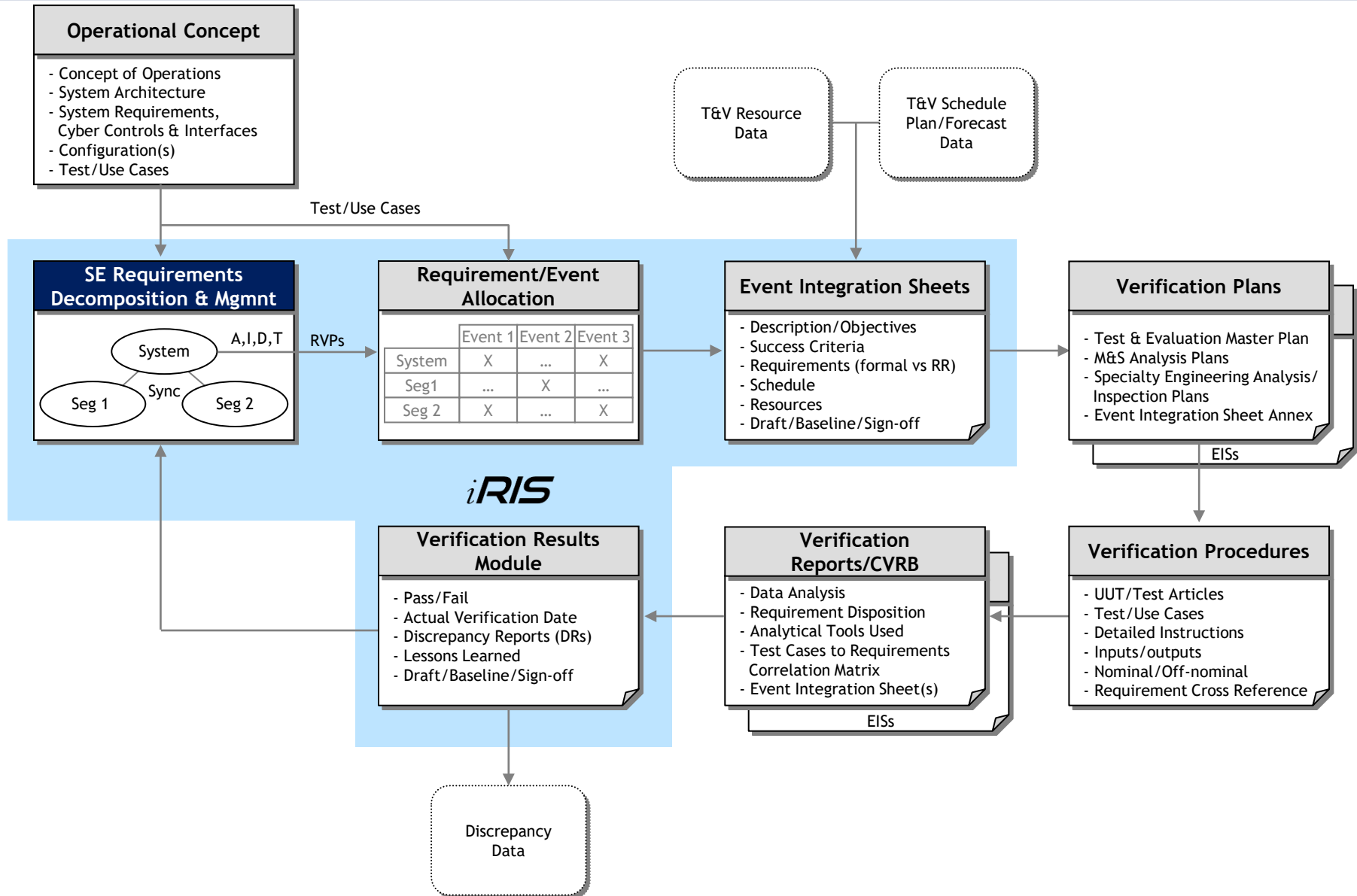




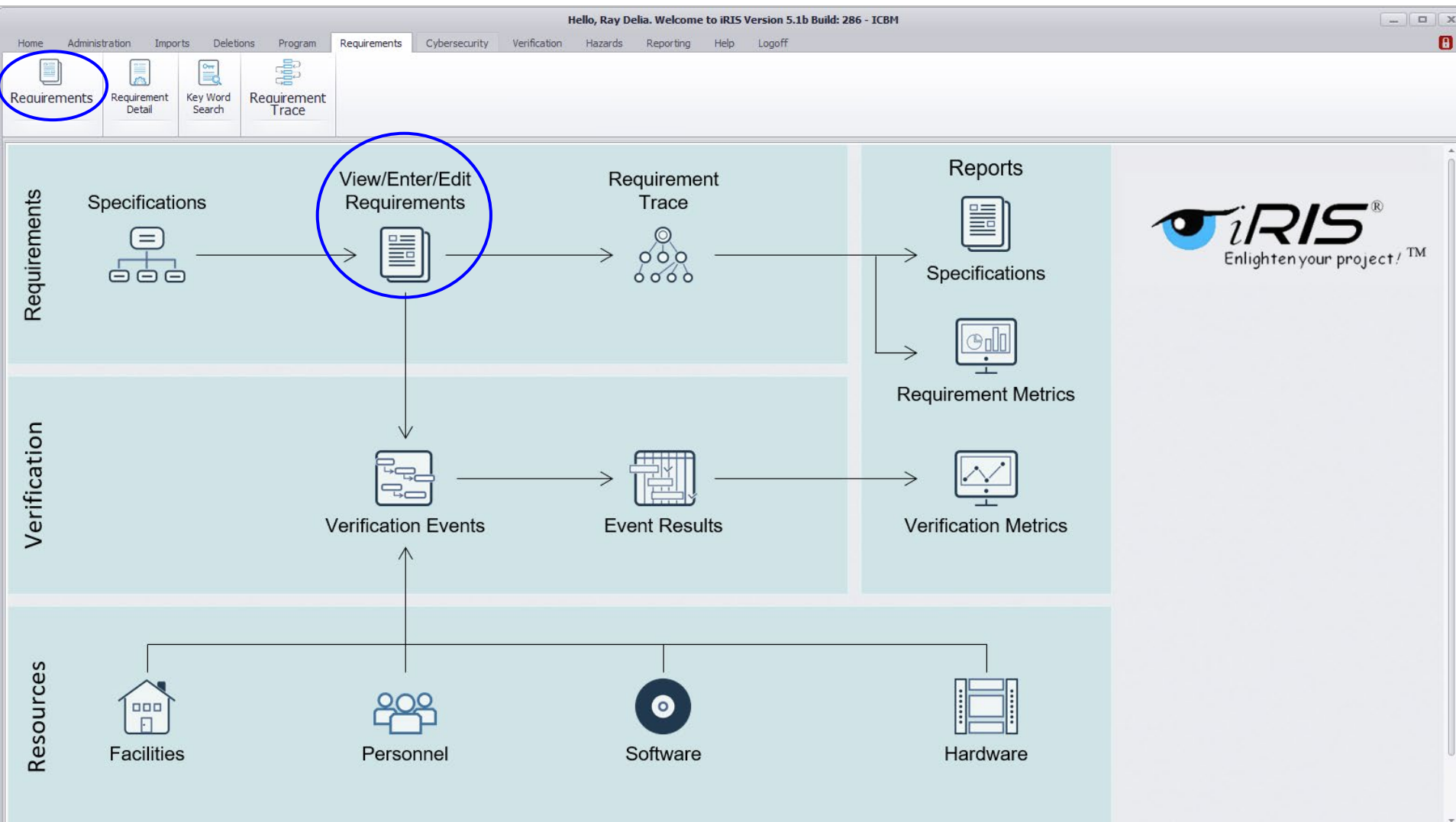
Module 2: Requirements Management

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Requirements Management in the Systems Engineering Workflow



Entering the Requirements Workspace



Requirements List View

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

Requirements Requirement Detail Key Word Search Requirement Trace

Requirements
Specification: 07 Rocket Motor Specification

Drag a column header here to group by that column

Requirement Number	Name	Description	Verification Method
BST-022	Booster Secure Data Transmission	The system data transmission shall comply with the NIST 8500 requirements.	Analysis; Inspection; Demo;
BST1-001	Probability of First Stage Successful Operation	Probability of booster successful operation shall be > X.XXXX	Test
BST1-002	Booster TVC Performance	The Thrust Vector Control of the booster SRM shall a probability of maintaining control of the vehicle from lift-off through 1st stage/ 2nd stage separation in the most stressing natural and induced environments of > X.X.XXXX	Test
BST1-003	Booster Backwards Compatibility	The Boosters shall maintain full backwards compatibility to the legacy KV.	Test
BST1-004	Probability of Solid Rocket Motor Ignition	The booster shall have a probability of ignitor/ SRM ignition of > X.XXX	Test
BST1-005	Booster Acceleration Profile	The Probability the booster will have achieved the Acceleration Profile required to meet the BV separation uncertainty volume and rates shall be > X.XXX	Test
BST1-006	Booster RF Emitter General Design Requirements	Where necessary, safety devices shall be provided to protect operating personnel and exposed initiators during ground operations	Test
BST1-007	Booster RF Emitter Design Requirements	is installed, erected, relocated, or modified without site plan approval from Range Safety and the RPO.	Analysis
BST1-008	Booster RF Emitter Design Requirements	shall be incorporated so that inadvertent operation of any hazardous RF emitting system is prevented.	Analysis
BST1-009	Booster RF Emitter Design Requirements	probability of placing the KV into a defined position and velocity basket at time of KV separation of > X.XXX	Analysis
BST1-010	Booster Special Considerations for Electroexplosive Subsystem Exposure to RF Radiation.	The booster RF power at the EED shall not exceed 20 dB below the pin-to-pin direct current (DC) no-fire power of EED.	Analysis
BST1-011	Probability of Successful Thrust Vector Control	With the redesign of the 1st stage SRM propellant, the probability of Thrust vector control of 1st stage SRM shall be > X.xxxx	Analysis
BST1-012	Booster Burnout Accuracy SEP	The booster Burnout Accuracy SEP shall be < X meters cross axis and Y Y meters along the long axis for the mass properties defined in table X.X	Analysis
BST1-013	Booster Reliability	The booster shall have an overall reliability of > x.X.XXXX	Analysis
BST1-014	Booster Sustained	ant wooden capability of > XX years	Inspection
BST1-015	Stage 1 Booster Initial Test Review	be submitted to Range Safety for review and approval.	Inspection
BST1-016	Booster RF Emitter Requirements	be submitted to Range Safety.	Inspection
BST1-017	Booster RF Emitter Requirements	to Range Safety and the RPO for all ground-based RF transmitters. See Attachment 1, A1.2.4.10.2.1 of this volume for content	Inspection
BST1-018	Booster RF Emitter Design and Test Data	The Booster RF emitter design and test data requirements shall be submitted in accordance with Attachment 1, A1.2.4.10.2.2 of this volume.	Inspection
BST1-019	Booster Laser System Design	The Booster Laser systems shall be designed to ensure that personnel are not exposed to hazardous emissions in accordance with the requirements of ANSI Z136.1, Safe Use of Lasers, 21 CFR 1040, Performance Standards for Light Emitting Diodes, and 45 CFR 49.201 and 49.129. Procedures for Operation Involving Non-Tested Devices and 49.129, as applicable.	Demonstration

Export Print New Requirement Columns Go to Detail Form

Enter text to search... Find

Double-click anywhere in the row to see requirement details

Right-click to add parent or child relationship

Data in this view can be exported to Microsoft Excel

Click to insert additional requirement attributes as columns

Navigate specifications by selecting from the drop-down menu

Right-click in the column header to sort, filter, group items in that column

Enter search strings here

Requirements File Cabinet

Click to return to list view

Double-click to view proposed and approved changes

Requirement: BST1-008 : Booster RF Emitter General Design Requirements

General TPM Note Source Functions Measure Issues Risks Analysis Hyperlinks Changes Comments Misc. RVP

Requirement Number: Requirement Name: ☐ Publish Only External ID:

Description:

Type: Effectivity: Cyber/IA: CTP: TPM/KPP: EA:

Specification: Paragraph Number: Specification Owners: Critical To System Verification:

Verification Method: ☒ Analysis ☐ Inspection ☐ Demo ☐ Special Method ☐ Test

Parents:

Children:

Name:

Description:

Events:

Drag a column header here to group by that column

Verification Number	Title	Forecast Date	Status
1024-S1BST	Booster Reliability Analysis	9/20/2020	Met

Legend:

Double-click to navigate to the verification event

Right-click to navigate to verification results

Key Word Search & Parent/Child Trace View

- Searches across the entire requirements database
- Double-click on the requirement number to open the requirement in the Requirement Detail form

Requirement Contextual Search

293 / 293 : Visible / Row Count.

Key word search

Enter search strings here

Enter text to search... Find

Requirement Number	Name	Description
RCC-001	Flight Termination Dispersion	Ensure the flight-terminated vehicle's debris impact, resulting from residual lift or drift under worst-case wind conditions, will not endanger any protected area. When termination is initiated, it shall be irrevocable.
RCC-002	FTS Functional Requirements/2	Render each propulsion system that has the capability of reaching a protected area incapable of propulsion. This includes each stage and any strap-on motor or propulsion system that is part of any payload.
RCC-003	FTS Functional Requirements/3	Terminate the flight of any inadvertently or prematurely separated propulsion system capable of reaching a protected area.
RCC-004	FTS Functional Requirements/4	Destroy the pressure integrity of any solid-propellant system and terminate all thrust or ensure that any residual thrust causes the propulsion system to tumble without significant lateral or longitudinal deviation in the impact point.
RCC-005	FTS Functional Requirements/5	Disperse any liquid propellant, whether by rupturing the propellant tank or other equivalent method. Shutdown and/or parachute systems may be used in lieu of rupturing propellant tanks if the risk posed by an intact impact is acceptable. Acceptability of shutdown-only systems will be range- and vehicle-dependent.
RCC-006	FTS Functional Requirements/6	Result in aerodynamic control surface manipulation that makes a vehicle unable to glide or auto-rotate. These types of termination systems shall demonstrate that any residual lift or drift under worst-case wind conditions will not result in the flight-terminated vehicle endangering any protected area.
RCC-007	FTS Functional Requirements/7	The FTS terminate action shall not detonate solid or liquid propellant.
RCC-008	FTS Functional Requirements/8	The termination action shall ensure that solid rocket motor propellant is fractured into small enough fragments to prevent unacceptable personnel risks due to blast effects upon ground detonation.
RCC-009	FTS Functional Requirements/9	For multiple-stage vehicles, the flight termination of one propulsion system shall not interfere with the flight termination of any other propulsion system.
RCC-010	FTS Functional	An FTS determination analysis shall be performed for payloads and upper stages of expendable launch vehicles during ascent. It will determine whether an

☐ Keep list open after selection.

Refresh Export

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Requirements Requirement Detail Key Word Search Requirement Trace

Enter search strings here

Requirement trace

Enter text to search...

Requirement Number	Spec Name	Name	Description
SYS-002	02) System Specification	Field Terminal Data Transmission	The system shall be capable of transmitting Direct Broadcast (DB) data products to field terminals.
SYS-013	02) System Specification	System Ka-band Emitter Requirements	All RF emitters shall have their RF hazard area verified by the RPO or a designated representative before the first operation and/or test.
SYS-014	02) System Specification	System Ka-band Emitter Requirements	Safety features shall be tested and verified by the Range User before coming to the ranges.
SYS-015	02) System Specification	System Ka-band Emitter Requirements	Test plans shall be submitted to Range Safety for review and approval.
SYS-017	02) System Specification	System Ka-band Emitter RF Requirements	Site plans shall be submitted to Range Safety and the RPO for all ground-based RF transmitters. See Attachment 1, A1.2.4.10.2.1 of this volume for site
GS-006	05) Booster Guidance Section	First Stage Battery Power	The First Stage Battery shall be capable of supplying 8W, max.
GS-007	05) Booster Guidance Section	GS Ka-band Antenna Characteristics	The main electrical (radio frequency) parameters to consider in an antenna are listed below. In addition to these parameters there are other important
BVICD-011	03) Ground Support System ICD	Booster Ka-band Antenna Characteristics	The main electrical (radio frequency) parameters to consider in an antenna are listed below. In addition to these parameters there are other important
BVICD-018	03) Ground Support System ICD	Booster Ka-band Antenna Pattern	Ka-band transmit antenna gain values (from the antenna pattern) vary due to deformities in the body (shape, wings, etc.) of the vehicle. A polar plot of
JPSS_009	04) Payload Specification	Payload Ka-band Data Transmission	JPSS shall provide Ka-band stored mission and telemetry data transmission from the satellite to the ground acquisition sites.
JPSS_013	04) Payload Specification	Payload Ka-band Emitter Data Requirements	The JPSS shall provide command, real-time and stored mission and telemetry data transmission to the Ka-band terminal.

Creating/Editing Requirements

The screenshot displays the Celeris Systems Requirements Management software interface. The main window is titled 'Requirement: New' and contains several tabs: General, TPM, Note, Source, Functions, Measure, Issues, Risks, Analysis, Hyperlinks, Changes, Comments, and Misc. The 'General' tab is active, showing fields for Requirement Number, Requirement Name, Specification, Paragraph Number, Specification Owners, Critical To System Verification, and Verification Method. The 'Verification Method' dropdown is set to 'Test'. The 'Requirement Number' field is marked with a blue asterisk, indicating it is a required field. The 'Requirement Name' field is also marked with a blue asterisk. The 'Specification' dropdown is set to '07) Rocket Motor Specification'. The 'Paragraph Number' field is empty. The 'Specification Owners' field lists 'Angel Martinez' and 'Ray Delia'. The 'Critical To System Verification' checkbox is checked. The 'Verification Method' dropdown is set to 'Test'. The 'Requirement: New' dialog box is overlaid on the main window. It contains a 'Description' field, a 'Type' dropdown, 'Effectivity', 'Cyber/IA', 'CTP', 'TPM/KPP', and 'EA' dropdowns. The 'Description' field is marked with a blue asterisk. The 'Type' dropdown is set to 'Analysis'. The 'Effectivity' dropdown is set to 'Inspection'. The 'Cyber/IA' dropdown is set to 'Analysis'. The 'CTP' dropdown is set to 'Analysis'. The 'TPM/KPP' dropdown is set to 'Analysis'. The 'EA' dropdown is set to 'Analysis'. The 'Requirement: New' dialog box also has a 'Parents' section with 'Children' and 'Name' fields. The 'Children' field is empty. The 'Name' field is empty. The 'Description' field is empty. The 'Add/Edit Relationship(s)...' button is located below the 'Description' field. The 'Events' section is empty. The 'Legend' section is empty. The 'Requirement: New' dialog box has a 'Save Entry' button, a 'Comment' button, a 'Propose Change' button, and a 'Close' button. The 'Propose Change' button is highlighted with a red arrow. The main window shows a list of requirements on the left side. The list has columns for 'Requirement Number' and 'Name'. The requirements listed are: BST-003, BST-005, BST-006, BST-007, BST-008, BST-009, BST-010, BST-011, BST-012, BST-013, BST-014, BST-015, BST-016, BST-017, BST-018, and BST-019. The 'Name' column contains descriptions of the requirements. The 'Requirement: New' dialog box is overlaid on the main window. It contains a 'Description' field, a 'Type' dropdown, 'Effectivity', 'Cyber/IA', 'CTP', 'TPM/KPP', and 'EA' dropdowns. The 'Description' field is marked with a blue asterisk. The 'Type' dropdown is set to 'Analysis'. The 'Effectivity' dropdown is set to 'Inspection'. The 'Cyber/IA' dropdown is set to 'Analysis'. The 'CTP' dropdown is set to 'Analysis'. The 'TPM/KPP' dropdown is set to 'Analysis'. The 'EA' dropdown is set to 'Analysis'. The 'Requirement: New' dialog box also has a 'Parents' section with 'Children' and 'Name' fields. The 'Children' field is empty. The 'Name' field is empty. The 'Description' field is empty. The 'Add/Edit Relationship(s)...' button is located below the 'Description' field. The 'Events' section is empty. The 'Legend' section is empty. The 'Requirement: New' dialog box has a 'Save Entry' button, a 'Comment' button, a 'Propose Change' button, and a 'Close' button. The 'Propose Change' button is highlighted with a red arrow. The main window shows a list of requirements on the left side. The list has columns for 'Requirement Number' and 'Name'. The requirements listed are: BST-003, BST-005, BST-006, BST-007, BST-008, BST-009, BST-010, BST-011, BST-012, BST-013, BST-014, BST-015, BST-016, BST-017, BST-018, and BST-019. The 'Name' column contains descriptions of the requirements.

Requirements can also be edited in this form if the spec is unlocked

Requirement: New

* - Required Fields

General | TPM | Note | Source | Functions | Measure | Issues | Risks | Analysis | Hyperlinks | Changes | Comments | Misc.

Requirement Number: * [] Requirement Name: * [] ☐ Publish Only External ID: []

* Description: []

Type: * []

Effectivity []

Cyber/IA []

CTP []

TPM/KPP []

EA []

Specification: 07) Rocket Motor Specification

Paragraph Number: []

Specification Owners: Angel Martinez, Ray Delia

Critical To System Verification: ☒

* Verification Method: ☐ Analysis, ☐ Inspection, ☐ Demo, ☐ Special Method, ☒ Test

Parents: [] Children: [] Name: []

Description: []

Add/Edit Relationship(s)...

Events: []

Legend: []

? Save Entry Comment Propose Change Close

Export Print New Requirement Columns Go to Detail Form