



WEBINAR

# Launch Your Aerospace & Defense Product Development Processes with Jama Connect®

# Agenda

## AEROSPACE & DEFENSE SOLUTIONS

- Overview of the Airborne Systems Solution
- What's new in the January 2023 release
  - Cybersecurity – Safety – CFR Library
- Space and Defense Dataset Additions
- European Cooperate with Space Standards (ECSS) Library
- US Space Command Range Safety Library
- DIDs Library



# Introduction

## AIRBORNE SYSTEMS SOLUTION

The Jama Connect Airborne Systems Solution is a complete set of frameworks, example projects, and procedural documentation intended to accelerate the implementation of Jama Connect for organizations developing airborne systems and components.

Organizations utilize the Airborne Systems Solution to start teams working in Jama Connect with zero setup and configuration time or work with a Jama Consultant to tailor the solution to meet your company's specific business needs.

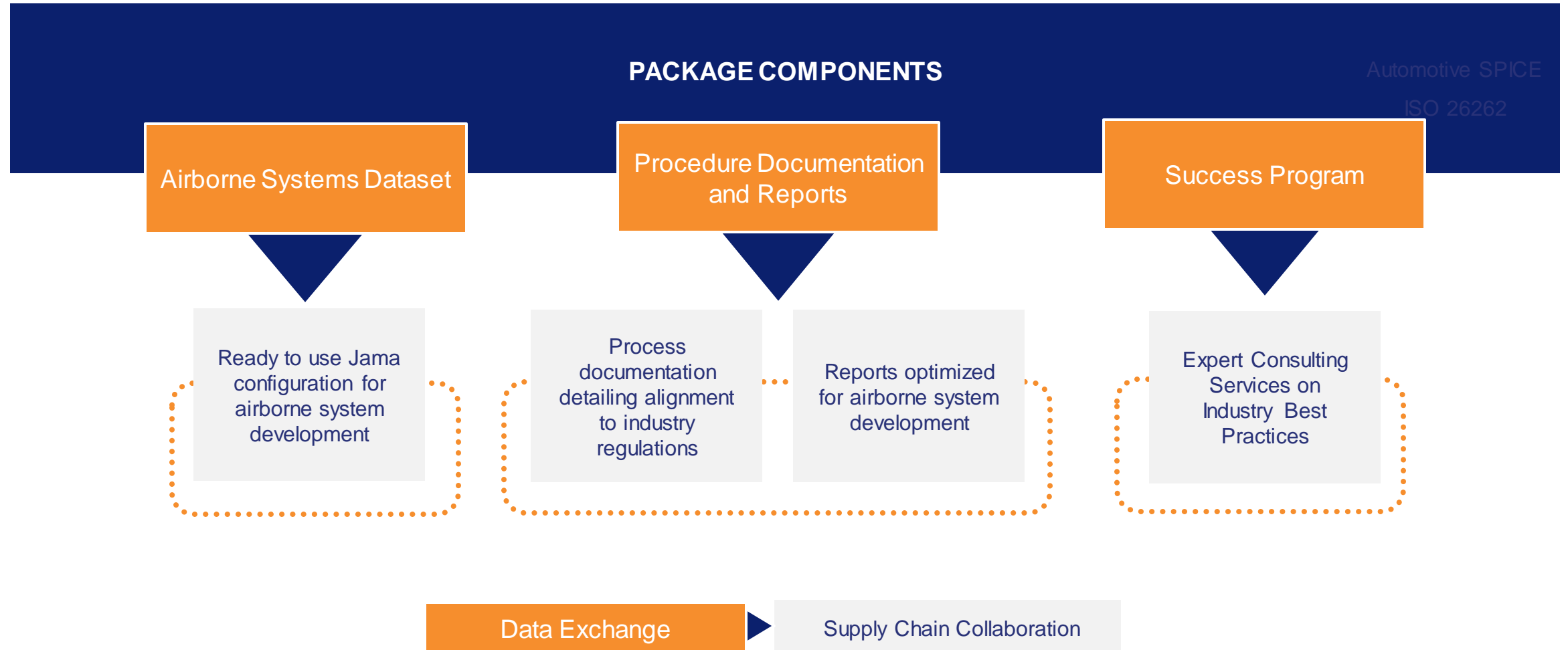
# Benefits

## AIRBORNE SYSTEMS SOLUTION

- **Eases the path to regulatory compliance by helping engineers:**
  - Understand compliance status and progress in the context of engineering information, people, and decisions to increase confidence in safety and security.
  - Create compliance evidence as a byproduct of daily work.
  - Reuse certified requirements and related data to accelerate new product development.
- **Increase confidence and decrease time to value** with an established scope and direct alignment of requirements
- **Reduce deployment time for new clients** with pre-defined configuration, export templates, and reports
- **Reduce training and adoption time** to new standards like ARP4754A/DO-178C/DO-254/ARP4761A for new engineers

# Solution Components

## AIRBORNE 2.0 SYSTEMS SOLUTION

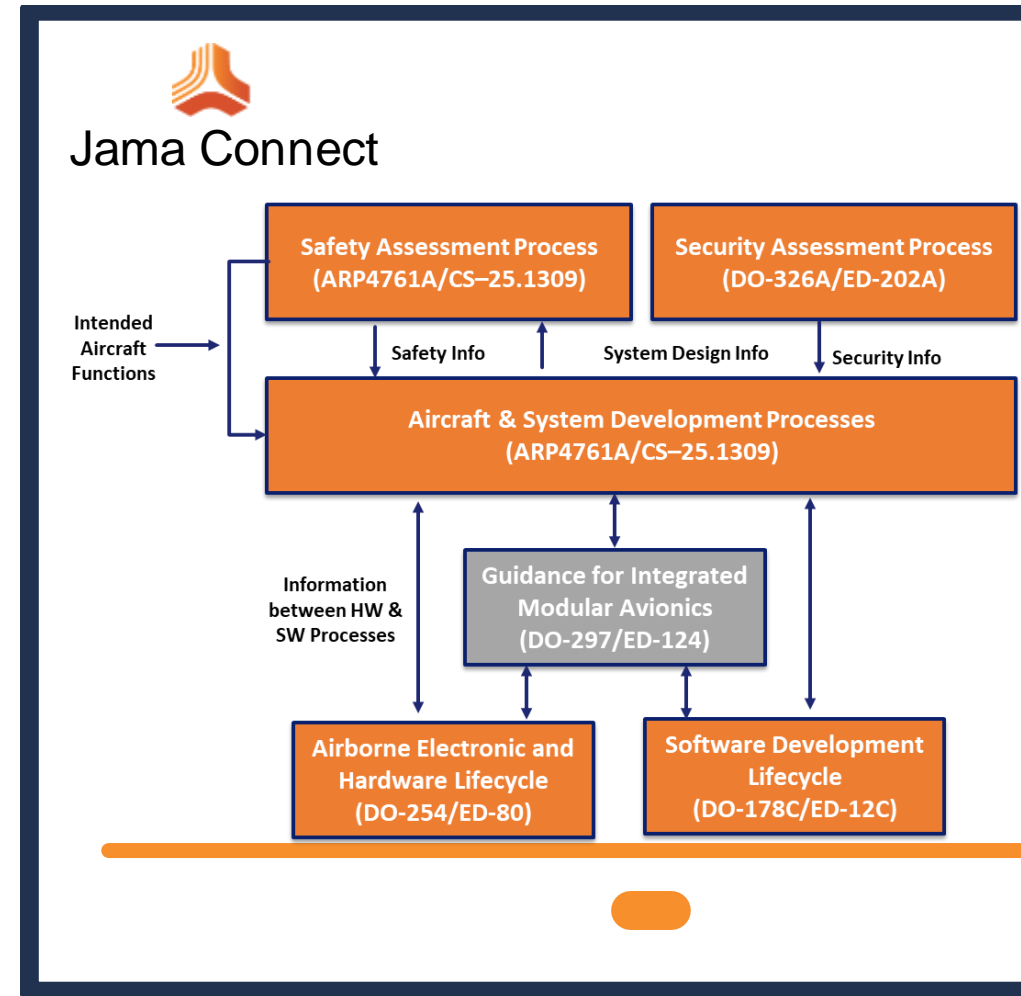


# Accelerate Development

WITH OUT-OF-THE-BOX CONFIGURATION

## The Airborne Systems 2.0 Framework includes:

- Support for ARP4754A/DO-178C/DO-254/ARP4761A/DO-326A
- Configured Item Types, Pick Lists and Views
- Relationship Rules aligned to Trace Matrix needs
- Workflows guiding review & approval
- Libraries of Standards – CFR Parts 21-59
- Includes document export templates for producing requirements specifications, test reports, risk analysis reports and more.



# Procedures Guide

- Identifies which processes and requirements of ARP4754, ARP4761, DO-178C, DO-254, DO-326A are best implemented in Jama Connect
- For each process and requirement, a procedure using Jama Connect is detailed
- Free updates to the guide are included with the solution



**for Airborne Systems**  
Procedure Guide  
January 2023

# Configuration & Update Guide

- Detailed description of the framework in the dataset
- Detailed description for each item type, relationship rule, and workflow in the dataset
- Makes it easier to track changes over time
- Allows existing customers to implement the same item types and data models that are in the updated dataset



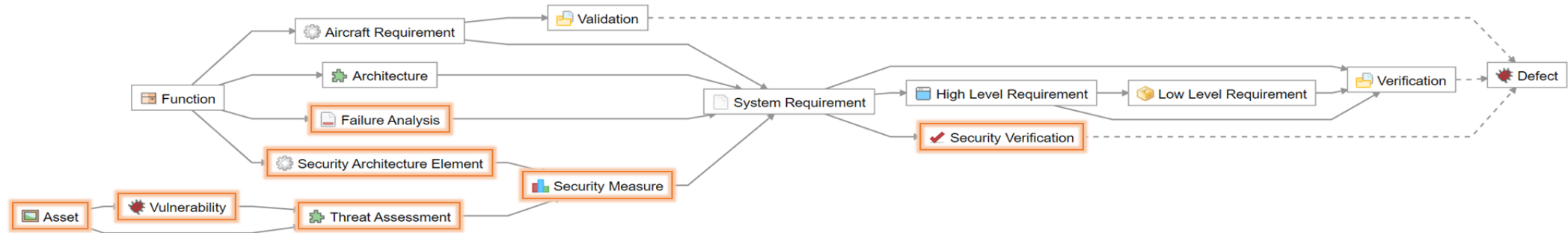
**for Airborne Systems**  
Configuration & Update Guide  
January 2023



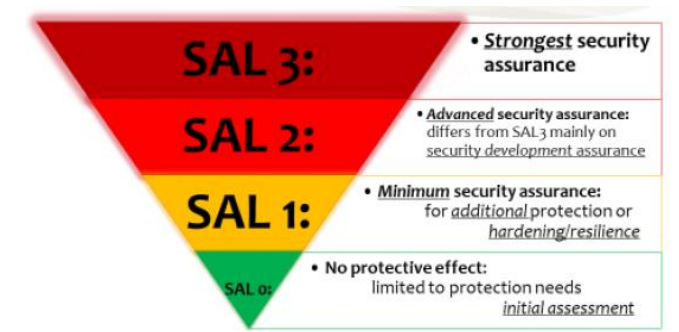
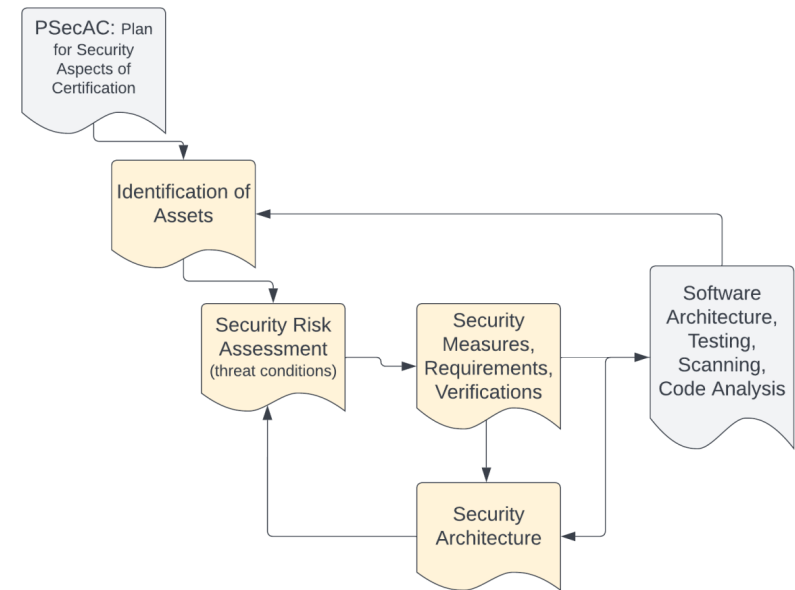
# NEW: DO-326A Cybersecurity

## AIRWORTHINESS SECURITY PROCESS

 New!



- [-] Airworthiness Security Analysis
  - [T] Cybersecurity Risk Assessment Process
  - [-] Assets
    - [+] Wired Devices
    - [+] Wireless Devices
    - [+] Data Entry Devices
    - [+] Mechanical Devices
  - [T] What is an Asset
  - [+] Cyber Vulnerabilities
  - [+] Security Architecture (Scope)
  - [+] Threat Assessments
  - [+] Security Measures
  - [+] Security Verification Test Cases



# DO-326A/ED-202A & DO-356A/ED-203A

*Airworthiness security is the protection of the airworthiness of an aircraft from **intentional** unauthorized electronic interaction*

## Airworthiness Security Process (AWSP)

### Steps

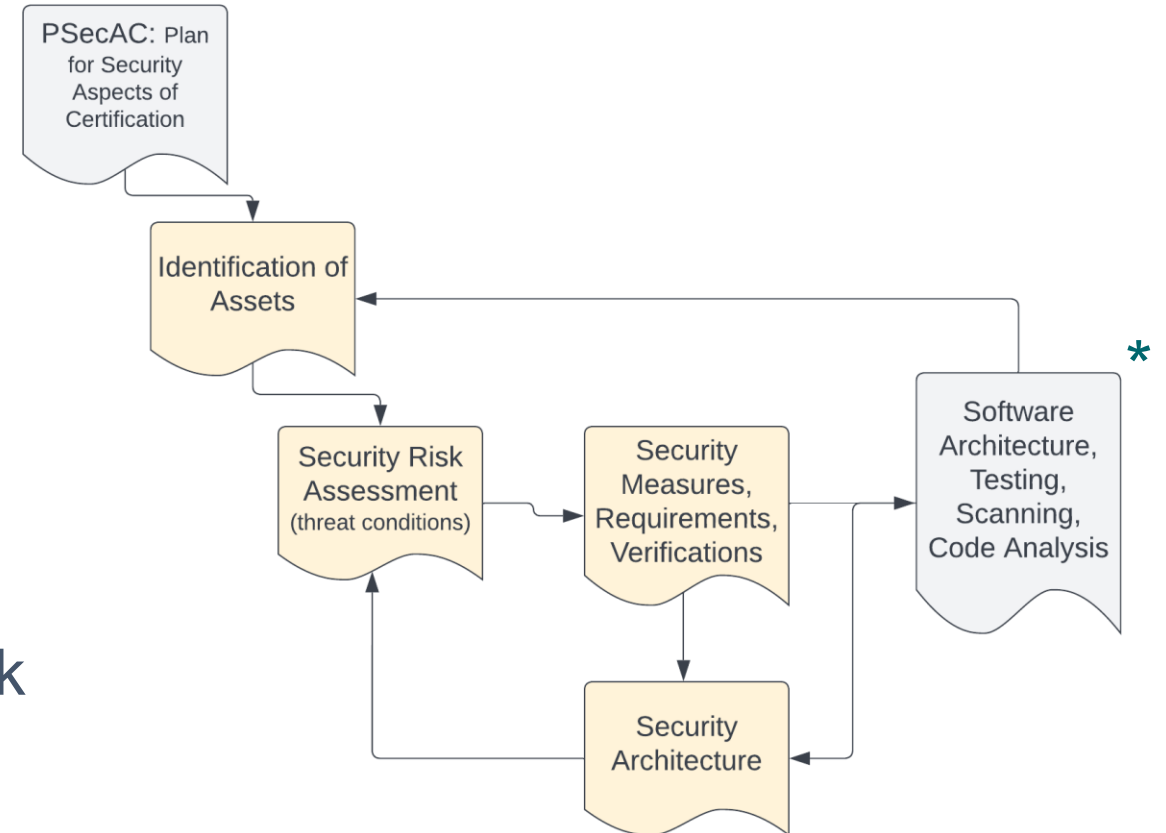
1. Develop Plan for Security Aspects of Certification (PSecAC)
2. Security Scope Definition
3. Identify System Assets & Perimeters
4. Identify Threats for each Asset
5. Identify Risks for each threat
6. Create Controls/Mitigations for each risk
7. Communication of Evidence (PSecAC)

# Airworthiness Security Process (AWSP)

## PROCESS OUTLINE

### Steps

1. Develop Plan for Security Aspects of Certification (PSecAC)
2. Security Scope Definition
3. Identify System Assets & Perimeters
4. Identify Threats for each Asset
5. Identify Risks for each threat
6. Create Controls/Mitigations for each risk
7. Communication of Evidence (PSecAC)



\*Typically performed in a 3<sup>rd</sup> party tool such software from LDRA or Rapita

# NEW: ARP 4761A/ED-135 Safety Additions

## AIRBORNE SYSTEMS SOLUTION

### Aircraft Level

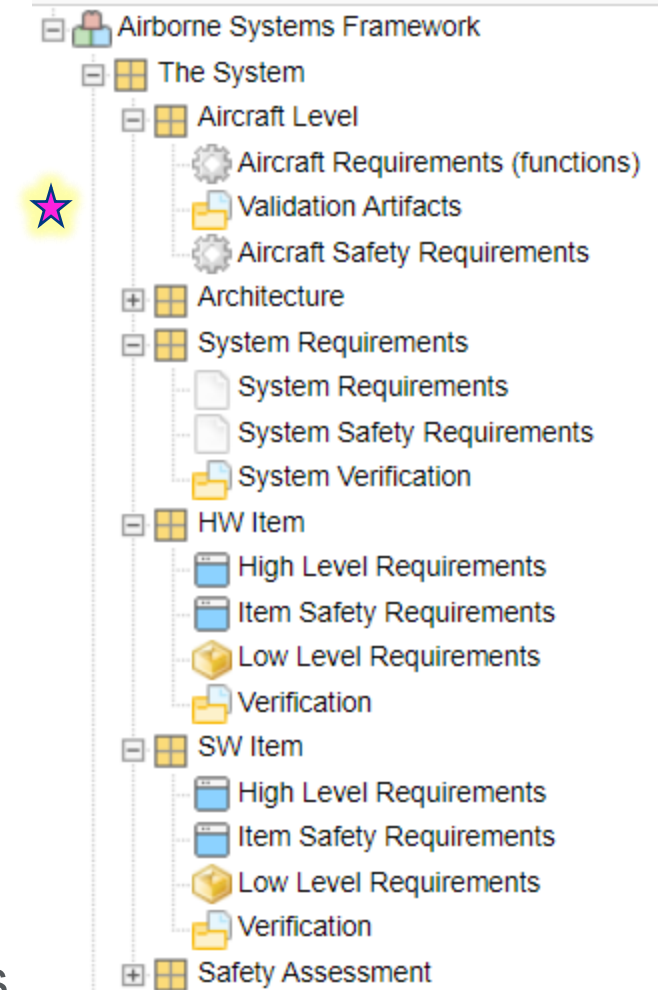
- Provide AFHA and PASA as inputs to Aircraft requirements process
- Verify using ASA

### System Level

- Provide SFHA and PSSA as inputs to System requirements process
- Verify using SSA

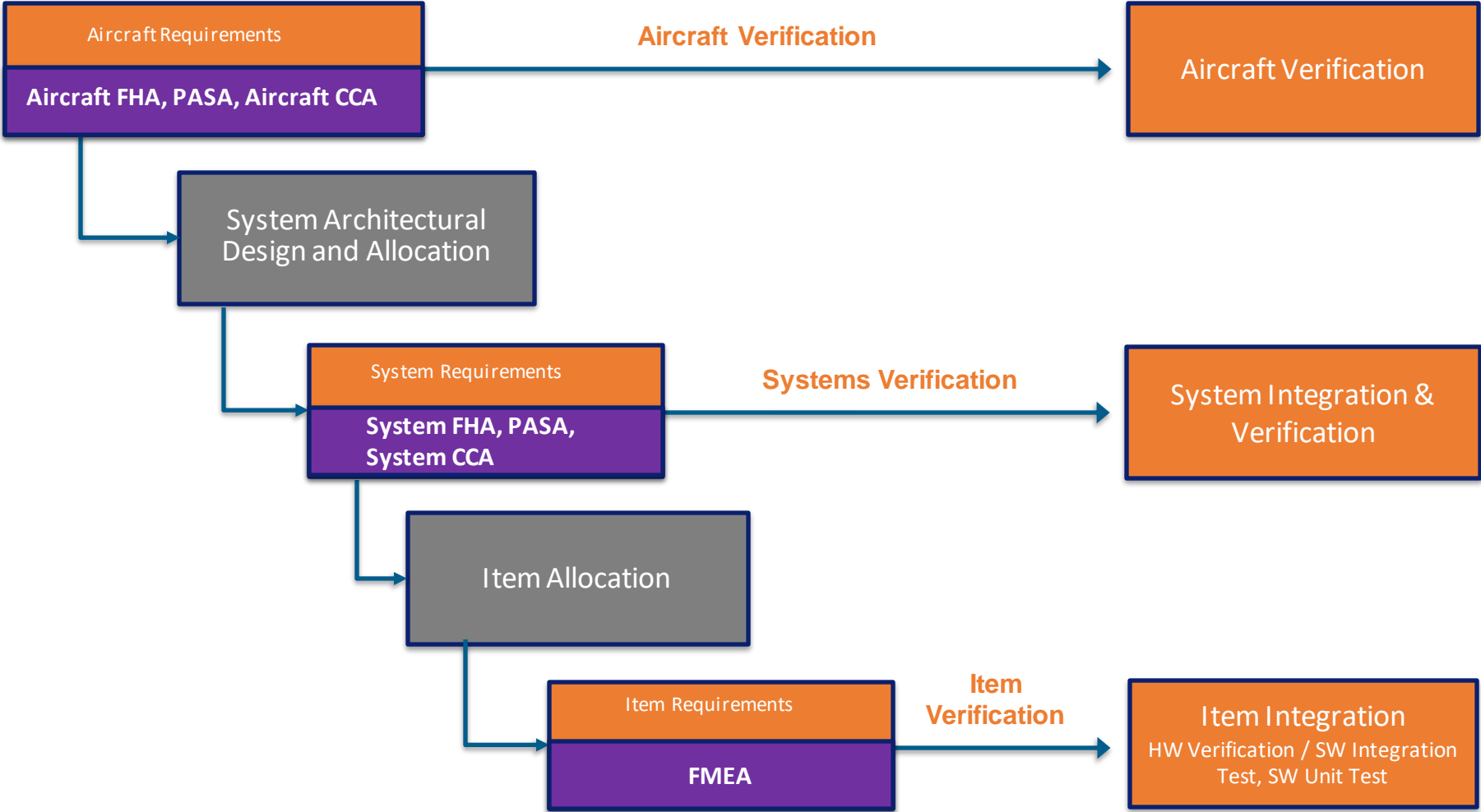
### Safety Regimens is Continuous throughout the Project

- Requirements changes are fed back through the safety process
- Defects and Problem Reports are fed back through the safety process
- Interdependencies analyzed for independence using Common Cause Analysis (CCA):  
Particular Risk Analysis (PRA) -> Common Mode Analysis (CMA) -> Zonal Safety Analysis



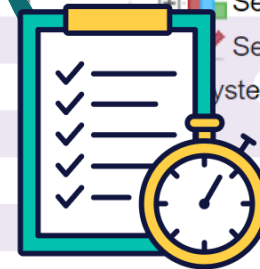
# Airborne Safety Assessment Process (ARP4761A)

THE JAMA SOFTWARE SOLUTION



# Demo

- Program Documents
  - UAV Aircraft
    - Aircraft Function Requirements
    - Aircraft Validation Artifacts
    - Architecture
    - Safety Assessment
      - Failure Analysis (FHA)
    - Aircraft Airworthiness Security Analysis
      - Assets
      - Security Architecture (Scope)
      - Cyber Vulnerabilities
      - Threat Conditions and Assessments
      - Security Measures
      - Security Verification Test Cases
      - System Level



# NEW: US Code of Federal Regulations (CFR)

AIRBORNE SYSTEMS SOLUTION



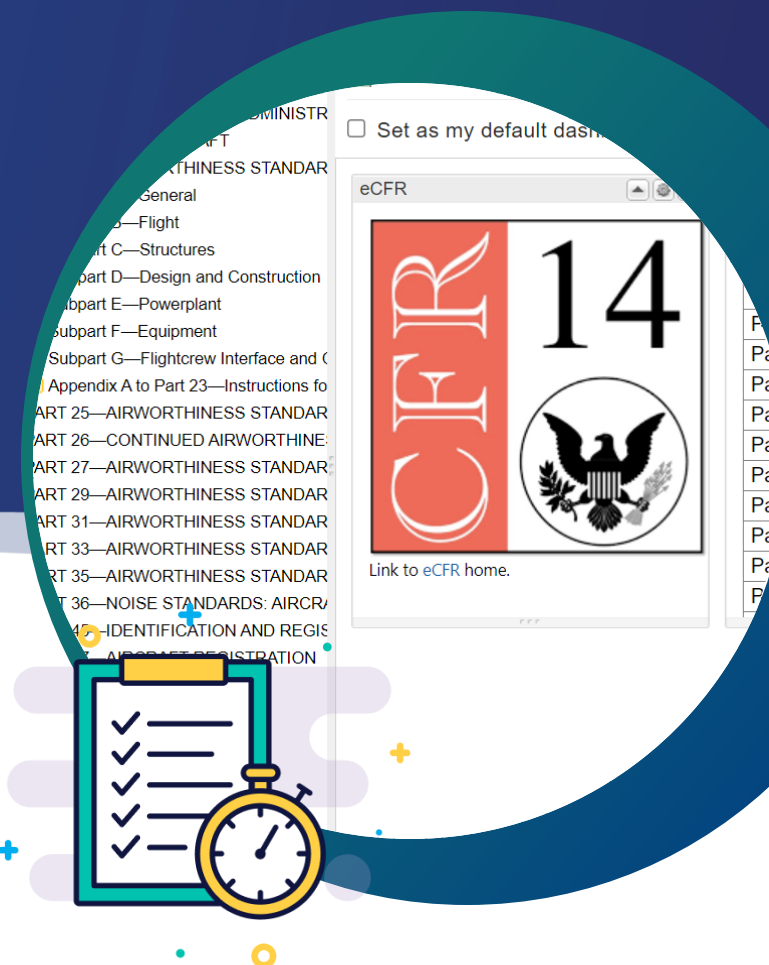
## Code of Federal Regulations

A point in time eCFR system



	Part / Section
▼ <b>Title 14</b> Aeronautics and Space	
▼ <b>Chapter I</b> Federal Aviation Administration, Department of Transportation	1 – 199
<b>Subchapter A</b> Definitions and General Requirements	1 – 5
<b>Subchapter B</b> Procedural Rules	11 – 17
<b>Subchapter C</b> Aircraft	21 – 59 ★
<b>Subchapter D</b> Airmen	60 – 68
<b>Subchapter E</b> Airspace	71 – 77
<b>Subchapter F</b> Air Traffic and General Operating Rules	89 – 109
<b>Subchapter G</b> Air Carriers and Operators for Compensation or Hire: Certification and Operations	110 – 139
<b>Subchapter H</b> Schools and Other Certificated Agencies	140 – 147
<b>Subchapter I</b> Airports	150 – 169
<b>Subchapter J</b> Navigational Facilities	170 – 171
<b>Subchapter K</b> Administrative Regulations	183 – 193
<i>Subchapters L-M [Reserved]</i>	
<b>Subchapter N</b> War Risk Insurance	198 – 199
▶ <b>Chapter II</b> Office of the Secretary, Department of Transportation (Aviation Proceedings)	200 – 399
▶ <b>Chapter III</b> Commercial Space Transportation, Federal Aviation Administration, Department of Transportation	400 – 1199
▶ <b>Chapter V</b> National Aeronautics and Space Administration	1200 – 1299
▶ <b>Chapter VI</b> Air Transportation System Stabilization	1300 – 1399

# Demo





# How to Obtain Update for Airborne Solution

AIRBORNE SYSTEMS SOLUTION 2.0

## Need it Today?

- Contact your Jama Customer Success Manager and/or Jama Consultant

## Coming Soon!

- Access to a password protected area in the Customer Community will house all procedure guides, configuration guides, and reports

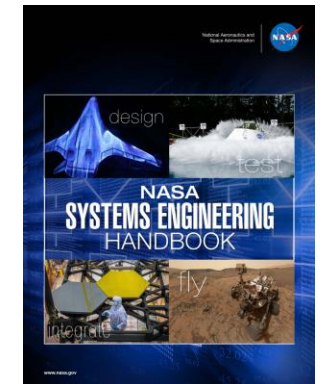
# Space and Defense Updates

DIGITAL ENGINEERING

# Digital Engineering in Space and Defense

## SPACE AND DEFENSE SYSTEMS SAMPLE DATASET

- Includes 5 Best Practices Pre-configured Sample Frameworks
  - Defense System V
  - Defense Companion MBSE
  - NASA Systems Engineering Handbook Full Lifecycle
  - NASA Integrated System
  - Airborne Systems Engineering Base
- Pre-imported Libraries
  - European Cooperation for Space Standards (ECSS)
  - Air Force Space Command Range Safety Requirements
  - DOD DIDs



# Space Framework Features

## CONFIGURABLE SPACE FRAMEWORK

### Structure & Version Control

- Needs vX
- System
- Architectures
- Subsystem A
- Subsystem B
  - Req
  - Tests

### Data model

### Workflow

Current Status	New Status
Item Created	Draft
Draft	Approved
	Rejected
Under Review	Approved
	Rejected
Approved	Completed
	Draft
Completed	Draft

### Diagrams

### Collaboration

### Integration

### Import/Export

- Structure supports Integration and easy navigation
- Element type definitions
- NASA SE Handbook Data model
- European Cooperation with Space Standards (ECSS) Pre-imported Library
- US Range Safety Requirements Library
- Data model is extensible
  - Risks, FMEA, Hazards, Goals, OKRs, Threats, Attacks...
- Facilitates exchange of data with other systems via REST or OSLC

# NEW: European Cooperation with Space Standards

## LIBRARY OF STANDARDS

Documentation templates with recommended outline and instructive helper text provided for:



- ECSS Superceeded
  - ECSS - Superseded v0.8
    - Q - Space Product Assurance
      - ECSS-Q-ST-70-11C
      - ECSS-Q-ST-70-38C
      - ECSS-Q-ST-70-13C
      - ECSS-Q-ST-70-71C
      - ECSS-Q-ST-70-05C
      - ECSS-Q-ST-20C Rev. 1
      - ECSS-Q-ST-10C
      - ECSS-Q-ST-70-31C
      - ECSS-Q-ST-10-09C
      - ECSS-Q-ST-30-11C
      - ECSS-Q-ST-70C Rev. 1
      - ECSS-Q-ST-70-26C
      - ECSS-Q-ST-70-10C
      - ECSS-Q-ST-80C
      - ECSS-Q-ST-40C
      - ECSS-Q-ST-60-14C
      - ECSS-Q-ST-30C
      - ECSS-Q-ST-20C
      - ECSS-Q-ST-60C Rev. 1
      - ECSS-Q-ST-70C
    - E - Space Engineering
    - S - ECSS System

# Demo



# Defense System V Framework Features

## GENERIC SYSTEMS ENGINEERING FRAMEWORK

**Structure & Version Control**

- Needs (vX)
- System
- Architectures
- Subsystem A
- Subsystem B
  - Req
  - Tests

**Data model**

**Diagrams**

**Workflow**

Current Status	New Status
Item Created →	Draft
Draft →	Approved <span style="color: green;">+</span>
	Action Text: "Approved" edit
	Rejected <span style="color: red;">-</span>
	Action Text: "Rejected" edit
Under Review →	Approved <span style="color: green;">+</span>
	Action Text: "Approved" edit
	Rejected <span style="color: red;">-</span>
	Action Text: "Rejected" edit
	Draft <span style="color: green;">+</span>
	Action Text: "Draft" edit
Approved →	Completed <span style="color: green;">+</span>
	Action Text: "Completed" edit
	Draft <span style="color: green;">+</span>
	Action Text: "Draft" edit
Completed →	Draft <span style="color: green;">+</span>
	Action Text: "Draft" edit

**Collaboration**

**Integration**

**Import/Export**

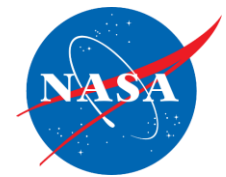
- DAU Systems Engineering Process Model 2008
- Data Model supports Integration and easy navigation
- Element type definitions
- Element attribute definitions
- Link type definitions
- Data model is extensible
- Diagram types are not constrained
- Facilitates exchange of data with other systems via REST or OSLC

# AFSPC 91-7XX series

## ROCKET PROPULSION SAFETY

The launch and range safety requirements contained in the Air Force Space Command Manual (AFSPC 91-7XX series) are based on standardized design and safety requirements for launch/range systems with lessons learned to ensure a prudent level of protection is provided to the public (people, resources, and launch & downrange area safety) during pre-launch, launch, and reentry operations.

Companies who build products that utilize rocket propulsion must show compliance to AFSPC 91-7XX series. NASA requires compliance.



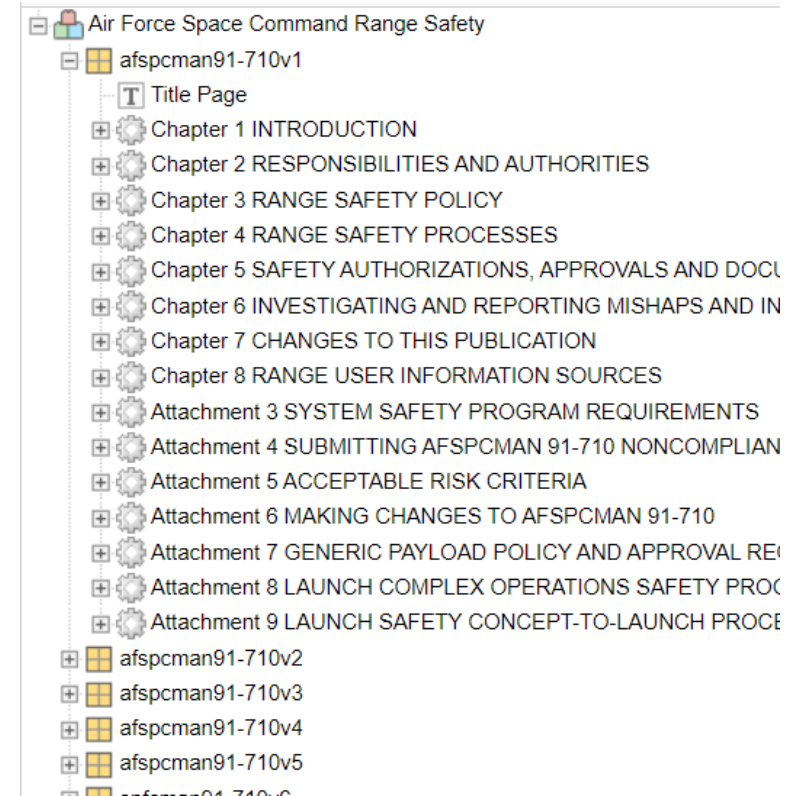


# NEW: DOD Range Safety Requirements Library

## ROCKET PROPULSION SAFETY

### (AFSPC 91-7XX series) - Range Safety User Requirements

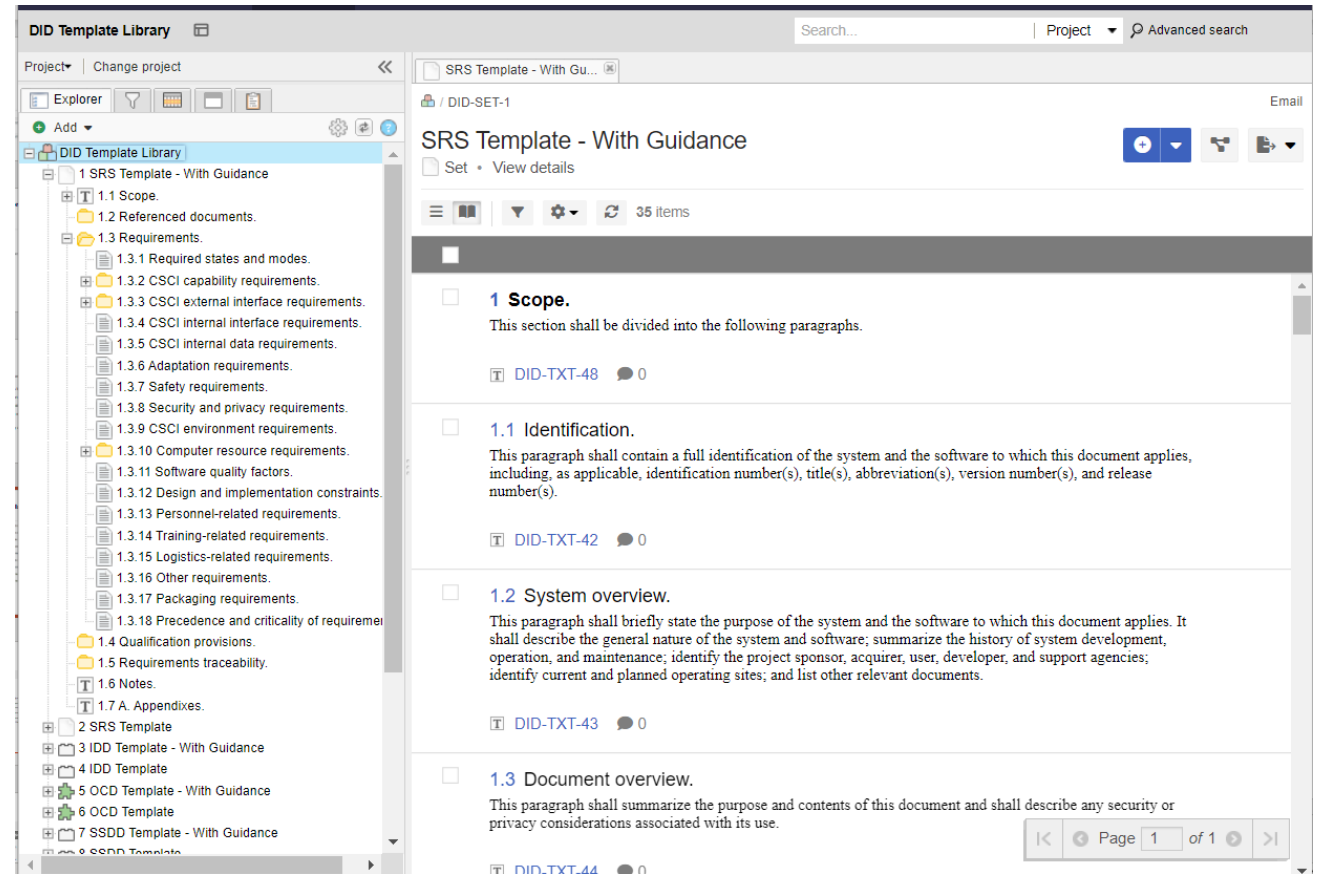
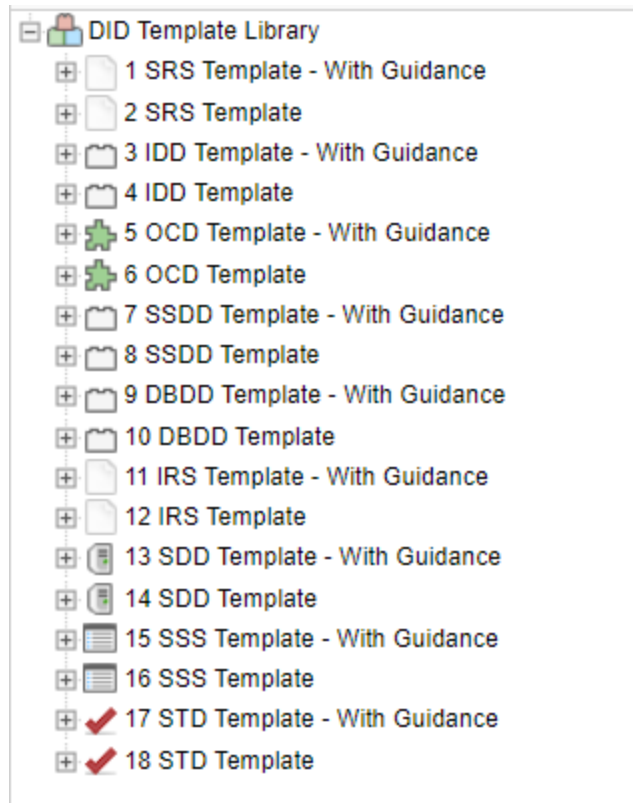
- **Manual Volume 1** - Air Force Space Command Range Safety Policies and Procedures Range Safety User Requirements Manual
- **Volume 2** - Flight Safety Requirements
- **Volume 3** - Launch Vehicles, Payloads, and Ground Support Systems Requirements
- **Volume 4** - Airborne Flight Safety System Design, Test, and Documentation Requirements
- **Volume 5** - Facilities and Structures
- **Volume 6** - Ground and Launch Personnel, Equipment, Systems, and Material Operations Safety Requirements
- **Volume 7** - Glossary



# NEW: Defense DID Document Templates

## EXAMPLE LIBRARY

Documentation templates with recommended outline and instructive helper text provided for:

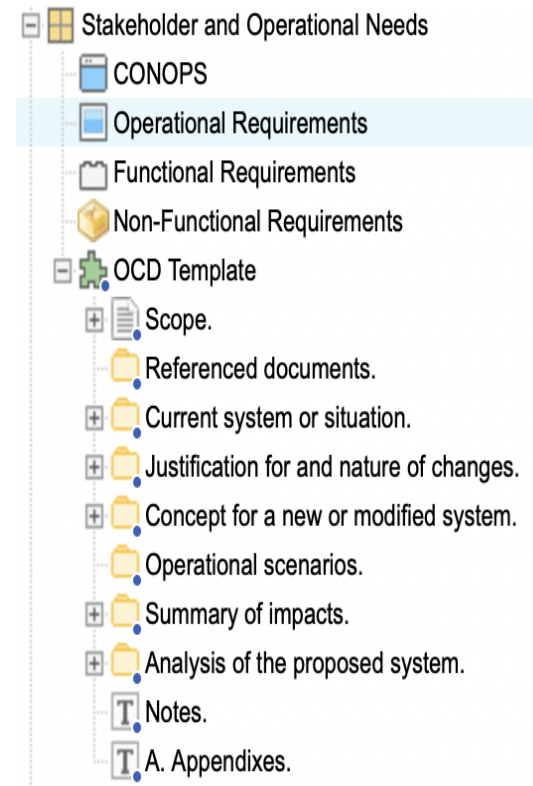
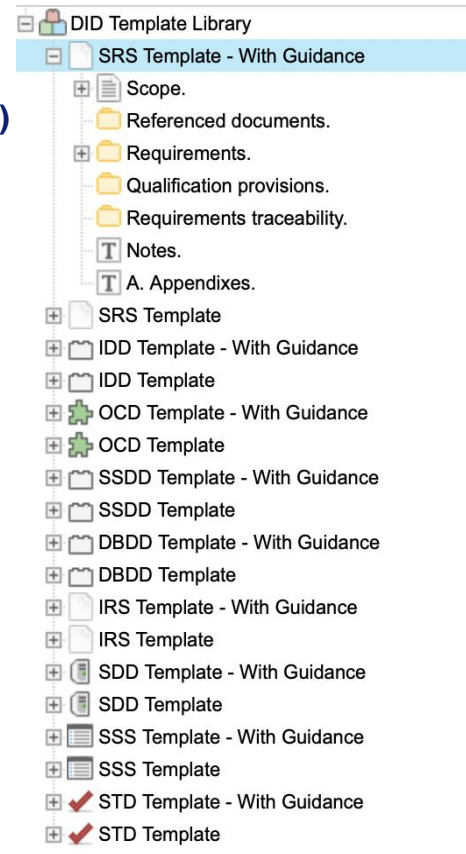


# Data Item Descriptions| Jama Implementation and Usage

A DOCUMENT THAT SPECIFICALLY DEFINES THE DATA REQUIRED OF A CONTRACTOR IN TERMS OF CONTENT, FORMAT, AND INTENDED USE.

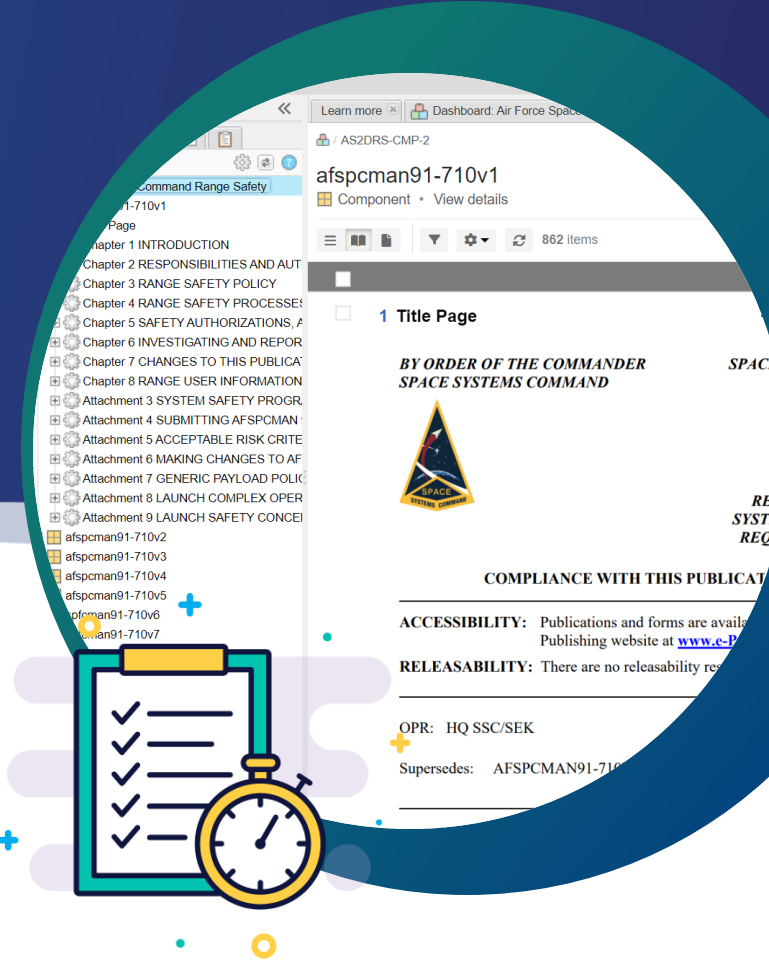
## List of DID's Included

- Software Requirements Specification (SRS)
- Interface Design Description (IDD)
- Operational Concept Description (OCD)
- Subsystem Design Description (SSDD)
- Database Design Description (DBDD)
- Interface Requirements Specification (IRS)
- Software Design Description (SDD)
- System Subsystem Specification (SSS)
- System Test Description (STD)



- Seamless incorporation of the templates into projects
- Simplicity of DID creation
- Ease of export from Jama to a document deliverable

# Demo



# Q&A

To learn more,  
contact

[sales@jamasoftware.com](mailto:sales@jamasoftware.com)

