WEBINAR

Accelerate Your Automotive Development Requirements Management with Jama Connect®

Jama software®

Speakers

AUTOMOTIVE TEAM

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Jama Software

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Senior Consultant
Jama Software

Agenda

- Introduction to the Automotive Solution
  - Summary & benefits
  - What's new in the release
- Standards Alignment
- Solution Dataset
- Solution Guides
- Solution Reports
- Access Process
- Q&A

Introduction

AUTOMOTIVE SOLUTION

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

Utilize the Automotive Solution to start teams working in Jama Connect with zero setup and configuration time or work with a Jama Consultant to customize the solution to meet your company's exact business needs.

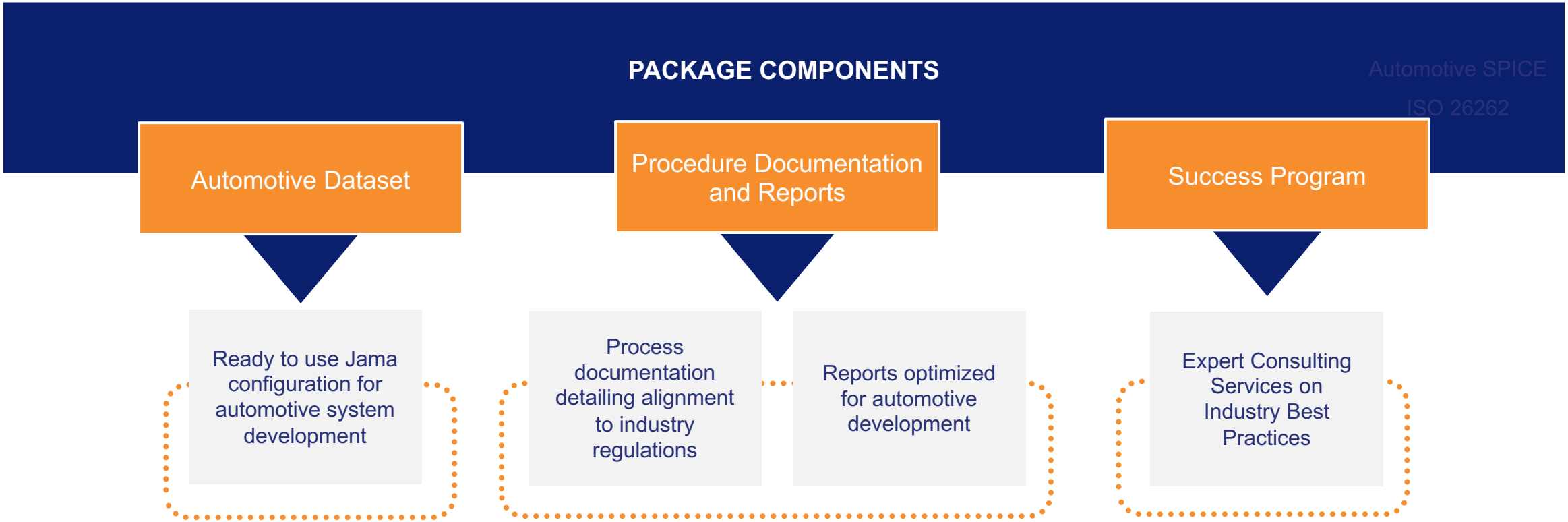
Benefits

AUTOMOTIVE SOLUTION

- Increase confidence and decrease time to value with an established scope and direct alignment of requirements
- Reduce deployment time for new clients with defined and justified configuration, export templates, and reports
- Reduce adoption time of new standards like ISO 21434 for existing clients

Solution Components

AUTOMOTIVE SOLUTION



Resource: https://www.jamasoftware.com/solutions/services/

What's New in the Latest Release

AUTOMOTIVE SOLUTION

The Latest Automotive Solution update is the first major update to the solution since it's initial release in 2019. The update is available to all new and existing customers with a subscription to the automotive solution.

The update both refines the existing solution elements and expands the scope of the solution into a new standard, ISO 21434.

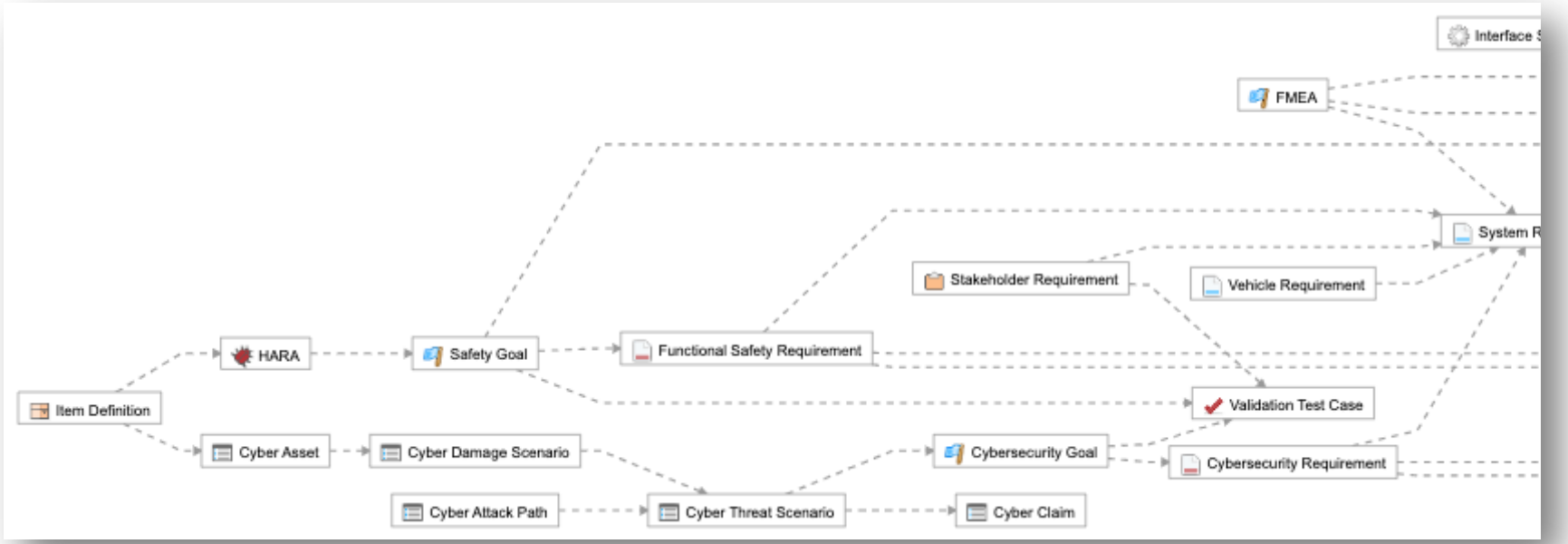
This update also introduces a new method for distributing the solution assets. Past and current versions of the assets are now available in the private Automotive Solution sub-community within the Jama Software User Community.

Resource: https://community.jamasoftware.com/home

NEW: Cybersecurity Framework

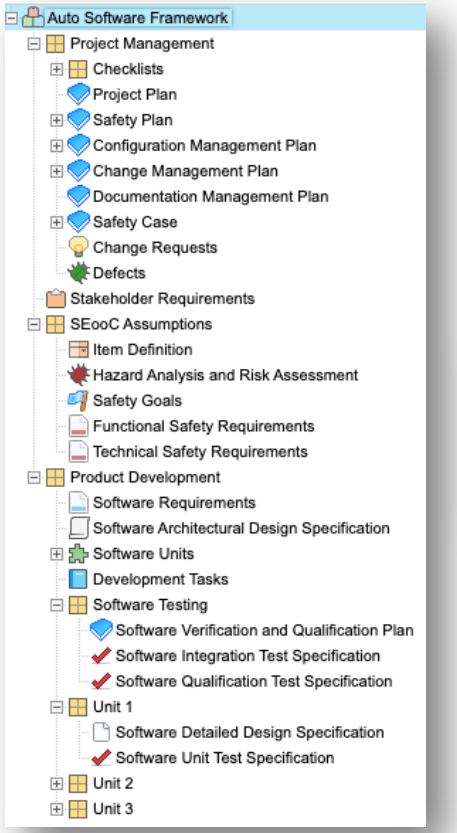
AUTOMOTIVE SOLUTION

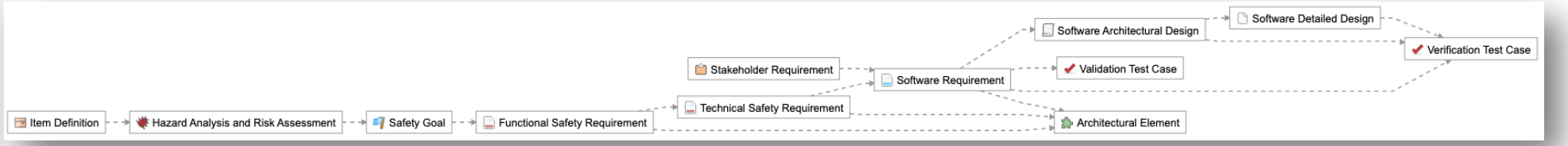
- Safety/Security System Framework
  - Stakeholder Requirements
  - Item Definition
  - Threat Analysis and Risk Assessment (TARA)
    - Assets
    - Damage Scenarios
    - Threat Scenarios
    - Attack Paths
    - Cyber Claims
    - Cybersecurity Goals
  - Hazard Analysis and Risk Assessment (HARA)
    - Hazard Analysis and Risk Assessment
    - Safety Goals
  - Concept Definition
    - Functional Safety Requirements
    - Cybersecurity Requirements
    - Functional Architectural Design Specification
    - System Functions
  - System Development
    - System Requirements
    - System Design Elements
    - System Architectural Design Specification
    - Hardware-Software Interface (HSI) Specification
    - FMEA
    - System Verification
    - Hardware
    - Software
  - System Validation
  - Project Management



NEW: Software Component SEooC Framework

AUTOMOTIVE SOLUTION



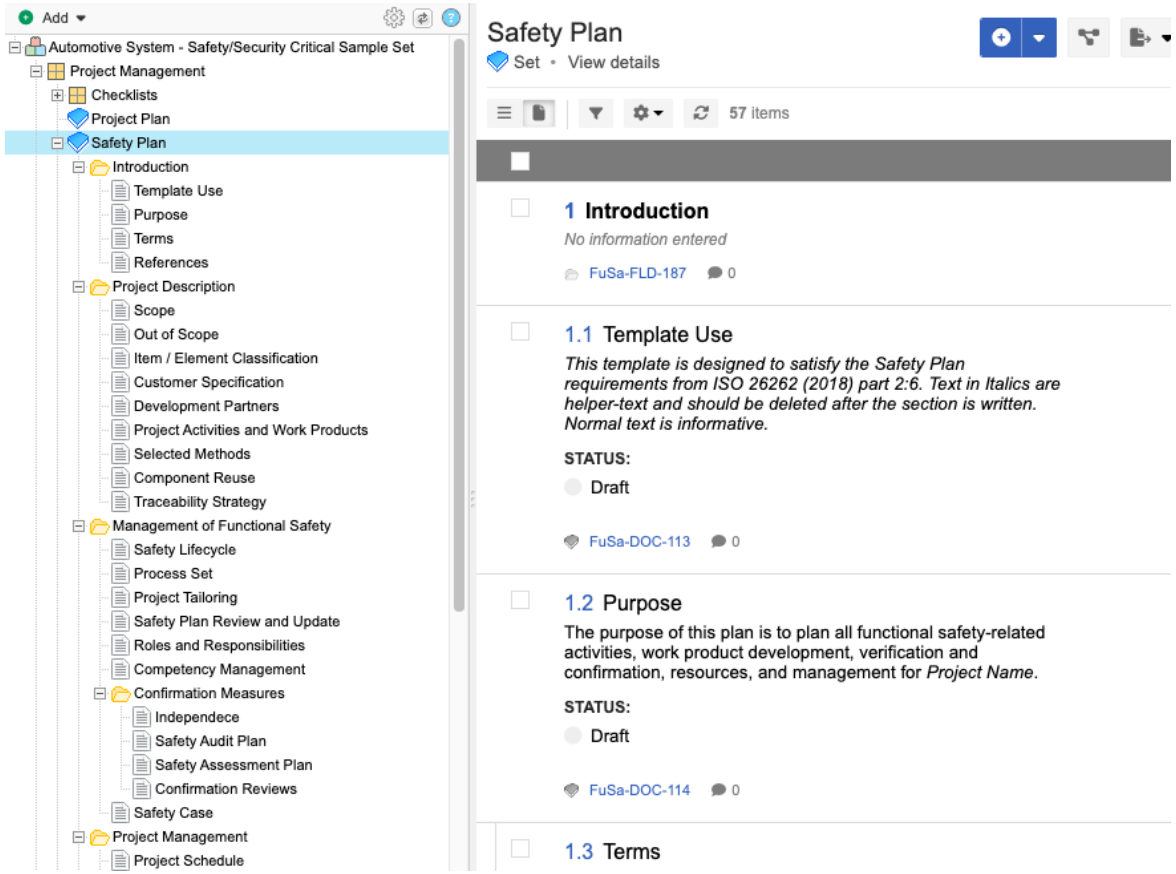


NEW: ISO 26262 Document Templates

AUTOMOTIVE SOLUTION

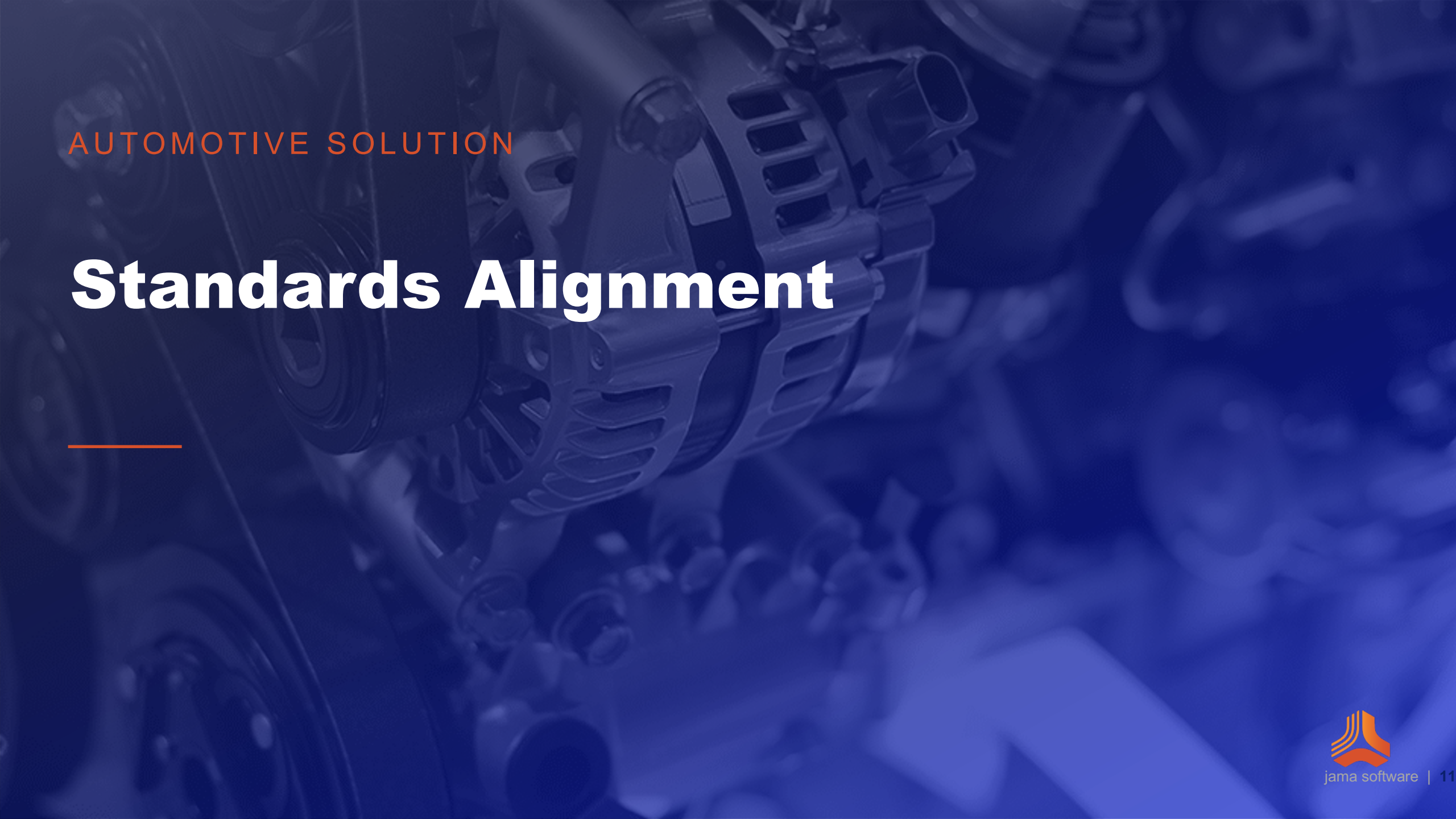
Documentation templates with recommended outline and instructive helper text provided for:

- Safety Plan
- Configuration Management Plan
- Change Management Plan
- Safety Case



AUTOMOTIVE SOLUTION

Standards Alignment



Standards Alignment

AUTOMOTIVE SOLUTION

AUTOMOTIVE SPICE 3.1

- System Engineering Process Group (SYS)
- Software Engineering Process Group (SWE)
- Supporting Process Group (SUP)
- Project Management (MAN.3)
- And more…

ISO 26262 (2018)

- Management of Functional Safety (Part 2)
- Concept Phase (Part 3)
- Product Development at the system Level (Part 4)
- Product development at the hardware level (Part 5)
- Product development at the software level (Part 6)
- Supporting Processes (Part 8)
- And more…

ISO 21434 (2021)

- Organizational cybersecurity management (Clause 5)
- Project dependent cybersecurity management (Clause 6)
- Concept Phase (Clause 9)
- Product Development (Clause 10)
- Cybersecurity validation (Clause 11)
- Threat analysis and risk assessment methods (Clause 15)
- And more…

Management and Supporting Processes

STANDARDS ALIGNMENT

Automotive SPICE Version 3.1 (only in scope sections)	ISO 26262 Second Edition (only in scope sections)	ISO 21434 First Edition (only in scope section)	Jama Connect supported process
Management and Supporting Processes			
MAN.3 Project Management	2-6.4.6 Planning and coordination of the safety activities	6.4.1-6.4.6 Project dependent cybersecurity management	Project Management
-	2-6.4.8 Safety Case	6.4.7 Cybersecurity case	Safety & Cybersecurity Case
-	8-6 Specification and management of safety requirements	-	Specification and management of safety requirements
SUP.8 Configuration Management	8-7 Configuration Management	5.4.4 Management Systems	Configuration Management
SUP.10 Change Request Management	8-8 Change Management		Change Control
SUP.1 Quality Assurance	2-6.4.10 Confirmation Reviews		Review
	8-9 Verification		
SUP.7 Documentation	8-10 Document Management		Document Management
-	8-11 Confidence in the use of software tools	5.4.5 Tool Management	Confidence in the use of software tools

Concept and System Development Processes

STANDARDS ALIGNMENT

Automotive SPICE Version 3.1 (only in scope sections)	ISO 26262 Second Edition (only in scope sections)	ISO 21434 First Edition (only in scope section)	Jama Connect supported process
Concept Development			
SYS.1 Requirements Elicitation	-	-	Stakeholder Requirements
-	3-5 Item Definition	9.3 Item Definition	Item Definition
-	3-6 HARA	-	Hazard Analysis and Risk Assessment
-	3-7 Functional Safety Concept	-	Functional Safety Concept
-	-	9.4 Cybersecurity Goals (including TARA)	Cybersecurity Goals
-	-	9.5 Cybersecurity Concept	Cybersecurity Concept
System Development			
SYS.2 System Requirements Analysis	4-6 Technical Safety Concept	10.4.1 Design	System Requirements
SYS.3 System Architectural Design			System Architectural Design
SYS.3 System Architectural Design			Hardware-Software Interface
SYS.4 System Integration and Integration Test	4-7 System and item integration testing	10.4.2 Integration and verification	System and Qualification Integration Testing
SYS.5 System Qualification Test			
-	4-8 Safety Validation	11 Cybersecurity Validation	Safety & Cybersecurity Validation

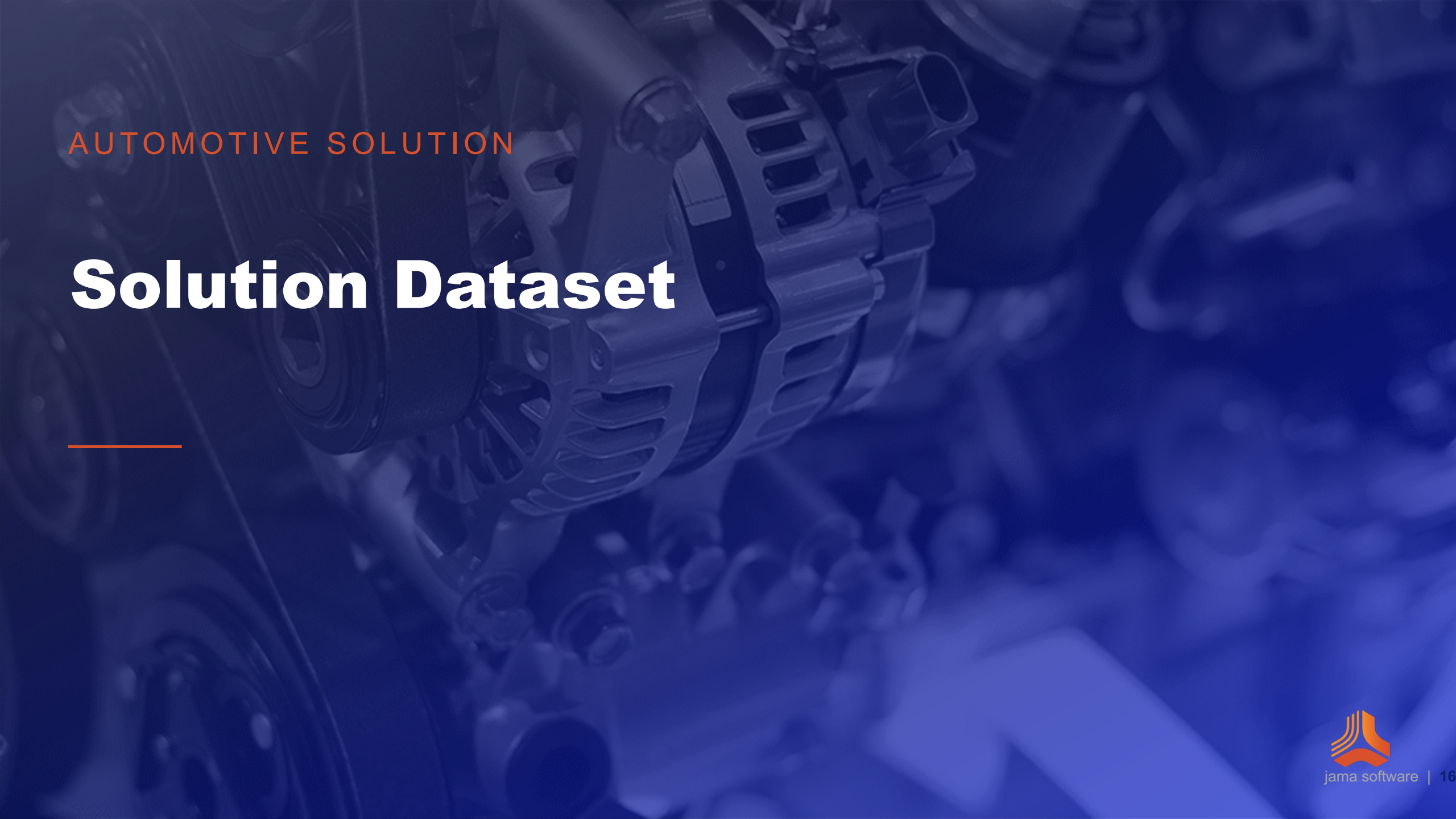
Hardware and Software Development Processes

STANDARDS ALIGNMENT

Automotive SPICE Version 3.1 (only in scope sections)	ISO 26262 Second Edition (only in scope sections)	ISO 21434 First Edition (only in scope section)	Jama Connect supported process
Hardware Development			
-	-	-	Hardware Requirements
-	5-6 Specification of hardware safety requirements	-	Hardware Safety Requirements
-	5-7 Hardware design	-	Hardware Design
-	5-10 Hardware integration and verification	-	Hardware Verification
Software Development			
SWE.1 Software Requirements Analysis	-	-	Software Requirements
-	6-6 Specification of software safety requirements	-	Software Safety Requirements
SWE.2 Software Architectural Design	6-7 Software Architectural Design	-	Software Architectural Design
SWE.3 Software Detailed Design and Unit Construction	6-8 Software unit design and implementation	-	Software Detailed Design
SWE.4 Software Unit Verification	6-9 Software unit verification	-	Software Unit Test
SWE.5 Software Integration and Integration Test	6-10 Software unit integration and verification	-	Software Integration Test
SWE.6 Software Qualification Test	6-11 Testing of the embedded software	-	Software Qualification Test

AUTOMOTIVE SOLUTION

Solution Dataset



Introduction

SOLUTION DATASET

The Jama Connect for Automotive Dataset that supports the processes described in the Automotive Procedure Guide are designed to meet the requirements of ISO 26262, ISO 21434, and Automotive SPICE, and incorporate established best practices for using Jama Connect.

The dataset includes two types of projects:

- **Frameworks** – These projects contain organizational structure, but no example content. Use these projects as templates for creating new projects aligned to the framework.
- **Sample Sets** – These projects contain example content and demonstrate how to apply a framework.

Frameworks and sample sets are provided for developing a variety of different systems and components in Jama Connect.

Frameworks Overview

SOLUTION DATASET

- Automotive System – Safety and Security Critical
- Automotive System – Standard
- Automotive Component – Software
- Automotive Component – Semiconductor
- Customization: Work with a Jama consultant to tailor or to combine frameworks to your specific business needs.

Automotive System – Safety and Security Critical Framework

SOLUTION DATASET

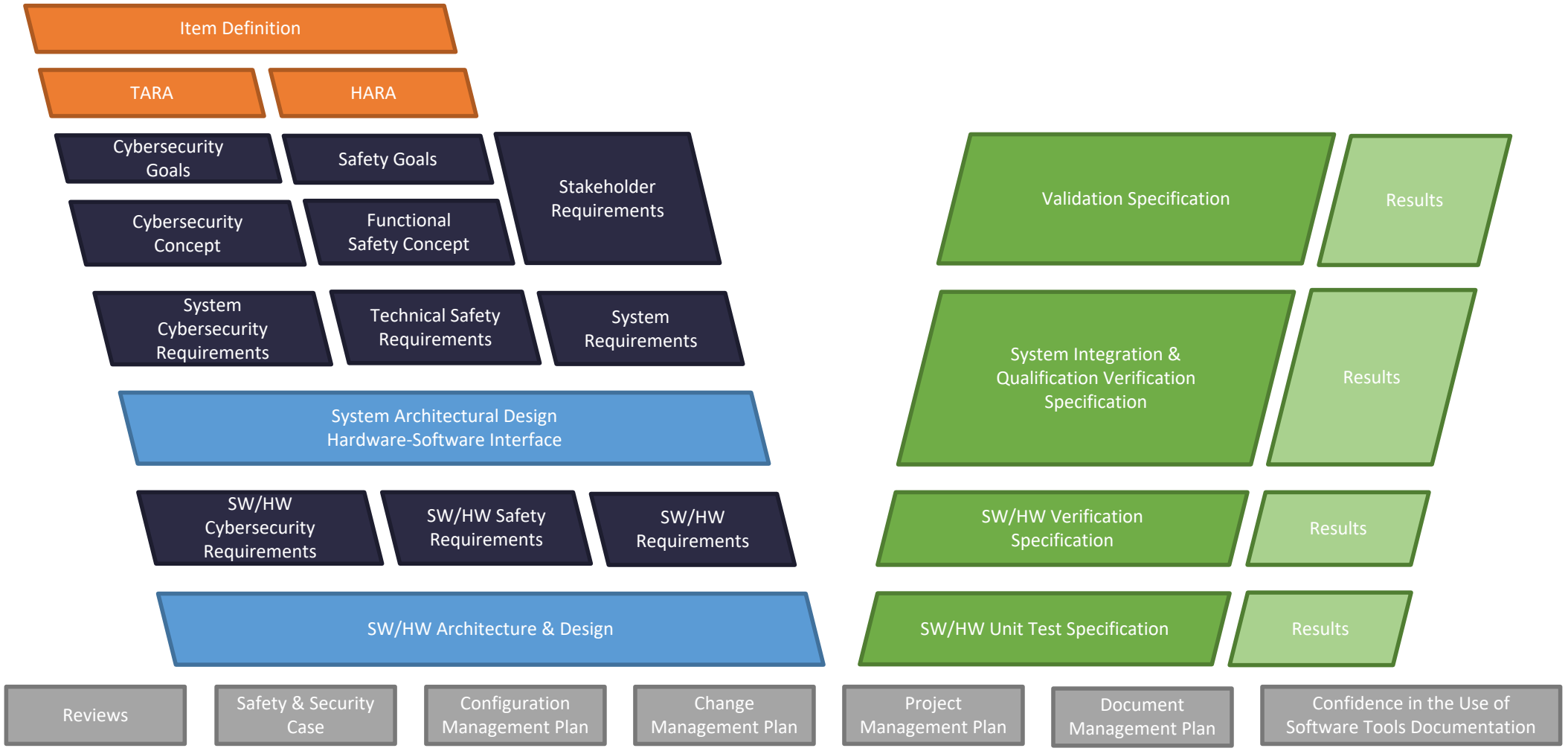
- Leverage the Automotive System – Safety/Security Critical framework to develop automotive systems with mechanical, electrical, and software elements that are both safety critical and require cybersecurity analysis. This framework is compliant with Automotive SPICE, ISO 26262, and ISO 21434.

Customization: Work with a Jama consultant to tailor or to combine frameworks to your specific business needs.

Framework	ASPICE	ISO 26262	ISO 21434
Automotive System – Safety/Security Critical	✓	✓	✓

Automotive System – Safety/Security Critical Framework V-Model

SOLUTION DATASET - ALIGNED TO ASPICE, ISO 26262, ISO 21434



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Demo Auto System – Safety/Security Critical Framework

SOLUTION DATASET

Jama Framework Demo

- Project Structure
- Item Types
- Relationship Rule Diagram

Automotive System – Standard Framework

SOLUTION DATASET

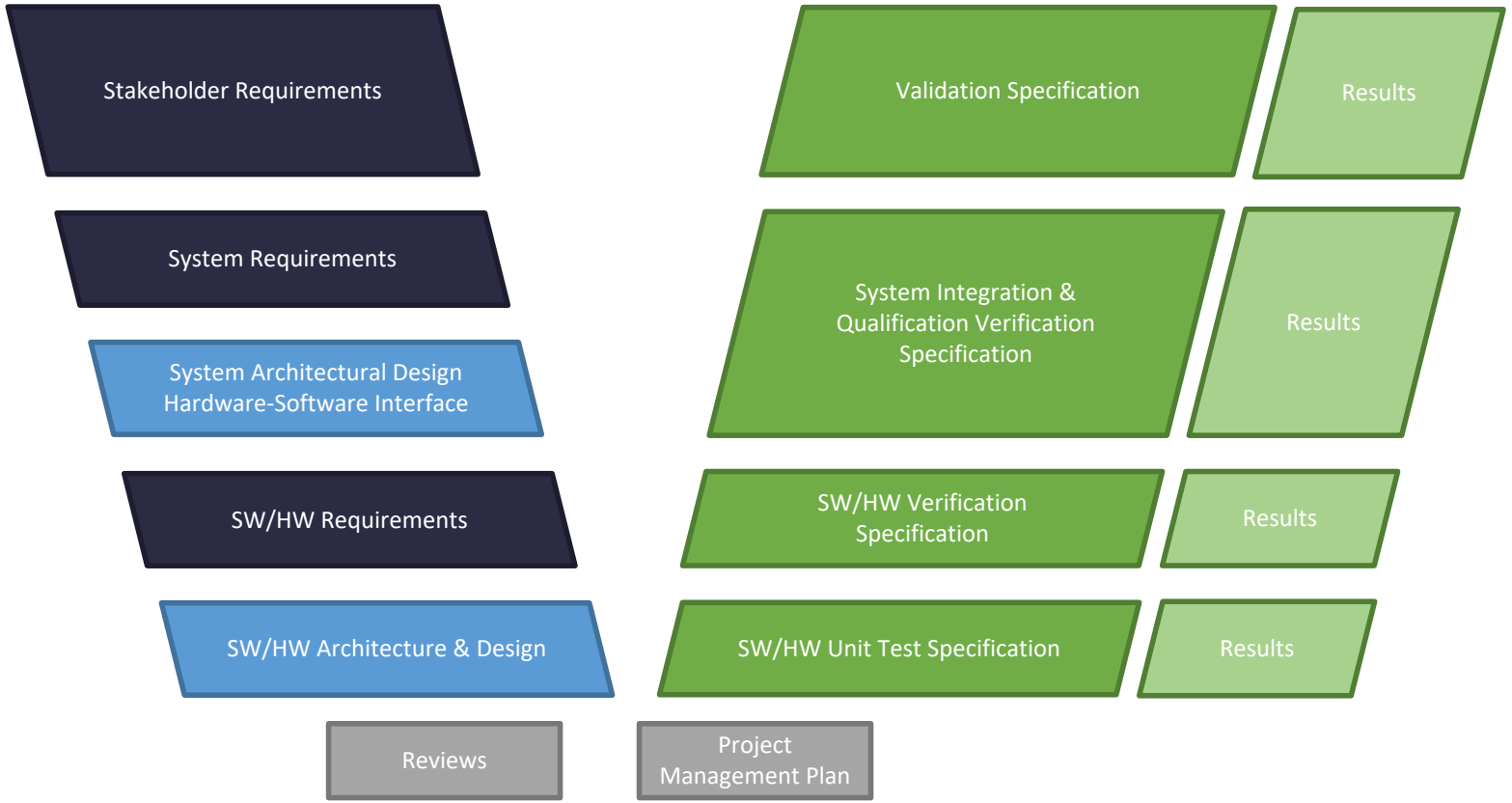
- Leverage the Automotive System – Standard framework to develop automotive systems with mechanical, electrical, and software elements that are not safety critical and require no cybersecurity analysis. This framework is compliant with Automotive SPICE when used to develop software.

Customization: Work with a Jama consultant to tailor or to combine frameworks to your specific business needs.

Framework	ASPICE	ISO 26262	ISO 21434
Automotive System – Safety/Security Critical	✓		

Automotive System – Standard Framework V-Model

SOLUTION DATASET - ALIGNED TO ASPICE



Demo Auto System – Standard Framework

SOLUTION DATASET

Jama Framework Demo

- Project Structure
- Item Types
- Relationship Rule Diagram

Automotive System – Software Framework

SOLUTION DATASET

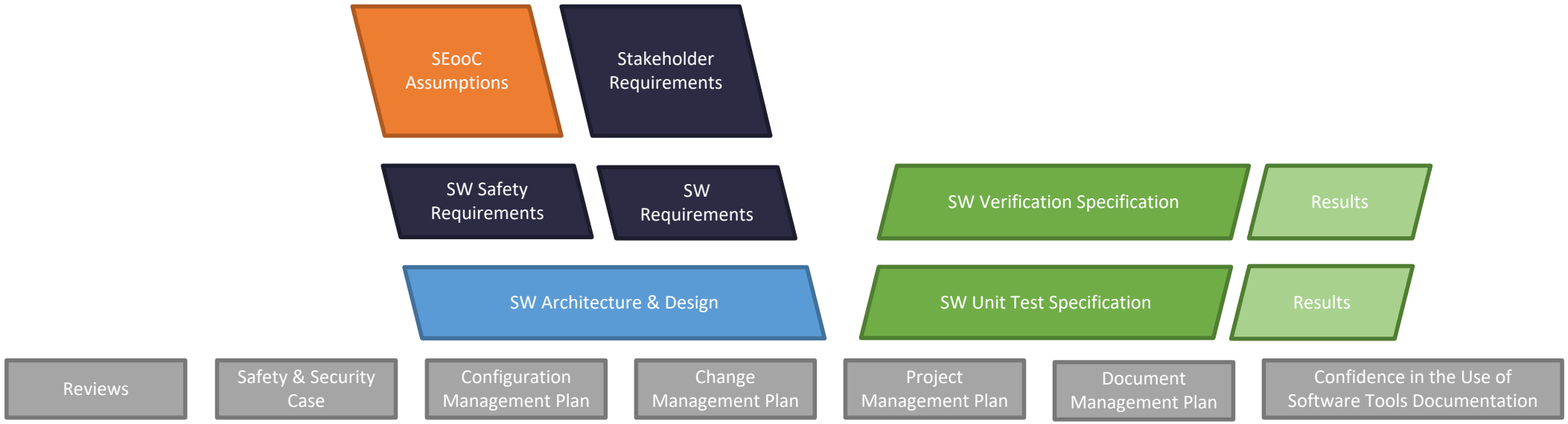
- Leverage the Automotive Component – Software framework to develop automotive software components that are safety critical. This framework is compliant with Automotive SPICE and ISO 26262.

Customization: Work with a Jama consultant to tailor or to combine frameworks to your specific business needs.

Framework	ASPICE	ISO 26262	ISO 21434
Automotive System – Safety/Security Critical	✓	✓	

Automotive Component - Software Framework V-Model

SOLUTION DATASET - ALIGNED TO ASPICE, ISO 26262



Automotive System – Semiconductor Framework

SOLUTION DATASET

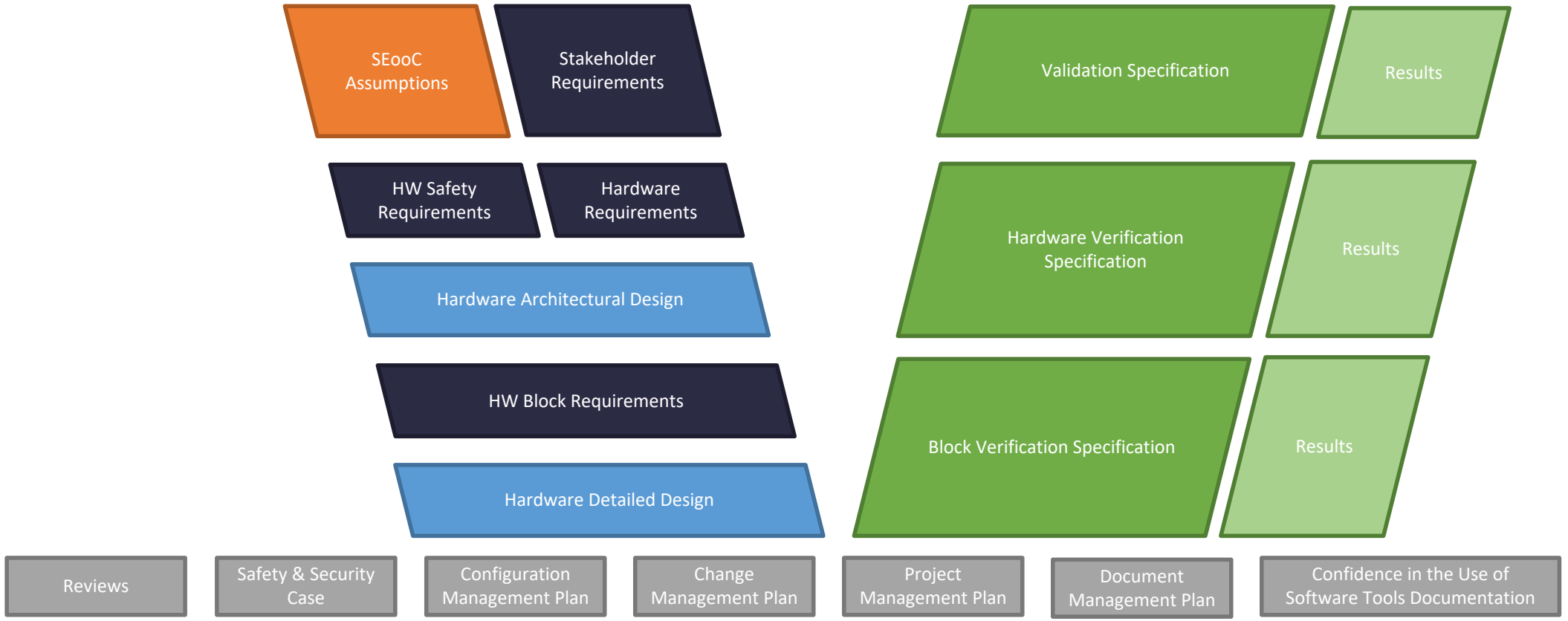
- Leverage the Automotive Component – Semiconductor framework to develop automotive integrated circuits that are safety critical. This framework is compliant with ISO 26262.

Customization: Work with a Jama consultant to tailor or to combine frameworks to your specific business needs.

Framework	ASPICE	ISO 26262	ISO 21434
Automotive System – Safety/Security Critical	✓	✓	

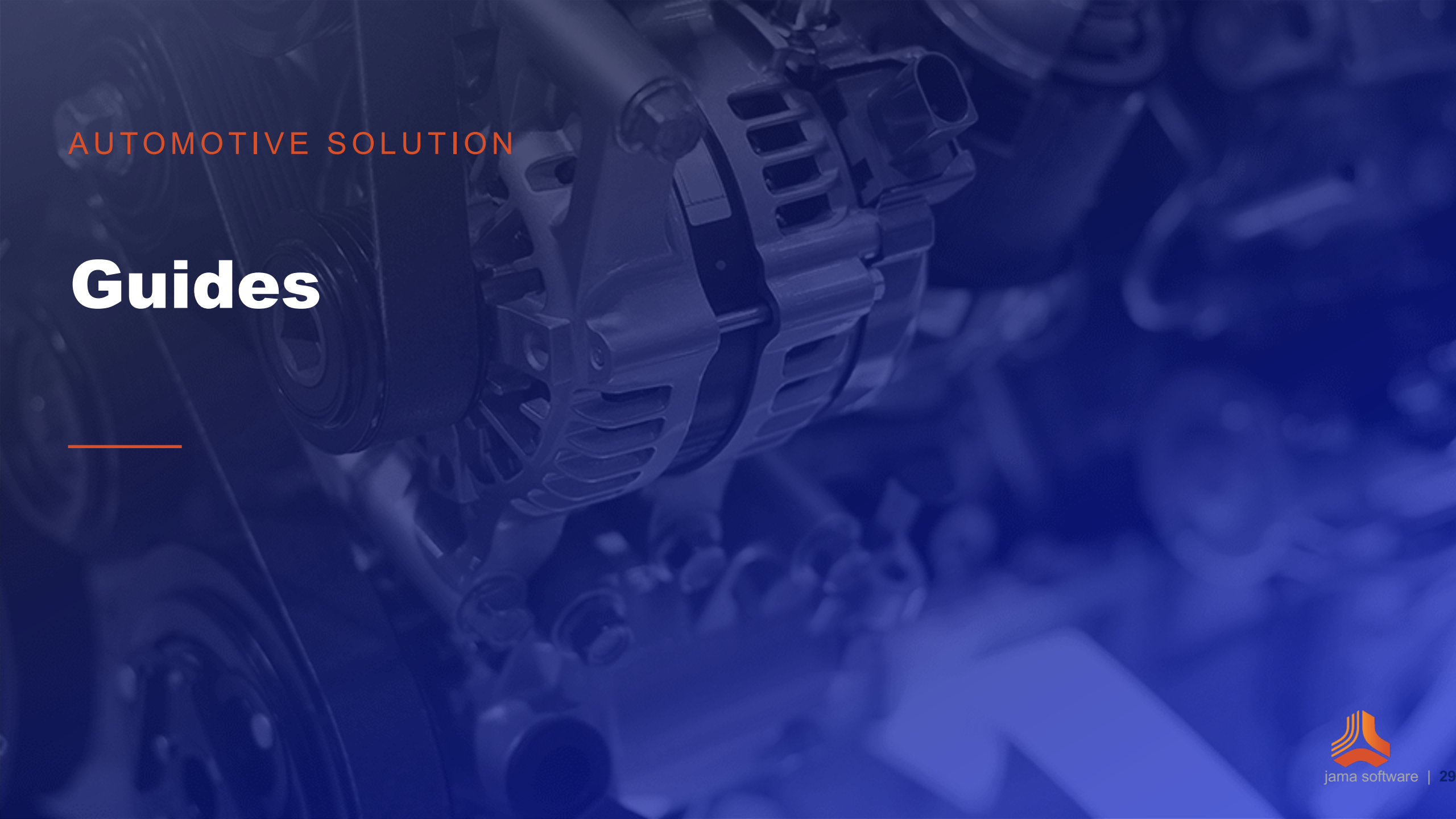
Automotive Component – Semiconductor Framework V-Model

SOLUTION DATASET - ALIGNED TO ISO 26262



AUTOMOTIVE SOLUTION

Guides



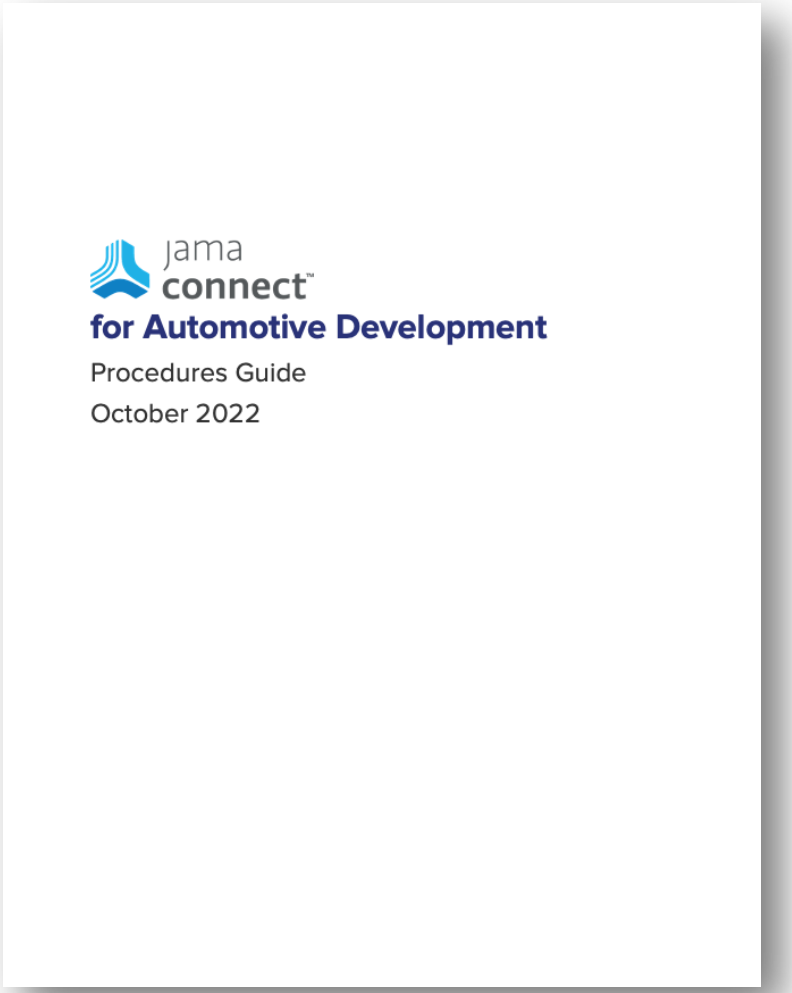
Introduction

GUIDES

The Jama Connect for Automotive Solution includes three documentation guides to fully document all aspects of the solution. Utilize the documents to understand the configuration of the Automotive Dataset, the process to follow when using the Automotive Dataset, and how generate reports from the data captured in Jama Connect.

UPDATED: Procedures Guide

- Identifies which processes and requirements of Automotive SPICE, ISO 26262, and ISO 21434 are best implemented in Jama Connect
- For each process and requirement, a procedure using Jama Connect is detailed

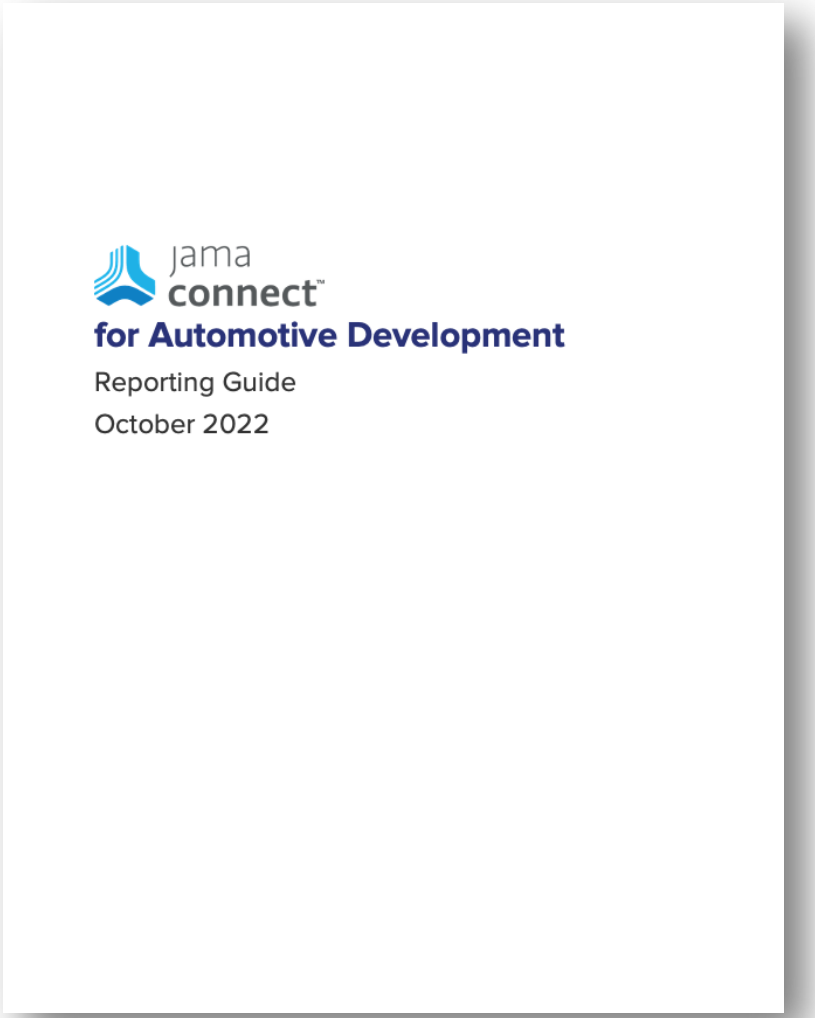


NEW: Configuration Guide

- Detailed description of each 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

NEW: Reporting Guide

- Detailed description of each export template and report included with the Automotive Solution
- Provides details on how to run each report included with the Automotive Solution and a sample output



AUTOMOTIVE SOLUTION

Reports

Introduction

REPORTS

The Jama Connect for Automotive Solution includes many export templates and reports for generating HTML, PDF, Word and Excel outputs from the system. While many of these export templates and reports are included with all Jama Connect instances or available for free on the Jama Connect User Community,

NEW: Reports

AUTOMOTIVE SOLUTION

Baseline Diff (Word): View baseline differences with inline comparison

V&V Matrix (Excel): View how how each requirement in a Set will be validated and verified in an efficient table layout

Requirements Allocation (Excel): View which system element each requirement is allocated to in an efficient table layout

Traceability Analysis (Word): Analyze the completeness of traceability across an entire project, or any subset.

Review Analysis (Excel): Analyze the completeness of review and approval across an entire project, or any subset.

Summary of Templates

REPORTS

Template Name	When to Use
Export to Word Default	Quick exports to Word where content is more important than formatting
Export to Word - Advanced	Export well formatted specification documents to Word
Export to Word - Simplified	Export well formatted specification documents to Word without custom fields or relationships
Export to Excel – HARA	Export HARA tables to Excel including Safety Goals
Export to Word - Checklists	Export Checklists to Word
Set Review Summary	Analyze project items for review completeness, results summarized for each Set
Traceability Analysis	Analyze project items for traceability completeness, results summarized for each item type
Requirements Allocation	Export a table in Excel showing the system elements allocated to each system requirement
Requirements V&V Matrix	Export a table in Excel showing the verification or validation method assigned to each requirement

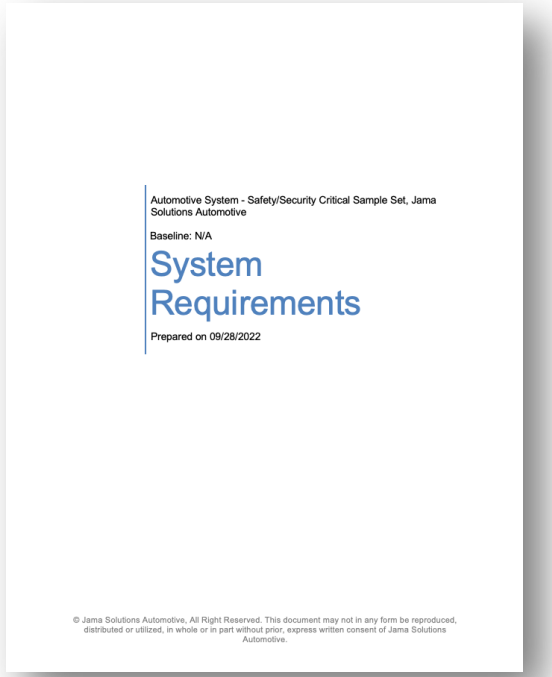
Export to Word - Advanced

REPORTS

The Export to Word Default - Advanced export template exports the same content with the same formatting as the Export to Word Default template with added functionality.

Functionality included in the Advanced template not available in the standard template includes:

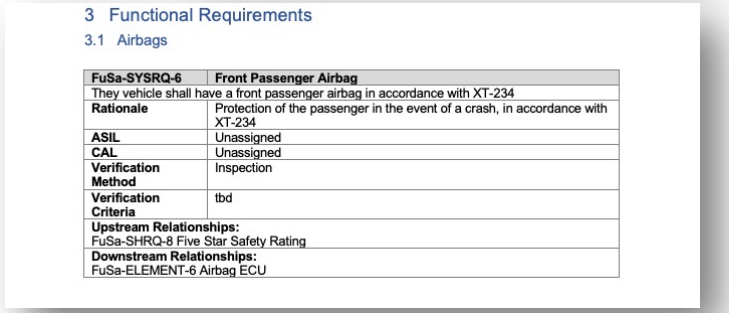
- Captioned Figures and Tables
- Tables of Figures and Tables
- Inter-document hyperlinks converted to cross-references
- Images automatically resized to fit the page
- Tables automatically resized to fit the page
- Tables reformatted with consistent styling
- Baseline signatures listed on the title page when exporting from a baseline
- Document properties from Set attributes included on the title page
- Inter-document hyperlinks converted to cross-references


Automotive System - Safety/Security Critical Sample Set, Jama Solutions Automotive

Baseline: N/A

System Requirements

Prepared on 09/28/2022


3 Functional Requirements

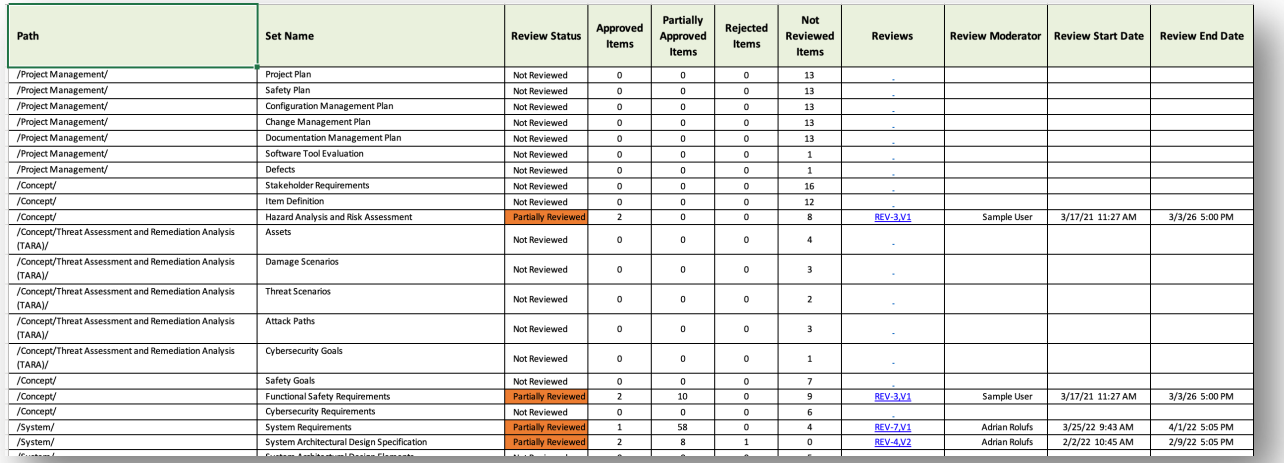
3.1 Airbags

FuSa-SYSRQ-6	Front Passenger Airbag
They vehicle shall have a front passenger airbag in accordance with XT-234	
Rationale	Protection of the passenger in the event of a crash, in accordance with XT-234
ASIL	Unassigned
CAL	Unassigned
Verification Method	Inspection
Verification Criteria	tbd
Upstream Relationships: FuSa-SHRQ-8 Five Star Safety Rating	
Downstream Relationships: FuSa-ELEMENT-6 Airbag ECU	

Set Review Summary

REPORTS

The Set Review Summary export summarizes the completeness of review for each Set in the list of exported items in an Excel table. This export can be run on the entire project by selecting View from the project or any subset by selecting a location in the project, using a filter, or a baseline. By analyzing from the perspective of the items in the Set, the Set can be split across multiple reviews without losing the visibility of review completeness. In case a review is deleted in Jama Connect, it will no longer be included in the summary.

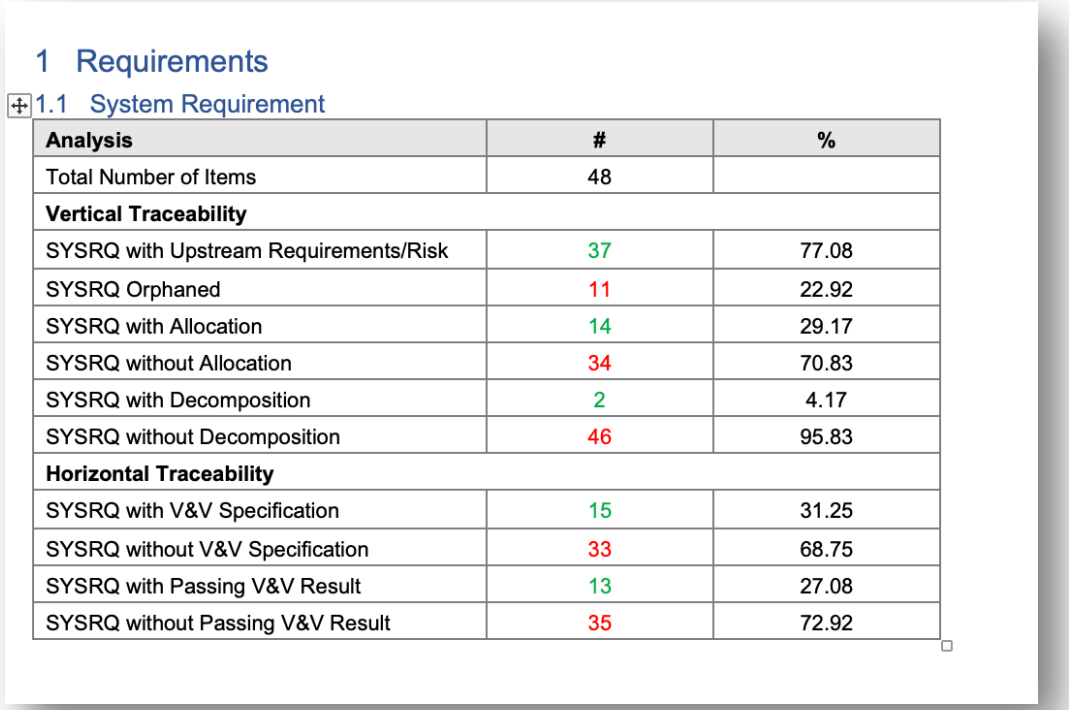


Path	Set Name	Review Status	Approved Items	Partially Approved Items	Rejected Items	Not Reviewed Items	Reviews	Review Moderator	Review Start Date	Review End Date
/Project Management/	Project Plan	Not Reviewed	0	0	0	13				
/Project Management/	Safety Plan	Not Reviewed	0	0	0	13				
/Project Management/	Configuration Management Plan	Not Reviewed	0	0	0	13				
/Project Management/	Change Management Plan	Not Reviewed	0	0	0	13				
/Project Management/	Documentation Management Plan	Not Reviewed	0	0	0	13				
/Project Management/	Software Tool Evaluation	Not Reviewed	0	0	0	1				
/Project Management/	Defects	Not Reviewed	0	0	0	1				
/Concept/	Stakeholder Requirements	Not Reviewed	0	0	0	16				
/Concept/	Item Definition	Not Reviewed	0	0	0	12				
/Concept/	Hazard Analysis and Risk Assessment	Partially Reviewed	2	0	0	8	REV-3,V1	Sample User	3/17/21 11:27 AM	3/3/26 5:00 PM
/Concept/Threat Assessment and Remediation Analysis (TARA)/	Assets	Not Reviewed	0	0	0	4				
/Concept/Threat Assessment and Remediation Analysis (TARA)/	Damage Scenarios	Not Reviewed	0	0	0	3				
/Concept/Threat Assessment and Remediation Analysis (TARA)/	Threat Scenarios	Not Reviewed	0	0	0	2				
/Concept/Threat Assessment and Remediation Analysis (TARA)/	Attack Paths	Not Reviewed	0	0	0	3				
/Concept/Threat Assessment and Remediation Analysis (TARA)/	Cybersecurity Goals	Not Reviewed	0	0	0	1				
/Concept/	Safety Goals	Not Reviewed	0	0	0	7				
/Concept/	Functional Safety Requirements	Partially Reviewed	2	10	0	9	REV-3,V1	Sample User	3/17/21 11:27 AM	3/3/26 5:00 PM
/Concept/	Cybersecurity Requirements	Not Reviewed	0	0	0	6				
/System/	System Requirements	Partially Reviewed	1	58	0	4	REV-7,V1	Adrian Rolufs	3/25/22 9:43 AM	4/1/22 5:05 PM
/System/	System Architectural Design Specification	Partially Reviewed	2	8	1	0	REV-4,V2	Adrian Rolufs	2/2/22 10:45 AM	2/9/22 5:05 PM

Traceability Analysis

REPORTS

The Traceability Analysis export creates a Word document that summarizes the completeness of traceability for each item type in a list of items. This export can be run on the entire project by selecting View from the project or any subset by selecting a location in the project, using a filter, or a baseline.



1 Requirements

1.1 System Requirement

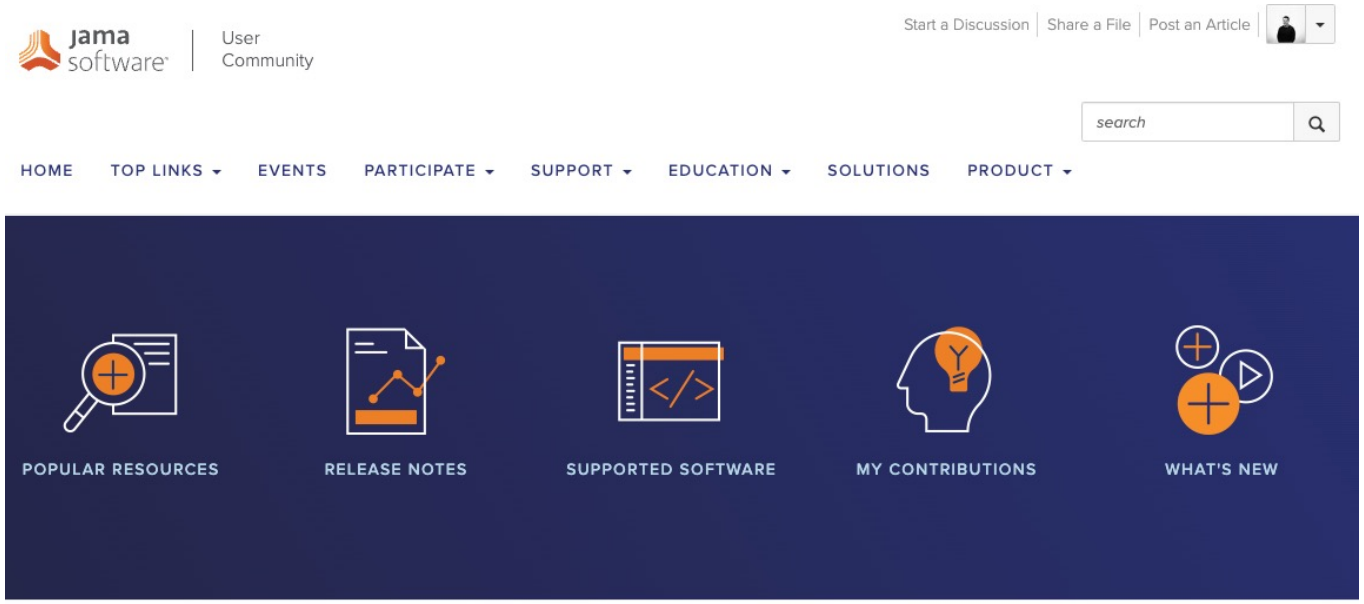
Analysis	#	%
Total Number of Items	48	
Vertical Traceability		
SYSRQ with Upstream Requirements/Risk	37	77.08
SYSRQ Orphaned	11	22.92
SYSRQ with Allocation	14	29.17
SYSRQ without Allocation	34	70.83
SYSRQ with Decomposition	2	4.17
SYSRQ without Decomposition	46	95.83
Horizontal Traceability		
SYSRQ with V&V Specification	15	31.25
SYSRQ without V&V Specification	33	68.75
SYSRQ with Passing V&V Result	13	27.08
SYSRQ without Passing V&V Result	35	72.92

AUTOMOTIVE SOLUTION

Access Process

Gaining Access to Automotive Solution

- Prospects that purchase Automotive package will have access to Automotive Solution.
- Existing Subscribers to the Automotive package can ask to be given access to the Automotive solution (email your Jama Customer Success Manager)
- Jama customers that have not subscribed to the Automotive package can work with their Jama Customer Success Manager to gain access.



Questions

AUTOMOTIVE SOLUTION

Thank You!