![Jama Software logo](j jama software)

All Systems Go

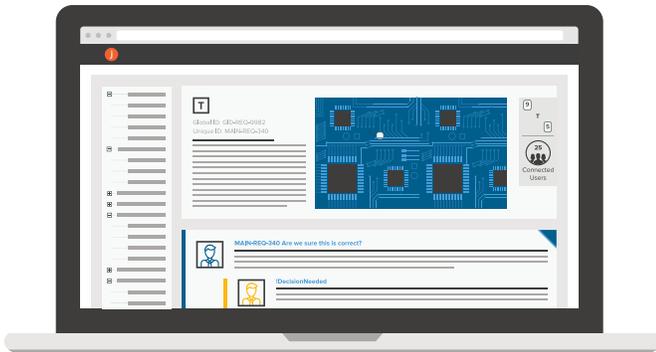## How to Unify Systems Engineering Processes and People

Do your systems engineering projects suffer from product-decision gridlock or arduous concept, design and validation phases that lead to unpredictable development costs and late releases?

Coordinating requirements management, verification and validation among the competing interests and inputs of multiple teams, all while striving to guarantee successful system development is a formidable challenge. But you have wise advocates on your side.

The International Council on Systems Engineering (INCOSE) bases its strategic objectives on helping systems engineering move away from "the limitations of document-based approaches" and toward a "highly efficient and shared human understanding of systems in a virtual environment that spans the full life cycle from concept through development, manufacturing, operations and support."

It's a logical proposal, asking organizations to take the evolutionary steps needed to keep pace with modern ways of working. Unfortunately—despite continued advances in development tools and processes— engineering organizations have not been able to add resources or gain new efficiencies fast enough to keep pace with the rising complexity in their projects.

The pressures to accelerate development and manage growing complexity—in distributed organizations and supply chains, within products, and across a network of interrelated and interdependent components—are real, and they manifest in the strain of delayed decisions, misaligned objectives and poor communication from which many systems engineering projects suffer.

How the Jama Solution Helps Systems Engineers Design Reliable Test Management Strategies:

- provides mechanisms to trace tests to product objectives and their associated costs, risks and priorities

- supplies mechanisms for all stakeholders to participate (including customers, developers, testers, engineers, product managers and business analysts)

- allows large enterprises to coordinate, track, and manage many software testing projects and teams across multiple locations

- makes it easy to create, view and report linkage between requirements, test cases, test data, test scripts, test results and defects

- helps ensure your process passes test and requirement data between specialized test tools and requirements repositories in an automated fashion

- supports analytics on testing progress and status through dashboards, reports and custom queries— all the data you need for thorough analysis

Solution Summary

Jama is a single system of action for your work in progress. The solution supports a broad range of systems engineering capabilities for Agile, Waterfall and hybrid development approaches:

- Requirements Engineering (RE)

- Requirements Change Management

- Test Management (TM)

- Systems Engineering Verification and Validation (V&V)

- Risk Management

- Program/Project Management (PM)

- Variant Management for Product Lines

Benefits

- End-to-end traceability

- Internal and external collaboration

- Real-time status and visibility
- Process standardization
- Automated compliance

Results

- Mitigated schedule risk and reduced cycle time
- Higher design quality from collaboration
- Reduced total cost of ownership from using the Jama SaaS cloud

Solution Specifics

The Jama modern requirements management solution fulfills the promise of the INCOSE mission for properly implemented systems. No other solution connects—in real-time—the individual contributions of thousands of architects, engineers, customers, managers, analysts and stakeholders who need to collaborate on complex systems development and sustainment. Even better, Jama provides traceability, visibility and communication context in a single system, thereby creating efficiency and capability where chaos once ruled.

Jama helps users navigate through rigorous and rule-based development conditions too. Our systems engineering customers working in regulated environments use Jama to:

- prioritize the interpretation and implementation of work processes
- innovate around new product and systems introductions and enhancements
- comply with regulatory standards

Manage Complexity

Complexity is the biggest challenge to successful systems design. Distributed teams, complicated product lines, siloed groups and market dynamics all contribute to a system's complexity. The solution: Better, modern ways of defining, building and testing. Jama makes it easy for all users to visualize and manage complex data models.

> While serving these needs might appear to be in conflict, systems engineers must find the balance. If you need to serve strict guidelines and customer needs, Jama helps you do it.

Behind Closed DOORS: A True Story

DOORS is archaic. I'd been looking for a replacement because it was such a pain to use that hardly anyone did. Requirements and specs are all over the place. There's no real traceability or collaboration between cross-functional groups due to the terrible user interface, and no intuitiveness for non-everyday users. We just couldn't make it work like we needed it to.

In contrast, my team has been using Jama and the difference is night and day. The user interface is intuitive and easy to use, whereas DOORS requires long and drawn-out training just to learn the basics. With Jama, implementation is relatively quick; you watch a couple of videos and you're good to go.

The DOORS environment basically forces people to take longer to get work done, and this removes productivity. **We need a tool that enables total collaboration, with better RM, traceability, usability and overall ROI, and that tool is Jama.**

An example as proof: On our very first spec review session, senior engineers who were previously accustomed to documents-based reviews were adding all their comments, questions and decisions into Jama. That speaks volumes on how easy it is to use, and how little time it takes to make and communicate decisions.

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> Thales USA)**

Improve the Way You Work Without Disruption

Unlike legacy tools and most competitors, Jama invests in building and maintaining a rock-solid UX; it's a foundational principal of the product's original design. You'll never find a bloated list of features you can't use—or have to beg anyone else to use, either. Configure Jama to the way you need to work and see how quickly teams adapt.

Trace Data, People and Processes

Traceability in Jama helps systems engineers ensure that essential information doesn't get missed, and it provides the ability to analyze change. Multiple levels of requirements, specifications, and verification

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artifacts each have their own sets of stakeholders that are architecting, performing engineering analysis, designing, testing, or offering feedback and ideas. In addition to support for complex traceability of data to data, Jama helps you trace the people to that data.

Coordinate, Validate and Verify

When building regulations- and compliance-bound systems, systems engineers are required to validate the tools used and the system's performance, and to verify that the system complies with every specification, requirement and regulation.

Using a combination of traceability through requirements and test cases, reviews of requirements and coverage, integrations with external testing tools, and documentation around Jama's processes and testing flows associated with the system you're building, Jama coordinates the discussions, decisions and actions around validation and verification so you know you're building right.

Reuse, Don't Rebuild

Reuse is a critical capability for following regulations. If you can't easily find information, don't know who to ask for it, don't know where to look for it, and don't know what is and isn't reusable, you're lost. Jama lets you document once and reincorporate trusted and proven content, creating relationships through traceability so you never have to scramble for critical data.

Make Communication Meaningful

Jama helps teams author, share, link and communicate around artifacts—essential communication that can easily become unmanageable, despite being the most important building block of any development process. Workflow diagrams, stage gates and Agile methodologies are merely good ideas if people and their outputs don't have a means of working together. Everyone has an opinion. But everyone doesn't have context. Jama provides the context for every bit of content and every single contributor.

Get and Stay Aligned

Modern, purposeful collaboration mechanisms built into Jama allow systems engineers to work smarter, keeping conversations in the context of the work itself. Jama keeps those that need to make and act on decisions focused on the system goals.

Iterate, Test and Launch Faster

Companies can get to market faster when people and data stay in sync on product development activities and deliverables. Jama's intuitive, web-based reviews and approvals shorten the time from ideation to value creation.

In product development, designing a reliable test strategy requires broad, strategic thinking. The goal of testing is to ensure that you release a best-quality product that meets customer expectations as documented in your early design concept and requirements gathering phases.

With Jama, every engineering activity and asset seamlessly connects to related activities and assets throughout the entire system life cycle. Jama captures product-related communication in context and brings all stakeholders together in one place for instant and comprehensive insight into what your teams are building and why.

Picture this: Traceable communication. Documented decisions and actions. All product and systems info organized and contextualized from concept to launch. With Jama, it's your reality. Try Jama and see how we can help you solve your team's systems engineering challenges.

About Jama Software

Jama Software is the definitive system of record and action for product development. The company's modern requirements and test management solution helps enterprises accelerate development time, mitigate risk, slash complexity and verify regulatory compliance. More than 650 product-centric organizations, including NASA, Rockwell Collins, Boeing and Caterpillar use Jama to modernize their process for bringing complex products to market. The company is headquartered in Portland, Oregon. For more information, visit www.jamasoftware.com.