

Spec-Driven Development, Governed.

Engineering at AI speed — without losing control of the spec.

AI Moved the Bottleneck. Most Teams Haven't Moved With It.

AI coding agents have made code generation fast and cheap. What they haven't done is make products ship faster. Speed in the wrong direction is just expensive rework: misread requirements, ignored guidelines, architectural drift, and burned tokens.

The bottleneck hasn't gone away. It has moved upstream into requirements and specifications, and downstream to testing and verification. Organizations that retool their development process around that reality are seeing real product velocity gains, while those that bolt AI onto an existing agile workflow get a productivity bump and not much else.

There is a name for that re-tooling: **Spec-Driven Development**.

What is Spec-Driven Development?

Spec-Driven Development (SDD) is a code production system built for a world where AI writes the code. Instead of relying on the implicit knowledge in engineers' heads, SDD converts that knowledge into explicit, deterministic structures that AI coding agents can act on reliably.

In SDD, the specification — not the code — is the source of truth. A specification is a collection of atomic requirements that unambiguously instruct an AI agent to build a verified feature. Code is generated from it, tested against it, and when code fails verification, you don't patch the code. You fix the spec and regenerate.

WHAT GOVERNED CONTEXT DELIVERS*

- +100% requirements reuse
- -50% rework
- -30% review cycle time
- -75% audit prep time

AI can generate the work. Jama Connect proves that the work is correct.

**Results reported by Arteris IP, a Jama Connect customer. Read the full story at jamasoftware.com/customer-story.*

This requires three shifts in mindset:

1. **From craft programming to production programming.** Code is system-produced, and engineers improve the production process rather than hand-crafting output.
2. **From implicit to explicit knowledge.** LLMs can only work from what's written down. Patterns, constraints, and rationale must be captured, not assumed.
3. **From minimal structure to deterministic structure.** Probabilistic AI needs a deterministic context layer to narrow its outputs into the solution space you actually want.

Agile was built to maximize human coding speed. SDD is built to harness AI coding speed — and turn it into verified, validated product velocity.

Connectivity is Not Context

Most teams start by wiring AI agents into their tools through the Model Context Protocol (MCP), and that's a necessary step, but access on its own doesn't tell an agent which information is authoritative, which version is current, what a change will affect downstream, why a decision was made, or whether the verification evidence behind it still holds.

Without those answers, the agent infers. And inference at agent speed is spec drift at agent speed.

This is the quiet risk in most AI adoption today: implementation accelerates while specification governance, traceability, and audit history fall behind. In regulated and multidisciplinary industries, that gap isn't a nuisance. It's a compliance problem, a quality problem, and eventually a delivery problem.

The organizations getting SDD right start with structure and governance, not generation. Teams that lead with AI content creation on a weak foundation don't reduce inconsistency; they produce more of it, faster.

Why Jama Connect® for Spec-Driven Development

Jama Connect is the Product Context Layer for SDD: one governed system of record connecting requirements, risks, tests, models, code repositories, reviews, approvals, verification evidence, and change history.

The Traceability Information Model gives AI a map. At the center of Jama Connect is a relationship graph that defines how requirements, models, code, tests, and verification results relate to one another. AI agents use it to understand intent, navigate dependencies, and assess impact — instead of guessing across disconnected artifacts.

Engineers stay in control. Every AI-assisted action traces back to the requirements, decisions, and validation evidence behind it. Each interaction through Jama Connect MCP is logged and versioned under the authenticated user, preserving security controls and a full audit trail.

Governed context makes AI cheaper and more accurate. Instead of pasting requirements documents into prompts, agents retrieve only the artifacts a task needs through Jama Connect MCP. Smaller prompts, less irrelevant context, and a token budget spent on reasoning rather than reading.

It works alongside your AI stack, not in place of it. Jama Connect doesn't replace your coding agents, LLMs, modeling tools, or test platforms, because its job is to govern the context they all draw from. Tools like GitHub Spec Kit and Kiro help teams execute against a specification; Jama Connect ensures it's the right specification, approved by the right stakeholders, and connected to the right evidence. Work-tracking tools like Jira and Azure Dev-Ops keep doing what they do best, which is managing the state of work, while Jama Connect Interchange keeps that work connected to the governed spec behind it.

Regulators already accept it. Jama Connect is TÜV SÜD certified for ISO 26262, IEC 61508, and IEC 62304, and is trusted for traceability compliance across regulated industries — which matters when AI-generated work must survive an audit.

What SDD Requires Of Your Tooling

Before committing to a product context layer, ask whether it provides:

- Complete explicit context across upstream (requirements, specification, systems design) and downstream (test generation, traceability, verification) activities
- A deterministic information model that infers the impact of change across the entire context
- A production-grade MCP server with full read/write access — not a limited, read-only integration
- A dual-mode interface, so humans and AI work on the same context layer
- Context awareness of enterprise branching, merging, and variants
- Acceptance by industry regulators for traceability requirements

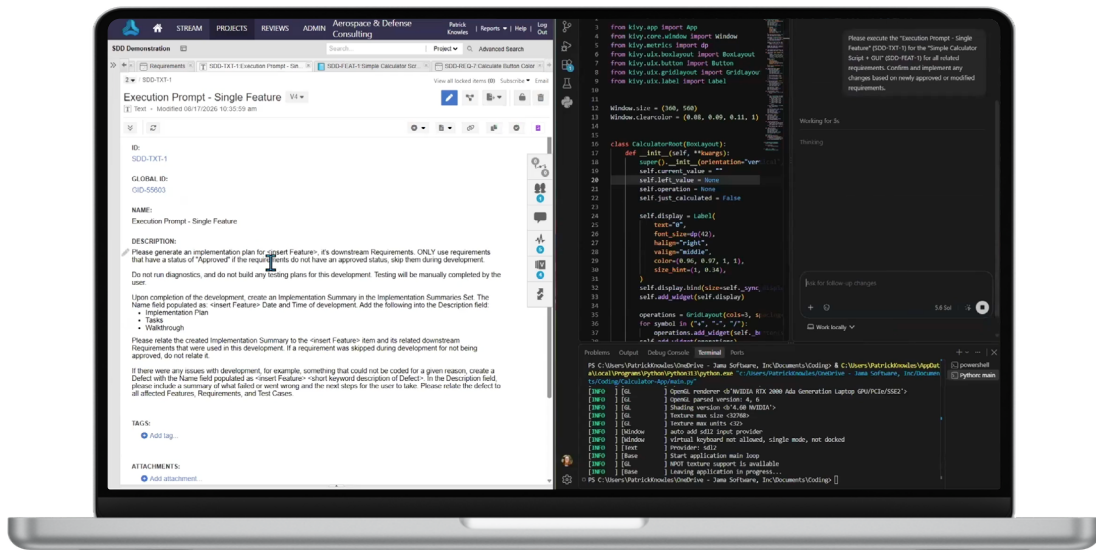
Agile tooling — user stories, kanban boards, wikis, tickets — does an important job: it tracks the state of work. It was never designed to be the source of truth an AI agent builds from, and asking it to carry that weight is where spec drift begins. Jama Connect sits alongside those tools as the product context layer, not in place of them.

Where Is Your Organization on the AI Adoption Curve?

Most teams today are improving productivity inside existing workflows. A growing number are retooling their development process around AI velocity — and discovering that spec governance is the difference between speed and drift.

Take the next step:

- Read the full [Spec-Driven Development Playbook](#) for an end-to-end implementation walkthrough, including governed prompts you can adapt
- Schedule a **Product Context Layer working session** with your engineering leaders and a Jama Software solutions architect



Jama Software is focused on accelerating product velocity with AI-driven development across multidisciplinary engineering organizations.
Learn more at jamasoftware.com.

ABOUT JAMA SOFTWARE

Jama Software is focused on accelerating product velocity with AI-driven development across multidisciplinary engineering organizations. Using Jama Connect, engineering organizations can now adopt AI-driven development while intelligently managing the complexity and compliance of parallel development, automated pipelines, and industry standards. Our rapidly growing customer base spans aerospace & defense, automotive, medtech & life sciences, semiconductor, industrial manufacturing, consumer electronics, infrastructure, robotics, and energy. For more information about Jama Connect services, please visit www.jamasoftware.com.