

A Comprehensive Analysis of Jama Connect for Requirements Engineering: Capabilities, Limitations, and Future Potential

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Abstract—This paper presents a comprehensive analysis of Jama Connect, a leading tool for requirements engineering (RE) and management, emphasizing its capabilities, limitations, and potential for future growth. Jama Connect plays a critical role in modern software and systems development by facilitating requirements elicitation, documentation, traceability, and validation. The report evaluates its advanced features such as Live Traceability™ and collaboration support, which enhance project efficiency, compliance with industry standards, and team coordination. A comparative analysis with alternative RE tools, including Jira, IBM DOORS, Helix RM, and Codebeamer, highlights Jama Connect's advantages in user-friendliness, integration capabilities, and regulatory compliance. The paper also explores the platform's limitations, such as its complexity for new users, customization constraints, and pricing structure. Future directions for Jama Connect include deeper AI integration, expanded customization, and enhanced global accessibility. Overall, this study underscores Jama Connect's value to industries with stringent regulatory requirements, such as automotive, aerospace, and healthcare, positioning it as a critical enabler in RE processes and systems innovation.

Index Terms—jama, jama connect, requirements, requirements management tools, requirements engineering

I. INTRODUCTION

Requirements engineering (RE) represents a pivotal discipline within the broader domain of software and systems development. It is concerned with the identification, documentation, and maintenance of the needs and expectations of stakeholders throughout the project lifecycle. It encompasses a series of processes, including requirements elicitation, specification, validation, and management, with the objective of ensuring that the final product is aligned with the goals of the relevant stakeholders and in compliance with the relevant regulatory standards. The effective implementation of requirements engineering can mitigate project risks, facilitate communication between teams, and enhance the overall efficiency of the development process. In this context, RE tools are of great importance in the management of the complexity of requirements, particularly in the case of large-scale or regulated projects. Such tools provide a range of features, including traceability, impact analysis, real-time collaboration,

and compliance management. By facilitating the streamlining of RE processes, these tools assist teams in achieving enhanced accuracy, maintaining alignment with evolving requirements, and meeting deadlines within the context of quality standards. The principal aim of this paper is to provide a comprehensive analysis of Jama Connect, a widely recognised RE tool. The objective of this paper is to evaluate the extent to which Jama Connect supports key RE tasks, such as elicitation, documentation, traceability, and validation. To this end, the paper will examine the features, capabilities, and limitations of Jama Connect in order to ascertain its suitability for use in the aforementioned tasks. This analysis is structured to offer insights into the tool's development background, its strengths, and areas for improvement, while also comparing it to alternative tools. Moreover, the paper presents a practical use case to illustrate the application of Jama Connect in real-world scenarios and examines its potential for future advancements in the context of evolving trends in RE, such as agile development and AI-driven processes. The objective of this detailed examination is to highlight the value of Jama Connect to practitioners in various industries, its contributions to improving RE processes, and its alignment with the challenges of modern systems development.

II. TOOL OVERVIEW

Jama Connect is a leading tool for requirements management and traceability, designed to streamline complex product and systems development processes. It caters to business analysts, product managers, software and systems engineers, and compliance teams across industries such as automotive, aerospace, and healthcare. By providing a centralised platform, Jama Connect enhances collaboration, ensures compliance with industry standards, and reduces inefficiencies caused by disconnected workflows and tools, ultimately mitigating the risks of costly errors.

Developed by Jama Software, a company headquartered in Portland, Oregon, USA, Jama Connect was first introduced in 2007 to meet the growing demand for robust requirements management solutions. Designed to support industries

transitioning to agile and iterative development approaches, the tool has evolved to include advanced features such as Live Traceability™, seamless integrations with tools such as Jira and Git, and enhanced collaboration capabilities. These innovations have established Jama Connect as the premier solution for managing complex and regulated projects.

The tool is widely recognized for its intuitive interface, robust feature set, and ability to adapt to various project methodologies, including Agile, Waterfall, and hybrid approaches.

III. KEY FEATURES AND CAPABILITIES

Jama Connect addresses critical challenges in requirements engineering and product development, especially for complex, regulated projects. Its primary goal is to improve product quality, ensure compliance with industry standards, streamline team collaboration, and reduce inefficiencies in the development lifecycle. The platform achieves these goals by leveraging advanced features such as Live Trace Explorer™ and Jama Connect Advisor™ to define clear, high-quality requirements that comply with standards such as INCOSE and EARS. By providing configurable workflows and robust traceability mechanisms, Jama Connect helps organizations comply with regulatory frameworks and mitigate risk. It also promotes collaboration by acting as a central repository for requirements and related data, improving decision-making and reducing miscommunication. In addition, its change management and impact analysis capabilities minimize errors and accelerate product delivery, enabling faster time to market.

It provides a comprehensive set of features to streamline requirements management and improve project outcomes. Teams can create, organize, and manage requirements with precision, supported by natural language processing tools such as Jama Connect Advisor™ that ensure high-quality documentation while enabling versioning, baselining, and reuse. Centralizing feedback and approvals through the Review Center facilitates cross-functional collaboration, reduces delays, and ensures stakeholder alignment.

The platform's Live Traceability™ feature links requirements, risks, test cases, and other artifacts, providing complete traceability throughout the development lifecycle. This enables detailed impact analysis and efficient management of requirements changes, reducing errors and ensuring dependencies are properly addressed. By aligning with industry standards and generating traceability reports, Jama Connect also supports compliance in highly regulated industries such as aerospace, automotive and healthcare.

Integrations with widely used tools such as Jira, Excel, and custom solutions through robust APIs allow organizations to maintain their existing workflows while benefiting from Jama Connect's advanced capabilities. In addition, linking requirements to development and testing activities ensures consistent verification and validation, reducing rework and catching defects early.

By supporting teams throughout the product lifecycle, Jama Connect enables organizations to efficiently deliver innovative,

high-quality products while maintaining regulatory compliance and fostering seamless collaboration.

IV. ADVANTAGES

Jama Connect offers a comprehensive suite of technical features, but its true value lies in its ability to transform the strategic, operational, and collaborative aspects of product development. By seamlessly aligning requirements management with overarching business objectives and industry best practices, Jama Connect provides organisations with the means to gain a significant competitive edge. It guarantees that product development efforts are not only technically proficient but also strategically aligned with customer needs and evolving market demands. This alignment permits teams to establish a direct correlation between requirements and business outcomes, thereby enabling decision-makers to prioritise features in an effective manner and to allocate resources in a way that enhances the impact of product launches.

A notable advantage of Jama Connect is its proactive approach to risk management. In contrast to a reactive approach, the platform is designed to identify potential risks at an early stage of the development lifecycle. The advanced traceability mechanisms and impact analysis capabilities afford teams the capacity to anticipate the downstream effects of requirement changes, thereby reducing the risk of costly project delays or failures. Such foresight engenders confidence in the eventual outcome of the project and helps organisations to maintain a competitive advantage by mitigating unforeseen issues before they escalate.

Furthermore, Jama Connect is particularly effective in fostering innovation, which is especially beneficial in highly regulated industries such as aerospace and healthcare. The challenge of balancing the demands of innovation with regulatory compliance is a significant one, but Jama Connect automates critical documentation processes and provides clear visibility into regulatory requirements, thereby assisting in the achievement of this goal. This allows teams to concentrate on the creation of innovative solutions without being encumbered by the necessity of engaging with administrative tasks related to compliance.

In the contemporary business environment, the ability to reach the market rapidly is a crucial factor that sets one enterprise apart from another. Jama Connect facilitates the acceleration of product development timelines through the promotion of iterative development and rapid prototyping. The collaborative capabilities of the system facilitate communication across teams, enabling organisations to bring high-quality products to market in a shorter timeframe while maintaining rigorous quality standards. The accelerated development process enables organisations to capitalise on market opportunities in a timely manner, thereby gaining a competitive advantage over their rivals.

Furthermore, Jama Connect facilitates data-driven decision-making through the provision of robust analytics and reporting tools. Teams are able to gain valuable insights into a number of key areas, including project progress, the quality

of requirements and the impact of changes. This fosters a culture of continuous improvement. This iterative feedback loop guarantees that each project benefits from the lessons learned in previous endeavours, thereby reinforcing a culture of continuous improvement and excellence.

The platform has exerted considerable influence beyond the boundaries of individual organisations, establishing itself as a standard within a number of different industries. Jama Connect has been instrumental in defining best practices in requirements engineering. By adopting this platform, organisations align themselves with industry leaders, ensuring they remain at the forefront of innovation in their field.

Furthermore, Jama Connect facilitates enhanced stakeholder engagement and transparency, effectively bridging the gap between technical teams and non-technical stakeholders. Its intuitive dashboards and comprehensive reporting capabilities provide all stakeholders, ranging from executives to regulatory bodies, with clear visibility into project status, risks, and requirements. This level of transparency fosters trust, promotes alignment, and ensures that critical decisions are made collaboratively and confidently, ultimately driving project success.

V. LIMITATIONS

While Jama Connect is a highly capable software, like any such product, it comes with certain limitations and areas for potential growth. One of the key challenges is the platform's complexity, especially for those without prior experience. The broad range of features can result in a steep learning curve, leading to an extended onboarding process for new team members. Achieving proficiency often requires dedicated time and frequent use beyond the initial training phase. For organizations that need to deploy quickly, this can negatively impact project efficiency.

Jama Connect also tends to focus on a product-centric model, using hierarchies to support the modeling of underlying structures. However, it lacks the ability to account for costs related to processes outside the product itself, or to integrate cost modeling into the requirements management strategy. This could be a limitation for organizations that need to factor in cost considerations across different processes. [1]

Additionally, Jama Connect does not fully implement the SysML standard, which could be a drawback for teams needing compatibility with this modeling language. [2]

Although the platform offers some automated features, such as linking requirements to potential test cases, these functions are not fully automated. The final validation and mapping of requirements typically rely on engineers, suggesting there is room for improvement in transitioning these semi-automated processes into fully automated ones. [3]

Customization within Jama Connect is another area where the platform could be enhanced. While it offers some degree of flexibility, much of the system's functionality is pre-defined, which may limit teams looking for highly tailored workflows or user experiences. This is particularly relevant for industries with unique or specialized needs.

The platform's pricing structure could also pose a barrier, especially for smaller organizations. Jama Connect uses a custom pricing model, rather than a transparent, predefined plan. This often results in higher costs, which may be prohibitive for small businesses or startups. The lack of clear pricing information can deter smaller teams that could otherwise benefit from the platform's robust features.

Lastly, while Jama Connect offers a mobile application, its functionality is limited compared to the desktop version. This reduced capability may be a disadvantage for users who need to access the platform on the go, potentially hindering their ability to engage with important project tasks remotely. ¹

VI. COMPARATIVE ANALYSIS

In this section a comparative analysis was performed between Jama Connect and other RE tools, namely, Jira, IBM DOORS, Helix RM and Codebeamer.

A. Jira

Jira is a widely used project management and issue tracking tool developed by Atlassian. Primarily designed for software development teams, Jira helps manage tasks, track bugs, and plan project workflows. It provides customizable workflows, agile boards (Scrum and Kanban), and robust reporting features to facilitate team collaboration and project tracking. Although Jira is primarily focused on project management, it can also be adapted to manage requirements with custom configurations and plugins, making it versatile for different types of teams. It is known for its strong integration capabilities with other tools in the Atlassian suite, such as Confluence and Bitbucket, as well as third-party applications. ²

B. IBM DOORS

IBM DOORS (Dynamic Object-Oriented Requirements System) is a legacy requirements management tool widely used in industries such as aerospace, defense, and automotive. It provides a structured platform for capturing, managing, and tracing requirements throughout the lifecycle of complex projects. DOORS offers robust version control, traceability, and change management features, ensuring that requirements are clearly defined and well-documented. While it is highly regarded for its ability to handle large, complex datasets and support regulatory compliance, IBM DOORS is often criticized for its outdated user interface and limited customization options, leading many users to seek alternative tools for more modern and user-friendly solutions. ³

C. Helix RM

Helix RM is a comprehensive requirements management solution designed to support the entire lifecycle of requirements in product and software development. Developed by Perforce, Helix RM offers a robust platform for capturing,

¹<https://www.crazyegg.com/blog/jama-connect-review/>

²<https://www.atlassian.com/software/jira>

³<https://www.ibm.com/docs/en/engineering-lifecycle-management-suite/doors/9.7.2?topic=engineering-requirements-management-doors-overview>

tracing, and managing requirements while ensuring alignment with project goals. It features strong integration capabilities with other development tools, enabling seamless collaboration across teams and disciplines. The tool is particularly well-suited for industries with complex regulatory and compliance requirements, such as automotive, aerospace, and medical devices. Helix RM provides a high level of customization, version control, and traceability, making it an ideal choice for teams needing advanced requirements management alongside their broader application lifecycle management (ALM) processes.⁴

D. Codebeamer

Codebeamer is a comprehensive Application Lifecycle Management (ALM) platform designed to streamline the development of complex software and systems. It provides a unified environment for managing requirements, testing, development, and collaboration across teams. Codebeamer offers powerful features for traceability, version control, and customization, making it suitable for industries such as automotive, aerospace, and medical devices that require high compliance and regulatory standards. The platform supports agile, waterfall, and hybrid methodologies, providing flexible workflows and integration with various third-party tools. With a focus on collaboration and end-to-end traceability, Codebeamer enables teams to maintain visibility and control over the entire lifecycle of a product, from requirements definition through to delivery.⁵

E. Comparative Analysis of RE Tools

Given the comparative analysis performed and documented on table I with the use of online websites and published articles [4], Jama Connect is the most suitable tool for requirements management, standing out for its ease of use, flexibility, and robust integration capabilities. It is particularly well-suited for industries with stringent regulatory requirements, such as MedTech, automotive, and pharma, due to its built-in compliance features and excellent traceability. Its cloud-based platform enhances collaboration, making it ideal for remote teams and modern workflows. In comparison, Jira, although highly effective for project management, requires extensive customization to handle complex requirements management and does not inherently support advanced traceability and compliance needs. IBM DOORS, while historically significant, is outdated and lacks the user-friendly interface and collaboration features that modern teams require, making it less practical for today's fast-paced, distributed work environments. Helix RM provides strong support for requirements management within the context of ALM but falls short in flexibility and collaboration when compared to Jama Connect. Codebeamer, though offering advanced configurability and strong branching capabilities, can be complex to set up and use, making it more suited for teams that need deep customization but may not prioritize simplicity and ease of use. Overall, Jama Connect

offers the most comprehensive, user-friendly, and flexible solution, making it the best choice for most teams looking for an effective and efficient requirements management tool.
6 7 8 9 10

VII. FUTURE POTENTIAL

Jama Connect has significant potential to evolve and address the emerging needs of modern requirements management. As industries adopt more advanced technologies, integrating artificial intelligence (AI) into Jama Connect could unlock transformative capabilities. AI-powered analytics could enhance risk identification, optimize requirements quality, and improve impact prediction when changes are introduced, allowing teams to proactively mitigate issues and ensure more efficient workflows.

Expanding integration capabilities is another key area for Jama Connect's future development. As DevOps practices and Continuous Integration/Continuous Deployment (CI/CD) pipelines become central to Agile development, deeper integration with these systems would streamline workflows. Jama Connect could strengthen its role as a bridge between requirements engineering and software development, ensuring traceability and compliance are maintained across the entire product lifecycle.

Increased customization options also present a promising direction. While Jama Connect already offers configurable workflows and templates, enhancing these to include more granular and industry-specific options could attract users from niche markets such as renewable energy and space exploration. By developing tailored solutions for these emerging sectors, Jama Connect could expand its user base and cater to increasingly complex project requirements.

The platform's collaboration features could benefit from further enhancements, especially with the growing emphasis on remote and distributed work. Integrating real-time communication tools like Slack or Microsoft Teams directly into Jama Connect would enable seamless, in-app communication. Additionally, implementing AI-driven review tools to analyze feedback and provide intelligent suggestions could accelerate approval cycles and improve overall collaboration.

Global accessibility remains another avenue for growth. Expanding localization options to support more languages and region-specific compliance standards would make Jama Connect a more attractive solution for multinational organizations. Features such as offline access and optimized performance in low-connectivity environments would further enhance its usability for teams operating in diverse global conditions.

⁶<https://www.jamasoftware.com/platform/jama-connect/>

⁷<https://www.jamasoftware.com/blog/jama-connect-vs-ibm-rational-doors-a-better-alternative-to-ibm-doors/>

⁸<https://www.g2.com/compare/helix-alm-vs-jama-connect-for-requirements-management>

⁹<https://www.trustradius.com/compare-products/jama-connect-vs-jira-software>

¹⁰<https://www.spkaa.com/blog/comparing-alm-software-products-codebeamer-vs-jama-connect>

⁴<https://www.perforce.com/products/helix-requirements-management>

⁵<https://www.ptc.com/en/products/codebeamer>

TABLE I
COMPARATIVE ANALYSIS OF RE TOOLS

Feature	Jama Connect	Jira	IBM DOORS	Helix RM	Codebeamer
General Overview	A modern requirements management tool with flexible customization, ease of integration, and simplicity. Rated highly for user-friendliness	Primarily a project management tool, but can manage requirements with custom configurations and plugins	Legacy requirements management tool, less user-friendly, outdated	End-to-end ALM suite with strong integration for requirements, testing, and version control	Advanced ALM platform for product and software development, offering high configurability
Ease of Use	Rated highly (ease of setup, admin, and use). 2.7x faster to adopt than IBM DOORS	Easy for project management but requires customization for requirements management	Known for a difficult user interface, many users prefer external tools for managing requirements	Rated higher than Jama in certain aspects of user setup and support	Advanced UI but offers flexibility for power users
Flexibility and Customization	Highly flexible with easy-to-configure workflows and templates, supports multiple methodologies	Highly customizable via plugins and integrations, but not inherently designed for requirements	Limited customization; upgrading to DOORS Next doesn't carry over old customizations	Good customization, but not as flexible in requirements traceability compared to Jama	Highly configurable, with templates for different industries and deep configuration options
Collaboration	Real-time collaboration with cloud capabilities, making it ideal for remote teams	Strong collaboration in project management but lacks native support for detailed requirements management	Lacks modern collaborative features, especially for remote teams	Collaborative features are available but not as seamless as Jama	Strong collaboration, integrates well with other tools for comprehensive teamwork
Integration with Other Tools	Seamless integrations with various ALM, PLM, QA, and MBSE tools. Strong support for integrations	Supports integration with many tools, especially through Atlassian's marketplace	Limited integration capabilities compared to modern tools	Strong integration with third-party tools but less extensive than Jama	Extensive integrations with third-party tools, including source code management
Version and Change Management	Supports versioning and change management with robust traceability features	Supports basic version control through plugins but not as sophisticated as others in this list	Poor version and change management. Difficult to track requirements over time	Strong version and change management but lacks deep configuration options for branching	Advanced version control and branching capabilities, superior change management compared to others
Support for Remote Work	Cloud-based, facilitating remote collaboration and real-time decision-making across global teams	Can be used for remote work but isn't natively focused on requirements management	Lacks cloud-based collaboration, making remote work difficult	Not optimized for remote collaboration compared to modern solutions	Cloud-based, excellent support for remote teams working on complex projects
Industry Focus	Highly recommended for regulated industries (e.g., MedTech, Automotive, Pharma)	Primarily used for software development, may require customization for regulatory requirements	Primarily used in industries where legacy systems are still in place	Best suited for teams needing full lifecycle management with an emphasis on integration	Highly suitable for industries like MedTech, automotive, and aerospace with complex regulatory requirements
User Ratings	Highly rated for ease of use, flexibility, and ROI; 80%+ for ease of doing business	Rated highly for project management; customizations can make it more complex	Rated poorly for usability and user experience	Rated for good customer support but lower for ease of use	Rated highly for configurability and advanced features
Pricing	Subscription-based, flexible model; cost-effective for most mid to large-size teams	Subscription-based; pricing based on customization and plugins	Expensive and not cost-effective for many businesses due to outdated platform	Custom pricing depending on the scale and integrations required	Subscription-based with flexible pricing, suitable for enterprise-level teams
Compliance and Traceability	Excellent traceability, built-in compliance features for regulated industries	Can be customized for compliance needs but lacks out-of-the-box solutions	Limited compliance tools and poor traceability	Good compliance and traceability features but not as robust as Jama	Strong compliance support, excellent traceability for regulated industries
Deployment	Cloud-based, making it scalable for teams across locations	Cloud-based or on-premise, depending on configurations	Primarily on-premise, cloud capabilities are limited	Cloud-based, with on-premise options available	Cloud-based and on-premise, flexible deployment options

Given the recent multi-million dollar acquisition of Jama Software, it can be inferred that significant future investments will be made to further enhance the Jama Connect tool. This financial backing will likely accelerate innovations in AI, deepen integration with development pipelines, and improve global accessibility, solidifying Jama Connect's position as a leader in requirements management.¹¹

To maximize its potential, Jama Connect should continue to focus on innovation in AI, deeper integration with development pipelines, and enhancements in global accessibility. These efforts, combined with future investments, would ensure its relevance in an ever-evolving technological landscape.

VIII. CONCLUSION

Jama Connect is a robust and versatile tool designed to address the complexities of requirements engineering (RE) in modern, regulated industries. Its comprehensive features, including requirements traceability, collaboration, impact analysis, and compliance management, make it particularly valuable for teams managing large-scale projects. By centralizing requirements-related tasks and enabling seamless communication, Jama Connect helps mitigate project risks, reduce errors, and maintain alignment with stakeholder expectations throughout the development lifecycle. The tool's standout features, such as end-to-end traceability and industry-specific compliance workflows, highlight its role as a critical enabler in achieving precision and efficiency in RE tasks. Its ability to integrate with other development and testing tools further enhances its appeal, enabling teams to streamline workflows and adapt to agile and hybrid methodologies. Despite its strengths, challenges such as a steep learning curve and high licensing costs may limit its accessibility to smaller organizations. However, for teams with the resources to support its implementation, Jama Connect offers unparalleled support for navigating the complexities of RE. In summary, Jama Connect serves as a powerful ally for practitioners in ensuring that requirements are well-documented, tracked, and aligned with both technical and business objectives. Its overall value lies in improving collaboration, compliance, and traceability, key factors in the successful delivery of complex systems and products. As industries evolve, tools like Jama Connect will remain central to addressing emerging challenges and advancing the field of requirements engineering.

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¹¹<https://www.jamasoftware.com/press/francisco-partners-to-acquire-jama-software-for-1-2b/>