Jama software®

Industry Innovator, Bollinger Motors, Selects Jama Connect®'s Requirements Managements Platform for More Efficient, Effective, and Scalable All-Electric Automotive Product Development

Learn how Jama Connect has enabled process efficiencies, cross-team visibility, and real-time collaboration for the Bollinger Motors development team, setting a solid foundation for innovation and growth for their all-electric vehicle solutions.

ABOUT | BOLLINGER MOTORS

- Headquarters: Detroit, Michigan

- Mission: To make a positive global impact by building truly evolved electric vehicle solutions at the highest quality possible.

- Expertise: Their all-electric, dual-motor drivetrain is best-in-class, and their all-electric commercial platforms are tailored to fit existing truck bodies, which will speed adoption in a sector that has a significant impact on emissions and our environment.

Bollinger Motors is engineering Class 3 and 4 electric platforms and trucks. From the ground up, the team's dream was to build something better. Bollinger is working with environmental organizations and Tier 1 and engineering firms to create advanced solutions that will facilitate the reduction in U.S. greenhouse gas emissions. They understand that the future is electric, and they're especially proud to be building their all-electric trucks locally in Detroit, Michigan.

BOLLINGER MOTORS CUSTOMER STORY OVERVIEW

Setting the Right Foundation for Growth

To set a solid foundation for the future of their company's growth and innovation, bringing in more discipline to their development process was of the utmost importance. Bollinger Motors was looking for some key things in a modern requirements solution, and Jama Software fit the bill.

OBJECTIVES

- An Organized and Centralized Requirements Management System

- Ease of Use

- Ability to Import and Export with REQ IF Data Exchange

- A Scalable, Configurable, Cloud-based Tool

OUTCOMES & FUTURE CONSIDERATIONS

- Managing Functional Safety

- Single Source of Truth

- Review Center

1 An Organized and Centralized Requirements Management System

When Jama Software was brought in, it was at the time the company was looking for a streamlined way to handle the complexity of their innovative vehicles. They needed new software to help achieve their high-level goals.

"Our vehicles are a massive organization of complex interconnected parts, and to effectively manage that level of complexity, an organized and centralized requirements management process was essential, "shared Lyth Alobiedat, Lead Controls Engineer at Bollinger Motors.

Across their vehicles, they have eight programmable modules which are each responsible for some subset of the vehicle's subsystems. Alobiedat oversees all the modules that exist in the vehicles they are building — and his team is responsible for both the software and the implementation of the systems. These complex modules all need to interconnect, communicate, and perform in very specific ways.

With a lean team, they knew that to build the first vehicles of their kind, their requirements management process had to be in order. They needed to move away from static requirements trapped in disparate documents and move towards a modern requirements management platform that enables Living Requirements™ which create a common thread through all downstream activity.

Jama Connect enables the Bollinger team to create living requirements which link each requirement to its decomposed user stories, dev status across engineering teams, change impact analysis, risk analysis, test results, defects, etc. This is helping them more effectively manage and validate complex systems requirements while eliminating the risks and inefficiencies associated with static, inefficient documents-based requirements and other legacy systems.
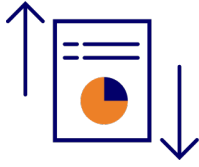
2 Ease of Use

According to Alobiedat, ease of use was a core differentiator—and key reason for the selection — of Jama Connect, when compared to other requirements management tools. With many on the Bollinger Motors team experienced in using other, more challenging-to-work-with requirements tools, a platform as easy as Jama Connect stood out for them. Even traditionally non-tool users can get involved and use the tool quickly.

"We had one training day with Jama Software's Professional Services team and after that, nearly every person in the company was able to write at least one or more requirements," said Alobiedat.

Because Jama Connect is designed with training and documentation aligned to industry standards, it helps teams get ramped up quickly and see value immediately.

3 Ability to Import and Export with REQ IF Data Exchange

Another key priority when selecting Jama Connect, was having the ability to import and export data accordingly, and effectively collaborate through requirements exchange, including standard Req-IF based data exchange.

"The ability to import and export documents with Jama Connect was just something that stood out over anything that I've used in the past," said Alobiedat. Data Exchange for Jama Connect enables the transfer of requirements and associated metadata between customers and suppliers, using the industry standard ReqIF file format.

The ability to import, export, and update data to create an ongoing exchange of requirements throughout the product development process has allowed the Bollinger team to save countless hours of tedious, manual work.

4 A Configurable, Scalable, SaaS Tool

When the team was looking for a new solution to manage their requirements, a Software as a Services (SaaS) tool was important, but in addition, they wanted a tool that would fit into their team's existing workflow. "The configurability of everything in Jama Connect is just huge for us, because it allows us to use the tool the way that we want to," shared Alobiedat.

The Bollinger team knew that having a SaaS requirements management solution would offer integrations with other cloud-based tools — thereby accelerating the design phase of the product development lifecycle with efficiency and scale by connecting requirements in Jama Connect with model-based design tools. It would also help to further streamline product development process and allow better collaboration across ecosystems like MathWorks, MATLAB & Simulink.

> *With Jama Connect being a cloud-based tool, I particularly appreciate that it's one less piece of software to connect, it's one less VPN to log into and it's one less risk of any potential local server issues that we have. The simplicity of just being able to quickly log in to a website browser and read the requirements that we need and submit them for approval is huge.*
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> **Lyth Alobiedat**
> Lead Controls Engineer Bollinger Motors

In addition to meeting all the objectives the Bollinger Motors team sought to accomplish by selecting and implementing Jama Connect, they have found some unexpected and welcome features of the platform that are making their processes even more efficient.

1

Managing Functional Safety

The team at Bollinger Motors uses Jama Connect to help them implement and adhere the engineering guidelines as set forth in ISO 26262 in areas of product development where functional safety is paramount. In one platform — Jama Connect — they can utilize the tools for hazards and risk analysis to help identify and mitigate risks earlier in the development process and make sure they are aligned and in compliance with the key safety requirements. The team can easily track relationships across projects, and quickly identify any problematic links with changes that are made.

2

Single Source of Truth

With a single source of truth in Jama Connect, stakeholders can access the information needed to stay aligned and make informed decisions. They also have visibility into open decisions, issues, and questions (in real-time) that require a timely response and stakeholder alignment.

With information at everyone's fingertips, key stakeholders feel empowered, more autonomous, and the overall development process is more efficient.

> *Having Jama Connect as a single source of truth has reduced a lot of confusion for us. When anyone has a question, they can always check for the answer in Jama Connect first, and that is a huge source of time saved. There's a resource that's accessible to everyone and making the best use amount of time for an organization as lean as ours is especially important.*

Lyth Alobiedat
Lead Controls Engineer Bollinger Motors

Jama Connect has enabled the team at Bollinger Motors to have secure, cross-functional collaboration across their team, ensuring that everyone stays aligned across the development lifecycle.

3 Review Center

Alobiedat described how the Jama Connect Review Center has been incredibly beneficial as the single place for reviewers, approvers, and moderators to collect and manage all requirements and feedback for a project – in real time.

> *We can get anyone in the organization to jump in and provide feedback. Being able to mark the statuses and having a structured, real-time approval process for requirements is a really nice capability. And, having as many of us contribute to what the design of vehicle is going to look, feel, and sound like is very important.*
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> **Lyth Alobiedat**
> Lead Controls Engineer Bollinger Motors

Jama Connect allows for unlimited access for all stakeholders and reviewers to provide their feedback resulting in quicker response times and faster review cycles, and overall, simplifies the review and approval process.

The Future

The Bollinger Motors team has big plans for how they would like to use Jama Connect in the future. Taking advantage of Jama Software's integration partners will allow them more flexibility, scalability, security, and a bi-directional flow of artifacts.

"Our dream in the future is to utilize the REST API to develop internal tools for requirements integration as well as integrate REQ IF exported requirements with MATLAB/Simulink. This will enable us to show that a particular subsystem satisfies a certain requirement. And then we can use tools in MathWorks to say this requirement is verified by this test case."

In addition to taking advantage of available and relevant integrations, Alobiedat says they just want to continue to use Jama Connect but utilize more features of the platform even more effectively for the continued success in the development of their innovative electric vehicles and the growth of the company.

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ABOUT JAMA SOFTWARE

Jama Software is focused on maximizing innovation success. Numerous firsts for humanity in fields such as Jama Software® is focused on maximizing innovation success in multidisciplinary engineering organizations. Numerous firsts for humanity in fields such as fuel cells, electrification, space, software-defined vehicles, surgical robotics, and more all rely on Jama Connect® requirements management software to minimize the risk of defects, rework, cost overruns, and recalls. Using Jama Connect, engineering organizations can now intelligently manage the development process by leveraging Live Traceability™ across best-of-breed tools to measurably improve outcomes. Our rapidly growing customer base spans the automotive, medical device, life sciences, semiconductor, aerospace & defense, industrial manufacturing, consumer electronics, financial services, and insurance industries. To learn more, visit us at: jamasoftware.com.