



CUSTOMER STORY

Bringing the High Costs of Doing Business in Space Down to Earth

Spaceflight Industries Propels Space Exploration Forward and Upward Using Jama Connect®

Companies that need satellite services typically consider two options: Buy or build. The problem? Both are tremendously expensive.

But when rocket ownership and maintenance isn't in the plan or the budget, there is Spaceflight Industries, an innovative provider of satellite design, rideshare launch offerings, global communications networking, and a geospatial intelligence platform.

As Curt Blake, president of Spaceflight, explains, the company works with launch vehicle providers to offer cubesats, microsats, telecommunications satellites, and everything in between for a choice of launch options via dedicated rideshare missions, launches to sun-synchronous and geosynchronous transfer orbits, and other destinations.

Spaceflight serves companies that need space access, but for whom liftoff is delayed or denied because of the exorbitant cost.

SPACEFLIGHT COMPANY SUMMARY:

- 120 employees
- Satellite building, launching, and imaging
- Enabling a timely and affordable model for accessing space and observing the planet

CHALLENGES

- Verifying regulatory compliance
- Structuring requirements management, traceability, and technical review
- Organizing product development processes from stakeholder requirements to validation

SOLUTIONS

- Clear requirements from start to completion
- End-to-end traceability for compliance and impact assessment
- Intuitive and self-contained review process

RESULTS

- Review times decreased from apparently indefinite to days
- Auditing the upstream and downstream linkages identified gaps in requirements decomposition
- Dashboard widgets made reporting review status easy



CHALLENGE

Save Time While Still Achieving Regulatory Compliance

While Spaceflight's offering is uncommon, the challenges endemic to complex product development are not.

Spaceflight's previous method lacked a single, structured process for requirements change management, team reviews, and traceability. Teams were collaborating, but weren't able to identify or understand the potential downstream impact of requirement and design changes without a time-consuming review of the baseline.

Spaceflight also needed the flexibility to marry traditional systems engineering practices with an agile approach to development. The goal: a solution that facilitates shorter design cycles and the rapid integration of new technologies, and that is easy to learn and maintain.

Industry best practices also needed to be accounted for, including launch vehicle and range safety regulatory requirements, FCC licensing, radiation environments, and many others.

“

Review Center is my favorite feature. All the comments are right there, and there's an integrated 'show changes' feature so I can see exactly how my feedback was incorporated.”

Adam Wuerl, Systems Engineering Lead,
Spaceflight Industries

Spaceflight sought a robust software system capable of documenting and understanding those drivers and each set of program-specific requirements across its fast-growing portfolio. Teams needed to leverage institutional knowledge from across the company and have clear sets of requirements at the beginning to help define the end.

SOLUTION

An All-in-One Tool for Collaboration and Traceability

Spaceflight knew that it wanted its solution of choice to work seamlessly across the enterprise, from satellite design to launch system integration and constellation operations.

With many seasoned aerospace veterans involved in the selection of a solution, IBM's Rational DOORS was a familiar option, but the team needed a more dynamic and collaborative solution. As luck would have it, a former SpaceX employee now at Spaceflight introduced the teams to Jama Software.

During an early conversation, Adam Wuerl, Spaceflight's Systems Engineering Lead and Chief Systems Engineer of satellite programs, quickly recognized that Jama Connect™ would meet Spaceflight's needs:

“

I can see a direct, one-to-one correlation between each of the artifacts in the integrated systems framework; this is perfect.”

Adam Wuerl, Systems Engineering Lead,
Spaceflight Industries

RESULTS

Increased Productivity Using Live Traceability Within Jama Connect

What Spaceflight's teams didn't know they needed, but quickly came to appreciate the most, was Jama Connect's intuitive Review Center.

Previously, teams would receive massive documents to review. Without knowing where to find the information they needed, or which aspects of the document they were expected to review, getting busy people to wade through dense documentation was a struggle.

“

We're in this for the long haul, with a goal of continuously iterating and improving our products. Having a structured way to capture and reuse foundational requirement and design artifacts will be huge.”

Adam Wuerl, Systems Engineering Lead,
Spaceflight Industries

Review Center — specifically, its ability to tailor reviews around customizable filters — clarified for stakeholders and engineers exactly what items needed to be reviewed and approved.

The ability to see upstream and downstream links also provided critical context to clarify a requirement's intent and demonstrate that it was flowed down and decomposed correctly.

Traceability is a productivity boon to development as well. Jama Connect's live traceability makes data navigation interactive. Teams can fix what's broken and ask: Is this covered or tested? Who wrote this? Why are we building this? When was this built?

Spaceflight's teams can now see and understand the impact of their choices before they decide. Once a decision is made, the suspect links feature helps ensure that potential impacts receive thorough assessment.



Spaceflight's teams came equipped with a high degree of in-house capability and knowledge, and they took to Jama Connect quickly. Teams appreciate the ability to easily access requirements data, make and see connections to that data, and trace changes and assess versions.

Some Spaceflight teams work with Jama Connect out of the box and others enjoy creating their own detailed relationship diagrams. What both groups like is that Jama Connect has the tools to make either

approach work. And whatever approach teams choose, Jama Connect gives them live data to enable more efficient collaboration, accelerate decision-making, and mitigate risks.

Doing business in space used to require incredible financial means. Today, thanks to the perceptive, problem-solving people at Spaceflight, it's not only possible, it's increasingly economical. Reaching the future, faster has never been easier.

ABOUT JAMA SOFTWARE

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.