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How PLM-Centric Manufacturing Helps Aerospace & Defense Burn Down Decade-Long Backlogs

Today, many aerospace companies grapple with decade-long order backlogs, while defense contractors face mounting pressure to triple production despite ongoing supply chain disruptions. Aviation Week Network recently spoke with **Marc Rivière** of PTC to explore how PLM-centric strategies are helping manufacturers break down operational silos, speed up change management from months to weeks, and shift years-long production cycles into more agile, responsive operations.

Q Aviation Week: What does the record-high backlog crisis look like on the ground for your A&D customers, and what's it costing them?

A Marc Rivière: It's different across aerospace and defense. In aerospace, companies are holding 10 years of orders but struggling to deliver on time—which often means paying penalties. The supply chain is global and complex. For example, 50% of Airbus components come from the U.S., the other 50% from Europe. And, you have widespread challenges like skills shortages as Western countries try to rebuild capabilities that moved to Asia, as well as raw material constraints, and ongoing tariff issues.

And while defense companies face potential lost contracts, order cancellations, and loss of revenue, they also face a different kind of pressure. Western nations are replenishing depleted stockpiles. Primes are being asked to ramp up production by three to four times—while government payments can take years. That creates a fragile supply chain, especially for smaller suppliers that can't survive long payment delays.

There's also a talent issue: younger generations are gravitating toward startups and digital-first environments, not traditional manufacturing. PLM-centric digital transformation is essential—not only to modernize operations but also to make the industry more attractive to new talent and improve supplier collaboration.

Q Aviation Week: What is a real example of how siloed systems create problems, and how 'digital continuity' can solve them?

A MR: Before I joined PTC, I worked on securing the first delivery of a next-gen long-range aircraft from a major OEM. The biggest issue I saw was the disconnect between engineering and manufacturing systems. We tracked three critical KPIs: deviations or nonconformances, missing parts and missing documentation. All were rooted in siloed systems resulting in poor communication across the supply chain.

That lack of connectivity meant incorrectly built parts, delayed change requests, and long turnaround times—sometimes two months just to process an engineering change. By integrating PLM-based change management across enterprise systems, like PTC provides, that same process can take just one week.

Digital continuity means that product data is accessible and synchronized across systems—an authoritative source of truth. A PLM platform like Windchill knows what data exists, where it lives, and how it fits into the bigger picture. It ensures that the right people can access the right information at the right time, whether they're handling change requests, simulations, packaging, or procurement. It's also foundational for AI. Without contextual data, AI can't deliver value. Digital continuity enables collaboration between legacy manufacturers, disruptors, and supply chains, all on one digital foundation.

Q Aviation Week: How does PLM-centric collaboration address supplier relationships amid tariffs and supply chain disruptions?

A MR: PLM is not only for engineers. You also need the PLM to provide a collaboration layer that tailors data access to different users. Logistics teams need different data than procurement or manufacturing. Tariffs often push companies to manufacture in different regions—for instance, information meant for a French plant might need to be shared with a U.S. manufacturer instead. That brings a host of compliance and export control challenges.

PLM systems are especially well-suited to manage this complexity. For example, we've worked with a defense company—which operates in France, the UK, and Italy—to build a system that allows cross-border collaboration while protecting each country's IP. It's made a big difference: the company has tripled its technical data packaging output with fewer people, brought outsourced tasks back in-house, and significantly boosted production. Similar results are emerging at another U.S. defense prime contractor, where our open architecture is enabling digital continuity across multiple vendor ecosystems.

Q Aviation Week: What's the biggest misconception A&D manufacturers have about implementing PLM solutions?

A MR: The most common misconception is that PLM is just for engineers. That mindset—especially when reinforced by IT departments—leads to siloed problem-solving. Companies will ask for separate systems: PLM, ERP, MES, without considering how they should be integrated. They often see PLM as just product data management (PDM), not as a foundational system that supports everything from requirements to end-of-life.

Too often, companies jump straight into tools—"What features does your PDM offer?"—instead of starting with business needs. We always steer them back to the bigger picture: "What are your challenges? What are your goals?" The right solution grows out of that understanding.

Starting with tools locks you into the wrong path. Change management on the business side is critical—everyone needs to focus on outcomes first. The tools come later.

About the Expert

Marc Rivière is the Senior Director for Aerospace & Defense at PTC, where he drives digital transformation strategies across the sector. With more than 30 years of experience in military aviation, consulting, and industry leadership, Marc brings deep expertise in aircraft lifecycle management, MRO optimization, and innovation strategy.