

The Problem of Data Disconnection in the Aerospace Industry

Imagine an engineering team working on the structural design of a new aircraft. In the initial phase, aerodynamic engineers use simulation software to calculate the loads and forces that will act on the fuselage. This data is critical for designing the wings, fuselage, and other structural components.

However, in most companies, this information must be extracted manually and then entered into computer-aided design (CAD) tools to model the structure. Structural engineers must then transfer that data into finite element analysis software to evaluate material strength and optimize weight distribution.

Meanwhile, electrical and electronic systems engineers need structural information to define cable routing and communication system placement. Without a direct digital connection between disciplines, they must manually enter this data into their own design tools, increasing the risk of inconsistencies.

When the manufacturing team receives the blueprints, they must interpret data from multiple sources and ensure the designs are feasible for production. Any change made by one department requires manual updates across all related documents, which can lead to errors, delays, and added costs.

In short, the key information for project development is fragmented across different systems, spreadsheets, and internal documents, forcing teams to manage data manually. This approach not only slows down processes but also increases the likelihood of errors and rework that could have been avoided with a continuous, centralized data flow.



Consequences of Data Disconnection

The lack of a centralized data flow in aircraft design and manufacturing creates a series of problems that impact efficiency, costs, and the quality of the final product:

Errors and rework: Manual data transfer between departments increases the likelihood of inconsistencies, potentially resulting in design errors that require costly corrections and project delays.

Longer development times: Without digital integration, any modification in one area requires manual updates in multiple systems, slowing down the design and manufacturing process.

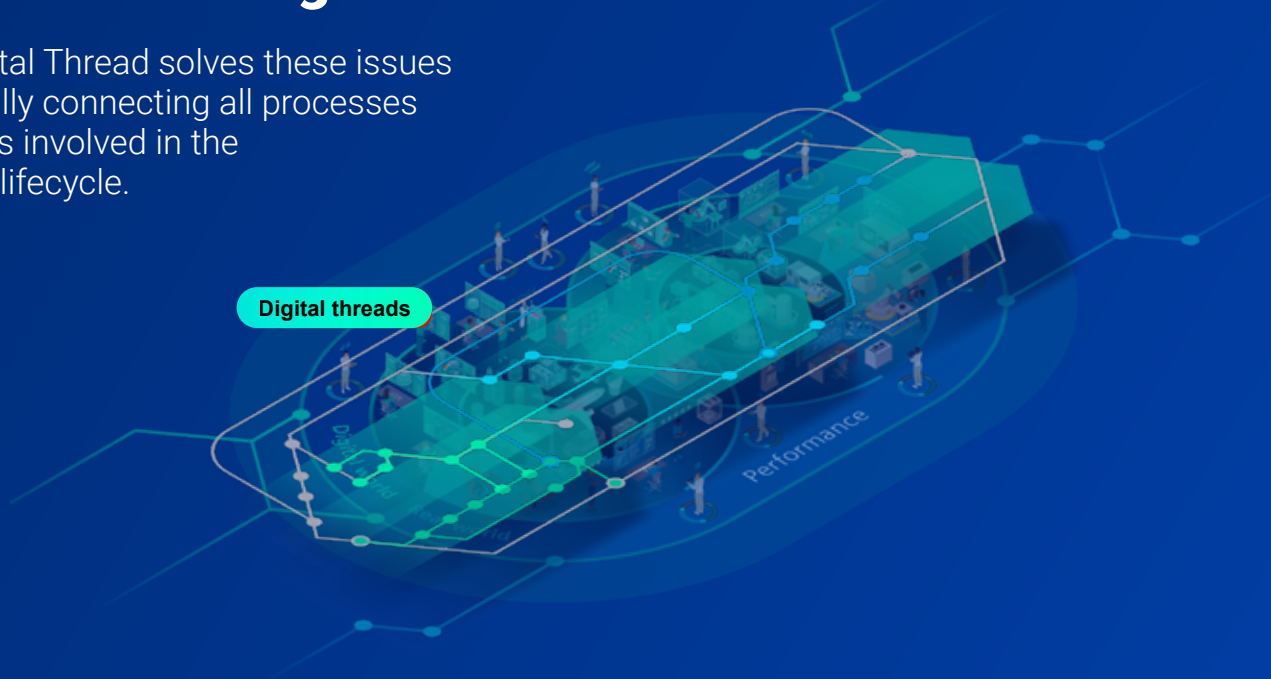
High costs: Errors and rework raise operational costs, while lack of synchronization between teams can lead to wasted materials and resources.

Lack of traceability and control: Fragmented information makes it difficult to monitor project status, preventing informed and real-time decision-making.

Difficulty integrating new systems: Introducing emerging technologies like additive manufacturing or real-time simulation becomes more complex when data does not flow automatically between platforms.

Solution: The Digital Thread

The Digital Thread solves these issues by digitally connecting all processes and tools involved in the product lifecycle.



Seamless data flow: Data generated in one stage of the design process is updated in real time across all connected platforms, eliminating the need for manual transfers.

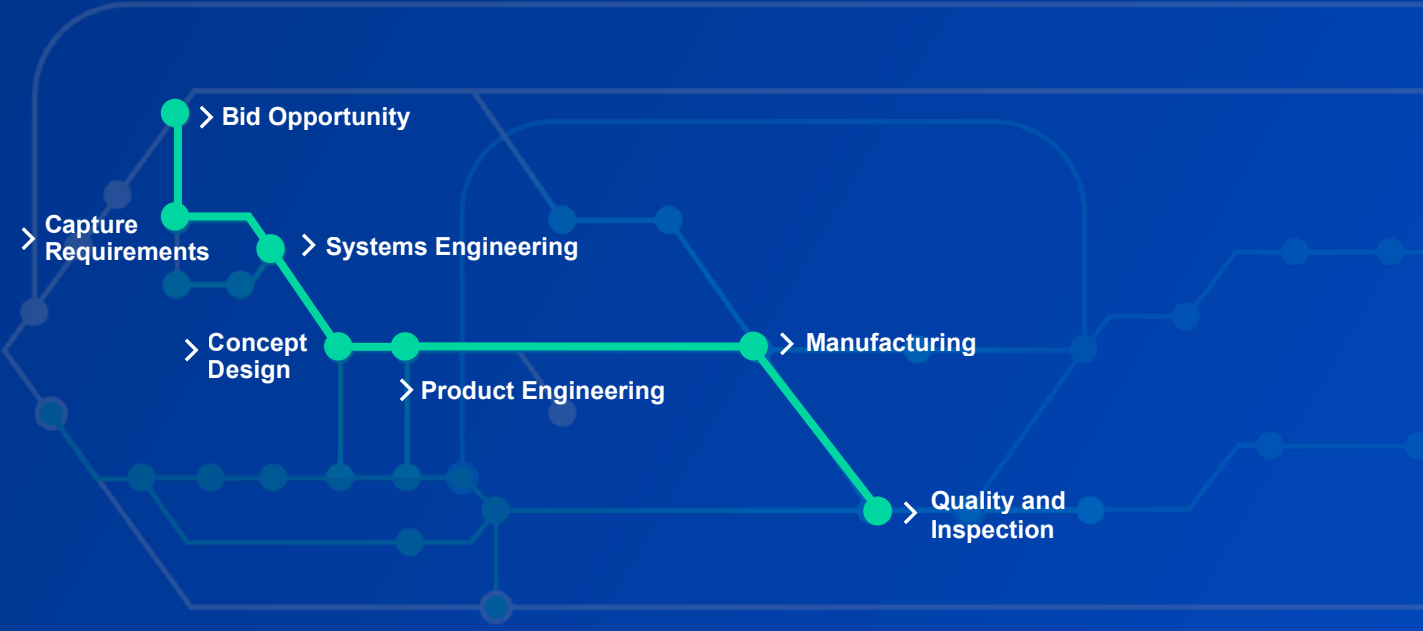
Automation and error reduction: With an integrated system, engineers always have access to accurate, up-to-date information, minimizing errors and rework.

Faster, smarter decisions: Complete traceability allows issues to be identified before they affect production, optimizing time and cost.

Greater team collaboration: With a connected digital environment, different disciplines work from the same data source, improving communication and coordination.

Cost and time optimization: Fewer errors and improved operational efficiency reduce production costs and accelerate the development of new aircraft.

With the Digital Thread, you can optimize every stage of development and production, ensuring continuous data flow, greater efficiency, and cost reduction.



Contact us today to discover how we can help you implement a Digital Thread in your company.