

# PTC DEMONSTRATES DIGITAL THREAD AND AGENTIC AI CAPABILITIES AT THE PARIS AIR SHOW TO REDUCE TIME TO MARKET FOR AEROSPACE AND DEFENSE MANUFACTURERS

Digital threads underpinning software applications for the design and manufacture of aircraft have great potential to reduce production times in the Aerospace and Defense (A&D) industry. According to the International Air Transport Association (IATA), the number of unfulfilled orders of new aircraft is currently 17,000 planes. At current production rates, it would take the industry 14 years to fulfill them. PTC's portfolio is well placed to assist the A&D industry to shave off the time required to get aircraft to the customers.

## NEWS

### LOTS OF NOISE, BUT SOME PRACTICAL EXAMPLES ON SHOW

The 2025 Paris Air Show was not short on noise, especially with the flight demonstrations of the Airbus A350-1000, Lockheed Martin's F-35A, and in terms of the future of air travel with Wisk's Autonomous eVTOL. But will these new aircraft get to the customer in a timely manner? According to the International Air Transport Association (IATA), the number of unfulfilled orders of new aircraft is currently 17,000 planes. At current production rates, it would take the industry 14 years to fulfill them.

PTC demonstrated how its solutions (Creo, Onshape, Codebeamer, and Windchill) can help the Aerospace and Defense (A&D) industry meet this challenge.

## IMPACT

### AN INTEGRATED PORTFOLIO CAN REDUCE CLIENTS' TIME TO MARKET

As covered in this ABI Insight, "[Windchill Is Critical to PTC's Digital Thread Vision](#)," PTC emphasized that the company is more than a suite of software applications. Instead, the company can help customers reduce their time to market via the establishment of a digital thread that enables collaboration throughout the value chain.

In the context of A&D, PTC supports the ideation and design processes in Creo and Onshape. The partnership with Ansys and Creo is critical. The partnership with Ansys introduces simulation earlier in the creative process so that there is more confidence that a new component will perform as desired and that the engineers' work is more likely to be approved by specialist simulation engineers—avoiding what PTC terms the "valley of death" for product design, which refers to the frequency at which designs are rejected by simulation engineers.

Windchill is the glue for coordinating the design, engineering, and manufacturing processes that include functions such as managing the Bill of Materials (BOM), planning the manufacturing processes, managing the assembly and production, and quality validation, as well as asset maintenance. The ServiceMax and Servigistics solutions handle the service orchestration and execution.

Two examples discussed at the show were Hill Helicopters and AURA AERO. Hill Helicopters wanted to reduce the noise of its turbines so that they not only met, but exceeded regulations. The company wanted noise reduction to be a key selling point of its helicopters. The Artificial Intelligence (AI) tools in Codebeamer ensured that consideration of all the applicable regulations were incorporated into the design produced with Creo. But the choices made did not remain with the design. The effects of changing the design of the turbine were integrated and communicated across the team with, for example, Windchill suggesting other options for the BOM and any issues from a manufacturing perspective. New information was communicated via the digital thread and teams could make decisions and preparations in anticipation of the new design earlier than previously, and thus reduce the time to market for the new helicopter.

AURA AERO uses Onshape when designing the new aircraft to support pilot training. Accelerating the design and engineering processes was the ability to overlay new parts into the current assembly set up via Augmented Reality (AR). PTC's AR solution, Vuforia, can be integrated into Onshape. The image can be transferred to a Three-Dimensional (3D) model and overlaid on current production items via a QR code.

Both examples illustrate how PTC solutions integrate with one another, but also how customers can reduce their time to market.

## RECOMMENDATION

### ORCHESTRATION REMAINS KEY TO REDUCING TIME TO MARKET

It is interesting to hear how PTC is incorporating Agentic AI into its solutions. Agentic agents make it quicker for engineers to get answers. However, the benefit is not just about speed, but also having the capacity to better understand and interrogate data, rather than spend time on data collection. Incorporating Agentic AI into workflows may not necessarily save time at the outset, but the user should have more confidence in their decision making later. Data orchestration will continue to be an important consideration. Furthermore, when interacting with the agent, the output is not simply answering the direct question, but also what's inferred in the question, for example, issues related to noise reduction. Engineers will need to learn best practices for interacting with agentic agents.

Individual engineers and individual engineering firms are not operating in isolation. Assembling aircraft is one of the most complex manufacturing undertakings with tens of thousands of components and hundreds of suppliers involved. A digital thread is an important tool for sharing information and cascading the impact of changes. Furthermore, it is critical that PTC's solutions do not work in isolation and share information with a customer's Manufacturing Execution System (MES) and Quality Management System (QMS) solutions. PTC's solutions enable clients to manage interactions and further enhance their digital thread via a marketplace of integration partners.

To support the need of A&D companies to reduce the order backlog, technology suppliers will need to prioritize how their solutions improve decision-making, but also enable data orchestration across all the applicable software applications that are used. PTC is taking on this challenge.

### WE EMPOWER TECHNOLOGY INNOVATION AND STRATEGIC IMPLEMENTATION.

ABI Research is uniquely positioned at the intersection of end-market companies and technology solution providers, serving as the bridge that seamlessly connects these two segments by driving successful technology implementations and delivering strategies that are proven to attract and retain customers. For further information about subscribing to ABI's Research Services as well as Industrial and Custom Solutions, contact us at +1.516.624.2500 in the Americas, +44.203.326.0140 in Europe, +65.6592.0290 in Asia-Pacific or visit [www.abiresearch.com](http://www.abiresearch.com).

ALL RIGHTS RESERVED. No part of this document may be reproduced, recorded, photocopied, entered into a spreadsheet or information storage and/or retrieval system of any kind by any means, electronic, mechanical, or otherwise without the expressed written permission of the publisher. Exceptions: Government data and other data obtained from public sources found in this report are not protected by copyright or intellectual property claims. The owners of this data may or may not be so noted where this data appears. Electronic intellectual property licenses are available for site use. Please call ABI Research to find out about a site license.