XTI AEROSPACE COMPLETES GLOBAL FINITE ELEMENT MODEL FOR LATEST TRIFAN 600 CONFIGURATION

News / Manufacturer



XTI Aerospace announced the Q1 completion of its Global Finite Element Model for its latest TriFan 600 configuration, achieving a key 2025 first quarter product and engineering milestone announced in a prior press release. This achievement advances the design team's ability to perform further structural integrity and load distribution analysis.

The GFEM represents the next level of detail for the Digital Mock-up (DMU), or "digital twin," within the highly detailed CATIA 3DX computer aided design model of the TriFan 600. The GFEM's completion enables the team to further analyze the underlying structural integrity and load paths in the aircraft before finalizing the Detailed Finite Element Model. Figure 1 depicts the GFEM update.

Dave Ambrose, VP of Engineering at XTI Aircraft commented:"The DMU and GFEM allows us to do detailed analysis of our design in terms of structure and mass properties. Our structures team is eager to begin the next phase of validation and modification of our internal structures of the aircraft. Just as the CFD (computational fluid dynamics) informs the aerodynamic performance of

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the aircraft, the GFEM enables a deeper understanding of structural integrity and load distribution."

Scott Pomeroy, Chairman and CEO of XTI Aerospace stated: "The completion of the GFEM is an important step in advancing the digital analysis of the TriFan 600. Our engineering team is driving forward with detailed design refinements—focusing on structures, load paths, weights, and part optimization—all while maintaining commitment to safety and performance."

In Q1 2025, XTI successful completed all six product and engineering milestones which were disclosed near the beginning of the quarter. The completions began with the downwash/outwash study and are leading up to the launch of the "Sparrow" subscale working model in early Q2.

Q1 2025 Milestones Completed:

- Downwash / Outwash Study – Analyze airflows generated by the aircraft during vertical takeoff and landing to evaluate safety and performance
- Type Certification Application – Formally apply to the FAA for type certification of the TriFan 600
- Engine Air Inlets and Exhaust – Optimize air intake and exhaust design to enhance performance and efficiency of the propulsion system
- Fuel System Design – Optimize fuel system design to reduce unusable fuel and increase fuel capacity
- Flight Deck Mockup Design – Develop a flight deck human factors mockup to design and evaluate and optimize ergonomics, pilot controls, and vision polar
- Global Finite Element Model (GFEM) of the latest configuration – Update the comprehensive structural model to evaluate and optimize the aircraft's strength and load paths under various loading conditions

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