UAV DESIGN

UAV/Aviation

Project Management

Mechanical Engineering

Systems Engineering

Electrical Engineering

QUADCOPTER AIRFRAME OPTIMIZED FOR RELIABILITY, MANUFACTURING, AND DFX

APPROACH

- Conducted a trade study to capture feedback from the customer about flight failures, pain points during assembly, and areas for improvement.
- Evaluated vehicle subsystems for design serviceability.
- Targeted modular design to reduce maintenance and improve reliability.

RESULTS

- Modified the payload interface subassemblies, which reduced the mass of those assemblies by 23 percent.
- Managed redesigns of the fuselage for the next-gen drone to achieve modularity.
- Optimized airframe design in preparation to meet FAA type certification for beyond visual line of sight (BVLOS) drone operation.

KEY TECHNOLOGIES

- Destructive composite testing to characterize system strength
- SolidWorks and SolidWorks Simulation
- Composite structure analysis using Femap with NX Nastran
- High-speed video for impact analysis

ALTEN TECHNOLOGY