

UAV DESIGN

## UAV/Aviation

Project  
Management



Mechanical  
Engineering



Systems  
Engineering



Electrical  
Engineering



## QUADCOPTER AIRFRAME OPTIMIZED FOR RELIABILITY, MANUFACTURING, AND DFX

### APPROACH

- Conduct a trade study to gather feedback from the client about flight failures, pain points during assembly, and areas for improvement
- Evaluate vehicle subsystems for design serviceability
- Target modular design to reduce maintenance and improve reliability

### RESULTS

- Modified the payload interface subassemblies, reducing the mass of those assemblies by 23%
- 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 TOOLS & 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