

FLIGHT SOFTWARE

Aerospace

Project
Management



Software
Engineering



NEXT-GENERATION SPACEPLANE FLIGHT SOFTWARE

APPROACH

- Develop flight software for the next-generation spaceplane vehicle
- Support flight software code reviews and pull requests
- Perform requirements review and recommendations
- Develop base classes and vehicle subsystem classes to fulfill functional requirements
- Serve as backup lead and point of contact for multiple spaceplane flight software subsystems

RESULTS

- Developed flight software for multiple vehicle subsystems
 - > Vehicle mode manager (VMM) and vehicle mode transitions (VMT)
 - > Environmental control and life support system (ECLSS)
 - > Flight control actuation system (FCAS) and actuator control system (ACU)
 - > Sensor and control interface module (SCIM)
 - > Action sequences (ASEQ) and condition monitors (CMON)
- Led multiple flight software subsystem certification efforts
- Identified bottlenecks and led data processing pipeline improvements
 - > Reduced TLM data processing time (overall 50% reduction in processing time)
 - > Reduced disk usage on servers for data processing and storage
 - > Added support for multiple OPS data formats to run in FSW pipelines and workflows
- Supported pathfinding efforts for AI tools and workflows as well as containerization and flight development integrations

KEY TOOLS & TECHNOLOGIES

- C++
- Python
- Linux
- VxWorks
- Cmake

ALTEN TECHNOLOGY