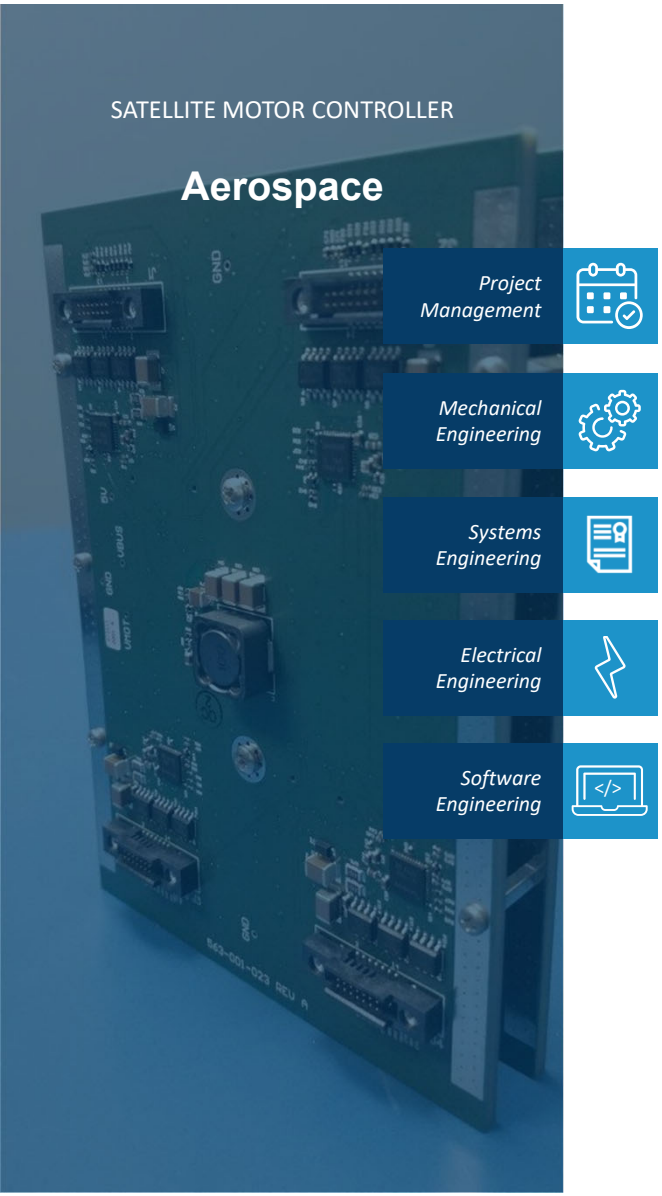

SCALABLE MOTOR CONTROLLER: CONTROLS 4-8 BRUSHLESS DC MOTORS IN LESS THAN 6 MONTHS

APPROACH

- Designed “stackable” motor control boards for LEO small satellite missions to easily accommodate multiple configurations
- Integrated ARM Cortex-M4 to control up to eight motors for satellite antenna deployment
- Hardware designed using radiation-tolerant COTS components
- System designed with radiation-tolerant firmware/software architecture to mitigate single-event upsets (SEU)
- Developed and executed verification test plan and procedures

RESULTS

- Developed and tested engineering development unit (EDU) in less than four months
- Flight units delivered two months after EDU and six months after the project start
- Leveraged Agile methodologies to achieve aggressive client schedules to support launch milestone dates
- Completed full product development life cycle from concept and architecture to flight unit deliverables

KEY TOOLS & TECHNOLOGIES

- Integrated brushless DC motor for space application
- Developed motor control algorithm to manage widely varying torque load
- Leveraged triple modular redundant (TMR) software architecture

ALTEN TECHNOLOGY