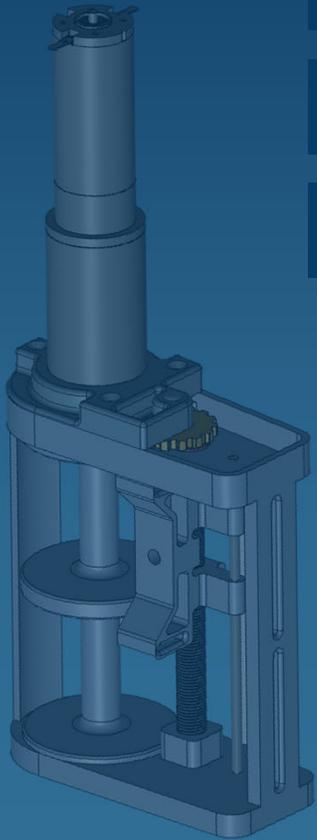


SATELLITE ANTENNA DEPLOYMENT SYSTEM

Aerospace



Project
Management



Mechanical
Engineering



Systems
Engineering



COMPACT LIGHTWEIGHT SPOOL SYSTEM FOR UNFURLABLE SPACE ANTENNA SOLUTION

APPROACH

- Identified critical design challenges and key control characteristics
- Leveraged existing spooling technologies to advance new designs
- Initiated analytical trade study process to down-select concepts in collaboration with the client
- Developed CAD and mechanical analyses to select recommended architecture
- Conducted system design review (SDR)

RESULTS

- Designed concept models for space-based high-force spool mechanism constrained to strict volume and weight constraints
- Achieved $3.9 \times$ load of comparable mechanisms
- Conceived multiple unique design concepts and down-selected two recommendations

KEY TOOLS & TECHNOLOGIES

- Incorporated Agile methods for rapid project execution
- Transformed theoretical concepts into practical space applicable mechanism
- Developed creative gear layouts to reduce complexities

ALTEN TECHNOLOGY