

DEFENSE MANUFACTURER

## Defense

Mechanical  
Engineering



# SEAT AND HATCH DESIGN FOR GROUND-BASED MILITARY VEHICLE

---

## APPROACH

- Design, build, analyze, and qualify:
  - > Upgrades to three different seats within a military vehicle to increase cushion comfort and reduce the mobility restrictions for one of the seats
  - > Upgrades to the ingress/egress hatch to improve the ease of opening the hatch and improve the locking mechanism that keeps the hatch in an open position

## RESULTS

- Upgrades qualified by military agency for retrofitting the vehicles:
  - > New seat cushioning and configuration modifications
  - > A new hatch mechanism that significantly reduced the force required to open the hatch
- Improved the locking of the hatch in the open position, which will reduce safety incidents of the hatch vibrating closed while in operation and other safety incidents noted in the field

## KEY TOOLS & TECHNOLOGIES

- Creo
- Finite element analysis (FEA)

**ALTEN TECHNOLOGY**