

DESIGN WASTE MANAGEMENT SYSTEM

Aerospace

Project
Management



Mechanical
Engineering



Systems
Engineering



DESIGNED A WASTE MANAGEMENT SYSTEM FOR ASTRONAUTS

APPROACH

- Evaluated the client's initial fecal collection concept
- Developed the initial design of the concept
- Designed full system, including fecal collection, garment, and actuation system
- Built a functional prototype system
- Performed human-in-the-loop donning and actuation tests, fecal simulant functional tests

RESULTS

- The prototype system met or exceeded all tested requirements
- Design evaluated by NASA
- For astronauts confined to pressure suits for up to six days

KEY TOOLS & TECHNOLOGIES

- A novel, simple-to-use waste collection, containment, and separation garment developed for operation and storage inside a pressure suit

ALTEN TECHNOLOGY