

- **Function & Architecture**
  - Linear Submicron Actuator to be fitted onto high sensibility airborne equipment.
  - In charge of providing fine positioning movement at extended temperatures
  - Based on stepper motor, planetary gear and spindle-nut
- **Main requirements**
  - Motion Range  $\pm 5\text{mm}$
  - Resolution  $0,03\ \mu\text{m}$  / Accuracy  $3,6\ \mu\text{m}$  / Repeatability  $0,20\ \mu\text{m}$
  - Limit Load  $>30\text{N}$
  - Interface: Tip Ball Diameter  $3,5\ \text{mm}$
  - Extended Temperatures: From Ambient up to Low Temperatures  $-200^\circ\text{C}$
  - $>15,000$  cycles
  - Vacuum compatibility
- **Product Specificity & Achievements**
  - Set & hold type. It can maintain position when it's switched-off
  - Designed to and MAIT(\*) under space on ground standards. In particular:
    - High Cleanliness Environment compatibility
    - Specific testing methodologies and rigs used for its qualification and acceptance
    - Different Dry Lubrication used (MoS<sub>2</sub>)
  - Precision CNC machined parts, made of AL6082 T6
  - Close loop control can be implemented through capacitive sensors
- **Main skills involved & Value Added:**
  - Building block approach combining Mechanical & Lubrication specialization know-how
  - Already tested and certified individually and as part of an upper level space on ground mechanism
  - The upgrade to bigger sizes and load capabilities is simple and with minimum cost
  - Customer Satisfaction regarding:
    - Performances and Robustness under extended temperatures
    - Easy upgrade for space/military/medical use
  - Series production suppliers identified for its industrialization



(\*) MAIT = Manufacturing, Assembling, Integration and Testing