



Team 512- Lockheed Martin Low-Cost HOTAS

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Objective

- Develop a low-cost Hand-On Throttle and Stick (HOTAS) system to support the Pilot Training Devices (PTD) product line.

Goals

- Create a low fidelity HOTAS with reasonable manufacturing costs and repairability
- Function with Prepar3D software, Lockheed's in-house software

Specifications

- 64 separate digital signal possibilities
- Low Latency, Less than 20ms
- Cost of \$1,570.00
- Plug and Play capabilities
- Modular din-pin connectors for electrical connection from each component to its base. Shown in slotted mechanism details

Electronics

- Custom printed circuit boards (PCB) to reduce wiring and increase durability and manufacturing capabilities, in each throttle and stick
- Shift registers to allow for more inputs

Testing and Validation

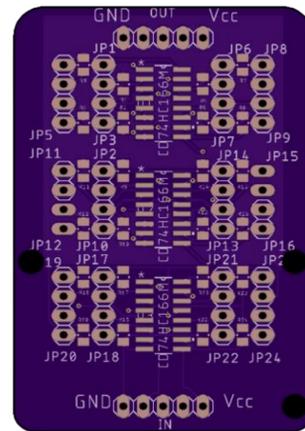
- [Testing Playlist](#)

Future Work

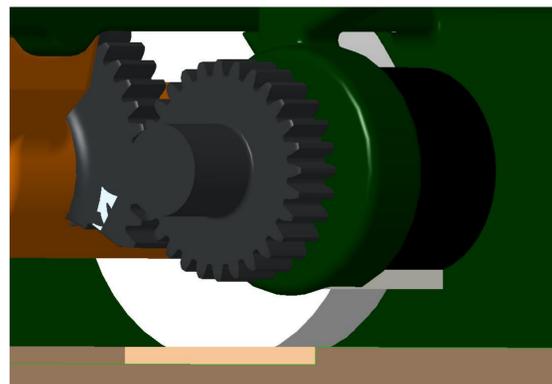
- Ground vehicle configuration
- Variable resistance profiles
- Implement with Lockheed Martin's stick and throttle CAD models



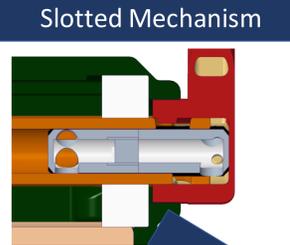
Prototype Usage



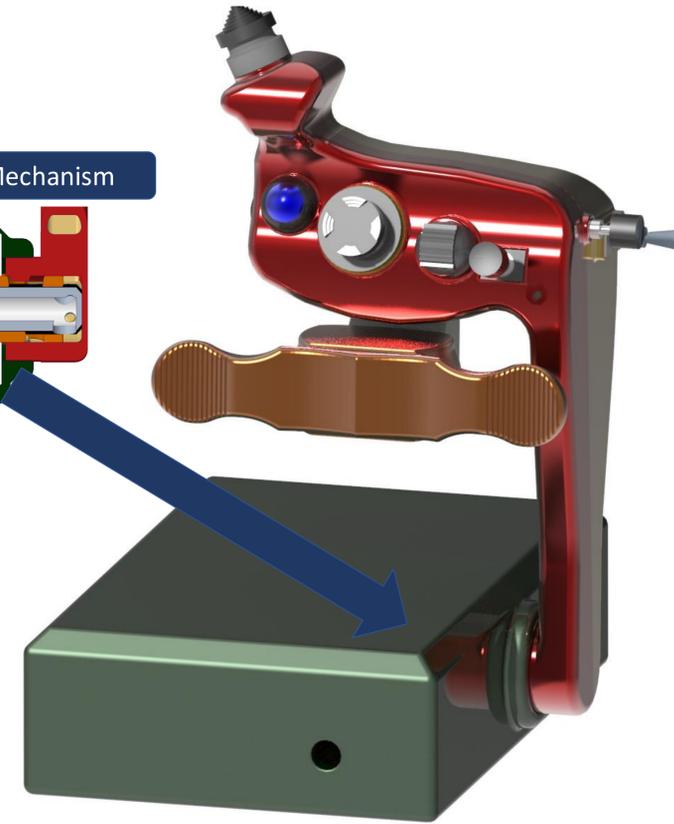
PCB



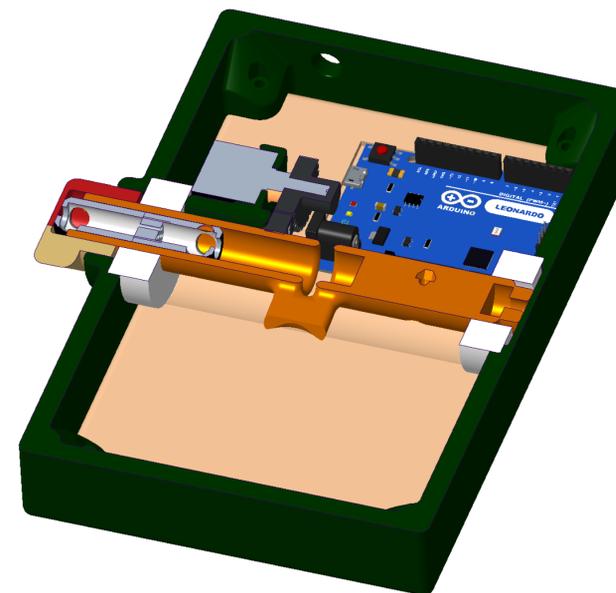
Throttle Gears



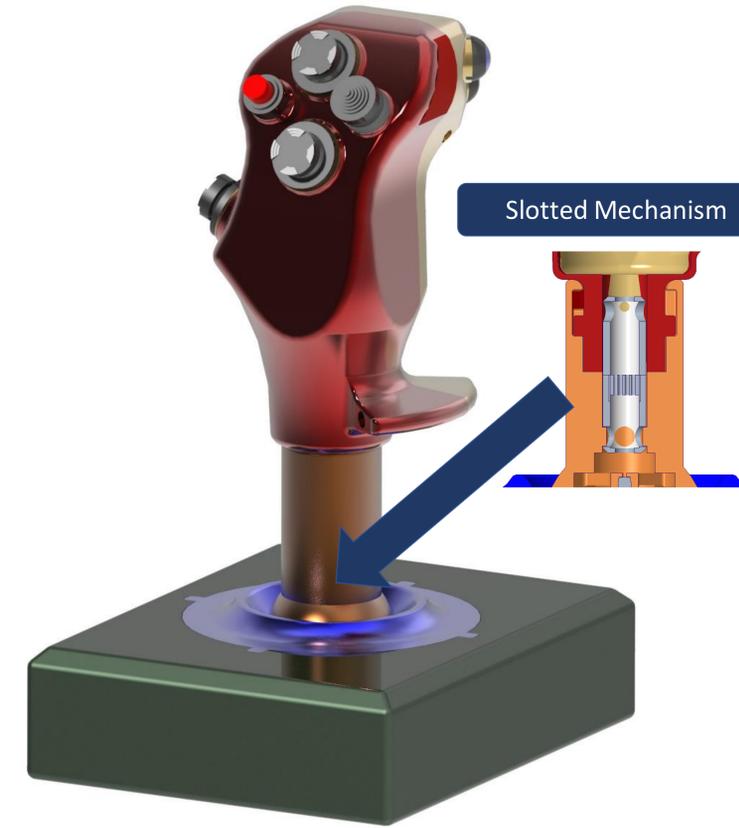
Slotted Mechanism



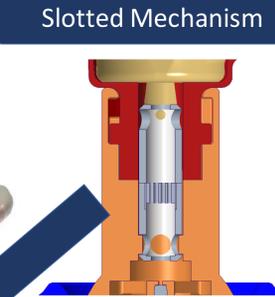
Throttle Assembly



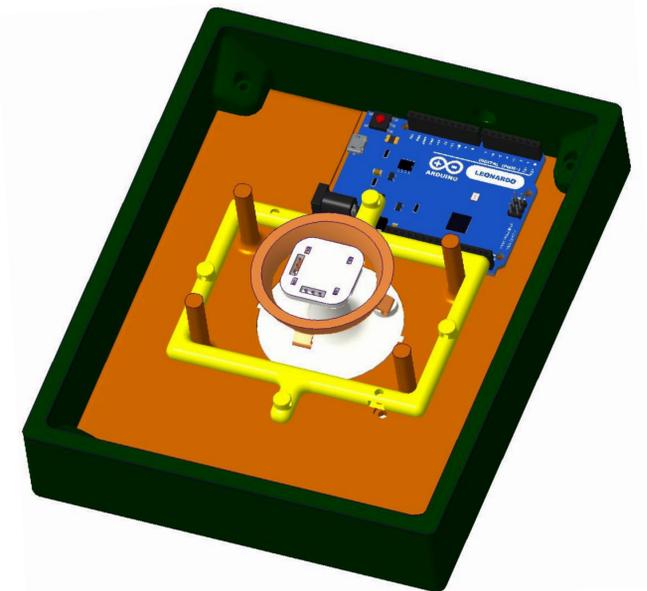
Throttle Base



Stick Assembly



Slotted Mechanism



Stick Base