

# MEMS Inertial Sensors Test Station

**Status:** Available

**Group Members:** TBD

**Sponsor(s):** Recon Instruments Inc.

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## Project Description

This project involves the design and production of a manufacture / test station for the production of next-generation head-mounted display (HMDs). The test station will include a mounting point for the boards of 6 HMDs, and allow for a USB connection to each to be able to probe the status of individual components on the board.

Along with static systems tests, the portion of the station which includes the HMD boards will also be able to be moved around three axes of rotation. This will allow testing and calibration of the on-board 3-axis accelerometer, gyroscope and magnetometer.

## **Hardware Component Deliverable**

The deliverable will be a test-station suitable for mounting 6 Recon Instruments boards. A position of the test station can be rotated up to 90 degrees in each of 3 dimensions using a stepper motor or other actuation mechanisms. A controller for the mechanism will be able to constantly poll for position data for each of the mounted HMD boards. The controller will use this

The software must contain a simple GUI to start and stop the system. A database to log all performance data is also required. If time permits, the test station could include software for data analytics and visualization of test result statistics.