

Modernizing Pilot Selection Methods & Technologies at the United States Air Force Academy

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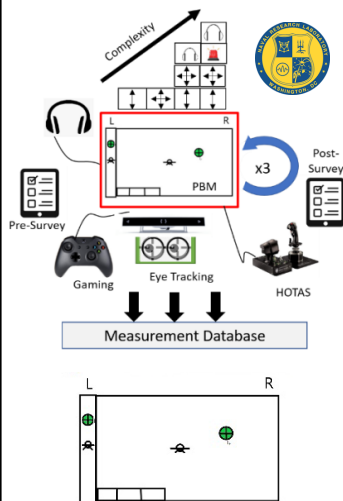
Goal

CSAF Directive: Modernize the Test of Basic Aviation Skills (TBAS) to effectively select pilots across diverse populations

- USAF Academy: Our (in-progress) project explores the Navy Performance-Based Measures (PBM) towards this broader goal
 - RQ1: Do different controls reduce gender differences while maintaining adequate levels of predictive validity?
 - RQ2: Does practice on controls reduce gender differences?

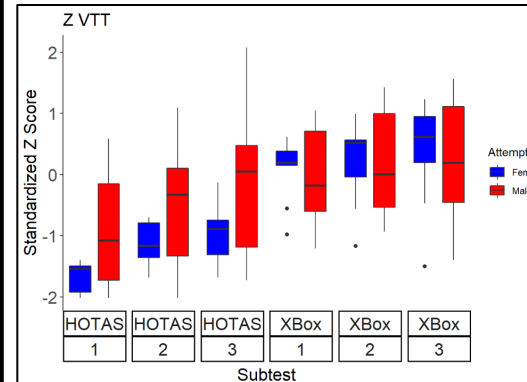
System Design & Methods

The PBM testbed at USAFA provides an environment to explore innovative (e.g., pupillometry) & incremental (e.g., controls) methods and technologies without test compromise



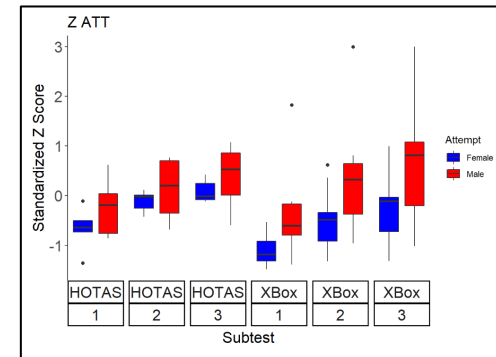
- Examine gender differences on both HOTAS (stick & throttle) & gaming controllers across trials
- Participants: Currently 14 females (5 HOTAS, 9 Xbox), 14 males (7 HOTAS, 7 Xbox) → 120 total planned
- Materials: PBM software, standard PC setup with controllers
- Measures: Tracking on the vertical sliding target (VTT) & 2D tracking of moving aircraft target (ATT)

Early Results



- Controllers (RQ1): Reduced gender differences on Xbox relative to HOTAS in VTT
- Practice (RQ2): Practice seems to be more important on HOTAS in VTT

- Controllers (RQ1): For ATT, opposite pattern might be developing
- Practice (RQ2): Practice led to increases in performance on both controls



Status / Way Ahead

- Continue collecting data for full analysis
- Explore more innovative tech & methods with primary stakeholders (NRL, AFPC)

