Real-Time Hardware-in-the-Loop Testing with Common Simulation Framework

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Project Background

- **DoD High Performance Computing Modernization Program**
  - **User Productivity Enhancement & Technology Transfer (PET) program**
    - **Integrated Modeling & Test Environments (IMT)**

- **AMSTAR Production Facility (Advanced Multispectral Simulation, Test & Acceptance Resource)**
  - **Redstone Technical Test Center (RTTC)**
  - **"best in the business at HWIL" (Mac Lowry)**

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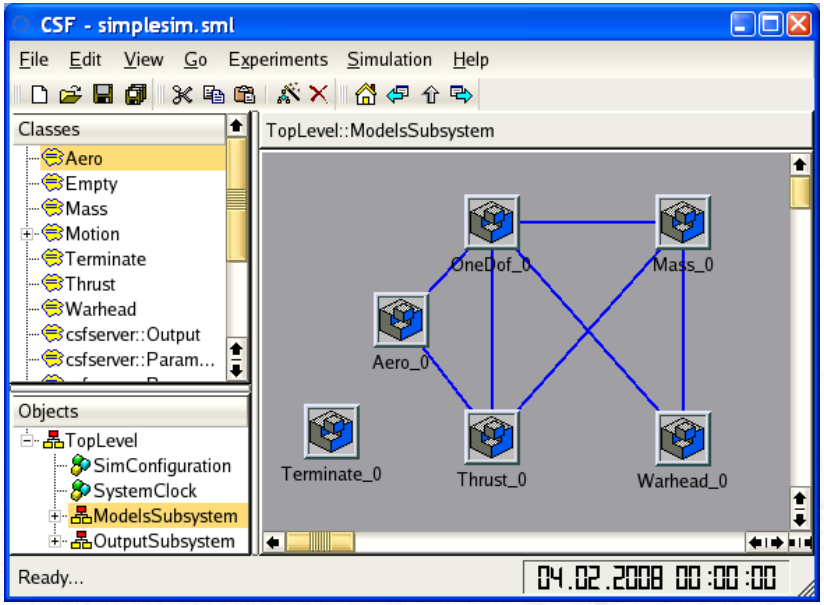
Project Goals

- Extend the real-time capabilities of the Common Simulation Framework (CSF)
- Demonstrate the effectiveness of CSF for hardware-in-the-loop (HWIL) testing
- Avoid project-specific changes to CSF



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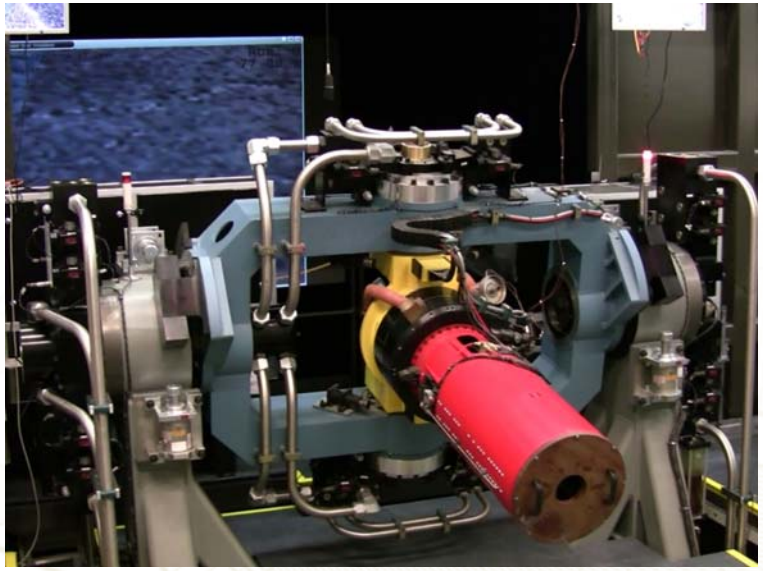
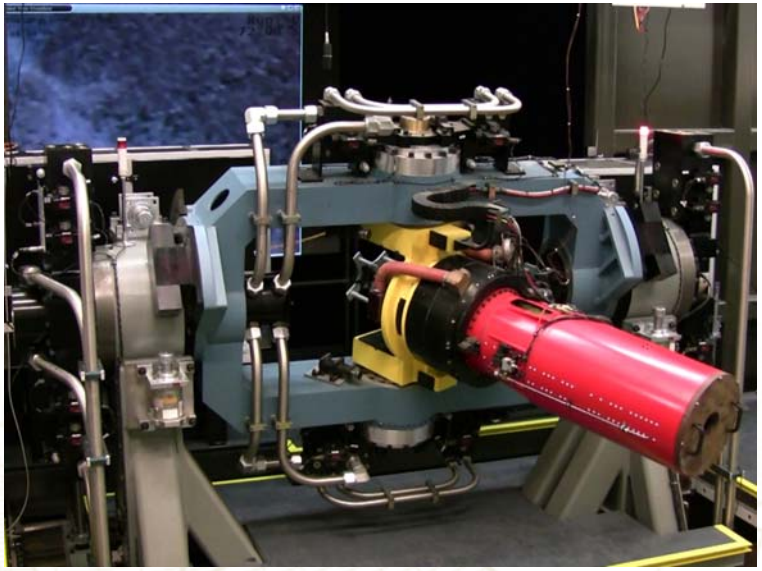
Hardware-in-the-Loop Demo

- **Successfully used CSF to drive a flight simulator table through a preprogrammed trajectory, update rate 600-1200 Hz**
- **RedHawk operating system, a real-time version of Linux**
- **Extensions to CSF will be offered to the CSF steering committee for possible acceptance in the standard distribution**





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