Supporting "Test Like You Fly" with Simulators and Test Beds

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Agenda

- Introduction & Introductions
- Presentation – Eric Hollmeier
- Presentation – John Bowers
- Discussion – TLYF Drivers for Simulators & Test Beds
- Summary
- Recommendations
Notional Ground System Elements

- External Interfaces
- User Services
- Mission Planning & Scheduling
- Processing and Product Generation
- Command & Control

Space Vehicle in Factory

Photo Courtesy NASA

- What simulators / test beds are needed for each element?
  - Are there other elements
Goals / Objectives

- Determine top level simulators / test beds needs to support ground system “like you fly” testing
- Identify key requirements for needed simulators / test beds
- Capture lessons from past experiences
- Identify topics for future work
What is “Like You Fly” Testing?

- Fly the Mission on the Ground (Days-in-the-Life Tests)
  - *Fly Long & Aggressively Enough to Let The System Fail*
- Using Representative Mission Timelines and Sequences
- Nominal and Stressing Days
- Use all elements involved in the mission during the timeline period
- Include applicable mission characteristics
Progression of LYF Tests

1. Function
2. Thread
3. Scenario
4. Timeline
5. Mission Phase
6. Performance Characterization
Discussion Topics

- Space vehicle simulators
- Other simulators for each element in ground system
- Fidelity & other requirements
- Validating simulators for TLYF