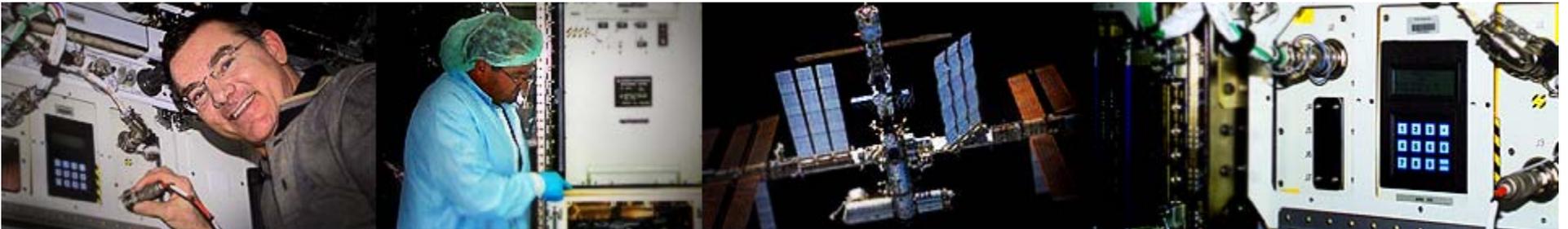




Boeing Payload Services for ISS Users



National Institute of Health (NIH) Implementation Partner Meeting

Amanda Rice

International Space Station – Payload Integration

June 16, 2009

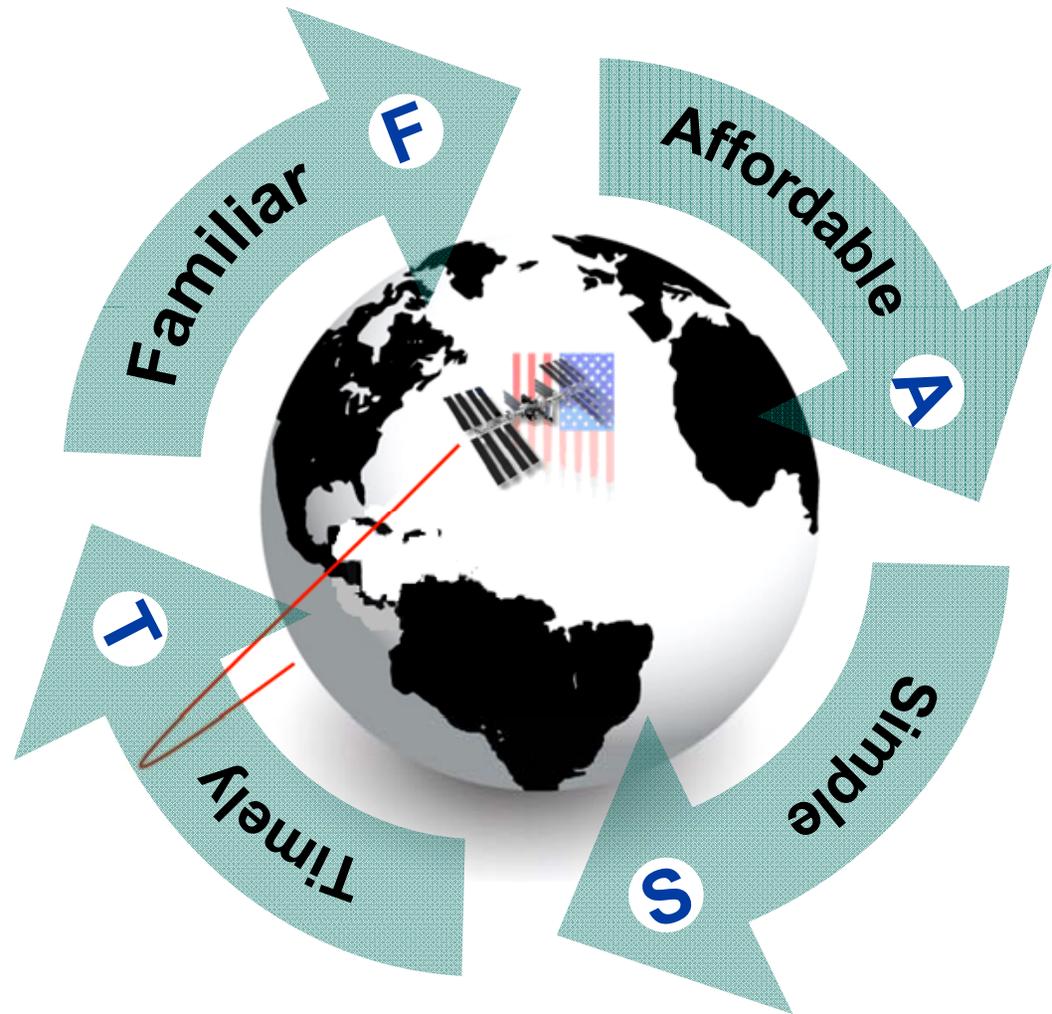
International Space Station National Lab

Boeing Payload Services

Implementation Partner for ISS National Laboratory

Boeing is investing in software initiatives to make ISS NL payload development and operations...

...FAST



Boeing Development in Support of National Lab

- We are building on our payload development and integration knowledge to simplify EXPRESS payload software development, integration and operations
- Restructuring Boeing-developed payload software for the Active Rack Isolation System (ARIS) Payload On-Orbit Processor (POP)
- Repacking and re-hosting ground test software capabilities



On-Orbit ARIS Rack

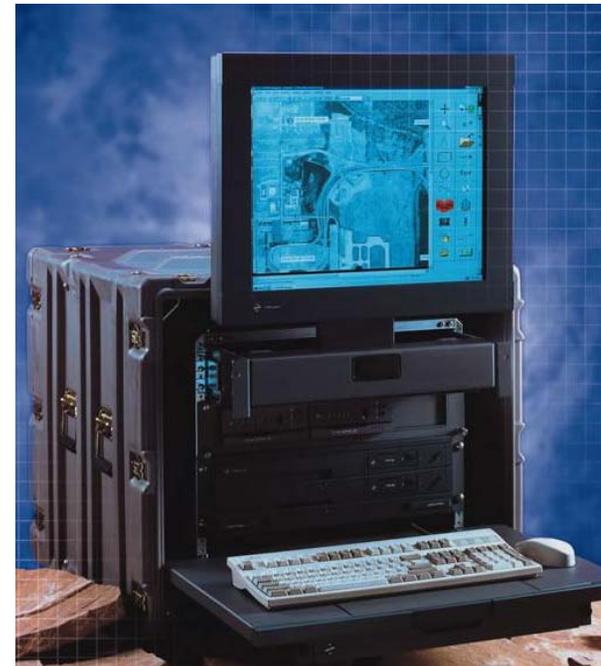
Boeing Development in Support of National Lab

- **Lean Application Programming Interface (API) Software Toolkit (LAST)**
 - Currently in development
 - Demonstration onboard ISS in early 2010
 - Available for payload developers mid 2010
- **What is LAST?**
 - Terrestrial lab-like control
 - Code to transition LabVIEW based experiment control and data acquisition to the ISS data architecture
 - Use LAST functionality to provide:
 - Real-time experiment control via command line instructions
 - Experiment data downlink and get real-time payload status
 - Applies to EXPRESS locker or drawer payloads
- **Enabling**
 - Simplified software development
 - Simplified experiment operations
 - Real-time results

... Make your ground lab software LAST for ISS National Lab

Boeing Development in Support of National Lab

- Remote Advanced Payload Test Rig (RAPTR)
 - Currently in development
 - Ground demonstration late 2009
 - Available for payload developers mid 2010
- What is RAPTR?
 - Portable computer environment
 - Simulates the ISS data architecture for your payload software interfaces
 - Supports the LAST architecture
- Enabling
 - Simplified software development
 - Simulation of end-to-end ISS data architecture for easier integration to ISS



RAPTR Concept

... RAPTR increases your software development and integration "Velocity" (Velociraptor)

