

Payload Integration Capabilities

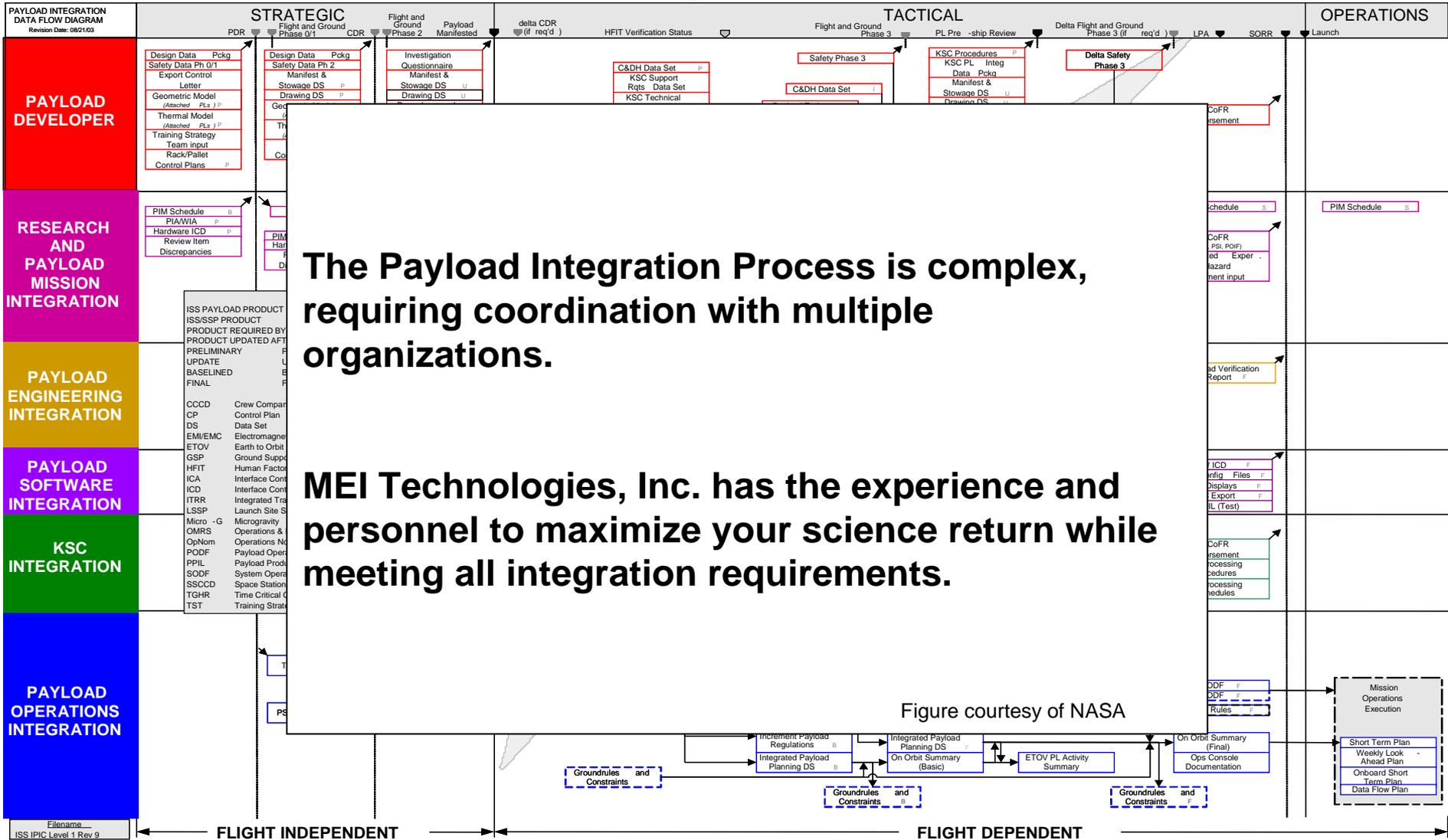
**Space Shuttle,
International Space Station,
Expendable Launch Vehicles**

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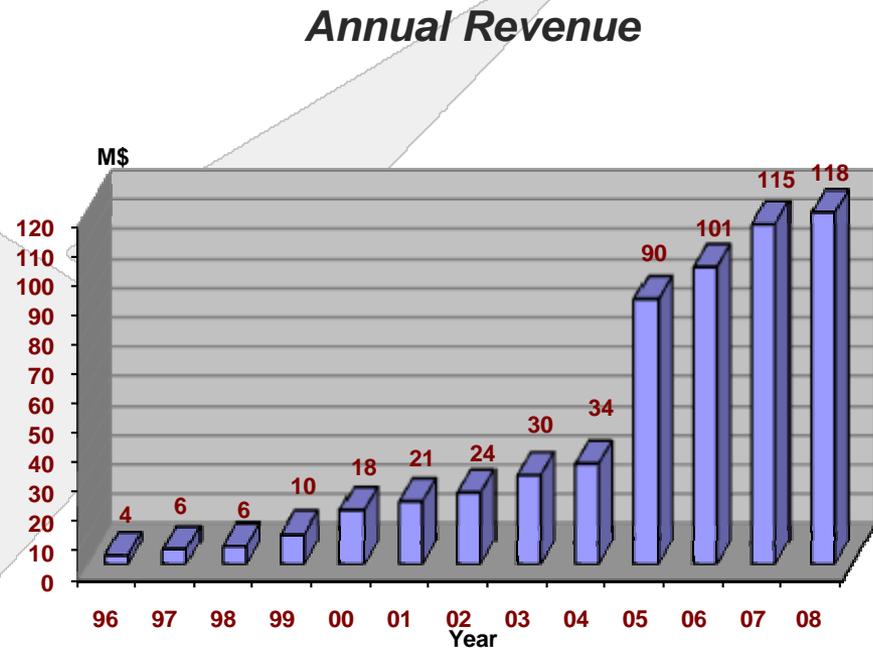
Payload Integration Overview



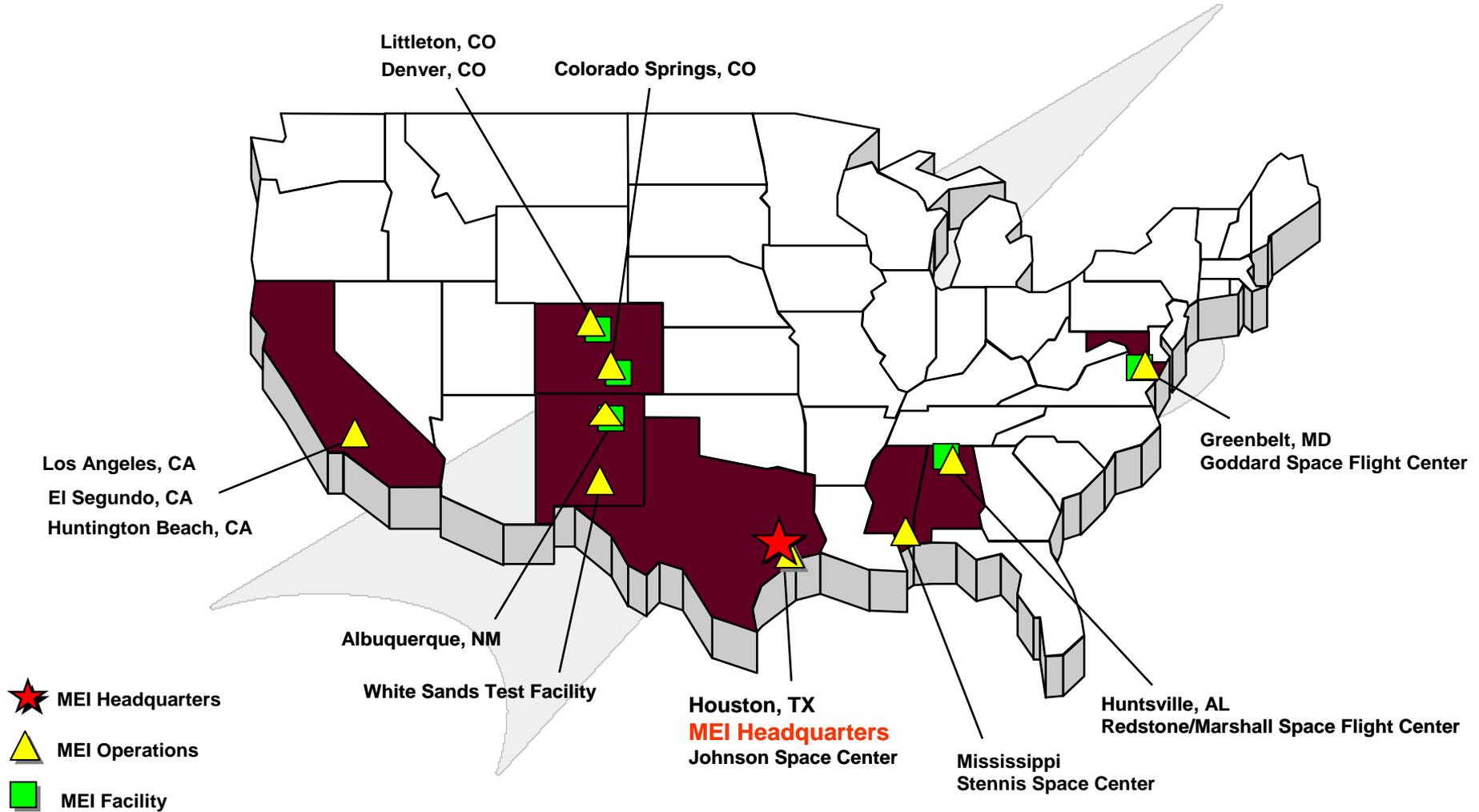
MEI Technologies, Inc.

- Incorporated January 1992
- Service-Disabled Veteran-Owned Small Business
- NAICS Code
 - 541712 *Research & Development*
 - 517110 *Telecommunications*
- Prime and Subcontracts with NASA and Department of Defense
- Over 800 employees

- ISO 9001:2000
- AS9100
- CMMI Level 3
- OSHA VPP Star Designation



MEI Technologies, Inc. Locations



MEI Experience

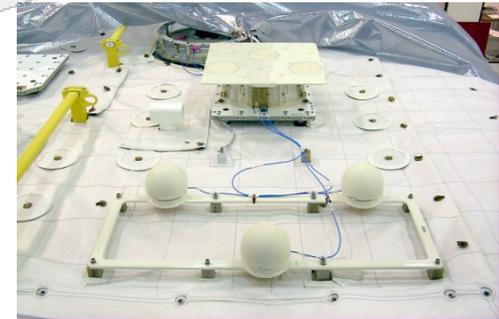
- ***MEI has been the sole provider of integration and operations support for all DoD experiments flown on the Space Shuttle and ISS for the past 17 years.***
- ***MEI has successfully integrated more than 125 payloads.***
- ***Payload carriers and destinations have included Space Shuttle middeck, payload bay Cargo Bay Hitchhiker, Get Away Special (GAS), and Cross-Bay Carrier, Spacelab, Spacehab, Phase I - Shuttle/Mir, International Space Station (ISS), Progress, HTV, and ATV.***



MightySat installed in the orbiter cargo bay (above) and ejected during STS-88 (right)



The Lightweight Flexible Solar Array Hinge (LFSAH) experiment being operated in the orbiter middeck on STS-93



Miniature Satellite Threat Reporting System (MSTRS) installed on Spacehab rooftop in preparation for STS-107

Photos courtesy of NASA

Our Personnel Supporting Recent Missions

Perform Payload Development, Testing, Integration, and Operations

- *Mechanical and electrical engineers for payload design*
- *Safety engineers*
- *Payload integration engineers*

- *Crew training instructors*
- *Test and verification personnel*
- *Real-time console operators*



CAPE free-flyers being installed into STS-116 Shuttle payload bay by DoD and MEI Team

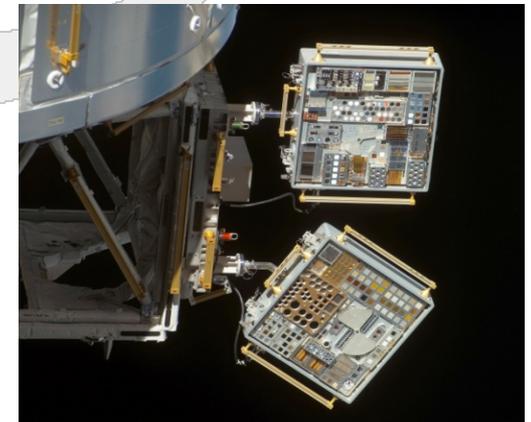


MEI personnel supporting DoD Team during STS-126 operations

Photos courtesy of DoD Space Test Program

Newly Awarded DoD Human Exploration Payloads (DHEP) Contract

- *Define and document payload requirements*
- *Obtain safety certification for payload flight and ground hardware*
- *Support manifesting and flight assignment*
- *Technical and schedule guidance to payload developer during hardware design and integration*
- *Verify compliance with SSP and ISS requirements*
- *Perform payload element testing and engineering analyses*
- *Train crew and console support team*
- *Pre-launch and post-landing hardware processing*
- *Maintain the DoD Payload Operations Control Center*
- *Provide console flight operations support to payloads*
- *Gather post-flight data from the SSP and/or ISS*
- *Maintain DoD document library and hardware vault*
- *Transition to future launch systems with NASA*



MISSE 6 deployed on Columbus module during STS-123

Photos courtesy of NASA

Other Shuttle/ISS Integration-Related Contracts

MEI also supports development and delivery of flight hardware to NASA on several subcontracts relating to payload integration

- ***Engineering and Science Contract (subcontract to JACOBS)***
Provide design, safety, quality, and test
- ***Bioastronautics (subcontract to WYLE)***
Provide design, build, and test
- ***Boeing Engineering Services***
Provide systems integration support
- ***Lockheed Martin***
Provide systems integration support
- ***NASA Johnson Space Center Engineering Directorate (BETA Contract)***
Integrated DragonSat picosats for STS-127 deployment via MEI-built ejection system

Multinational Vehicle Integration

Launch and Space Operating Vehicles

- *Space Shuttle, Mir and International Space Station*
- *Progress*
- *HTV (H-II Transfer Vehicle)*
- *ATV (Automated Transfer Vehicle)*

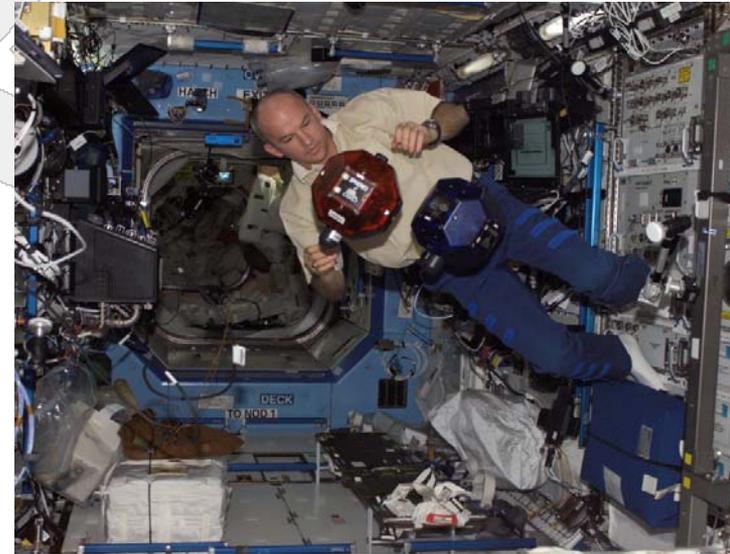
Launch Integration Experience

- *Systems and Payload Integration*
- *Mission Planning and requirements definition*
- *Requirements Implementation, Verification and Certification*
- *Flight and Ground Crew Training*
- *Trainer and Simulator Design, Acquisition and Operations Support*
- *Technical Interchange and Action Item / Conflict Resolution*
- *Integration Documentation*
- *Safety Certification*
- *Pre-launch Processing and Checkout Support*
- *Real-Time Mission Operations Support*

Summary

MEI has extensive payload integration experience

- *Author payload requirements documentation*
- *Perform testing, verification, and safety certification*
- *Support payload manifesting, operations and logistics support*
- *Lead payload organizations to successfully utilize chosen vehicle and carrier*
- *Navigate the requirements and processes of several launch vehicles and associated carriers*
 - Space Shuttle
 - International Space Station
 - ELVs (Expendable Launch Vehicles)
 - *Progress,*
 - *HTV,*
 - *ATV*
 - *and COTS*



Increment 14/Jeff Williams operating SPHERES with MEI ops supporting

Photos courtesy of NASA