International Space Station

How do I get a new payload on ISS?

ISS Payloads Office
3 August 2010
Sponsorship of Payloads on ISS

ISS National Laboratory

- U.S. Commercial Sector
- Non-profit organizations
- Other U.S. Government Agencies (DoD, NIH...)

ISS National Laboratory

ISS Program Office

International Partners

NASA Mission Directorates

- Manage Agreements:
  - SOMD – Space Operations
  - ESMD – Exploration Systems
  - SMD – Science
  - OCT – Office of Chief Technologist

ISS Program Office

- Plans, Integrates and Operates

NASA Research

- ISS Research in Physical and Life Sciences (SOMD)
- Human Research Program (ESMD)
- Exploration Research & Tech. Develop. (OCT, SOMD, ESMD)
- Astrophysics, Heliophysics, Planetary & Earth Science (SMD)

International Partners

- CSA
- ESA
- ASI
- JAXA
Steps for manifesting/planning a new ISS payload

1. **Sponsor selects for flight** (depends on who is funding the work)
2. **Sponsor notifies appropriate integration contact who works with ISS Program to implement**
3. **ISS Integration contact submits planning inputs to ISS Payloads Office** (depends on timeframe for flight)

<table>
<thead>
<tr>
<th>Sponsoring Org (NASA Directorate)</th>
<th>Selecting Official *</th>
<th>ISS Integration Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Research Program (ESMD)</td>
<td>NASA: Dennis Grounds</td>
<td>Cindy Haven, NASA JSC</td>
</tr>
<tr>
<td>Physical Science (ESMD)</td>
<td>NASA: Benjy Neumann/ Fran Chiaramonte</td>
<td>Fred Kohl, NASA GRC</td>
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<tr>
<td>Life Science (ESMD)</td>
<td>NASA: Benjy Neumann/ David Tomko</td>
<td>Sid Sun, NASA ARC</td>
</tr>
<tr>
<td>Astrophysics, Heliophysics, Space &amp; Earth Sciences (SMD)</td>
<td>NASA: Paul Hertz/ Selecting Division Director</td>
<td>Marybeth Edeen, NASA JSC</td>
</tr>
<tr>
<td>Engineering Research &amp; Technology Development (SOMD, OCT, ESMD)</td>
<td>NASA: Ron Ticker (coordinating POC)</td>
<td>Marybeth Edeen, NASA JSC</td>
</tr>
<tr>
<td>ISS National Lab (Other Government Agency coordinated with SOMD)</td>
<td>Agency Selecting Official (NIH, NSF, DoD, etc.)</td>
<td>Marybeth Edeen, NASA JSC</td>
</tr>
<tr>
<td>ISS National Lab (Non-profit/Commercial coordinated with SOMD)</td>
<td>NASA: Mark Uhran/ Jason Crusan</td>
<td>Marybeth Edeen, NASA JSC</td>
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*Selecting officials may change at short notice as ISS Research is consolidated at NASA HQ*
**Steps for manifesting/planning a new ISS payload**

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<th>Timeframe</th>
<th>Planning Process</th>
<th>Board Chair</th>
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<tr>
<td>L-12 through launch (Once a Research Plan has been baselined through execution)</td>
<td>PMIT Payload Mission Integration Team</td>
<td>George Norris/OZ2 Payload Mission Manager</td>
</tr>
<tr>
<td>L-24 through L-12</td>
<td>RPWG Research Planning Working Group</td>
<td>Rod Lofton/OZ4 Research Planning Manager</td>
</tr>
<tr>
<td>2 years and out (Strategic Timeframe)</td>
<td>UOP User Operations Panel</td>
<td>Julie Robinson/OZ ISS Program Scientist manages long-term Strategic Planning</td>
</tr>
</tbody>
</table>
Requirements Integration & Prioritization

- Each node in queue responsible for prioritization within its scope.
ISS Payload Integration Timeline

- **Strategic**
  - L-X months
  - Requirements Definition (Design, Development, Test, Safety, and Verification)
  - PDR
  - CDR
  - Manifest Approved

- **Tactical**
  - L-X months
  - Mission Integration (Increment Planning)

- **Operations**
  - ~L-1m
  - Real Time Operations (Research)
  - ISS Crew Rotation
  - Launch

- **Post-flight**
  - 6 months
  - Crew Return
  - Post Flight Ops (H/W, Data Return)
  - ISS Crew Rotation
  - Launch

Hardware development time varies per payload
36 months to days
Payload Tactical Planning Process

Research Sponsor initially responds to the RPWG “Call for Payloads” with a list of candidate payloads and resource requirements for consideration. This action starts the manifesting process.

Payload-specific Resource Definition and Two-pagers

ISS Payloads Office Feasibility Assessments (Integration Organizations)

Payload-prioritization

Flight & Increment-specific Utilization Allocations (ISS Program Office)

(Up/down-mass, Crew time, Power, etc)

Launch Schedules (Shuttle, Russians, ESA, JAXA, ISS Program Office)

Research Planning Working Group

Increment-specific Research Plan
Payloads Mission Integration Process

Increment-specific Research Plan
Research Directive

Mission Integration

Increment Management
- Payload Tactical Plan
- Flight and Stage Priorities
- ISS Mission Management Team
- Weekly Planning
- Safety Process
- Certificate of Flight Readiness

Launch Package Management
- Manifest and Stowage
- Flight Priorities
- Shuttle Crew Time Schedules
- Safety Process
- Certificate of Flight Readiness

Payload Integration Manager (PIM)
- Primary interface to ISS for the Payload Developer
- Function as payload advocate at ISS Program meetings
- PIM schedule for major ISS integration milestones and hardware deliveries
- Coordinate ISS Program Support for PDRs/CDRs
- Negotiate and coordinate Payload Developer requirements and service needs