



ZIN Technologies

ISS Payload Operations Center (ISSPOC) - GRC Telescience Support Center (TSC)

ISS Payload Operations Center (ISSPOC – GRC TSC)



DESIGN HIGHLIGHTS

- Secure, dedicated audio, video, and data interfaces are provided and maintained for payload teams, including four channels of ISS video and the ability to communicate directly with the ISS crew.
- The ZIN Team provide operations Planning Products: URC Inputs, OOS Review & Resource Planning, Operational Change Request (OCR) Generation & CoFR for Console Operations.
- Our Experience:
 - Facilitates development of detailed payload operational scenarios
 - Build realistic operational timelines
 - Accurately estimate bandwidth, storage, video requirements
 - Provide certified operations personnel
 - Provide Commanding, Display, and Data Processing
 - Provide training for the proper use of TSC resources
 - Provide real-time support to perform payload operations

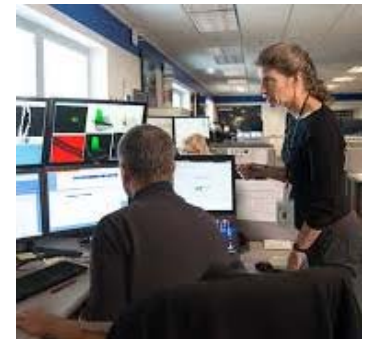


NASA Glenn Research Centers (GRC) ISS Payload Operations Center ISSPOC – also known as the Telescience Support Center (TSC)) Provides around-the-clock operations support for space experiments on the ISS. The sustaining engineering and operations team is under a prime contract with ZIN Technologies.

The ISSPOC is a secure, multipurpose facility designed to provide dedicated support for simultaneous training, simulations and real-time operations of space experiments on the ISS. The facility includes the Payload Operations Center, the Communication and Network Support Room, the TSC Operations and Support Room and a visitors viewing area that provides access on a noninterference basis.

Principle investigators, project scientists and payload operators send commands and receive telemetry and science data from their payload hardware operating on board the ISS. By working off the Earth for the Earth, the International Space Station advances scientific knowledge in Earth, space, physical, and biological sciences.

- Since 2001, ZIN at the TSC has provided over 30,000 hours of continuous support for diverse microgravity research experiments and vehicle health onboard the ISS, 24 hours a day, 7 days a week when necessary.
- Hardware and software provide the ability to send commands to payload hardware and to receive feedback via telemetry.
- The quality of scientific and engineering data is enhanced while the long-term operational costs of experiments are reduced because principal investigators and engineering teams can operate their payloads from their home institutions with support of experienced operations personnel.



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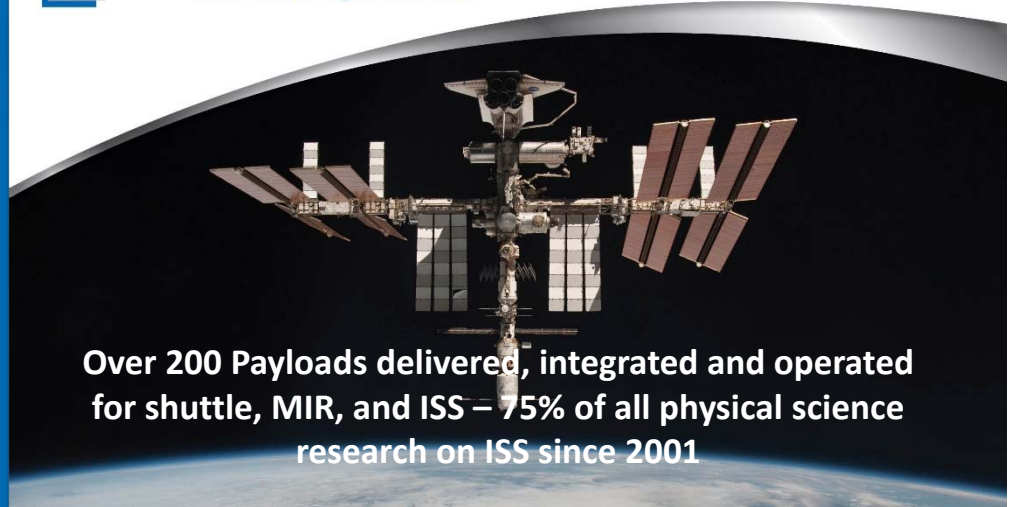
ISS National Lab CASIS Implementation Partner

For 25 years, the ZIN engineering team has partnered with NASA management, scientific experts and industry to manage and develop space flight systems, from concept definition, design, development, and fabrication to system assembly, integration, test, launch, operations and return.

As an implementation Partner for the ISS National Laboratory ZIN can streamline ISS science facility utilization to researchers, businesses and educators to take advantage of the unique benefits offered through space-based investigations providing a variety of services to enable efficient execution of science initiatives.



Focus on Quality - Certified and Compliant with Industry and Government Quality Standards



Over 200 Payloads delivered, integrated and operated for shuttle, MIR, and ISS – 75% of all physical science research on ISS since 2001

OUR PRODUCTS & SERVICES

PRE FLIGHT:

ZIN provides a wide range of products and services and demonstrated experience for space-based science investigations.

- ❑ Access to a large repository of previous space experiments that align with promising commercial applications
- ❑ Collaboration with experienced payload developers and other subject matter experts to ensure successful experiment operations
- ❑ Utilization of unique capabilities and facilities for developing payloads
- ❑ Coordination with NASA and launch vehicle providers for transparent and easy interaction with investigators

IN - FLIGHT:

ZIN can support private sector product development and ensure seamless investigation implementation, including:

- ❑ Support of “real time” on orbit payload operations -Telescience Support Center
- ❑ Interfacing with ISS crew during experiment interaction
- ❑ Facilitation of data and software interfaces
- ❑ Coordination of contingency planning for mission changes to preserve science objectives

Primary Services:

- ❑ Hardware design, manufacture and certification
- ❑ Hardware analytical and physical integration
- ❑ Full lifecycle software, integration & testing
- ❑ Program management
- ❑ Export Compliance
- ❑ Hands-on crew training
- ❑ On-orbit operations

POST-FLIGHT:

After the project comes back to Earth, ZIN can assist with the following:

- ❑ All post-flight data & report requirements are submitted to the principal investigator in a timely fashion
- ❑ Post Flight Testing and Data Analysis
- ❑ Logistics support for sample and hardware return from ISS
- ❑ Identification and support at appropriate facilities for post-processing activities

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