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# Flight Crew Integration (FCI) ISS Crew Comments Database & Products Summary

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# Background

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The Flight Crew Integration (FCI) Operational Habitability (OpsHab) team collects, analyzes, and reports on data from ~30 ISS Crew Debriefs managed by the ISS Post Mission Working Group and scheduled after every ISS Expedition (4 rounds per year)

- OpsHab started collecting, de-identifying, categorizing confidential crew comments on an excel spreadsheet data for Expedition 1 in 2000, and all subsequent Expeditions
  - ✓ Process included Crew Office signature approvals on all data generated for engineers, researchers, etc.
  - ✓ Process also included JSC Legal Office approval
- In 2010, the Program funded the development of a confidential SQL database that could accommodate growth and generate products
- In 2011, a stenographer was added to the OpsHab team to increase efficiency and accuracy
- In 2012, the OC Post Mission Working Group Team recognized this team and the FCI ISS Crew Comments Database as the official source for all debrief notes



# Background

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- In 2015, the database has grown to include **71,313** comments from flown crewmembers, spanning 48 expeditions and addressing a wide variety of topics:
  - ✓ EVA, Training, Exercise, Safety, Hardware, Crew Time, Habitable Volume, Waste and Hygiene, Labeling, Robotics, Procedures, Planning, Human Computer Interaction, Crew Provisioning, GFE, CHeCS, Acoustics, Training, Tools, MPLM, Galley, Food and Dining, Communications, Architecture, Restraints & Mobility Aids, Water Sampling, Sleep Stations, Stowage, Soyuz, Housekeeping, Logistics & Maintenance, TOCA, Crew Earth Observation, etc.
- Summer 2014, OpsHab was invited by the Flight Director Office (via Crew Office) to collect real-time data following critical on-orbit events; i.e. robotics, visiting vehicle ops, and EVAs
- Spring 2015, OpsHab began supporting iSHORT on-orbit data collection as co-PI for Habitability ISSMP payload



# Data Destination

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## **Purpose:**

This Crew Debrief Data provides support for design and development of vehicles, hardware, requirements, procedures, processes, issue resolution, lessons learned, consolidation and trending for current Programs; and much of the data is also used to support development of future Programs.

## **Requestors:**

- All ISS Post Flight Debrief System Primary POCs
- All Directorates at JSC; OB, EA, SA, FOD, etc.
- All ISS System Managers
- GJOP Board Presentations (2x yr.)
- Crew Office Staff Meeting Presentations (1x yr.)
- FACB Board Presentation (1X yr.)
- Other NASA Centers
- International Partners



# Data Products



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## Products Generated:

- Quick Request Reports
  - ✓ Report consists of all available comments on a specific topic allowing access to a large set of individual comments (e.g. Exercise Hardware) or a specialized data set (e.g. ARED cylinder evacuation)
    - FY 2011 – 43 Quick Request Reports
    - FY 2012 – 76 Quick Request Reports
    - FY 2013 – 90 Quick Request Reports
    - FY 2014 – 100+ Quick Request Reports
    - FY 2015 – 110+ Quick Request Reports
    - FY 2016 – 90+ Quick Request Reports (and counting!)
  
- Debrief System Reports
  - ✓ On a secure SharePoint site, each ISS System has a unique library that will automatically be updated three times a month with crew comments specific to the individual systems
    - Each individual comment contains context from the question the comment is referencing
    - Controlled, minimal user group established for each library, with FOD concurrence



# Integration



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## Recent Projects:

- 7+ Crew Assessment
- Paperless Interactive Cargo Operations (PICO)
  - ✓ Conducted usability assessment on updates to OSPTV via OPTIMIS
- Support for ISS Habitability Payload
  - ✓ Co-PI support for Payload
  - ✓ Integration/Dissemination of Real Time Data with Post Flight Crew Comments Data
- Training Retention/Reduction Action
  - ✓ Provided crew comments data and HF support for program and CB
- EVA Investigation Support
  - ✓ EVA 32 Mishap Investigation Board Human Factors Assessment & Interview Data Collection Support
  - ✓ Recurrence Control Options for Inadvertent EMU Feedwater Switch
- OPTIMIS Support
  - ✓ Conducted usability assessment on updates to OSPTV via OPTIMIS



# Integration



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## Recurring Integration Activities:

- Data Trending & Lessons Learned Development
  - ✓ Developing trending methodology and lessons learned from database
  - ✓ Expand process and integration with systems
  - ✓ Collaboration with JSC Chief Knowledge Architect
  - ✓ Integration of other ISS program data resources (on-orbit, on-console, post flight)
- GJOP Support
  - ✓ Provide Expedition summaries tailored for Ops community
    - On 8/10/11, GJOP chair requested periodic presentations on a regular basis
- CB/FOD Coordination and Consultation
  - ✓ Provide periodic status to CB/FOD mgmt on process, progress, & further opportunities for integration and collaboration
- Dynamic Event On-Orbit Debrief Support
  - ✓ Provide transcription and summary services for EVA and Visiting Vehicle realtime debriefs following critical operations



# Conclusion

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## Our Goals

- Increase awareness that a searchable ISS crew debrief data repository exists
- Increase use of ISS crew debrief data

Please contact Susan Schuh ([susan.v.schuh@nasa.gov](mailto:susan.v.schuh@nasa.gov)) to gain access to the FCI/Opshab SharePoint site

<https://meme-portal.jsc.nasa.gov/sites/groups/FCIteam/default.aspx>

## Opshab Team

- Susan Schuh (Team Lead)
- Katie Vasser
- Nicole Schoenstein
- Rhonda Russo (Stenographer)
- Laura Duvall (NASA TM/FCI System Manager)