RVTEC Ship/Shore Communications Subcommittee

Recommendations - Three-Year Plan

- Keep current system of HSN as primary & FBB back-up
- Increase HSN bandwidth by 4x & improve infrastructure
- Thoroughly test GX as it starts coming online
- Monitor bandwidth and create a Management Plan
- Move ships toward Level 3 telepresence capability as need and budget allow
- Meet annually at RVTEC
- Review after 3 years

RVTEC
Ship/Shore Communications Subcommittee

TELEPRESENCE GUIDANCE FOR SCIENTISTS AND SHIP OPERATORS

Document provides:

- Descriptions of each level of telepresence
- Real examples of each level of telepresence
- Proposal Preparation and Pre-cruise Planning
- Implementation at Sea
  - Guidance for the Science Party
  - Guidance for the R/V Operators and Marine Technicians
- Community Resources and Contacts
- UNOLS Ships – Satellite Bandwidth Capabilities
- Mobile Telepresence Unit (MTU) Description

TELEPRESENCE GUIDANCE FOR SCIENTISTS AND SHIP OPERATORS

Level 0: Minimal connectivity

Requirements:

Bandwidth: 256Kbps ship-to-shore (normal HiSeasNet)

Shipboard Equipment: Computer with integrated camera and associated software

Shipboard Personnel: A host of the session is required

Shore-based Equipment: None

Shore-based Personnel: None

TELEPRESENCE GUIDANCE FOR SCIENTISTS AND SHIP OPERATORS

Level 1: Public Viewing (live broadcast to the Internet)

Requirements:

Bandwidth: 1.5-2 Mbps (ship-to-shore), 1 stream of SD video

Shipboard Equipment: Mobile Telepresence Unit

Shipboard Personnel: 0.5-1 shipboard personnel dedicated to organizing the broadcast and operating the camera and MTU

Shore-based Equipment: Dedicated server and possibly a video streaming service provider such as a Content Delivery Network

Shore-based Personnel: Part-time technical personnel to set-up and monitor the equipment feeding the stream to the website

TELEPRESENCE GUIDANCE FOR SCIENTISTS AND SHIP OPERATORS

Level 2: Remote Learning, Outreach, and Media Events

Requirements:

Bandwidth: 1.5-2 Mbps (ship-to-shore) and 256Kbps (shore-to-ship). 1 stream of SD video; 2-way audio communication

Shipboard Equipment: Mobile Telepresence Unit

Shipboard Personnel: 0.5-1 shipboard personnel dedicated to organizing the broadcast and operating the camera and MTU, and coordinating with shore-based personnel for planned outreach and remote science activities

Shore-based Equipment: Dedicated servers and video teleconferencing systems, in addition to website broadcast equipment

Shore-based Personnel: A part time technician and potentially a part-time educational coordinator

TELEPRESENCE GUIDANCE FOR SCIENTISTS AND SHIP OPERATORS

Level 3: Telepresence-Enabled Science

Requirements:

Bandwidth: 6-20 Mbps (ship-to-shore) and at least 512Kbps (shore-to-ship)
Usually more than 1 stream of HD video, 2-way audio communication

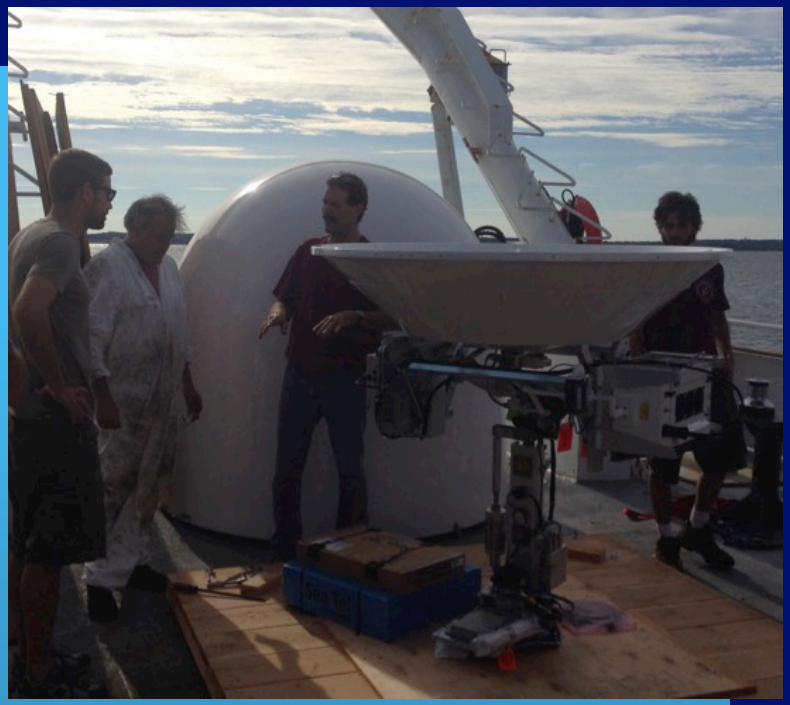
Shipboard Equipment: An advanced telepresence system or sophisticated MTU

Shipboard Personnel: At least 1 dedicated telepresence technician onboard to manage the hardware and support the audio/video system; at least 1 dedicated member of the science party to coordinate the telepresence operation

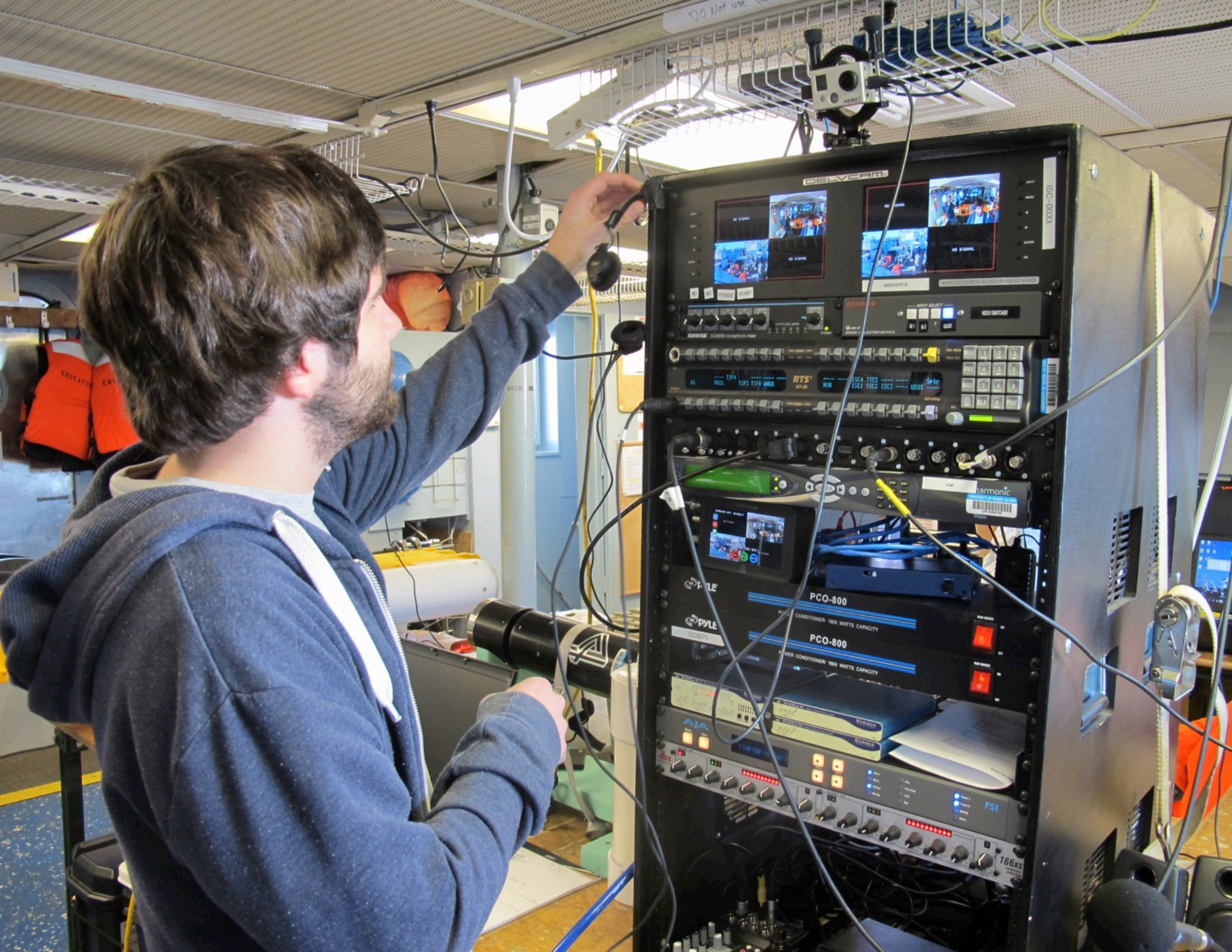
Shore-based Equipment: Advanced video broadcast, audio, and data server equipment and software, capabilities such as those at Exploration Command Centers or Inner Space Center facilities

Shore-based Personnel: Full-time technical personnel and potentially a part time science party coordinator and/or educational outreach coordinator.

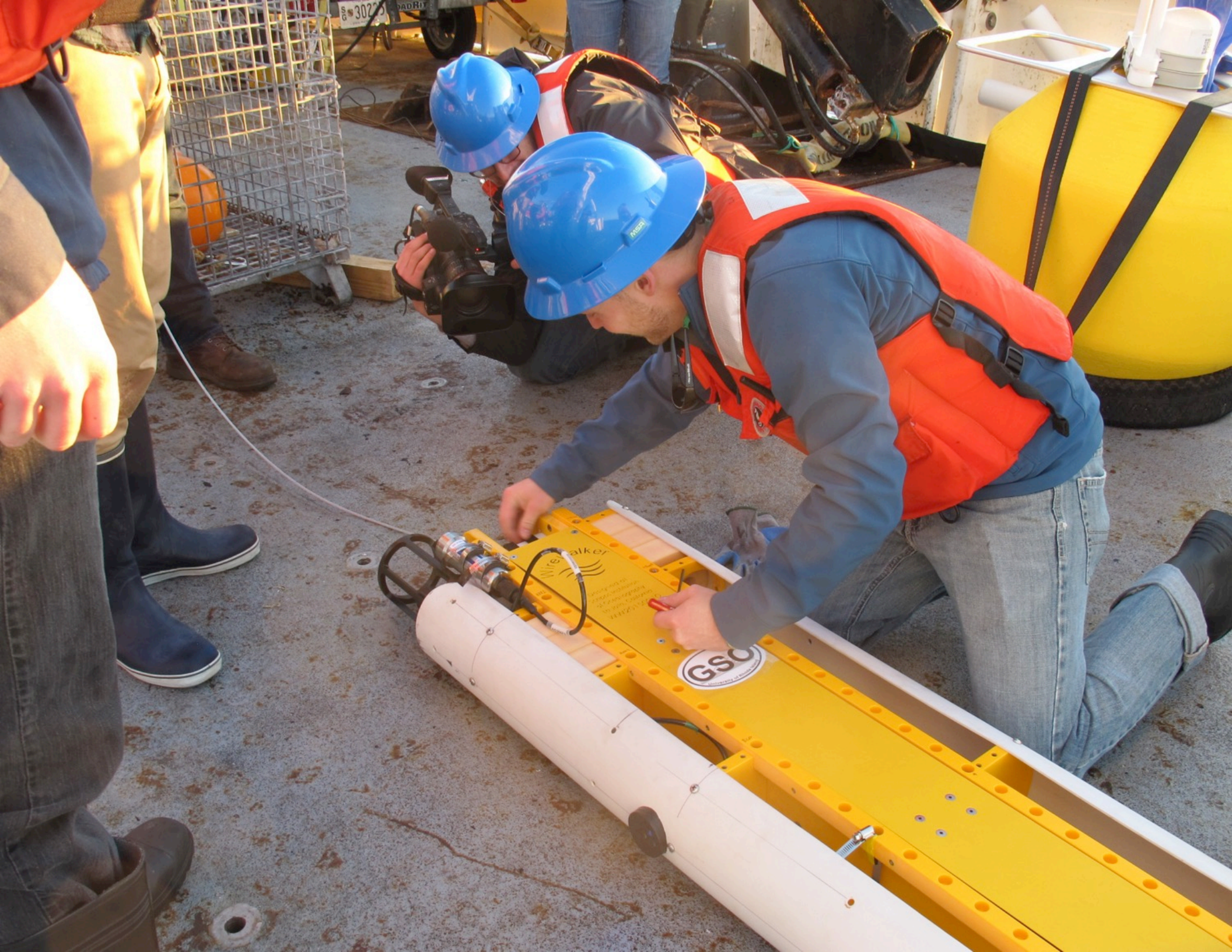
Mobile Telepresence Unit (MTU) Description

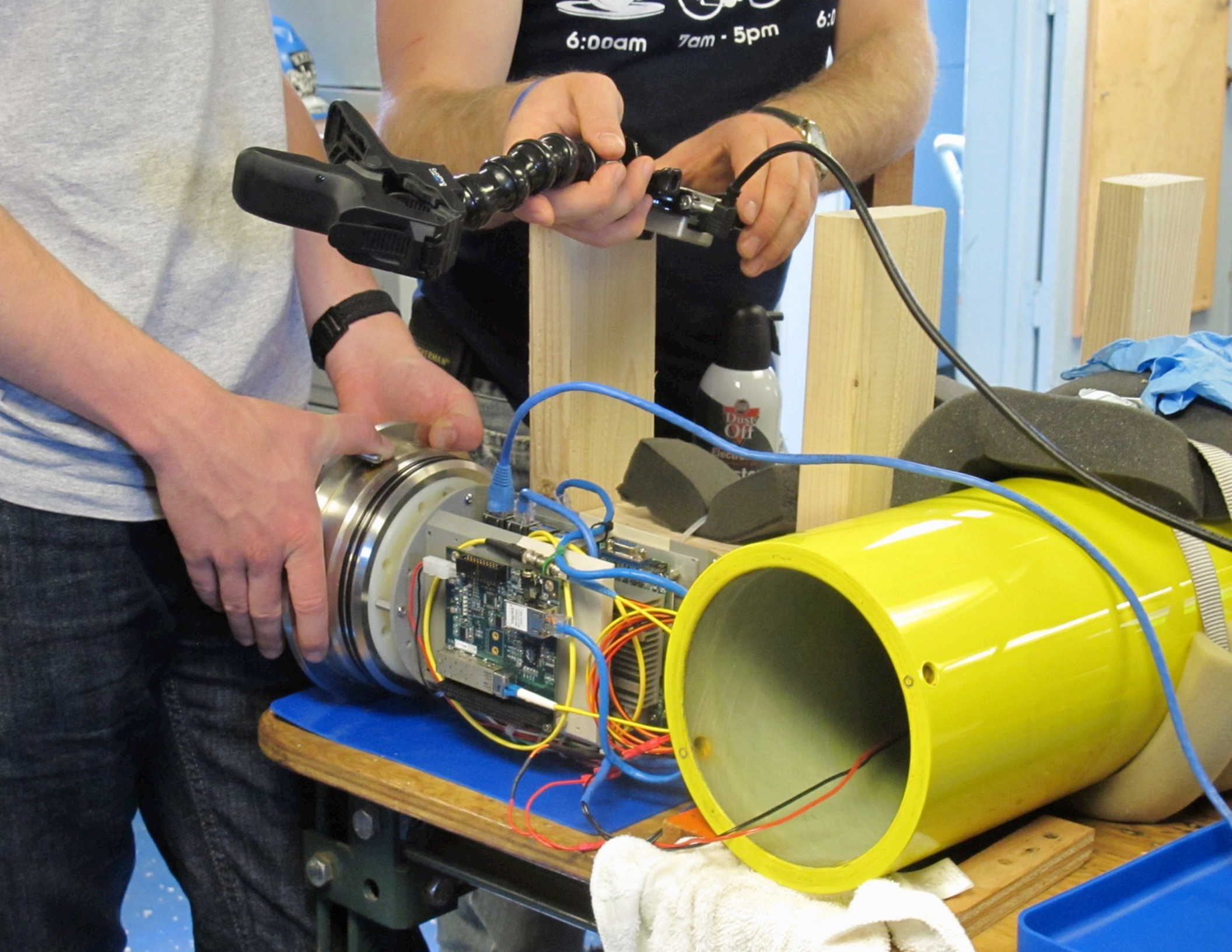


A Telepresence System for the R/V *Endeavor*


PELVCAM
ISC-0033
PCO-800
PCO-800
PYLE
AIA
FS1
166xs


LIVE
R/V ENDEAVOR




6:00am
7am - 5pm
Dust Off

RVTEC Ship/Shore Communications Subcommittee

TELEPRESENCE GUIDANCE FOR SCIENTISTS AND SHIP OPERATORS

Next Steps:

- Collect more feedback and finish edits to document; Post document on UNOLS web site
- Organize a webinar for the community to discuss telepresence
- Develop a companion document for education/outreach and instructions for proposal development
- Provide information at RVTEC, AGU, Ocean Sciences, etc
- Prepare for February NSF Ocean Sciences proposal submissions for PIs who wish to incorporate telepresence into their ship time requests

Ship-to-Shore Telepresence