

**Research Vessel Technical Enhancement Committee Meeting
Florida State University
Tallahassee, Florida
October 28-30, 2008 (Tuesday-Thursday)**

Meeting Minutes

Executive Summary: The 2008 RVTEC Meeting was hosted by Florida State University on 28-30 October. Stewart Lamerdin, RVTEC Vice-Chair, presided over the meeting. The meeting began with a moment of silence for Bill Martin, RVTEC Chair. Bill passed away just weeks before the meeting while working aboard the R/V *Thompson*. His leadership and dedication to RVTEC will be greatly missed.

The meeting agenda was full. A few of the major topics of discussion included the:

- Crew and Marine Technician Retention and Recruitment Initiative.
- Repository to Deck (R2R) Initiative
- Implementation of RVSS Appendix A = Safe Working Loads and Monitoring Systems.

The agenda also included reports from agency representatives, committee reps, the UNOLS Chair, and subcommittee liaisons. The RVTEC traveled to FSU's Coastal and Marine Laboratory for a tour. Group purchases were discussed. An informative Show and Tell session was provided at the end of the meeting.

Elections were held for a new RVTEC Chair. Rich Findley from the University of Miami was elected. University of Washington will host the 2009 meeting.

Action Items:

RVTEC Chair Election – Send RVTEC's Chair nomination of Rich Findley to Vernon Asper, UNOLS Chair, for Council endorsement. (UNOLS Office) - Status: complete

Research Vessel Safety Standards:

- "Volunteers" review chapter assignments
- Provide input to Dale by Nov 7th.
- Dale will compile feedback and circulate it to RVTEC
- RVTEC Chair will submit feedback to Mike Prince

Post Cruise Assessment Report Subcommittee – Send a recommendation to the UNOLS Council for the PCAR committee to regroup. (RVTEC Chair).

RVTEC Charter Review <http://archive.unols.org/info/ucharter.html#annexV>:

- RVTEC should review Annex V.
- Send comments to the UNOLS Office
- Annette will compile all comments and recirculate to RVTEC.

Education Subcommittee – Aubri Steele has agreed to chair this committee. Tasks include:

- Compile and collect procedural manuals/video clips for instrumentation/equipment (eg. Drilling, H2O, etc).
- Post/link the manuals on a web site
- Announce training opportunities (all RVTEC members should do this)
- Coordinate technical presentations/guest speaker for RVTEC Annual meeting

Solicit RVTEC Nominations to Committees and Subcommittees - Action for Rich Findley

- RVOG (RVTEC liaison)
- Safety Committee
- PCAR Subcommittee – Mary-Lynn plans to step down next year. Dave Fisichella is interested.

Ocean Class Research Vessel Acquisition – UNOLS Rep: RVTEC Chair will solicit RVTEC nominations for this position. RVTEC Chair will draft a recommendation that the individual nominated by RVTEC serve as the OCRV UNOLS rep and that the position should be compensated. RVTEC also recommends that single person representation is insufficient and should be expanded.

RF Frequency Spectrum Management Committee - Richard Perry will continue to be the point of contact. Disband the committee.

HiSeasNet – RVTEC members should contact Steve Foley if interested in training.

Pilot Program – Fleet Broadband – WHOI will prepare a report on the Fleet Broadband installation on *Oceanus*. (Al Suchy)

Defined Levels of Technical Services – Encourage Tech Managers to enter http://unolsweb.cms.udel.edu/STRS/Public/diu_login.aspx . The UNOLS Office is willing to assist. Annette will send reminders.

RVTEC and Tech Manager Email Lists:

- Initial Action – Office will send lists to Rich Findley for review (done)
- Remove vendors
- Vet list through Tech managers
- Establish and clearly articulate email list policy (Rich)

Winch/Wire Monitoring System: Group development effort

- Rich will send a letter to RVOC stating that RVTEC is addressing this issue in order to comply with the RVSS Safety Standards.
- Rich will put a call out for those interested and form a working group.
- Rich will coordinate and deal with funding. – Suggested that this be a focus of the Wire Workshop planned for early 2009.

Gravimeter Pool – Dan Fornari is preparing written guidance regarding access and use of the gravimeters. The UNOLS Office will circulate the document when available. Any additional action can be determined once the guidance document has been reviewed.

Shared Support for Specialty Systems – Determine if there are systems that would benefit by pooling resources for maintaining, calibrating, processing, etc.

Crew and Marine Technician Retention and Hiring:

- Rich will seek comments/endorsement from the Tech Managers for Stewart’s letter to Vernon Asper (done)
- Rich will send RVTEC endorsement of the letter to Vernon Asper (done)
- Rich appointed Stewart Lamerdin as working group chair. (done)
- Stewart will report back on the recommendation of the working group meeting in late 2008/early 2009.

Apendices:

I	Agenda
II	Meeting Participant List
III	NSF Report
IV	Research Vessel Safety Standards - Project Update
V	Alaska Region Research Vessel Update (6.7 MB)
VI	Ocean Class Research Vessel Update
VII	RF Frequency Spectrum Management Committee Report

VIII	INMARTECH 2008 Report (1.6 MB)
IX	UNOLS Chair Report (1.3 MB)
X	SWAP General and Focus Group Report
XI	HiSeasNet Report (1.1 MB)
XII	Alliance for Coastal Technology (ACT) (1.5 MB)
XIII	Fleet Broadband Pilot Program
XIV	SAMOS Update
XV	UHDAS and ADCP Update
XVI	Legacy Data Workshop Report (1.1 MB)
XVII	Crew and Marine Technician Retention and Hiring Initiative
XVIII	MATE Report
XIX	RVSS Appendix A - Overview: Safe Working Load (1.7 MB)
XX	Wire Workshop
XXI	Pumped MocNess
XXII	Pressure Actuated Line Cutter
XXIII	Alternative Winch/Wire Monitoring System (3.6 MB)
XXIV	Two-Ship SWAP in the Arctic (2.9 MB)
XXV	SmokePing Monitoring Tool

Meeting Report:

Monday October 27th -- COAPS, R. M. Johnson Building Room 220

Focus group meetings were held on the following topics:

- SWAP Focus Group Toby Martin-Facilitator
- HiSeasNet Focus Group Steve Foley-Facilitator

Tuesday October 28th – Research Foundation Area – Building A, Room 120

Steward Lamerdin, RVTEC Vice Chair, called the 2008 RVTEC meeting to order at 8:30 am. Shawn Smith (FSU) provided a few welcoming remarks and logistic details. Eric Chassignet, [Director of FSU's Center for Ocean-Atmospheric Prediction Studies \(COAPS\)](#) provided the FSU welcome. He gave a brief overview of the COAPS program.

Introductory remarks to the 2008 RVTEC meeting participants were provide by Stewart Lamerdin. He started by saying that he was sorry to be standing in front of group at this meeting instead of Bill Martin, RVTEC Chair, who recently passed away while serving the oceanographic community on the R/V *Thompson*. A moment of silence was observed in memory of Bill. A plaque and memory book was on display in the room and RVTEC members were invited to add their thoughts to the book.

RVTEC meeting participants introductions were made. The meeting agenda is included as **Appendix I** and the participant list is included as **Appendix II**.

RVTEC Chair Election – Marc Willis reported that there are two candidates for RVTEC Chair – Rich Findley (U. Miami) and Dale Chayes (L-DEO). If anyone else is interested, see Marc. Marc reviewed the responsibilities of the Chair.

Accept 2007 RVTEC Minutes – Marc Willis made a motion to accept the 2007 minutes. Mary-Lynn provided a second. The motion passed.

Agency Reports:

Office of Naval Research (ONR) – Tim Schnoor provided the ONR report. He has been at ONR for a while, but recently took over as the Research Facilities manager. A lot of the ship operations activities are new to him and he is coming up to speed. The Navy is on a continuing resolution. Bob Houtman has been a great help to him. Although funding is limited, there are some Navy specialized programs to support ship equipment.

United States Coast Guard (USCG) – Jon Berkson provided the USCG report. He gave an update on their Icebreakers:

- *Healy* was commissioned in 2000 and primarily supports science in the Arctic. The vessel once helped support breakout operations in McMurdoch.
- *Polar Sea* stood by for Deep Sea 2008 operations, but was not needed. The ship was then sent to the Arctic for crew training. The vessel is conducting fall deployment for CG missions and then will standby for Deep Freeze 2009.
- *Polar Star* – The USCG received an appropriation for of \$30M for vessel activation. Full activation would require at least double that amount.

National Science Foundation (NSF) – Jim Holik provided the NSF report. His slides are included as **Appendix III**. Jim has been at NSF for 9 months. He reviewed NSF's Ocean Science Integrative Program Section staffing changes. The Section head position was filled by Bob Houtman, formerly of ONR. Matt Hawkins, formerly of U. of Delaware, was hired as Program Manager for SSSE and Ship Acquisitions. Jim Holik was hired as Program Manager for Technical Services and Oceanographic Instrumentation. He replaced Sandy Shor. Linda Goad continues to oversee Ship Operations and Brian Midson has been assigned to Deep Submergence Facilities. He replaced Dolly Dieter.

The FY2009 budget appropriation has not been passed and NSF is currently operating under a Continuing Resolution through March 2009.

FY 09 again looks to be a very challenging year with Ship Operations projecting major shortfalls. In 2009, the Global ships are projected to have good schedules, East Coast Intermediate schedules are weak however, and layups are suggested. Technicians and instrumentation programs funding are expected to be similarly stressed. Some of the pressures on the 2009 tech support budget include 2 CLIVAR cruises, 3 long core cruises, and *Langseth* operations.

NSF recommendations for layups in 2009 are for one NSF Intermediate Class ship on the east coast and fund only a partial schedule for *Seward Johnson*. Also recommended is a partial lay up for the *New Horizon*.

In ship design news, the Alaska Region Research Vessel (ARRV) was delayed a year but completed its Final Design Review (FDR) last week. The Regional Class Research Vessels (RCRV) design study continues and should be completed this year.

New Initiatives for 2009 include:

- Pools: Van, Wire and Winch
- Fleet wide data collection and archiving
- Technician Pool
- A New Way to Handle the Equipment Pools.

Van, Winch and Wire pools will have stand-alone budgets to include salary, maintenance and shipping. The van pool is funded under Oceanographic Instrumentation and the Wire and Winch pools are funded under SSSE.

NSF is funding the "Rolling Deck to Repository (R2R)" project. It is an initiative to standardize data collection and data archival across the fleet. It removes the onus from operators to archive and provide data post-cruise. It

establishes a shore side repository for all underway marine data, essentially creating an integrated global observing network. The plan is to begin slowly with metadata and navigation but ultimately encompass all underway data.

Next Jim presented his concept of a Technician Pool. Jim said that the establishment of a pool of contract, sea-going technicians can provide greater flexibility, cost savings and ultimately better science support. The Tech Pool is not an attempt to destroy institutional culture. The same technicians can continue to work on the same vessels. It is not an attempt to decrease the level of technical support. The Tech Pool can offer more flexible and discipline specific cruise staffing. It can provide an opportunity for technicians who are either not able or willing to be full time employees of an institution, to sail. There would be an opportunity for cross-platform exposure and training for technicians. It would be a gradual transition from the paradigm of full-time, institution specific technical support to one of cruise specific staffing based on need.

To work, the Tech Pool must have clearly defined pay and opportunity structure with benefits comparable to those at the institutions. Buy-in from institutions, which includes the contribution of technicians to the pool and the opportunity for pooled technicians to sail on their vessels.

Jim presented one idea of how the Tech pool would function. The pool could be managed by someone in the UNOLS office (new hire). This person is responsible for hiring, administration, and scheduling of the pool in direct coordination with the Tech Managers. Pool Technicians become contractors to a single institution. The Technician is paid a base rate and is paid only while working or traveling. The Tech can make his/her own contribution to benefits while not working.

Lastly, Jim commented that he wishes that RVYEC would participate and make presentations in future international settings (INMARTECH).

UNOLS Reports

Fleet Improvement Committee (FIC) – Marc Willis reported that the FIC is finalizing the Fleet Improvement Plan and it should be complete very soon. The FIC is also working to set values and priorities for the Ocean SMRs.

Dale asked where the FIP fits with the agency Fleet plan. Marc – The Interagency Working Group on Facilities (IWG-F) published a status report, but was not allowed to establish a “plan.” The FIC was unconstrained and could develop a plan based on the science demand.

RVOC and Safety Committee – Annette DeSilva provided the status of the effort to update the Research Vessel Safety Standards (RVSS). See **Appendix IV**. The RVSS applies to all UNOLS vessels, whether or not they are USCG Inspected, and are based on regulations for inspected vessels and good practices. Vessels operators must adhere to the UNOLS RVSS in order to be designated as a UNOLS vessel. Inspection teams use the RVSS to ensure compliance.

Since the last update, the overall structure of the standards was revised to uniformly show those requirements mandated by laws and regulations, those required by the UNOLS RVSS in addition, and any further recommendations, best practices or resources. The chapters were re-ordered.

A chapter was added on Personal Safety with sections covering alcohol and drug policies, sexual harassment and accommodations for persons with disabilities (Chapter 5). Chapter 10, on explosives was removed and relevant information was inserted in Chapter 8 (Hazardous Materials). A chapter was added on Human Occupied Vehicle (HOV) safety (Chapter 11).

There are new appendices. Appendix A provides UNOLS Rope and Cable Safe Working Load Standards. Appendix B provides UNOLS Load Handling System Design Standards and Appendix E includes a Sexual Harassment Brochure.

One goal of this standard is to minimize damage to cables and handling equipment, and the loss of scientific equipment, while still permitting the science objective to be met. Appendix A defines the operating requirements, or loading limitations on wire, and are expressed in terms of Factor of Safety (FS) on the Nominal Breaking Load (NBL) and divided into three different categories:

- FS of 5 or greater
- FS of 4.9 to 2.5

– FS of 2.4 to 1.5

Appendix A also defines the inspection and testing requirements for wire.

The final draft of the RVSS has been circulated to RVOC and the Technical Services Managers. Mike Prince has requested comments by end of month. The update is dedicated to both Jim Williams and Bill Martin.

Each UNOLS Marine Superintendent or Operations Manager has a vote on whether or not to approve the revised RVSS and send it to Council for their approval.

Discussion:

- Dale – He feels that the document is not ready for print. There are parts that are missing and pieces that are confusing. It needs to be edited.
- Rich – It needs to be rewritten so that it can be revised more easily.
- RVTEC needs to nominate a rep to the safety committee.
- Marc – this is a very important document. We have to use this document. We rely on it.
- Rich – Suggested that a committee be formed and given parts of the document to read.
- Marc – there are problems with content as well as editorial. More time is needed for the review in order to be accurate.
- Annette stressed that Mike put a lot of effort into this and would want it to be as accurate as possible.

Arctic Icebreaker Coordinating Committee (AICC) – Steve Hartz reported on some of the recommendations that the AICC has put over the past year. The recommendations included one that the NSF support the proposed replacement of the existing *Healy* multibeam system with a Kongsberg EM122 multibeam system during a planned dry-dock in 2010. The AICC has also recommended that NSF purchase a laboratory van to be used on the icebreakers, and, when not needed, to be part of the UNOLS van pool.

The AICC has recommended that NSF and the CG enable Science of Opportunity (SOO) on non-science missions on board POLAR SEA and other icebreakers through open calls to the community. They also recommend that NSF support upgrades/maintenance to existing science equipment on POLAR SEA and that the NSF continue to support the POLAR STAR in caretaker status until a decision is made regarding replacement or refurbishment of the POLARS.

The AICC continues their efforts to regularly communicate with the Alaska Eskimo Whaling Commission.

Steve reported that he attended the Unmanned Aircraft Systems meeting in Anchorage (NOAA & Shell). Shell is using one off of the Norseman2 for marine mammal observations.

Scientific Committee on Oceanographic Aircraft Research (SCOAR) – Steve Hartz reported that the committee has not been very active. They are soliciting nominations for a new Chair.

Deep Submergence Science Committee (DESSC) Report – Annette DeSilva provided a report on the DESSC activities. A major focus of the year for DESSC has been advising on the Replacement Human Occupied Vehicle (RHOV) project. That project took a new direction this year when the decision was made to pursue a phased 6500m HOV capability by installing the new titanium sphere currently in fabrication into *Alvin*. Initially the vehicle will maintain a rating of 4500m. Over time as *Alvin*'s other systems are certified to 6500m, the depth rating will be increased.

DESSC continues to conduct user debriefs for the deep submergence vehicles. They recommend system improvements based on the user feedback. Lastly, DESSC will hold their winter community meeting on Sunday, Dec 14, 2008 in San Francisco.

Marcus Langseth Science Oversight Committee (MLSOC) – Al Walsh reported that R/V *Langseth* has been in operation since the start of the year and has had successes. There were three 2D cruises, one 3D cruise, one sound source only w/ OBSs. It has been a daunting task keeping the ship staffed with the technical expertise that is needed.

Post Cruise Assessment Report (PCAR) Subcommittee – Mary-Lynn Dickson reported that the committee has been inactive. Mike Prince is trying to re-activate the committee.

Discussion:

- The PCAR results are likely to be used in ship lay-up decisions.
- There are a lot of PCARs submitted by scientists and captains, but far less are submitted by the marine technicians.
- Jim Holik – He receives the PCARs that identify problems.
- Annette reported on the PCAR distribution - Linda Goad receives the PCARs at NSF and then distributes them accordingly to the Program Managers. The UNOLS Office receives all reports and enters them into a database. Statistics on the report submittal levels are reported annually at the RVOC meeting. Prior to NSF's inspection, the inspectors receive a compilation of all of the PCARs that were submitted for the ship.
- Jim Holik - The NSF Committee of Visitors were concerned over the low number of PCARs submitted by the marine technicians.
- Rich Findley –He recommends that some one in the business of surveys create the form.
- Dale – There is new leadership at the agencies that can be approached regarding this topic.
- Dale – The PCAR committee should be active.
- Shawn – perhaps RVTEC should recommend that the agencies fund the creation of a new form.
- Rich Findley – Internally his group created a form. He will try to find it and distribute it.

RVTEC Charter Review <http://archive.unols.org/info/ucharter.html#annexV> – Annette DeSilva reported that a copy of the RVTEC by-laws, Annex V of the UNOLS Charter, was adopted in 1993 and revised in 2004. If anyone has comments to the Charter they should send them to the UNOLS Office.

RVTEC nominations for Committees and Subcommittees – There are a few RVTEC subcommittee memberships and liaison positions with openings:

RVOC/Safety Committee - Bill Martin had served on the Safety Committee as the RVTEC rep. There isn't anything in Annex V that states that this position must be the RVTEC Chair. It is preferred that the Safety Committee members be from operator institutions. Since the Safety Committee typically meets the day before the RVOC meeting, the Safety committee member can also represent RVTEC at the RVOC meeting. RVTEC can also be represented by the marine technician from the host institution. The Safety Committee is responsible for updating the RVSS. Any issues that involve the safety of operations fall onto the plate of the Safety Committee.

PCAR Subcommittee – Mary-Lynn Dickson has served on this subcommittee for a few years and plans to step down next year. A replacement is needed. They have been inactive over the last year, but Mike Prince plans to start the review process again. The subcommittee reviews the PCARs and identifies any trends and areas of concern. The subcommittee will also try to address the problem of low return of the PCAR forms by the technicians and if needed, perhaps create a new form.

Education and Training Subcommittee – Bill had chaired this committee. The tasking for the subcommittee was to maintain a webpage with a listing of training opportunities. Over the years it became more informal. If an institution hosted a training session, they would invite the RVTEC members to participate. RVTEC needs to decide if this committee is still needed.

Phil McGillivray – suggested that a U-tube video of deck operations would be useful. The aft deck camera on the *Healy* provides videos. Annette – These sorts of videos could be added to a library of user manuals. Rich Findley – He has an HO book from the 1960's.

There was discussion on whether or not the RVTEC rep to the Safety Committee and the RVTEC liaison to RVOC should be the same person. Rich and Dale felt that the reps do not have to be the same person. The more RVTEC reps in the community, the better.

Break

Ship Updates:

Regional Class Research Vessel (RCRV) – Stewart Lamerdin provided an updated on the Regional Class design and acquisition effort. The design effort by two design/build teams is still underway. One shipyard went into bankruptcy. After both ship designs are complete, there are no immediate plans for continuing the acquisition effort. The RCRV committee will provide recommendations on the two designs. If funds become available,

construction can be started up based on the recommendations.

Alaska Region Research Vessel (ARRV) – Marc Willis provided an update on the ARRV project. His slides are included as **Appendix V**. There are shipyards qualified to bid on the project. The project will be funded from NSF's Major Research Equipment – Facilities Construction (MRE-FC) account. FDR held at NSF on 20-23 October. The Panel recommended that the project move toward construction and the decision is now pending NSF and National Science Board approvals. If all goes as planned, construction would be complete in 2013 to 2014. The timeline is dependent upon the z-drive fabrication.

A major decision is required on whether the z-drives should be purchased as Owner furnished equipment (OFE) or contractor furnished equipment (CFE). Currently, the z-drives have a 36-42 month lead time. An additional 11 months would be required if the z-drives were to be CFE. The FDR Panel recommended the OFE option.

Ocean Class Research Vessel (OCRV) Acquisition Status – Tim Schnoor provided the status of the Ocean Class acquisition effort. His slides are included as **Appendix VI**. The construction funds are in the Navy's budget. The solicitation for design/build teams is on track for release in FY2009, first quarter. The draft solicitation is complete and in NAVSEA Contracts and Legal review. An Industry Day was held.

The ship is being built in phases. Phase I is for Preliminary/Contract Design and Phase II is for Detail Design and Construction. There will be at least two awards for the Phase I period and one award for Phase II.

The Navy's plan is to request participation of two UNOLS representatives (1 primary, 1 alternate) to ensure coverage at all design reviews. Continuity of personnel throughout the design process is ideal. During Phase I, the rep would attend design reviews to be held once every three months at each Contractor's facility (multiple designs). The rep would assist with review of data deliverables (drawings, plans, calculations). He/she would provide input on Science Mission Systems equipment selections and attend design reviews to be held once every two months at the construction facility. During Phase II, the rep would attend design reviews to be held once every 2 months at the construction facility. He/she would assist with review of data deliverables (drawings, plans, and calculations) and with review of vendor recommended spares listings and commercial off-the-shelf technical manuals.

Additionally, the Navy requests participation of one representative from each of the institutions selected for operation of the ships throughout Phase I, Phase II, and Phase III. The responsibilities of the operator rep are outlined in Tim's slides. He/she will represent UNOLS and their home institution with the on-site Government team at the construction facility during construction of the vessels. The rep will collaborate with the Government team to develop the Post Delivery Schedule, including Mission Trials.

Affordability of the Ocean Class AGOR ships has been of great concern for the program. The solicitation *must* be developed to a level of requirements that is affordable within the given, *fixed* budget. The Navy continues to evaluate affordability of level of requirements in the system specifications.

Discussion:

- Stewart – As part of the RCRV project, there was a large UNOLS advisory committee and it seemed beneficial. He is concerned about leaving this to just one rep would be an enormous responsibility.
- Marc – He suggested that RVTEC nominate an individual for the UNOLS OCRV rep.
- Annette – At the FIC meeting, the Navy indicated that the UNOLS OCRV would need to be a volunteer. It is a big effort in terms of time and travel for a volunteer. Also, are there any conflict issues that we should be concerned with? Should the OCRV rep be from an institution that is different from the two operator institutions?
- Dave Fisichella – It seems like a small investment in money to pay support for an OCRV rep now instead of correcting problems later.
- Dale – Will an institution have to give up a ship?
- Stewart – If anyone is interested in volunteering for the OCRV rep position, see Annette. The issue of conflict with the operators and other constraints will have to be addressed with the Navy.
- Dale – RVTEC's nomination of an OCRV rep should come with a recommendation for compensation and that the rep be appointed early in the project.

- Tim - The ship operators will not be selected by the time the Navy needs the UNOLS OCRV rep. He will look into these issues further.

National Oceanic and Atmospheric Administration (NOAA) – Mike Webb reported on NOAA's fleet recapitalization plan. The plan calls for the replacement of all the ships by 2020. The plan requires old ships to come off-line as new ones come on-line. However, NOAA Fisheries requires two years of new ship to old ship calibrations before they can retire the old one.

- Because of high fuel costs, NOAA took two ships off line (*Rudy* at the beginning of the year and *Cob* in August).
- NOAA acquired the vessel *Assertive* from the Navy two years ago, but has decided not to put it in operation.
- The biggest challenge facing the NOAA fleet is the high fuel costs.
- *Okeanos Explorer* was commissioned when the *Cob* was decommissioned. *Okeanos Explorer* is in a shipyard in Seattle and will soon begin tests of its telepresence capability. The vessel will likely begin operations in March 2009. The ROV and telepresence capabilities have come with a high cost.
- Phil - Will the new ships be geographically distributed? Mike - A new home-porting plan is being developed.

RF Frequency Spectrum Management Committee Status Report – Richard Perry provided a report on the committee task and activities. His slides are contained in **Appendix VII**. There were 17 survey responses that reported 30 types of services. The committee's report is available on the UNOLS website.

The Committee's work is complete and they were thanked for the efforts. A motion was made by Chayes/Ustach to disband committee. The motion passed. Richard Perry agreed to remain the point of contact for RF Spectrum issues.

INMARTECH 2008 Report – Tim McGovern reported on the INMARTECH 2008 meeting held in Toulon, France on 8-10 October. His slides are contained as **Appendix VIII**. The meeting was heavily focused on the AUVs. China has 3 new ships coming on-line. *Aurora Borealis*, a multi-national ice breaker/deep sea drilling vessel is being designed to operate in all seasons. The slides provide a detailed review of each day's agenda and highlights of the presentations.

Discussion:

- Jim Holik – He was very disappointed that more US techs didn't attend the INMARTECH meeting. He funds it and more should attend.
- Dale – If we are interested, we should propose to host a future meeting.
- Tim McGovern – He has most of the presentations from the meeting and can share them with anyone interested.

Break - Lunch

UNOLS Council Address – Vernon Asper (UNOLS Council Chair) provided the UNOLS Report. His slides are contained as **Appendix IX**. Vernon just recently became the UNOLS Chair. Vernon's slides cover the following topics:

- 2008 Highlights
- 2008 Activities
- UNOLS Policy on Committee Recommendations
- Fleet Improvement Plan status, findings, and recommendations
- UNOLS Ship Scheduling and Operation Issues
- UNOLS Goals for 2009

One of the goals in 2009 addresses the issue of Maritime Personnel. Crew and marine technician retention has always been a challenge for UNOLS vessel operators. The issue is now reaching crisis proportions with the boom in the offshore industry which makes it very difficult for academic salaries to compete. So much specialized training is invested into each shipboard crewmember to meet the regulations that turnover is a huge financial loss. RVOC/RVTEC are proposing strategies for addressing this issue.

Stewart – pointed out that the average day rate for techs has not changed over time.

Dale – This will enter into the discussions planned during Day 2 of this meeting.

SWAP General & Focus Group Report – Toby Martin reported on the SWAP2 status and plans. His presentation includes as **Appendix X**. The SWAP 2 to do list includes:

- Merge distributions
- Code SWAP meet – early to mid January in Seattle is proposed. Wecoma will be in the yard in Seattle. USCG will be there and UW is there.
- Automate standard configurations
- Advertizing - get the word out
- Documentation
- Expand shore coverage
- Possible new operators: Cruise Ships, Florida Towers, Bermuda?

More information about SWAP can be found at:

<http://www.shipops.oregonstate.edu/martech/project/swap>.

Discussion:

- There are a lot from scientists who don't even know that they are using SWAP.
- Jim Holik – Is additional support needed? Toby – yes.
- Jim Holik - Travel funds should be available. This year the tech proposals will go to panel. Be sure to justify who is using things like SWAP and other infrastructure items.
- Toby – SWAP is easy to do and can be installed quickly.

HiSeasNet Report – Steve Foley reported on the current status of HiSeasNet. Refer to his slides, included as **Appendix XI**, for details. Steve reviewed the services provided which include Satellite bandwidth, Earth station connection to Internet at SIO, and ship equipment maintenance provided roughly two times per year. Steve displayed the Ku-Band coverage. There are eight UNOLS vessels with C-Band (2.4m dish, Global coverage) and seven ships with Ku-Band (North America coastal coverage). Changes in 2008, issues addressed since last RVTEC, highlights from the past year, and equipment downtimes are included in the slides.

A 4-day HiSeasNet training class was developed and offered in Feb 2008 at WHOI. 14 students attended. Most problems that have been experienced are user or ship related; Power outage, antenna repoints, gyro failure, unfamiliarity with gear, etc. The training program has helped techs recognize and solve their own problems. RF gear failures are a major cause of ship outages and the solution is to carry spares.

Steve encouraged the group to get involved in the wiki. Read the contents and contribute to it. Report problems sooner rather than later.

Future work includes expanding the service to the remaining ships. They are still looking for better coverage options for Ku-band ships.

Steve provided a summary of the user group meeting.

The HiSeasNet tech staff can be contacted at hiseasnet@ucsd.edu. Steve will offer additional training sessions if there is interest. Contact Steve if interested.

Alliance for Coastal Technology (ACT) – Ali Hudon provided a presentation on ACT, which is a NOAA-funded partnership of research institutions, state and regional resource managers, and private sector companies interested in developing and applying sensor technologies for monitoring coastal environments <see <http://act-us.info>>. Ali's slides are included as **Appendix XII**. ACT members are from the private sector companies and environmental management agencies. Members participate in planning and decision-making to ensure a focus on service-oriented activities.

ACT holds technology workshops that focus on specific sensor technologies for use in coastal environments. The workshop goals are to help reach consensus on the steps needed to build useful tools, while also facilitating critical dialogue among technology manufacturers, developers, and end users.

ACT also performs technology evaluations and verifications. They evaluate *commercially-available* instruments to verify manufacturers' performance specifications or claims.

ACT also provides a data and information clearinghouse, <http://www.act-us.info>.

Ali is interested on how people find the usefulness of ACT services.

Break

RVSS Assignments – Dale Chayes presented a chart with the names of the people who volunteered to review chapters. He also showed his pdf review document. On the UNOLS website, there is a pdf or word version of the RVSS. Dale will synthesize all of the RVTEC review comments and then send it back to RVTEC. After vetting, the RVTEC chair can present the comments to Mike Prince. Dale asked that volunteers provide comments to him within a week.

Pilot Program: Fleet Broadband – Dave Fisichella provided the report on the pilot program. His slides are included as **Appendix XIII**.

The Pilot Program goals are to:

- Evaluate Fleet Broadband as a reliable, versatile and secure back-up to HiSeasNet (HSN).
- Evaluate Fleet Broadband as a stand-alone system for vessels without HSN.
- Help develop fleet-wide protocols for administration, billing and security.

The Fleet Broadband (FB) has proven to be a reliable back-up to HSN. The system provides for delivery of email in the event of HSN loss; however, the data pipe is slower than HSN.

As a stand-alone system for vessels without HSN, the FB is a well designed, lightweight package. It is easy to install and configure, reasonably priced hardware, with good global coverage. The pay per volume pricing can be expensive if not tightly managed.

Discussion:

- Marc Willis - Did you run the cost figures for the KuBand HSN as compared to the Fleet Broadband. He would be interested in hearing how the cost compares?
- Bruce Applegate – How are you managing costs? They don't charge for HSN?
- Jim Holik – There are a couple of ships that don't have HSN. We wanted to evaluate other options.
- Joe Ustach – The *Cape Hatteras* was part of the pilot program and their Fleet Broadband use was very expensive. They don't know why and it didn't perform well. Perhaps a webpage was left open.
- Dave Fisichella – WHOI monitors their FB system from shore.
- The Fleet Broadband coverage in the Pacific is not good.
- Bill F – What does the Bill for payment look like? Dave – It is broken down quite a bit.
- Jim Holik – He would entertain a group purchase.
- Steve Foley - \$45000 would have been the cost of *Melville's* HSN use.
- Rich Findley – This would be stepping back in time; it was such a hassle charging and collecting from users.
- Jim Holik – What is the big advantage? Is it Broadband? Dale – The antennae is small.
- Toby – We have been trying to get out of being a service provider. It's unfair to compare FB to HSN.

SAMOS Update – Shawn Smith provided the SAMOS update and discussed the flow of SAMOS observations. SAMOS conducts QC of the collected data. There are currently 17 ships reporting to SAMOS. Most of the vessels are NOAA ships. WHOI's ships participate. Shawn would like to get more ships participating. SAMOS will try to secure funds to support additional UNOLS ships coming on-line with SAMOS. The benefit for vessel operators participating in SAMOS is they get routine data quality evaluation by experienced marine meteorologist.

The 2nd SOSUD/SAMOS workshop was held earlier in the year. The technicians' roundtable was very useful. They discussed the need for fleet-wide standards for underway data.

Shawn is looking for input to define the knowledge and skills needed to conduct in-situ collection in an ocean environment.

The time frame for the next workshop is winter because this is when the NOAA ships are typically tied up.

Shawn discussed the future of underway data collection. His slide is included in **Appendix XIV**. The vision is to have a UNOLS Central Data Portal. All raw data would feed into a central repository. Funded data centers would perform QC and push to the data to a world data center.

OceanOBS09 will be held in Venice next year. They will look at ocean observing as a whole and determine what is working and how R/Vs can be included.

Discussion:

Dave Fisichella – How should underway data that is collected in foreign EEZs be dealt with? Shawn – The IOC is trying to address this. Discussions are underway. It is a problem.

Phil McGillivray – the British have wave height sensors. Do any UNOLS ships have this? Frank – *Melville* is getting a system. Rich Findley – *Explorer* had a system, but it was not automated.

Rich Findley raised the issue of staffing this effort. If we want all of these sensors along with QC, it will require support. The scientists who need the data should make their requirements known and should provide support for the effort.

UHDAS and ADCP update – Julia Hummon provided a report on the University of Hawaii Data Acquisition System (UHDAS). Her slides are included as **Appendix XV**. UHDAS includes two Antarctic ships, three NOAA ships, and eight UNOLS ships. The computer at sea provides near real-time processed data for science as plots on the ship's web or Matlab files. Jules can interact with the at-sea techs remotely to let know issues such as the Ashtech is down or the plots are not updating.

The ADCPs are generally working but must be monitored. Jules recommended that the tech groups upgrade their firmware to 23.16. Also two frequencies are better than one (although this can be expensive). Obtain an accurate heading device and monitor it.

Jim Holik – He noted that Jules proposals are always the highest rated. She should be used as a model.

Legacy Data Workshop Report – Bob Arko provided a report and discussion on the current progress for automated transfer of metadata and instrumentation data. His slides are included as **Appendix XVI** and cover three topics in detail (see slides):

1. UNOLS Data Management Committee update.
2. Legacy of Ocean Exploration (LOE) meeting.
3. Rolling Deck to Repository (R2R) pilot project.

The Rolling Deck to Repository (R2R) is a collaborative 1-year pilot project funded by NSF OCE. The goal is to prototype an end-to-end system to deliver data + documentation from research vessels to a central shore side repository. The R2R team includes people from LDEO, SIO, and WHOI.

R2R would like underway data from vessels. They have set up an email drop box: dropbox@researchvesseldata.edu.

Discussion:

- Jules – ADCP is listed in Bob's list of underway data. ADCP data isn't worth anything until you have the metadata and processing. There is already a central repository for ADCP data. ADCP must be processed by a person. Bob – He agrees.
- Tim McGovern – they keep an event log. He doesn't want to have to maintain two log books. Bob – This not a trivial issue and Cyndy Chandler is addressing it.

5:25 pm Adjourn Day 1

Wednesday October 29th – Research Foundation Area – Building A, Room 120

8:30 am - Call Day 2 of the RVTEC Meeting to Order

Crew Retention Initiative Update – Stewart Lamerdin provided a report on the status of the Crew and Marine Technician Retention Initiative. The RVTEC and RVOC Chairs and Vice-Chairs studied this issue over the past year. His slides with details on the status are included as **Appendix XVII**. They include a brief history and main issues. Issues include:

- Lower salaries across the fleet with increased competition from higher paying employers
- Lack of confidence in long-term viability of the UNOLS fleet
- Higher costs for credentials and training and a lack of dependable funding to support these costs
- No career path for technicians and general lack of respect from scientists and operations managers
- Increased regulatory pressures continue to increase operational demands
- Shrinking and aging workforce

The question has been asked whether RVTEC should be grouped with RVOC on this issue. Stewart explained that it was determined to be more effective if grouped together – strength in numbers and both are facing similar issues.

A salary survey was conducted, but this is always a sensitive issue and difficult to carry out. There are a lot of holes in the data. They attempted to simplify the survey as much as possible. Stewart summarized the salary survey response and results. The initial assessment is that our salary levels are not that much different than competing ships of similar employment, however, they are lower than industry when you account for the amount of paid time off that mariners receive.

Deirdre Sullivan (MATE) has also conducted a salary survey. It includes a lot of the federal salaries. It should be released in early 09. One of the problems is that the job descriptions vary from institution to institution.

Marine technician salaries are very hard to compare. There was no adjustment for cost of living. The charts represent sea days.

Discussion:

- Jim Holik – He sees all of the numbers and it is impossible to compare the costs because of the institutional differences.
- An issue facing UNOLS is long term viability. With the uncertainty in future schedules, how do UNOLS mariners make this a career? The pool might be the answer.
- Jules made the point that the people who have been around long started with lower salaries and get small pay raises. New employees are getting the higher salaries to begin with.
- Some institutions have steps to their marine tech positions and some do not.
- Rich Findley – It is not salary that is the driver for retention. It is the interesting work. Letting people do the things they enjoy.

Stewart summarized some of the recommendations from the evaluation of this issue:

- Remove certain training costs from budgets so they are NOT included in the ship or technical services day rates. The reason for this recommendation is that the training is often cut during negotiations.
- Investigate the creation of the UNOLS Internship program in an attempt to certify and train younger personnel to fill crew and technician positions. Train these people from the ground up.
- Creation of a position at the UNOLS office to formalize and manage the pool of “relief personnel available,” promote the UNOLS fleet at various job fairs/maritime schools, develop brochures and videos designed to increase awareness, monitor morale in the fleet, etc.
- Continue to pursue higher base salaries for positions in the fleet; inevitably you get what you pay for.
- Development of a pool of full-time, relief personnel (including technicians) that would be available to ship out to any of the ships in the fleet

Discussion:

- Dale – recast the first bullet to state, “remove the training costs from the day rate calculations.”

- Jim Holik – he feels that money is important. If you pay peanuts, you get monkeys.
- Richard – not everything you get in industry is a good thing and may not be the model that we would want.

A letter has been sent to Vernon Asper, UNOLS Chair, with the study's recommendations and hopefully it will get the Council endorsement. They would like to form an ad hoc committee of technicians and operators to formalize the recommendations and draft a proposal that will be submitted to the agencies to address the retention and recruitment issues. A workshop of the ad hoc committee is tentatively scheduled for December or early January and we hope to have the recommendations to the agencies by the end of January.

Discussion:

- Toby – We keep directing our attention on Jim. Jim doesn't have any control over institution policies. There is a disconnect.
- Joe Ustach – Vessels are facing lay-ups. The ship that is going to be laid up could be the tech pool for that particular year. They could write a proposal to be the pool. The *Cape Hatteras* has had to deal with lay-ups and they are a challenge.
- Stewart – This is exactly the goal. A pool would provide options to the people with vessels that are laid up.
- Marc – Basically we have been doing this ad hoc. This would formalize this process.
- Phil – USCG realized after Katrina and 9/11 that they need a deployable operations group. He cautioned that you don't want the people no one else wants. You might want to have a pool on each coast. Be sure to offer training to the pool so that they are equipped to carry out their responsibilities. If you set this up correctly with a trained pool of employees, with steps for promotion, it can be successful.
- Dale – Training is not the answer; it is an overused word. This should be considered "education."
- Jim Holik – He is not advocating moving institution people to be contract personnel. He disagrees that the pool concept doesn't promote retention. There are people out there that would only want to be in a pool.
- Rob Hagg – He is battling this issue right now. He needs to recruit people who are educated. At UW they just laid off a lot of IT people. He is approaching these people and determining who would like to go to sea. He has his fingers crossed. They also have a training course for undergrads.
- Bruce Appelgate – In the proposal we need to be very clear as to the path between the problems and how the recommendations will solve the problems.
- Vernon – There is an under appreciation of the technicians. Scientists don't appreciate the techs. At the University level, the faculty doesn't feel appreciated. However there are things that faculty get – tenure, assistant/associate/senior positions, a say in the operations. He would suggest that the Council have a better appreciation of the techs and give them a larger say in the operation. He thinks that having the tech in the Ocean Class rep position is a good one that the Council did not consider.
- Dale – Instead of stating that the workshop will provide a proposal, maybe we should refer to it as a "plan." The workshop leads to a report, which leads to plan.
- Jim Holik – A lot of things that we are talking about cost money and the budget isn't growing. We have to do something. Status quo is not working.
- Stewart – To summarize, the problem has existed a long time and is growing. A letter has been sent to the Council. We will put together a small group of techs and operators for the workshop. They have been getting pressure from the agencies to do this.
- Stewart displayed the letter that had been sent to the Council along with the tentative list of workshop names. He was asked to do this by agencies.
- Rich Findley suggested that we table this discussion until we appoint an RVTEC chair. (Findley/Perry). Motion carried.

Break

MATE Report – Erica Moulton provided the MATE report. Her slides are contained as **Appendix XVIII**. There have been some personnel changes at MATE. Erica provided statistics on the intern program and their experiences with UNOLS. She reported on the successes in 2008. There are ways that UNOLS operators can still help MATE. Commit to providing internship opportunities as early as possible this year so we can recruit and place the best students. Volunteers are needed and should contact Tami Lunsford. Erica passed out a questionnaire and asked that RVTEC return them to her.

How-To Manuals – Stewart Lamerdin said that there are various manuals explaining how to: dredge, box core,

piston core, net tow, do terminations, etc. These manuals are not catalogued in any way and no one knows what is available. He suggested that we appoint a committee to collect manuals and create a single manual or make the documents centrally available. Aubri Steele volunteered to take this on.

Safe Working Load Spreadsheet – Rich Findley reported on Appendix A of the RVSS which addresses Safe Working Loads. His slides are included as **Appendix XIX**. Rich started off by saying that he didn't write RVSS Appendix A and it took days for him to understand what they meant. Rich reviewed useful definitions, the general concept, operating requirements for Factors of Safety (FS) of 5.0 or greater, operating requirements for FS of 4.9 to 2.5, cable operating requirements for FS of 2.4 to 2.0 and wire operating requirements for FS of 2.4 to 1.5.

The implications of Appendix A are:

- Limited to FS of 5 if tensiometer fails.
- Applies to all winches and tension members including those supplied by scientists.
- If you don't have logbooks -- you can not operate.

This standard will be phased as soon as the appropriate equipment can be funded and purchased and no later than 18 months after the published date of this revision of the RVSS. The new standard will present new responsibilities for ship operators and winch operators in order to operate at lowest FS.

The solution is to integrate and automate. Rich described network nodes. These are an acquisition/logging system attached to the winch. It is compatible with installed sensors. The system is a combination of solid state hard drives and Compact Flash memory. The ship network storage holds ship related logs and stays with the ship.

The capabilities of the system are:

- Takes all the information available and shows real time minimum FoS
 - Operator qualification
 - Last determination of ABL
 - Blocks within specification
- Displays current Operating Requirements
 - Deck cleared, physical barriers etc.
- Predicts load – deviation would indicate approach of slack wire
- Logs everything – winch operator, winch, blocks in use and suitability, bending cycles
- Controls fresh water spray bar
- Could control hydraulic by pass valve for auto render

Discussion:

- Rich emphasized the significance of the Appendix A standard.
- Tim McGovern – On *Kilo Moana* they are operating at FS 2.5. They weren't as bad off as they thought they might be. Rich – A SWATH is designed for this.
- Bill Fanning – How did you pick the 20 Hz sampling rate? Rich – It seemed to come from Matt who perhaps got it from industry. Dale – it would be nice to see how the 20Hz was derived. What was the rationale?
- Jules – this doesn't seem excessive. Rich – The operator needs to keep this data for the life of the winch. It is a lot of data.
- Dave Fisichella – The only data we need to keep is the peak data. Rich – The standard states that you need to keep all of the data.
- Rich Findley – The logging system records from the tapes in the wire.
- Richard Perry – what happens if you exceed the load? Rich – You aren't allowed to exceed the load.
- Stewart – What are the financial implications of the new requirements? Will NSF fund the logging systems? Jim Holik – Matt is aware of this and the cost involved.
- Marc – with high capacity load cells they might be missing the high jerk loads. You may not see these high loads. The load cells themselves cannot mechanically handle those loads.
- Jules – What do you do when a scientist brings on a Kevlar line? Marc – RVOC has raised the awareness of the regulatory requirements that we must operate under. First we have to deal with the ship winches. Then there are science supplied winches that have no monitoring systems. Rich – According to the USCG, in those cases, we can only operate to FS = 5. In order to allow operations at FS =2, we need to do all of the measures – monitor loads, clear deck, etc.
- Marc – The standard is modeled after the UK's practice. Rich- The UK fleet is only consists of about two ships.

- Richard – Are wires grandfathered? How do you deal with wires that are 10 years old and you have no data.
- Dale – We will be hard pressed to be in compliance within 18 months.
- Phil – Kevlar fails in a very different fashion. If you are rotating the cable, it will be more susceptible to rotation. Rich – This is why it hasn't been addressed.

Wire Workshop – Rich Findley reported on plans for a wire workshop. Rich will be co-chair with Rick Trask. A new wire is available now that is one conductor. For operational reasons, we probably don't need 3 conductors, but it is nice to have three. This could be a cheap fix to improve working loads.

Discussion:

- Marc – Was the inner armor increased? What about outer armor? Rich – The inner armor was increased and outer is the same.
- Dale – The new cable provides a 10% improvement.
- A constraint is that we must keep the wire size at .322"
- Dale – is there a big cost difference between this and the existing .322?
- Rich - should we change the focus of the wire workshop to implementation of the new safe working load standard?
- Dale – He agrees with Rich's recommendation

Adjourn - Day 2 Meeting

Lunch

1:00 pm - Bus Departs for FSU Coastal and Marine Laboratory

2:30 pm - FSU Coastal and Marine Laboratory Tour

Thursday October 30th – Research Foundation Area – Building A, Room 120

8:30 am - Call Day 3 to Order and Announcements

Determine Host Institution for 2009 RVTEC Meeting – Robb Hagg volunteered University of Washington as host for the 2008 meeting. The members voted all in favor

Knudsen Group Purchase – Rich Findley reported that the group purchase was for eight 3260 echosounders. He also purchased a simulator. Rich purposely disconnected the wire, and told RVTEC not to fix it. Coordinate any issues through Miami. If you need the simulator, contact Aubri.

Phoenix 4 – Sandy funded (through Bill Martin) a factory exchange on ADCP deck units. Rich's understanding is that if RDI has your ADCP serial number, they should have another deck unit on their shelf that they could switch out. Robb offered to look into this.

Fleet Broadband – Dave Fisichella - The FB is about \$5/MByte and the Fleet77 is more.

RVTEC Chair Nominations – Marc Willis introduced the two nominees; Dale Chayes and Rich Findley:

Dale Chayes – Crew and retention is a big issue and we need to be more proactive at it. The Charter doesn't say anything about RVTEC having to hear from talking heads. We need to have more time devoted to discussions instead of reading off slides. The meeting costs \$50M. We need to think about how to use our time more effectively.

Rich Findley – He disagrees on the agency reports. He thinks it is important that the group hears about the big picture and have a better understanding of budgets. We are a technology group. All of these small groups that are put together should be video conferencing. The system that the UNOLS office is using is archaic. We can do this using the best technology. Tom Wilson should be permanently funded out of the UNOLS budget.

Stewart – Members should provide their vote to Annette on a piece of paper.

Show & Tell Presentations:

Pumped Mocness – Rich Findley introduced Greg Diffendale from RSMAS who gave a talk on Pumped Mocness. The issues are that standoffs are easily bent, they are hard to move by hand, and the rods are unprotected. As a solution, RSMAS made a set of legs for rod protection.

- Steve Hartz – UAF did a similar thing. The Mocness is in a cradle and the electronics are on the outside and easy to get to. They ship the system with the cradle and it is easy to move around.
- Greg – They also have a cradle and have added wheels. This week the legs for the prototype are being built.
- Richard suggested color coding the components.
- Marc – What cad tool did they use? Greg – AutoCad.

Pressure Actuated Line Cutter – Dave Fisichella's slides are included as **Appendix XXII**. He reported on his hydrostatic pressure actuated cable cutter. They wanted something that was inexpensive and reliable. It hasn't been used in the field, but it has been tested in the pressure tank with great success. The design concept uses shear pins and offers safe, portable, reliable, one time use, ease of deployment, and minimal number of parts system. This is a method of last resort in emergency situations. Josh Eaton developed the system.

They hope to not have to use the cutter, it is an insurance system. It allows you to save as much of the cable as possible. They are trying to get the cost down to \$500.

- Dale – Is there a minimum depth (not enough pressure)? Dave – yes.
- Marc – back to the future. They used shear pins to actuate the MocNess.
- Shawn – what is the fabrication time? Dave – a couple of hours.
- Dave is willing to share the drawings.
- Dale – Maybe we should think about making a batch of these.

Alternative winch/wire monitoring system using National Instruments hardware and software – Jim Lovin provided the show and tell presentation. See **Appendix XXIII**. They tried to size the system so that someone wearing heavy gloves could still manage it. It has been designed for the new regulations. Jim gave a demo of the new wire monitoring system.

Dale – we have been abandoned by winch and wire monitoring equipment vendors. We are in the same boat so maybe we should pool our expertise and develop something ourselves.

Using SmokePing as a monitoring tool – Toby Martin showed the web pages on the monitoring tool. See **Appendix XXV**.

SAMOS Metadata Interface- Data providers can manipulate their vessels' metadata as soon as parameter designators, instruments or instrument locations change. Jeremy Rolph provided a demonstration of its functionality. It is important to keep the metadata up to date. Each institution gets a password for their institution. He demonstrated how to update the metadata.

- Shawn - there is also has a vessel metadata form. This form would only have to be filled out once. Everything is date stamped.
- Steve – Is there a shipboard client in case the web is unavailable? Shawn – That is a good suggestion.
- Dale – There needs to be a link on a page that allows you to report things that might be incorrect with the sight.

Two-ship SWAP in the Arctic – Dale Chayes provided the show and tell. His slides are in **Appendix XXIV**. They implemented SWAP on two icebreakers (*Healy* and *St. Laurent*). Their goal was to provide a continuous connection between the ship's science groups working in close proximity. There is a diagram of swap link in the slides. In summary:

- There were simultaneous confounding start-up issues: connections, connectors, corrupt flash
- The range was less than expected, perhaps due to icing. There is some question on the impact of icing on RF in this range.

- There were routing problems and the link often did not “recover” itself.
- Antenna field of view is always an issue
- Keeping it running and helping users was labor intensive
- However, it was very effective for science.

Marc – He assumes that there are lessons learned that could be applied to future operations.

Dale – it was worth it, but it was a big time sink.

The Automatic Identification System (AIS) was briefly discussed.

- An AIS receiver and antenna was purchased.
- Used existing code <http://vislab-ccom.unh.edu>

RVTEC Meeting Action Items: Stewart Lamerdin reviewed the meeting Action Items. They are listed at the beginning of these minutes.

Chair Election Results – The new RVTEC Chair is Rich Findley.

There was a motion to include funding in the budget for Tom Wilson to attend future RVTEC meetings.

The RVTEC group thanked Shawn, Meredith, and Michelle for hosting the 2008 meeting.

A motion was made and passed to adjourn the 2008 RVTEC meeting (Willis/Findley).