

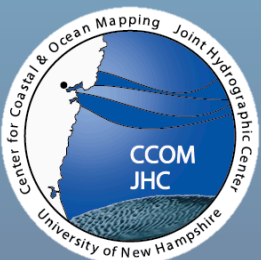


Optimizing Multibeam Data Quality Across the Fleet

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Background

- MB workshop at NSF June 2010 in response to fleet-wide issues with multibeam performance
- Goals:
 - Discuss operation of the sonars
 - Identify common threads in documented problems
 - Get advice from domain experts and other MB users
- Outcomes:
 - Identified several specific operational and technical issues, some poorly understood, impacting multibeam data quality
 - Identified *a strong need to coordinate operational and technical efforts across the fleet*

Multibeam Advisory Committee (MAC)

- Fleet-wide Approach
- Facilitate Communication
- Community of Stakeholders
- Technical Resources
- Technical Teams
 - Shipboard Acceptance
 - Acoustic Noise
 - Quality Assurance
- Best Practices
- Transition into a UNOLS Committee





MAC: *Committee Structure*

- Horizontally Integrated Committee
 - Co-Chairs (3)
 - Representative from Institutions Operating MBs (10)
 - Technical Team Representatives (3)
 - Representative from *Parallel Effort* Focused on Installation/Maintenance & Spares (1)



MAC: *Committee Role*

- In-person meeting once per year
 - Supplement with Telecon/Web Conferencing
- Review Technical Team activities & products
- Prioritize ship visits
- Address practical implementation of best practices
- Discuss concerns/issues from Operators
- Ensure MAC is providing necessary resources



MAC:

Shipboard Acceptance Team

- **Goal:** Ensure all hull-mounted multibeam systems are installed, calibrated, and configured properly and consistently
- Participate in Sea Acceptance Trials
- Provide tools for troubleshooting problems in real-time or near real-time
- Anticipate 2 ship visits per year
- **Initial Team Lead:** John Hughes-Clarke (UNB)



MAC: *Acoustic Noise Team*

- **Goal:** Perform acoustic noise tests to assess and potentially improve sensor efficiency (coverage) and data quality
- Establish baseline noise levels
- Help populate an archive of historical data on noise properties of each vessel
- Anticipate 2 ship visits per year
- **Initial Team Lead:** Tim Gates (ManTech)



MAC: *Quality Assurance Team*

- **Goal:** Ensure multibeam sonar systems are operated in a consistent manner that maximizes data accuracy, precision, and scientific utility
- Develop and disseminate best practice documentation
- Develop and deploy tools and procedures to optimize data quality during acquisition
- Complement ongoing fleet-wide MB QA (e.g. R2R) and MB reduction (e.g. GMRT) efforts
- **Initial Team Leads:** Vicki Ferrini, Jonathan Beaudoin, Paul Johnson



MAC: *Approach*

Discover

Collect information & define problem scope

Design

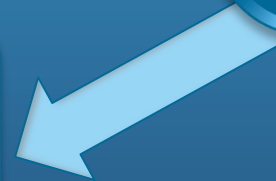
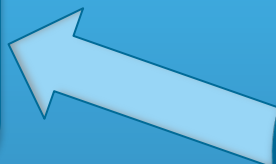
Collaborative planning to address problems

Deploy

Integrate solutions into existing fleet infrastructure

Community Input

Operating Institutions
Scientists
Funding Agencies

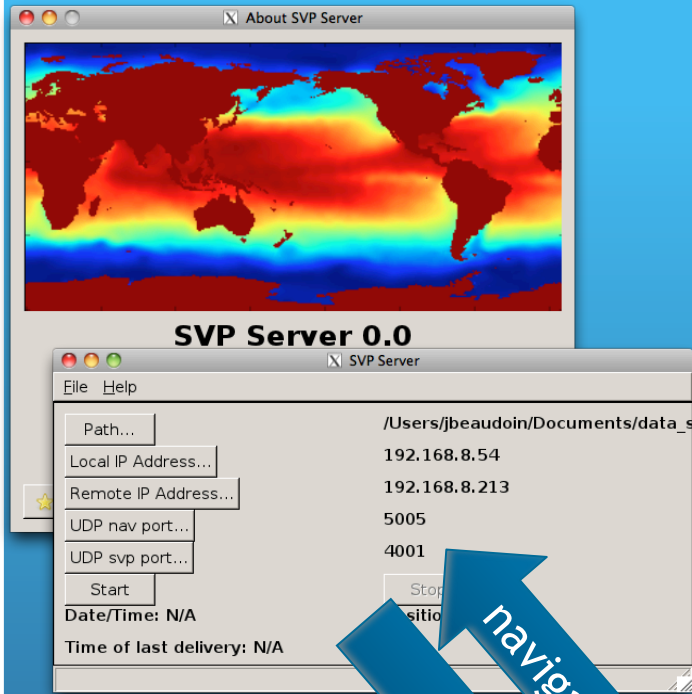


MAC: *Status/Plans*

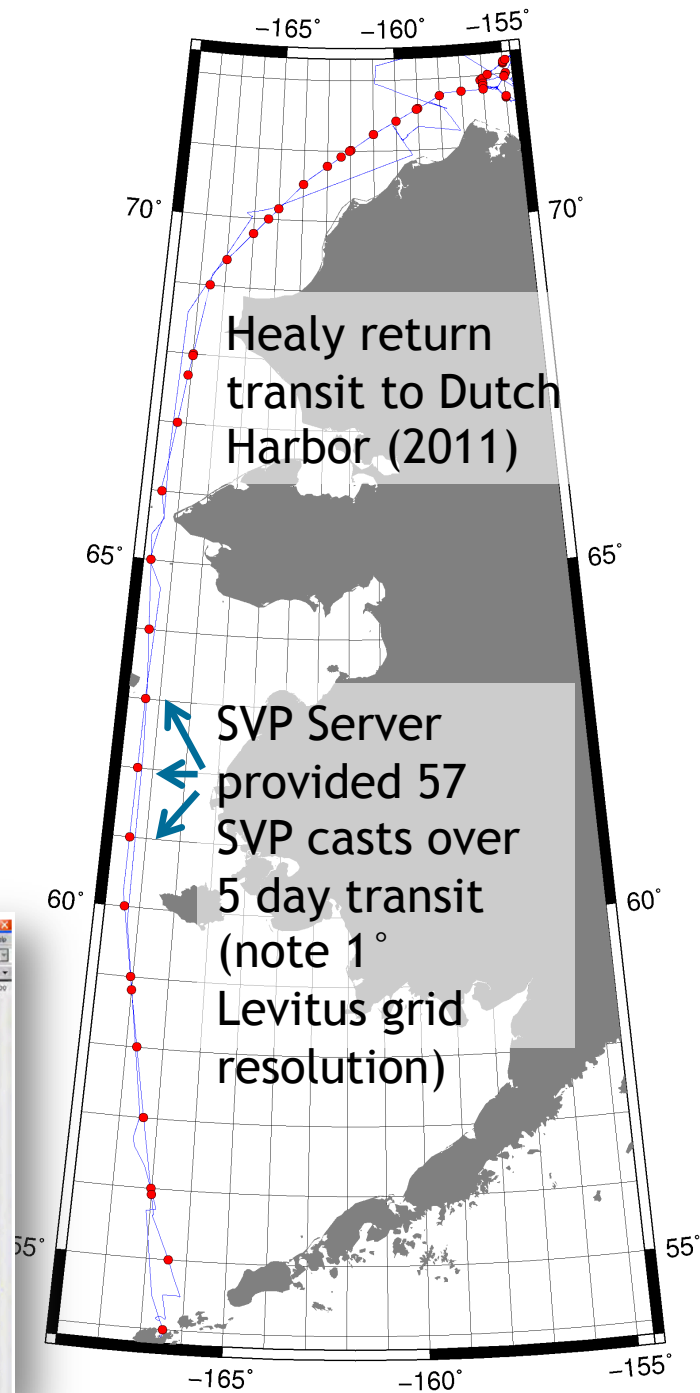
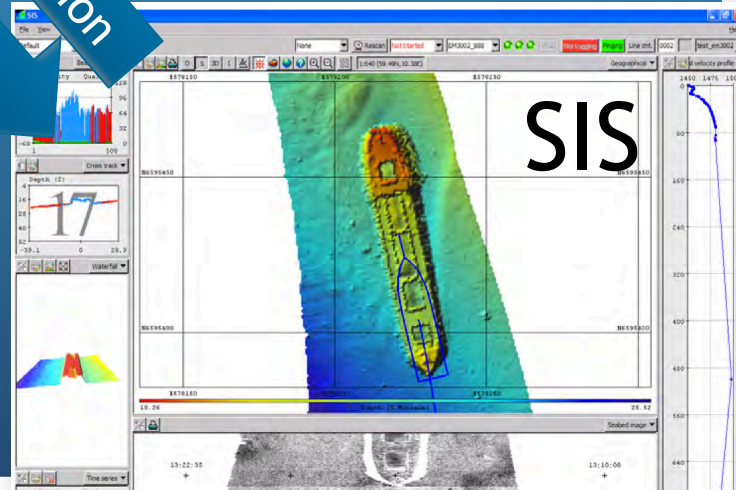
- September 2011 - MAC effort funded
- December 2011: Initial Organizational Meeting
 - Co-PIs, Technical Team Leads
 - Establish ship visit procedures
- Establish communication mechanisms
 - <http://mac.unols.org>
 - Help Desk, FAQ, YouTube Channel etc.
- Spring 2012: Inaugural Meeting of Stakeholders
- **PENDING**: Parallel Proposal for Installation/Maintenance & Spares (TBD)

SVP Server

An app that extracts temperature and salinity profiles from the 2009 World Ocean Atlas (“Levitus”) and delivers them to Kongsberg Maritime multibeam echosounders for ray bending corrections in real-time without operator intervention.



Come see a demo during the poster session!!



We need your input!

- Identify MAC Reps from Operating Institutions
- Gather relevant materials
- Participate in Spring Meeting
- Visit our Poster
- Contact us with Questions, Concerns, Suggestions

http://mac.unols.org/contact



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