

NDSF Data Management Update

Vicki Ferrini - NDSF Associate Director for Data System Strategy
Tina Haskins - NDSF Associate Director for Data and Science Ops

NDSF NATIONAL
DEEP SUBMERGENCE
FACILITY



Sealog Improvements - Phase 1

- **UI Updates** - devoting significant effort to modifying Sealog to improve usability and to streamline back-end components to help make future changes easier to achieve.
 - Specific focus on addressing user requests with Sealog interface improvements.
- **Code consolidation** - normalized versions used across vehicles
- **Containerization** - to facilitate and simplify deployment
 - Smaller update packages allowing for at sea updates/bug fixes if necessary.
- **Continuous integration** - more efficient code validation and testing
- Work is on-going and overseen by NDSF Data Leadership
- Deployed on recent Beinart cruise

The screenshot displays the Sealog interface for a replay of a video feed. At the top, it shows the cruise ID 'RR2102 > J2-1322' and a 'Replay' button. Below this, there's a video player with four camera views: SciCam, BrowCam, PilotCam, and IP-SeaCam. The video player shows a dark, underwater scene with a chimney structure. Below the video player, there are several data panels: 'Navigation' with fields for Time (UTC), Latitude, Longitude, Depth, Altitude, Heading, Pitch, and Roll; 'Original Nav Data' with fields for Latitude, Longitude, Heading, Depth, and Altitude; and 'Vehicle Temperature Probe' with fields for Probe1, Probe2, Probe3, and Probe4 temperatures. A progress bar is visible below the navigation data, showing a duration of 00:00:00 to 21:28:00. Below the progress bar is a 'Filtered Events' list with a search bar and a 'Filter' button. The current event is highlighted: '2021-04-19T00:08:17.134Z <guest>. FREE_FORM -> free_text: 'possibly three orifices present on the top of this chimney''. At the bottom, there's a pagination bar showing page 45 of 101. The interface also includes a 'Review Cruises/Dives' link, 'System Management', and 'Admin' options at the top right. The bottom right corner states 'Sealog is licensed under the MIT public license'.

NDSF NATIONAL DEEP SUBMERGENCE FACILITY



Data QA/QC

- Goals
 - To provide timely feedback to at-sea operations team to ensure that
 - Intended data were acquired and sensors are working properly
 - Data high quality standard are met
- Strategy
 - Developing a framework for tests and code that will enable cross-vehicle implementation
 - Leverage R2R QA approach
 - Seek input from domain specialists where possible
- Status & Timeline
 - Currently laying the framework to identify tests, criteria and thresholds
 - Development to begin in coming months

Directory Structure Standardization

- Goals
 - Standardize data structures and at-sea protocols to achieve cross-vehicle consistency
 - Improve user experience for scientists and down-stream data users
 - Gain efficiency with code and operations
- Strategy
 - Review current structure
 - Develop new/consistent structure & implementation plan
 - Update documentation
- Status & Timeline
 - Initial plan developed
 - Expecting to make progress on vehicle directory structure unification in the coming months.

Review/Update NDSF Data Documentation

- Goals
 - Review and update NDSF Data Policy to ensure it is clear, current
- Strategy
 - Refined language and improved flow
 - Clarify the important idea that the facility is NOT responsible for archiving of PI-provided equipment/sensors
- Status & Timeline
 - DeSSC review underway
 - Once updated policy is posted, data distribution documentation will be reviewed and normalized to be consistent with revised facility-wide directory structure

Data Access via MGDS

- Goals
 - Enable broad community/public access to NDSF data via MGDS
 - Integrate NDSF data with other submersible data from US research community
- Strategy
 - Leverage tools/workflows already built by MGDS
 - Prioritize data for migration/ingestion starting with geophysical data
- Status & Timeline
 - Start with Sentry data post-2018, then move on to other vehicles
 - In parallel, review new data and begin to build workflows that leverage new directory structure.
 - Develop strategy for prioritizing ingestion of older data

Ongoing Endeavors

- Documentation and reports under development
 - Documentation of modifications and plans for Sealog
 - Report describing the new NDSF directory structure
- NDSF Website
 - Ongoing site improvements
 - Planned training section for videos and documentation
- Questions/Suggestions
 - Feedback on Data Policy Update?
 - Reach us at ndsf_info@whoi.edu