

Engineering Weekly Report 12/2/2021 - 12/9/2021

Executive Council Notes

- 902106 Niobicon AUV Dock Development - This project is in full swing this week with tests offshore and final assembly of the dock mooring in the high bay. LRAUV Tethys has been docking to a test mooring while Brian and Ben refine the acoustic homing and dock latching software. Francois, James, Johnny, Aaron, Paul and of course Jose, have been assembling and wiring up the dock mooring as we get ready for full system testing beginning next week.

Individual Activities

- Kevin Barnard
 - 902002 - Fathomnet Detect and Classify
 - Participated in the Ocean Vision AI game brainstorming workshop (12/8/2021)
 - Added some features to the VARS integration of gridview
 1. Sorting by ROI color, dimensions, etc
 2. Query combination UI
 - Implemented requested extra filters to fathomnet-generate script
 - 902005 - VARS Annotation Assistance
 - Further developed BoxJelly and sharktopoda-client-py
 - Tested the new YOLOv5 codebase for training on AWS SageMaker. Trained yolov5x model successfully with multi-GPU support
- Francois Cazenave
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Took apart tether guide and inspected cable
 - 902106 - Niobicon-Based AUV Docking Development
 - Assembling buoy and dock
 - Project management
- Mark Chaffey
- Danelle Cline
 - Out of Office
 - Vacation 11/23-11/26
- Duane Edgington
 - Overhead
 - NeurIPS 2021: Tutorial Machine Learning and Statistics for Climate Science
 - AWS re:invent 2021
 - Out of Office
 - Back from vacation, Dec 7. Post-international travel 14 day self-quarantine at home until Dec 21.
- Jon Erickson
- Ben Erwin
- Kevin Gomes
 - 200105 - Core Nav - MDUC
 - Moved simulator from Rich's office to mine
 - Was able to fix (not sure how) the Windows update problem
 - 300058 - DMO Support Western Flyer

- Different bug surfaced for GLL age in Dataprobe. Fix implemented, tested and deployed on Flyer
 - Updating docs for Navproc/Datamanager/Dataprobe
 - 902100 - Telepresence on MBARI Research Vessels
 - Working on Slack as an authentication mechanism. Firebase doesn't support Slack as a provider so not sure I will use Firebase, might use Slack directly.
 - Overhead
 - Working through Figma tutorials to see if it's worth using to mockup UIs for ODSS, Telepresence, ESP, Data Catalog, etc.
 - Weekly meeting with Todd
 - Finalized hours re-work for 2022 based on recent changes. Running up the chain before having Mandy put in the spreadsheet and send out to everyone impacted.
 - End of year purchase/budgets
 - Meeting with SMD to discuss Telemetry upgrade on Doc Ricketts
 - Out of Office
 - 12/9 Vacation - Volunteer at Tech Fest day at Bay View Academy
- Andy Hamilton
- Kent Headley
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Working on a large set of code changes on core Terrain Relative Nav code aimed at addressing issues indicated by the static analysis tool cppcheck. Rich, Rob and I are doing code reviews on change sets.
 - 902005 - VARS Annotation Assistance
 - Brian indicates that the new Black Magic frame grab server is functioning well, and he plans to start integration and test on the ships in the next week or two
 - Overhead
 - Generated a custom version of the OASIS download app to help Paul Barter at Cawthron patch an issue with a cell modem driver on a deployed system. Provided some suggestions for patching the driver for future use.
 - SRSC meeting
 - Labor spreadsheet update
 - With Doug Conlin's help, transitioned from a loaner back primary laptop, which returned from a battery replacement w/ a clean hard drive.
- Rich Henthorn
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - CoNav computations and testing
 - CoNav data logging
 - libtrnav pull requests
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Plan updates for next go-around
 - 901618 - Pelagic-Benthic Coupling
 - Testing Rover components as the vehicle is reassembled in the High Bay
 - Addressed issue with the port rack prematurely halting on insertion
 - 902101 - LRAUV Technology Development and Fleet Operations
 - CoNav computations and testing
 - CoNav review
 - Overhead
 - Booster Clinic
 - Out of Office
 - Dec 17 - 31, Holidays and vacation

- Brett Hobson
- Scott Jensen
 - 901205 - ESP SURF Center
 - Working out sampling protocol
 - 901805 - Coastal Biogeochemical Sensing
 - Trying to isolate temperature sensitive components in signal chain
 - Overhead
 - EE Hire
 - Out of Office
 - Vacation
- Brent Jones
 - 901112 - Monterey Bay Time Series
 - Flew Daphne in support of MBTS runs
 - Fixing minor code in CPF that allows bad GPS times to propagate to CPU system clock
 - 901800.98 - Bioacoustic Payload
 - Temp tested mechanism in cold room. No temp affect observed
 - Re-ballasting gimbal with a better piece of Pb.
 - 901805 - Coastal Biogeochemical Sensing
 - Tearing down Spray34 looking at corrosion damage due to cracked wing
 - Modifying MFET design to fit on the Wire Walker
- Chad Kecz
- Brian Kieft
 - 300082 - DMO Support - Wave Glider
 - Piloted Tiny over the weekend.
 - 300083 - DMO Support LRAUV
 - MBTS assistance for Daphne
 - 708168 - DHS Y8
 - Investigated and fixed an issue with the DDM on Polaris causing a power cycle and loss of power to the IR sensor during docking
 - 800139 - EyeRIS
 - Working with Tom/Ivan on SBD image transfer to the waveglider
 - Added delay for acomms ack to accommodate longer packet sizes.
 - 901023 - Continental Margins
 - Ready for final qual testing of BED 2.0. Looking for deck box...
 - 901800.98 - Bioacoustic Payload
 - Fixed missing data issue from last deployment
 - 902009 - AUV UI
 - Responded to questions from Sliced Bread and set up vehicle state meeting for later this week.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Added a critical failure when navigation is really far off in response to a failed compass on daphne that caused the vehicle to drive in the wrong direction.
 - Updated checklist in response to this incident to make sure operators note the cardinal direction the vehicle is pointing during IBIT.
 - 902106 - Niobicon AUV dock dev
 - Fixed issue with a long delay during USBL mode pings
 - Working on converting DAT to be asynchronous for higher accuracy during docking
 - Overhead
 - Coordinated abstract for data access talk
 - Dealt with a catastrophic failure of my laptop (thanks IS!)
 - Out of Office

- 12/22-29 (PST)
- Denis Klimov
- Diana LaScala-Gruenewald
 - Out of Office
 - Out sick last Friday (11/12)
- Eric Martin
 - 708164.50 - Y2 Research Labor funds
 - Meeting last friday, Rob and I are going to tackle some data analysis to see if we can detect waves.
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Troubleshooting system wide damage to the vehicle's CANbus
 - Seems to be an issue with the tether assembly.
 - 901911 - ROVVR
 - Participated in a games workshop this Wednesday to strategize a concept for game development.
 - 902100 - Telepresence on MBARI Research Vessels
 - Meeting last thursday
 - Advancing microservices and api investigations for various control room components.
- Thom Maughan
 - 901009 - CANON
 - Looking into SquiggleNet for real time control of nanopores in the minion sequencer.
 - DeepRip ssh access resolution
 - 901805 - Coastal Biogeochemical Sensing
 - Discussions with Yui
 - 902004 - Planktivore
 - Parts ordering
 - Fitment review last Thursday with Larry and Paul. My preliminary design needed to be broken into smaller boards and mounted at the back of the optics frame.
 - Strobe v1 is complete, ready for fab. Connector selection challenges due to 40amp 20usec pulse, small area and tight board stack requirement. Found some good white papers about pulsed currents by Samtec and Tyco.
 - Strobe Energy v1 is complete and ready for fab.
 - Strobe Control v1 is in progress.
 - Met with Yui about Planktivore on Spray and goal for mid-March deployment. At issue is we are down to one Spray Glider due to housing corrosion on the 2nd Spray.
 - Out of Office
 - Vacation is TBD, sometime end of Dec. Staycation.
- Mike McCann
 - 901101 - Seafloor Mapping
 - Will be reloading database following changes contributed by Jenny & Karen
 - 901221 - Midwater Time Series
 - Completed filtering and resampling aligned data, ready to test loading into STOQS
 - Overhead
 - Reviewing capstone student's project to convert GMT bathymetry data to glTF
- Rob McEwen
 - Out of Office
 - Dec 22-31
- Paul McGill
 - Out of Office
 - Medical appointment Tue morning

- Ed Mellinger
- Tom O'Reilly
- Craig Okuda
 - Out of Office
 - Vacation days
- Doug Pargett
 - 881135 - 3G ESP Cartridge Redesign
 - Meetings with Function to review design status.
 - 901205 - ESP SURF Center
 - Designing new blank cartridge parts for improving pressure testing. Getting first test articles made.
 - Designing changes to the G3 mechanism for the Function cartridges. Fixing fastener hole misalignments.
 - Overhead
 - Engineering mtg
 - Out of Office
 - Sick Leave
- Ben Raanan
 - Out of Office
 - June 8-22
- Mike Risi
 - Out of Office
 - April 26-30: Ocean Imaging Cruise
 - May 3-7: Vacation
 - June 4-11: Vacation
 - June 28-July 2: Vacation
 - August 30-September 14: Ocean Imaging Cruise
 - September 14-17: Vacation
 - November 22-24: Vacation
 - Vacation on alternate Fridays
- Paul Roberts
- Brent Roman
 - 901913 - Demonstrating high-speed communication with a submerged AUV
 - Demonstrated streaming video from LRAUV camera over internet cellular network
 1. Ready for test of Waveglider in the test tank late this week
- Carlos Rueda
 - 901009 - CANON
 - Continue reviewing the MXM concept of operations.
 - 901502 - Passive Acoustic Sensing
 - Meeting with Orcasound folks.
 - 901513 - Targeted Sampling by AUVs
 - Starting to set up the core tracking software on the SMC-2 upon the python3.7.9 install that Tom has made.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Positive response regarding Dash4 additions/adjustments toward decommissioning the legacy TethysDash UI early next year. Some additional feedback received but for extra improvements in the future.
 - Updated TethysDash operations doc, in particular, to reflect recent changes in the location of backend log files: <https://docs.mbari.org/internal/tethysdash-ops-doc/>

- As noted via email to Ben, I'm out the rest of this week but, if the need arises, could be contacted in case of TethysDash issues during the upcoming LRAUV operators training.

- Overhead

- Reimplemented the [dispatch](#) behind the doc-generation webhook. With an improved handling of some edge cases, the new dispatch is now also able to handle GitHub repositories, at the moment only public ones, but later on we intend to also enable private repos.
- Feedback for Dash4 during WHOI vehicle deployment (thanks, Mike G.)
- Ing. zoom meeting.
- ESIP COR meeting; Code adjustments toward upcoming release of the SWEET ontologies.
- SE-IE meeting.

- Out of Office

- Dec 9,10, 21–31: vacation
- Dec 6: out sick.

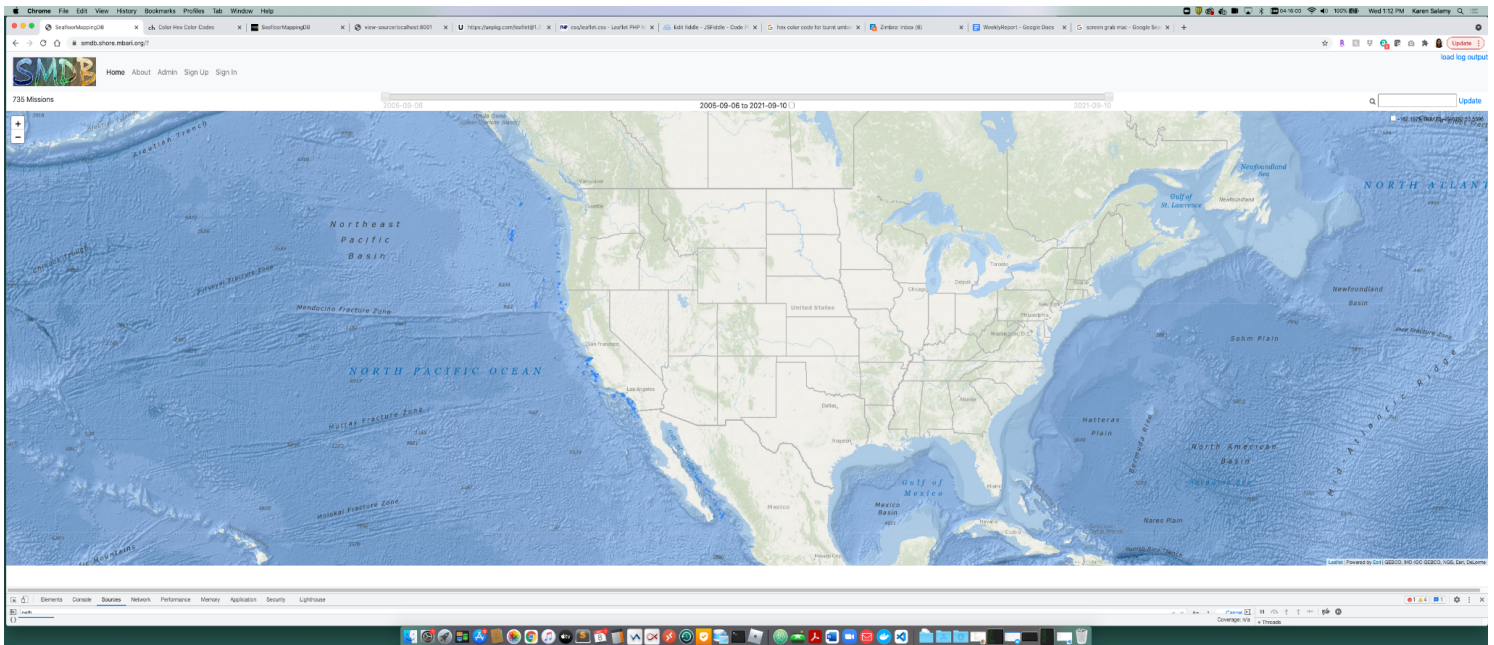
- Karen Salamy

- 300057 - Mooring Maintenance

- Weekly maintenance and data checks.

- 901101 - Seafloor Mapping

- Added ESRI World Ocean Bathymetric map to the SMDB map view at <https://smdb.shore.mbari.org/> (image below).
- Met with Mike and Jenny about proper git push protocols between branches and the main.



- I will start looking into the ability to zoom in further into the ESRI maps. The Vector BaseLayerMap is not as high resolution as the TileLayers.
- I will also check to see if the leaflet data points (path) can be adjusted from blue (which now clashes with the Ocean bathymetric map colors) to a dark orange.

- Overhead

- Completed all of the software maintenance license renewals for 2022-2023 including Mathworks, MathCad and Aldec.

- Out of Office

- Vacation: December 22, 2021 - January 4, 2022. May extend this to spend some more vacation time with my daughter.

- Brian Schlining
- Rich Schramm

- Alana Sherman
 - Out of Office
 - Out early Monday for a dr appt