

Engineering Weekly Report 1/16/2025 - 1/23/2025

<https://docs.mbari.org/internal/projects/Engineering/Weeklies/2025/>

Executive Council Notes

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Individual Activities

- Michael Anderson
- Kevin Barnard
- Francois Cazenave
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - PTO assembly
 - 902106 - Niobicon-Based AUV Docking Development
 - Preparation for buoy recovery
 - 902204 - Scalable Robotics
 - Laser bracket
- Danelle Cline
 - 901221 - Midwater Time Series
 - Loaded 200 meter classifications using active learning examples from top-2
 - Working with Rob.S to label confused examples. Current model has top-1 balanced accuracy (a better metric for long-tail distributions) of 0.89.
 - 901502 - Ocean Soundscape
 - Modified PBP quality flag notebook to demonstrate compressed .nc with added flag
 - Team meeting
 - Opened GitHub issue on quality flag
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting
 - Using Meta Segment Anything model (SAM) + SIFT keypoints, cleaned up bird localizations. Worked pretty well, but some manual cleaning still needed for heavy shadows
 - Setup jupyter notebook for teams to use for training on doris as user mldevops
 - uav.shore.mbari.org IS request for GPU for running processing pipeline
 - Retraining ViTS model
 - Synopsis of ML work for Sanctuary report
 - 902111 - Carbon Flux Ecology
 - Setup jupyter notebook for teams to use for training on doris as user mldevops
 - 902306 - SINKER
 - Discussion with Karen S. about project goals and brainstorming about tools and architecture. Team meeting next week will provide needed requirements
 - Overhead
 - Preparing self-assessment
 - AWS 2025 touch base and SA intro meeting
 - Conflict of interest form completed
- Duane Edgington
 - 901502 - Ocean Soundscape

- Attended [Orcasound summit](#)
 - Returning to processing MARS raw data to [kaggle google multispecies-whale model](#)
 - Planning to run Orcasound public curated data through google multispecies-whale-model as sanity check
 - Looking at [Orca Symposium February](#)
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting
 - Completed yolov11x jelly model for eval
 - Preparing to train yolov11x one-class model with full dataset with aim to improve object detection accuracy
- Jon Erickson
- Kevin Gomes
 - 200105 - Core Navigation - MDUC
 - Got Carson simulator running on VM finished. Generating log files from simulated data and LCM bridge operating and flowing data into Redis, ZMQ Proxy.
 - 300079 - DMO Support - RV Rachel Carson
 - More ArcMapNav, tracking OK, working on waypoints
 - 706008 - READI-Net
 - More updates to web app code
 - Pushed web app changes to both production and dev cloud servers
 - Still trying to debug why automated SD image build on AWS is failing
- Andy Hamilton
- Kent Headley
 - Overhead
 - Mostly review activities this week...
- Rich Henthorn
 - 902401 - Geo-Sense
 - Final config prep before Friday deployment
 - 902405 - Precision Control Technologies
 - Merging updates
 - Overhead
 - Annual review
 - Battery fire
 - Out of Office
 - Feb 3 - 6: WFH and PTO
 - Mar 3 - 6: WFH and PTO
 - Mar 31 - Apr 3: WFH and PTO
- Akshay Hinduja
 - 902101 - LRAUV Technology Development
 - Shit priority to LRAUV
 - Look through ExternalSimulator class
 - Plan for nc4 data extraction and conversion to gazebo messages for sim
 - 902204 - Scalable Robotics
 - Beta driver development finished
 - Background/legacy research on s7k conversion tool
 - Go through Ocean Imaging repositories on reson and 7kcenter
- Brett Hobson
- Irene Hu
 - 901217 - Chemical Sensors

- RevD baseboards received from Indtec last Wednesday. Quick troubleshooting on extra current draw, traced to a rotated part
- 901805 - Coastal Biogeochemical Sensing Program
 - Trying to get together boards and package to send to Ellen Briggs at Scripps for Alkalinity sensor; troubleshooting some issues with bad signals (cable was backwards)
 - Working w/ Jose on non isolated Nanofet board
- 901904 - Deep-Sea Coral-Sponge Community Observatory
 - LED ring mockups to try to cram as many LEDs as possible in a symmetrical way
 - Graphed a lot of LED and other spectra to help pick LEDs
 - Reviewed Paul's circuits
- Overhead
 - Procured lots of snacks for Lunar New Year cookie break
- Out of Office
 - 1/17: MBARI forced to WFH due to fire; 1/22, possibly 1/23: WFH
 - Feb 26 - Mar 9: vacation
- Scott Jensen
- Brent Jones
 - 901502 - Ocean Soundscape
 - Spinning up code on a windows server
 - Click processing
 - 901805 - Coastal Biogeochemical Sensing Program
 - Code updates to incorporate firmware versioning, seabird pump turn on at various times, etc
- Chad Kechy
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - 901513 - Targeted Sampling by AUVs
 - Supporting PAM mission testing on Pontus
 - 902101 - LRAUV Technology Development
 - Fixed missing data from last year's canon experiment
 - Added timeout to TRN mission for approach depth
 - Fixed up LRAUV cron jobs to deal with 2025 and removed old years
 - Adding PAR to sample at depth
 - Supporting Aku deployment for bioacc testing
 - 902405 - Precision Control Technologies
 - Did a non-ingest TRN run on Pontus per Steve's request
 - Overhead
 - Coordinated rescue and berthing of Dorado mapper AUVs to santa cruz harbor this weekend due to fire in moss.
 - Coordinating shipping of Oshen ASV back to UK
 - Out of Office
 - 02/06 - vacation (PST)
 - 02/10-14 Open Ocean (PST)
 - 02/25-28 (MST)
- Denis Klimov
- Eric Martin
 - Out of Office
 - Vacation 12/23-1/3
- Thom Maughan
 - 300083 - DMO Support - LRAUV

- BPC2 RevC was handed off by Duane and we were adjusting some connector locations thanks to feedback by Evan M and a layout problem was found in the power discharge path. After discussing and looking at 10 layer board as an option, the decision was to relayout the pcb.
 - Setup Cole with the portable Batman development environment.
 - 901217 - Chemical Sensors
 - Dev/Test boxes are mostly built and tested with MSC3 RevB baseboards and v5.0.3 MoSoS.
 - Jess has the TestVectorizer python script running tests and Irene has setup the Yokagawa for energy measurement. Jess has run repeated tests on the MSC1 and is starting to run MSC3.
 - Irene received MSC3 RevD baseboards on the 15th.
 - 902004 - Planktivore
 - Setup recurring meeting.
 - Met with some of the team 1:1
 - Sent request to ASO group for I2MAP following mission. Monique had already coordinated the following weeks MBTS Plankton Proxies
 - Planning to meet with Kevin / Carlos to see if we can get minor bugs fixed on ODSS Planning
- Mike McCann
 - 902403 - Expedition DB Modern
 - Tried to organize [EXPD Modernization project page](#) to be helpful for project team members
 - Working on cookiecutter-django and Django 5.0 updates: [Issue 59](#)
- Paul McGill
 - Out of Office
 - On vacation all of last week and Monday
- Enoch Nicholson
 - 706008 - READI-Net
 - Finalizing FIDO design
 - Supporting Ice breaker prep
 - 901007 - Benthic Biology & Ecology
 - Supporting justin as he starts to take over BRS changes
 - 901205 - ESP SURF Center
 - SURF Center future meeting
- Tom O'Reilly
- Mike Risi
 - Out of Office
 - Offsite on Tuesday and Friday
 - March 3 - March 6, 2025 - vacation
 - June 2 - June 6, 2025 - vacation
- Paul Roberts
 - Out of Office
 - Jan 6-10 Vacation
- Brent Roman
 - 708184 - ESP Monitoring PNW
 - Wrote Ruby code to provide optional cjxl compression for puck images
 - 901205 - ESP SURF Center
 - Helping Team ready for their trip to Tasmania
 - Overhead
 - Moving into new G206 office
- Carlos Rueda
 - 901502 - Ocean Soundscape
 - PLOS paper accepted, yay! (many thanks and congrats to John R. et al!)
 - 902101 - LRAUV Technology Development

- Lots of work on a new authentication mechanism for TethysDash/Dash4. I now feel very close to deploying it into production, but with temporary settings to allow power users and other testers to exercise it for a while so we can make sure it works reliably, while also likely exposing the need for adjustments, etc. Also, worth noting that, especially in consideration for our external TethysDash deployments, both the old and the new mechanisms are intended to be supported.
 - 902504 - Scalable Semantic Mapping
 - Brief meeting with GT in preparation to prioritize tasks.
- Karen Salamy
 - 200103 - Core CTD Data - MDUC
 - Updated latest round of ROV CTD O2 flag updates from Rob Sherlock.
 - 300057 - Mooring Maintenance
 - Reviewed download and maintenance on coredata8 server.
 - 901101 - Seafloor Mapping
 - Reviewed various dives and issues on Github.
 - Out of Office
 - Took a personal day yesterday to help a family member.
 - Out sick several days last week. :(
 - Vacation March 3-11, 2025 - Holiday Vacation
 - On-campus 3 days/week (**T, W, TH**).
- Brian Schlining
 - 902002 - FathomNet
 - Started [port of the REST API from Micronaut to quarkus](#). Micronaut has not been a stable platform as it introduces breaking changes with each release.
 - Overhead
 - Attended the Deep-Sea Biology Symposium
 - Out of Office
 - Jan 10-17 - [Deep-sea Biology Symposium. Hong Kong](#)
- Alana Sherman
 - 902401 - Geo-Sense
 - We have been going non stop preparing for deployment friday
 - Tested full system after Bryan spliced last section of fiber
 - Worked on sealing up electronics sphere and Deepsea connect housing
 - Held last meeting with Sintela to finalize settings
 - Starting to create documentation for deployment
 - Trying to help out with mechanical assembly
 - Working with pilots on last details of ROV-manipulation
 - Too many details to even remember
 - Overhead
 - Since MBARI was forced remote on Friday I worked on performance evaluation stuff
- George Stern
 - 300078 - DMO Support - AUV
 - Reviewed layout of the pressure test sample and cut some corners to get it on order in time; unfortunately build questions pushed the completion date into the PCBway lunar new year holiday so now I lose at least 2wks.
 - 902204 - Scalable Robotics
 - Ordered Charuco targets
 - 902304 - Piscivore Cam
 - Held meeting with Rhonda SW, few concerns about current trajectory, they are working to answer some of our questions and remainder will wait until the project plan deliverable
 - 902306 - SINKER

- Continued working on battery charger script and finished checking out the battery interface card.
Charged a set of LRAUV batteries! But still implementing the hardware fault flag threading
- Justin Tucker
 - 901007 - Benthic Biology & Ecology
 - Working through layout for Rev C improvements
 - 901101 - Seafloor Mapping
 - Worked on benchmarking strobe thermal improvement
 - Mapped out strobe hydraulic layout
 - 902010 - Mesopelagic LRAUV
 - Organized priority list for next steps.
- Johann Voigtlander
 - 902208 - Mini ROV Operations
 - MiniROV Mob
 - GT Dives x3
 - Out of Office
 - Dec 16th - Jan 10th - Vacation