

Engineering Weekly Report 2/8/2024 - 2/15/2024

<https://docs.mbari.org/internal/projects/Engineering/Weeklies/2024/>

Executive Council Notes

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Individual Activities

- Michael Anderson
 - 705102 - Open Wave-Energy Control System Development
 - Meeting with SNL
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Getting v1.1.0 release ready (automatic release scripts / testing)
 - Enable nightly testing
 - Update documentation
 - 901910 - Plankton Taxonomic Groups from AUVs
 - Package up python package dependencies for offline install
 - Work toward installing python processing on alternate vehicle
 - Processed ML predictions for plankton proxies on LRAUV data in STOQS
 - 902101 - LRAUV Technology Development
 - Learning how to get multiple vehicles in gz sim
 - 902405 - Precision Control Technologies
 - Finished writing TRN data bridge (put data from TRN backseat on LRAUV slate)
 - Meeting with Steve Rock for status and next steps (ingesting TRN and CoNav)
 - 902204 - Scalable Robotics
 - Consolidated docker images to run with docker compose
 - Wrote various helper scripts
 - Managed data rates of all sensors to meet bandwidth requirements to run full system
 - Enabled recording of full system
 - Got all sensor drivers running in ros2
 - Enabled raw lidar_packet data output in ros2
 - Enabled output of all scan rings from lidar (including static transform publishers for display)
 - Enabled RTK mode on GPS
 - Enabled RGBStereo mode (output all three cameras of camera system)
 - Meeting with GIM (sub-contractor)
- Kevin Barnard
- Francois Cazenave
 - 901221 - Midwater Time Series
 - Helped prepare I2map for deployment
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Working on tether order, load cell repair, PTO maintenance
 - 902106 - Niobicon-Based AUV Docking Development
 - Designing bracketry for LRAUV pontus
 - Recover docking buoy

- 902204 - Scalable Robotics
 - Designed and ordered hardware for ROV Subastian
- Danelle Cline
 - 902111 - Carbon Flux Ecology
 - Tested the ISIS instrument frame captures with sdcats which is doing a great job clustering. Beginnings of [core ai docs](#).
 - 500055 - VARS, M3/RS, DSG.
 - Debugging SSO account issues. Minor assistance on training activity.
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - Beginnings of [core ai docs](#)
 - 901502 - Passive Acoustic Sensing
 - Adding audio metadata extraction to PBP. IcListen, Soundtrap working from S3, next is HRS from GCP.
 - Setup Open Data sync for raw 2024 data. Added to ansible playbook
 - Beginnings of [core ai docs](#)
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Lots of activity on OSM e-poster and lightning talk preparations.
 - Assisted with two flights.
 - Cleaning up sdcats code for open source release.
 - 902204 - Scalable Robotics
 - Working on sightwire watchdog pipeline for stereo data ingest with simulated video stream. Evaluating redis timeseries.
 - Out of Office
 - OSM Conference, Feb 19-23, New Orleans, MS
 - Vacation Feb 26
 - Leave Feb 28-29 care for son following surgery
- Duane Edgington
 - 500055 - VARS, M3/RS, DSG
 - Assisting Lonny with training a model with new collected 402K dataset 1280 yolov5x6 on AWS using deepsea-ai. Successfully trained 1 epoch model demonstrating the toolchain is working. Team is retooling some of the localizations before we try again...
 - Team meeting 2/14
 - 901502 - Ocean Soundscape
 - Team meeting 2/14/2024
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Assisting with iposter for OSM meeting
 - Abstract for EGU meeting has been accepted for presentation.
 - Out of Office
 - Feb 29, 2024. Personal
 - April 1 - 12, 2024. Vacation UTC+3
 - April 12 - 21, 2024. EGU UTC+2
 - June 10 - 21, 2024. Vacation UTC-8
 - Oct 21 - Nov 8, 2024. Vacation UTC+1
- Jon Erickson
- Kevin Gomes
 - 200105 - Core Navigation - MDUC
 - Met with Mike to go over new repo structure and will deploy on simulator for Packard
 - 300070 - DMO Support - Ventana
 - Working on web application to replace MiniROV DiveLog (shore based) which will be the first step in building a web application to replace DiveLog on Carson and eventually Packard

- Overhead
 - Using MiniROV DiveLog app development, prototyping a OAuth application stack using multiple OAuth providers (including MBARI's AD) and leveraging SuperTokens to manage authorization centrally.
 - Met with John Zicker to discuss our machine learning efforts and getting outside assistance/guidance
- Out of Office
 - March 12-21: Vacation
 - March 25-29: Data Council Conference: Austin, TX
- Andy Hamilton
- Kent Headley
 - 901101 - Seafloor Mapping
 - Issued pull requests to sync w. Libtrnav, mostly cmake build changes
 - 902204 - Scalable Robotics
 - Attended cruise 2/9 via telepresence
 - Updates for cruise were successful in fixing range/gain init issue
 - Data set was collected, pending analysis
 - Tweaked and checked in change set re status bar for readability
 - Ran M3 sonar samples w/ mb1stream to generate MB1 LCM log
 - Scoping M3 sonar real-time capability
 - Help w/ OSM posters (if needed)
 - Overhead
 - Hiring application review
 - Merit increases
 - Misc admin
 - Ground fault workshop
- Rich Henthorn
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Lab's Python processing scripts enabled on target
 - Tinkering with new version of lab's image analysis scripts
 - Redesign for use in deployed system
 - 902306 - SINKER
 - Ready for Mar 5 deployment and tank testing
 - 902401 - Geo-Sense
 - Prep for meeting with Sintela (DAS manufacturer)
 - Meeting morning of Feb 14
 - 902405 - Precision Control Technologies
 - Lrauv LCM decoder for CoNav channel
 - Out of Office
 - Feb 12 - 15: WFH Tu & Wed, vacation Mon & Th, at MBARI Friday
 - Mar 18 - 21: Vacation and WFH
- Brett Hobson
- Irene Hu
 - 300078 - DMO Support - AUV
 - Met with Jenny Paduan and Dave Caress for more project background
 - 901805 - Coastal Biogeochemical Sensing Program
 - Discussions with Yui, Jose, and Yui/Thom re: mpHox revB; making a few changes and then should be ready for layout
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Building circuit and writing code to test pucks

- Wrote code for stacked tiffs for multispec, tested on optical target
- Overhead
 - Rec comm: helped with chili cookoff, hosted Lunar New Year cookie break, and set up ledger for 2024
- Out of Office
 - May 3-15: Taiwan
- Scott Jensen
 - 706008 - READI-Net
 - Fluidic issues while trying to managing protocol. While clearing puck the mechanics allow the puck seal to become unseated allowing a small spray of fluid out into a critical area.
 - A software issue causes the console port to stop sending out data. This may be a problem with a data overrun in the lower USB code.
 - Waiting for the new frits to arrive
 - Closing in on a design for allowing the opto-interrupters to ignore ambient light conditions
 - 901205 - ESP SURF Center
 - Meetings to determine field deployment calendar
 - Out of Office
 - April 5-9 vacation
 - June 17-21 vacation
 - July 18-23 vacation
 - July 24-29 vacation
- Brent Jones
- Chad Key
 - Out of Office
 - Jan. 22- Potential Jury Duty
 - Out of office on Fridays
- Brian Kieft
 - Out of Office
 - 02/12-02/16 (MST)
 - 04/04-04/10 (CST)
 - 04/15-04/19 (GMT+8)
 - 06/03-06/18 (GMT+1)
- Denis Klimov
- Eric Martin
- Thom Maughan
 - 300070 - DMO Support - Ventana
 - Valve pack controller board is being stuffed. A hex file has been located, however the source has not been found.
 - 901805 - Coastal Biogeochemical Sensing Program
 - Working with Irene on MpHOx rev B and instrument integration
 - Working with Joe on implementing a quick prototype ground fault data logger for Spray Glider. Option A is hacked MFET/MCAP and Option B is tweaked Current Ranger.
 - 902004 - Planktivore
 - Ahi + Planktivore deployment with Galene on the 14th. We have addressed most issues found in previous deployment. Working to chase down a faint image 'reflection'.
 - LRAUV team is also using Ahi for testing a new 'tail' mission.
 - Out of Office
 - Feb 15 - 16 Vacation
 - Feb 18 - 23 OSM24
 - Apr 5 - 10 Eclipse

- Mike McCann
 - 901910 - Plankton Taxonomic Groups from AUVs
 - Added isusQuality variable to help us QC Dorado nitrate data and tested with a few missions
 - 902403 - Expedition DB Modern
 - Learning about and implementing Leaflet AJAX data loading by fixing EMDB's home page
 - Adding generic filtering to EMDB's DRF so that the UI can better use the REST backend
 - Rolled out MBARI Single Sign On in EMDB
 - Overhead
 - Removed old entries from the internal calendar for the R/V *David Packard*
- Rob McEwen
 - 902101 - LRAUV Docking
 - Finished code that sends the vehicle in the down-current direction under power if it doesn't drift far enough after a docking attempt.
 - Also now log the heading control PID gains. They can change during flight.
 - Issued a PR.
- Paul McGill
 - 300070 - DMO Support - Ventana
 - Working on a couple of Ventana problems with DJ. We'll tackle them next week during the maintenance period.
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Reviewed some of the 20,000 images from the just-recovered Coral Macro Cam.
 - 902101 - LRAUV Technology Development
 - Got Jose to build new AOS sensor boards, and will test them on Thu.
 - 902304 - Piscivore Cam
 - Created documentation for build of PCam v2 I/O board
 - Put together build kit and submitted parts to e-techs to build new controllers
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Inspected new Gen3 controller just sent by McLane
 - 902306 - SINKER
 - Tracking down new cable for SINKER connection to MARS. The cable we chose previously will not support GigE.
 - 902401 - Geo-Sense
 - Working on requirements doc
 - Had telecon with Sintela people in England
 - Overhead
 - Wrote and presented a well-attended ground-fault tutorial.
- Enoch Nicholson
 - 706008 - READI-Net
 - Pneumatic lifter prototyping
 - Request phase Separator Caps
 - 901007 - Benthic Biology & Ecology
 - BRS kickoff meeting
 - Ordered vacuum test hardware
 - 902306 - SINKER
 - SINKER Mass properties
 - MARS deployment Frame Design
- Tom O'Reilly
- Mike Risi
 - 200105 - Core Navigation - MDUC
 - Started overlay process

- Review of new configuration setup for navproc
 - Modifying some of the processes after doc-ricketts process changes
- 701147 - MARS O&M IV
 - MARS meeting
- 901101 - Seafloor Mapping
 - Trigger board revC design review
 - Working on firmware changes for trigger board revC
- 902405 - Precision Control Technologies
 - Meeting with Steve and some administrative tasks
- Out of Office
 - Out of office on Fridays
 - January 16 - January 19, 2024
 - March 4 - March 8, 2024
 - May 20 - May 24, 2024
- Paul Roberts
 - Out of Office
 - Jan 9-Jan12 at CES
 - Feb 19- Feb 24 Ocean Science Meeting
- Brent Roman
- Carlos Rueda
 - 901502 - Ocean Soundscape
 - [PBP](#) and [mbari/pbp](#) docker image updates; NRS11 and MB05 data processing; notebook updates, new scripts, etc.
 - 902101 - LRAUV Technology Development
 - A big milestone was accomplished last week. The new direct parsing and execution of TethysL (.t1) missions in the LRAUV was successfully exercised during a Galene deployment, which involved missions with [TethysL array and macro extensions](#). Next phase in the integration plan is to continue exercising the new mechanism with more missions, while keeping the old mechanism as a backup, for some time. Thanks LRAUV team for your support!
 - TethysDash API: fixes in a couple of endpoints related with the retrieval of lrauv-mission artifacts depending on whether there's an active vehicle deployment. Thanks, Quinn, for the heads-up.
 - 902204 - Scalable Robotics
 - Dial: Integrating display of image streams in the main page; re-structuring deployment spec to accommodate the new channels. Exploring options to improve performance, including use of binary payloads in the websocket communication (pending discussion with Kevin B.) as well as use of web workers in the frontend.
 - Overhead
 - Some technology exploration related to ongoing modernization efforts for APIs and databases.
 - IE mtg about authentication/authorization, thanks Kevin!
 - Out of Office
 - Feb 19: Dentist appt.
- Karen Salamy
 - 300057 - Mooring Maintenance
 - Weekly checks and monitoring of downloaded mooring data.
 - 902101 - LRAUV Technology Development
 - Testing a few updates following relevant course material (see Overhead).
 - 902403 - Expedition DB Modern
 - Working on generating EXPD diagrams for improvements requested by users.
 - Overhead

- The Ultimate React Course 2024: React, Redux & More - Online course covering React 18+. In total the course will be ~67 hours long. I am almost halfway through at this point.
- Out of Office
 - **Feb. 29 - Mar 10** - Trip to east coast for personal family reasons
 - On-campus 3 days/week (**T, W, TH**).
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - Prepping for major updates to [video asset](#) and [annotation database](#) scheduled for this Friday. All annotation systems will be down on Friday. In addition to [the system updates](#), we will be migrating the databases from perseus (SQL Server 2016) to venus (SQL Server 2022) Please do not annotate!!
 - Along with Nancy and Lonny, we've set up [target goals](#) and organized [tasks](#) for the team for this year.
 - 902403 - Expedition DB Modern
 - Met with Maas engineering, the team behind [Marine Facilities Planning](#) software.
 - Put together a somewhat [simplified diagram of the current EXPD database](#).
 - Overhead
 - Investigated a VARS issue for [DARC](#).
 - Met with the New England Aquarium to discuss whale annotation software
- Alana Sherman
- George Stern
- Johann Voigtlander
 - 902208 - Mini ROV Operations
 - Started installing 19" racks for the 20' container deployments