

Engineering Weekly Report 2/1/2024 - 2/8/2024

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

Executive Council Notes

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Individual Activities

- Michael Anderson
- Kevin Barnard
 - 701165 - OVAI Phase II
 - Gave Q1 FathomNet OVAI-wide product update
 - 702108 - Deployable AI
 - Modeled MiniROV core body components and thrusters in Stonefish for RL training



- 901809 - Deep Sea Bioinspiration
 - Prepared DeepSTARia presentation for OSM
- 902002 - FathomNet
 - Added support for fast WoRMS names API to fathomnet-py
 - Implemented workaround in fathomnet-generate script for micronaut bug in fathomnet-rest-api
- 902204 - Scalable Robotics
 - Calibrated stereo cameras for Falkor (too) imaging sled
- Francois Cazenave
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Load cell repair.
 - New tether sent to TMT
 - 902106 - Niobicon-Based AUV Docking Development
 - Designing bracketry for Pontus
 - Assembling Pontus
 - Designing new housing
 - 902204 - Scalable Robotics
 - Designing camera mount for Subastian arm

- Danelle Cline
- Duane Edgington
 - 500055 - VARS, M3/RS, DSG
 - Team meeting Feb 7 (?)
 - 901103 - Biodiversity & Biooptics
 - Reading Taurun's manuscript that he hopes to submit to CVPR workshop
 - 901502 - Ocean Soundscape
 - Team meeting Jan 31. Orca sound discussion.
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Completed and posted a first-cut detection model using the current labeled library.
 - Addressing bug in label download that skips labels with " " in the label.
 - Working on info for OSM poster presentation
 - Preparing to train the next-cut detection model.
 - 902004 - Planktivore
 - Kick off meeting Feb 6.
 - 902111 - Carbon Flux Ecology
 - Requirements meeting Feb 1.
 - 902403 - Expedition DB Modern
 - User story meeting Feb 6.
 - Out of Office
 - Feb 29, 2024. Personal
 - April 12 - 21, 2024. EGU
 - June 10 - 21, 2024. Vacation
 - Oct 21 - Nov 8, 2024. Vacation GMT
- Jon Erickson
- Kevin Gomes
 - Out of Office
 - March 12-21: Vacation
 - March 25-29: Data Council Conference: Austin, TX
- Andy Hamilton
- Kent Headley
 - 300078 - DMO Support - AUV
 - Studying Dorado behavior code; hoping to help with behaviors to support I2MAP tow-out capability
 - 901101 - Seafloor Mapping
 - Updated TRN intragration package for Sentry:
 - Fixed cmake build errors (libtrnav, mframe) due to packaging changes for libpthread, libm in macOS and linux
 - Updated doc
 - Tested on macOS, Ubuntu 22.04
 - Merged updates to trndev branch of MB-System
 - 902204 - Scalable Robotics
 - Gemini sonar driver, added status bar feature, installed for cruise 2/9
 - Reviewing change image format ID in LCM messages from Gemini sonar driver
 - 902405 - Precision Control Technologies
 - Working on outline for doc
 - Overhead
 - Hiring: application review
 - Misc admin

- Rich Henthorn
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Experiments with new controller (V3) system OS variants
 - Ported image processing Python script to V3
 - Good results but the performance is lacking - may need to convert to C++
 - 902306 - SINKER
 - Control board software
 - 902401 - Geo-Sense
 - Weekly meeting
 - Prep for meeting with Sintela next Monday
 - Out of Office
 - Feb 12 - 16: WFH Tu Th F, vacation M W
- Brett Hobson
- Irene Hu
 - 300078 - DMO Support - AUV
 - Met with Erik and Alana to discuss project; initial googling
 - 901805 - Coastal Biogeochemical Sensing Program
 - Made changes to schematic for mpHox revB, just waiting on some connectors for testing
 - Reviewed Jose's layout for NC-Nanofet, which is now ready to be sent out
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Divided control board into two boards. Solidworks mockup incorporated/approved by Aaron. Split nets on schematic, added connectors, reorganized schematic
 - Materials sent out for design review
 - Out of Office
 - May 3-15: Taiwan
- Scott Jensen
 - 706008 - READI-Net
 - Lots of preparation for dock deployment
 - Running into an issue with competing mechanical needs between puck manipulation and fluidics
 - Developed protocols for sampling
 - Out of Office
 - Due to covid exposures
 - April 5-9 vacation
 - June 17-21 vacation
 - July 18-23 vacation
 - July 24-29 vacation
- Brent Jones
- Chad Keczy
 - Out of Office
 - Jan. 22- Potential Jury Duty
 - Out of office on Fridays
- Brian Kieft
 - 901513 - Targeted Sampling by AUVs
 - Troubleshoot gazebo sim internal with Yanwu. Fixed nvidia driver issues.
 - Lab tested gain change for buoyancy inner PID P term for more aggressive buoyancy control during PAM missions. Will sea trial today.
 - 902101 - LRAUV Technology Development
 - Lots of Gazebo simulator work. Pushed new docker images to public repo.
 - Testing with WHOI on gz sim

- Lots of testing on Galene and Ahi following Mon/Tue deployments.
- Fixed issue with goToSurface, altitude envelope, and keepstation behaviors
- Fixed vertical control mode flipping issue
- Did another basic MMP test in the lab
- Fixed up some config issues with our tethysl default missions
- Made a repo to hold our Thruster HE code
- Made a release repo for our partners at WHOI to use
- Fixed an issue with DAT timestamp being written with drift from DAT. Converted back to vehicle time.
- Sent fuel gauge test to WHOI collaborators and helped prep for Buzzards Bay deployment.
- Debugging WHOI bottoming incident during B&T. Solution sent.
- Reviewed PR for onboard TethysL execution. Testing at sea today.
- DQ2322 - Denmark Windfarm
 - Working logistics on horn site with team there
- Overhead
 - Collaboration agreement work with Ivan (UPC), Matteo (UPC), and Matt (Nature Conservancy). Awaiting approval for all
- 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
 - Ventana has an issue with valve pack delay. It was found there are no spares of French's valve pack controller. DJ has a couple more being built and assembled and is requesting PIC programming when those come in.
 - 300083 - DMO Support - LRAUV
 - BPC2 firmware
 - 901009 - CANON
 - Met with Kobun to discuss goals for this year.
 - 901805 - Coastal Biogeochemical Sensing Program
 - Glider groundfault, prelim testing shows potential diff between aft and mid pcase can source 2.5uA. Working with Joe and Irene to craft a micro amp data logger out of either an MFET+modified MCAP or a CurrentRanger. Testing has been on the bench so far and next steps are to take measurements in seawater with the housing closed.
 - pHFET-SOS v5.0 testing on nanoFET and MpHOx
 - Working with Irene on MpHOx revB hardware and instrument drivers.
 - 902004 - Planktivore
 - Board testing
 - Prep and deploy Ahi + PtvrV2.
 - Watch standing for Ahi. Weather affected some of the team availability for watchstanding. Very appreciative of new DMO team stepping up.
 - Slides, planning, held Planktivore kickoff Feb 6.
 - Out of Office
 - Feb 8 - 12 Vacation Colorado
 - Feb 18 - 23 OSM24
 - Apr 5 - 10 Eclipse

- Mike McCann
 - 500055 - VARS, M3/RS, DSG
 - Fixed vfcbydive frame grab processing to now get position data from EMDB's REST API
 - 901101 - Seafloor Mapping
 - Met with Janny & Karen – we have a plan to use form entry in SMDB to collect additional info
 - Meeting with capstone Team Draco on Friday
 - 902403 - Expedition DB Modern
 - Team meeting to start collecting user stories in a Google Jamboard
 - Meeting with capstone team on Friday – they picked GraphQL
 - Exploring OAuth2 social account implementation in EMDB
 - Cleaned up EMDB pagination and implemented infinite scroll for Expeditions view (using HTMX)
 - Overhead
 - Created video of 10 Hz pontus attitude data with the shark bite video & [shared on slack](#)
 - Checking all the steps for regular nav data processing between EXPD and EMDB
- Rob McEwen
- Paul McGill
- Enoch Nicholson
 - 706008 - READI-Net
 - Fluid path diagramming
 - Reagent bottle concepting
 - 901007 - Benthic Biology & Ecology
 - BRS Schematic / instrument disassembly
 - 902306 - SINKER
 - Wiper testing on Ventana
 - Pressure testing of glass ports
- Tom O'Reilly
- Mike Risi
 - 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
 - 901809 - Deep Sea Bioinspiration
 - EyeRIS on Scuba
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Setting up camera capture PC
 - 902001 - Ventana 4k Camera
 - White balance testing on Ventana
 - 902004 - Planktivore
 - Deployment on LRAUV Ahi
 - RIMS data ingest and testing dataset bootstrapping
 - 902204 - Scalable Robotics
 - Building second HSI camera system
 - OSM poster
 - 902306 - SINKER
 - Wiper testing on Ventana
 - Out of Office
 - Jan 9-Jan12 at CES
 - Feb 19- Feb 24 Ocean Science Meeting

- Brent Roman
- Carlos Rueda
 - 901502 - Ocean Soundscape
 - The mbari/pbp docker image is now 1.0.3. Container enabled and successfully tested on 'gizo': <http://gizo.shore.mbari.org:8899/> (thanks IS for installing docker on gizo)
 - With the team, delineating next steps (docker-based use cases, etc)
 - 902101 - LRAUV Technology Development
 - LRAUV Application and TethysL: The implementation of the new direct .tl loading mechanism has been merged into the current release branch, which is being exercised at sea with Galene. In short, the usual loading mechanism via the compiled .tx files will remain the default one for the time being, but we now have a new config setting that allows to activate/deactivate the new mechanism to proceed with testing in real operations. Many many thanks to Quinn S. and Brian K. for their assistance.
 - 902204 - Scalable Robotics
 - Fixes in the image display implementation in Dial
 - Out of Office
 - Feb 8, 19: Dentist appts.
- Karen Salamy
 - 200103 - Core CTD Data - MDUC
 - Awaiting updates from ETP3...
 - 300057 - Mooring Maintenance
 - Weekly checks on data downloads, etc.
 - 901101 - Seafloor Mapping
 - Met with the team briefly on next steps.
 - 902101 - LRAUV Technology Development
 - On hold while I am taking my react 18 online course.
 - 902403 - Expedition DB Modern
 - Attended this week's meeting. Will carve out some time to try and write up a few simple user requests between now and the next meeting.
 - Overhead
 - Class: The Ultimate React Course 2024: React, Redux & More by Jonas Schmedtmann on UDEMY.COM. Very informative and helpful course so far! Highly recommend.
 - 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
 - Wrapping up integration tests for the backend renovation of the VARS services.
 - <https://github.com/mbari-org/annosaurus/pull/41>
 - <https://github.com/mbari-org/annosaurus/issues/18>
 - Running interactive tests with the VARS applications against the renovated services.
 - 902002 - FathomNet
 - Investigated bug when fetching very large taxa trees. <https://github.com/fathomnet/fathomnet-rest-api/issues/24>
 - 902403 - Expedition DB Modern
 - The team worked on user stories to guide development. <https://github.com/mbari-org/expd-feedback/issues/4>
 - Investigating off-the-shelf "Marine Facilities Planning" software as a potential replacement for the EXPD web interface. <https://mfp.us/>
 - 902404 - 5th Marine Imaging Workshop

- Working with Jennifer Durdent to assemble a science committee. <https://miw2024.org/>
- Alana Sherman
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Working on poster for ASLO
 - 902208 - Mini ROV Operations
 - Helped troubleshoot issues with clump comms
 - Spoke to Dale about software updates and will get started with those plans
 - Scheduling for both the aquarium and MBARI PIs. After some false starts, I think Ian and I have a viable plan for the spring.
 - 902401 - Geo-Sense
 - Preparing for kickoff meeting with DAS manufacturer, also looking at housings for DAS unit, several options but each with its own issue.
 - Overhead
 - Finished reviewing postdoc files
 - Out of Office
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- George Stern
 - 902204 - Scalable Robotics
 - P3 testing on the paragon
 - Added heat pipe to reduce roof lidar temperature
 - RTK driver debugging, configuration/initialization changes
 - 902304 - Piscivore Cam
 - PCv3 system care abouts doc and PCv2 camera build help
 - Kick off meeting
 - 902306 - SINKER
 - Battery module controller schematics started
 - 706008 - (READI-net)
 - Completed reader antenna tuning - Scott says it works!
- Johann Voigtlander
 - 902208 - Mini ROV Operations
 - Reinstalled Focal Box
 - Started preparing racks for 20' container
 - Started DSP&L RMA
 - 902402 - CSEM
 - Submitted CSEM vessel proposal