

WeeklyReport

Engineering Weekly Report 12/4/2025 - 12/11/2025

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

Executive Council Notes

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Individual Activities

- Michael Anderson
- Kevin Barnard
 - Out of Office
 - Nov 26 - Dec 2: vacation
- Francois Cazenave
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Working on 2-point mooring
 - Designing new buoy
 - Testing compensator and laser
 - 902106 - Niobicon-Based AUV Docking Development
 - Meeting with IFREMER
 - Planning recovery
- Danelle Cline
 - Out of Office
 - November 26th vacation
- Duane Edgington
 - 901502 - Ocean Soundscape
 - Back from a weeklong Acoustic Society of America meeting. Highlights were DAS applied to passive acoustic monitoring of biological signals on the OOI cable out of Seattle, Baleen whale PAM and tagging, Dolphin sound analysis via machine learning.
- Jon Erickson
- Kevin Gomes
 - 300062 - DMO Support - Doc Ricketts
 - Data extraction and analysis for Ricketts dives
 - 706008 - READI-Net
 - Prep for and participate in all day meetings with USGS for FIDO demonstration
 - 901009 - CANON
 - Some ODSS support requests
 - Overhead
 - End of year budget and organization
 - Out of Office
 - Dec 22 - Jan 2: Vacation
- Andy Hamilton
- Kent Headley
 - 701147 - DMO Support - MARS O&M
 - tested a change set that provides indicators for the channel currently being scanned for groundfaults, and calculation/display of a timing hint.
 - configuration/test of remote desktop setup from mac/linux

- 901101 - Seafloor Mapping
 - syncing repos
 - returning to some work started earlier this year related to using TRN on ROVs
- Overhead
 - staffing planning
 - review planning
 - reviewing job descriptions and review forms
 - misc admin, mbwa
- Out of Office
 - 12/22-1/2 vacation
- Rich Henthorn
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Improved variable event trigger system
 - Refactor event detection
 - Other improvements and fixes
 - Overhead
 - ReCom stuff
 - Out of Office
 - Dec 11 - WFH
 - Dec 19 - Jan 1: Vacation
- Akshay Hinduja
 - 901809 - Deep Sea Bioinspiration
 - Meetings with CVision to kickstart Oceanshot bigelow grant work
 - 902101 - LRAUV Technology Development
 - Finished v1.0 of tethystales, completing initial requirements from LRAUV dev team
 - tagged in mbari-org github
 - Pushed to dockerhub mbari/tethystales
 - Tested on lrauv lab computers, pending announcement for broader mbari users
 - 902204 - Scalable Robotics
 - Refined and finished getting data for ASV surveys of MBARI dock, assist with data verification
 - Getting back into Sonar based navigation, looking at data from sponge ridge for localization and loop closure detection
- Brett Hobson
- Irene Hu
 - 901805 - Coastal Biogeochemical Sensing Program
 - Continued work on alkalinity sensor
 - Troubleshooting w/ contractor Jim's help to fix filesystem issues w/ mphox rB
 - Data processing to try to extract inflection point, found faster data needs block average so might make sense just to measure slower
 - Troubleshooting and calcs on current source for 2-3% error. Has to do with Howland pump nonideal behavior, will do some tests once a more precise lab setup is ready to determine how much of a problem it is
 - Designed some parts in Solidworks to hold floating anode design
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Assembled some photos / videos for engineering update
 - Out of Office
 - Dec 25 - Jan 2: vacation
- Scott Jensen

- Out of Office
 - Vacation December 22- January 2
- Brent Jones
 - 901112 - Monterey Bay Time Series
 - Deploy and recover LRAUV
 - 901502 - Ocean Soundscape
 - Create new VM with IS since gizmo can no longer run matlab R2022b needed for Triton processing
 - 901805 - Coastal Biogeochemical Sensing Program
 - Completed pcb for n channel ISFET
 - Prepping all 4 nanofet v2 pcb for manuf
 - 902004 - Planktivore
 - Investigating power consumption on Orin
 - Overhead
 - Communications workshop
- Chad Keczy
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - Out of Office
 - 12/05 (MST)
 - 12/08 (MST)
 - 12/20-01/02 (various)
- Denis Klimov
- Eric Martin
 - Out of Office
 - Underwater Intervention 12-2-12/8
 - Vacation 11/25-11/26
 - Vacation 12/22-12/24
- Thom Maughan
 - 300078 - DMO Support - AUV
 - Hyperion power supply design / layout
 - Review power entry board, send for fab
 - 300083 - DMO Support - LRAUV
 - Battery packs are assembled and waiting for degaussing by Denis
 - Ran simulation on switching converter, lowered the frequency to improve thermal, reviewed with Erik and then modified the packs
 - Reviewed Evan's heat sink design
 - 901009 - CANON
 - Configured a hi perf server from Puget, provided Francisco the \$70K quote for a potential deepedna3. Also provided Sebastian a \$20K quote for upgrading fast storage on DeepEdna1 and 2
 - 901217 - Chemical Sensors
 - Preparing the MoSoS v5.1.8 release for handoff to UW at end of December. Jess has been manually testing pre-releases. Planning to start running regression tests end of this week.
 - Found and fixed the teraterm issue affecting some laptops and usbserial cables.
 - 902004 - Planktivore

- Brent is working to lower the power consumption on the Orin. We also have found that 3 to 4w could be saved by switching to a different machine vision camera.
- Out of Office
 - Vacation TBD around Christmas
- Mike McCann
 - 901101 - Seafloor Mapping
 - Looked over Karen's feature branch code changes deployed on smdb-dev
 - Advising capstone students, namely about merge conflicts with mbgrd2gltf
 - 901910 - Plankton Taxonomic Groups from AUVs
 - Testing new LRAUV processing through to STOQS for jul2024, apr2025, jun2025, & sep2025
 - Applying fixes as the new auv-python software finds more edge cases with these log files
 - Out of Office
 - 22 December - 2 January: Vacation
 - 5-19 January: Remote work
 - 20-23 January: ESIP Winter Meeting - remote attendance
- Paul McGill
 - Out of Office
 - I've been busy sleeping in because I'm retired!
- Enoch Nicholson
 - Out of Office
 - Thursdays at MLML
- Tom O'Reilly
- Mike Risi
 - 200105 - Core Navigation - MDUC
 - Fixed some bugs in Ricketts interface processes
 - 300062 - DMO Support - Doc Ricketts
 - Support of ROV deployments
 - Working with Ben B. on CTD pressure issue
 - Updated process for \$PMBANP to provide CTD data to SMD control system
 - 300070 - DMO Support - Ventana
 - Working on change to external control interface
 - 901101 - Seafloor Mapping
 - LAS AUV scoping meetings
 - Out of Office
 - Offsite on Tuesday and Friday
 - March 3 - March 6, 2025 - vacation
 - June 2 - June 6, 2025 - vacation
 - June 16, 2025 - vacation
 - July 2, 2025 - vacation
 - July 29 - August 1st - vacation
 - November 10 - November 14 - vacation
 - December 1 - vacation
 - January 2, 2026 - vacation
 - January 19, 2026 - January 30, 2026 - vacation
- Paul Roberts
 - 901221 - Midwater Time Series
 - Sony FX6 4k120p testing
 - 901809 - Deep Sea Bioinspiration
 - SOI planning
 - Scuba-EyeRIS

- 902306 - SINKER
 - Planning for recovery on Dec. 12
 - Testing alternative flux camera settings
- Out of Office
 - Nov 22 through Nov 30, Scotland
 - Dec 26 through Jan 4, San Diego
- Brent Roman
 - 708184 - ESP Monitoring PNW
 - Provided a bit of help to Steph's lab debugging ESP 2G gripper issue
 - 901205 - ESP SURF Center
 - Completed configuration of T2-chip equipped MacBook Pro
 - Built bootable USB SSD to facilitate recovery and cloning
 - Found and fixed problem where FIDO WiFi AP was being assigned random MAC
 - Scripted custom APN rewriting logic needed for connecting SIM7672G cell modem
 - Took weeks to work this out!
 - Sent script to SIMCom with plea to fix module firmware bug necessitating this
 - 902304 - Piscivore Cam
 - Dropped framerate to 30hz as an experiment for remainder of this deployment
 - Overhead
 - Helped Brett Hopson choose a replacement for LRAUV's CradlePoint router
- Carlos Rueda
 - Out of Office
 - Dec 1–11, 22–30: vacation
 - Jan 2–5: vacation
- Karen Salamy
 - 300057 - Mooring Maintenance
 - Weekly monitoring of data downloads.
 - 901101 - Seafloor Mapping
 - Fixed the database load deletion on my development server smdb-dev following the VM upgrades last week. The download of the database took several hours to complete. I now have a nightly backup system to hopefully avoid the deletion from occurring on the server again.
 - The new development server for the SMDB project can be found at: <http://smdb-dev.shore.mbari.org:8001/> and is built for full development tests before creating pull requests (github repo) and deployment to the production server.
 - 902101 - LRAUV Technology Development
 - I will be resuming updates to github bug requests this week until the end of the year.
 - 902306 - SINKER
 - Completed 2025 SINKER Dash updates and revision requests. The app can be found here: <http://sinker.shore.mbari.org/sinker/>
 - Overhead
 - Looking into an IS vulnerability alert and how to best approach the fix for both:
There is a significant vulnerability in [React Server Components](#). CISA has added it to their Known Exploited Vulnerabilities (KEV) catalog which indicates they have evidence of active exploitation in the wild.

This impacts React Server Components specifically, not React as a whole. Unfortunately for us, that includes downstream frameworks including [next.js when using App Router](#). Based on a cursory GitHub scan, this appears to impact the following repos:

*Dash5: next version **15.2.3**, fixed in **15.2.6***

- Out of Office
 - On Vacation for Christmas Holidays: Mon. Dec. 22, 2025 - Fri. Jan 9, 2026. Back in the office on Jan 12th. I will be online and available to help during this time, albeit intermittently.
 - On-campus 3 days/week (**T, W, TH**). New OFFICE - G106.
- Brian Schlining
 - Out of Office
 - Nov 15, 2025 - Nov 21, 2025 - PAIDIVER workshop. University of Southampton, UK.
 - Nov 26, 2025 - Dec 3, 2025 - Vacation
 - Apr 6, 2026 - Apr 24, 2026 - Vacation
 - May 18, 2026 - May 22, 2026 - Marine Imaging Workshop, Gibraltar
- Alana Sherman
 - Overhead
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- George Stern
 - 300078 - DMO Support - AUV
 - Began looking into PID controllers and reverse engineering the small pressure chamber design to make the testing easier
 - 902204 - Scalable Robotics
 - Tested new extremely accurate clock trigger board and rebuilt Mola's OAK-D500m chassis with the board
 - Updated HSI light schematic
 - 902304 - Piscivore Cam
 - System planning for next year to optimize use of 2025 money
 - 902306 - SINKER
 - Flux strobe lighting power analysis and options
 - 902106 - Niobicon-Based AUV Docking Development
 - G.hn COTS UTP/STP transmitters and anticipated performance research
 - Other coms options to spend this years money
- Justin Tucker
 - Out of Office
 - Fridays through March 2026
- Johann Voigtlander
 - 902204 - Scalable Robotics
 - Debugging Blueboat tailscale disconnection. Purchased an RTC to integrate
 - Drew up sensor baselines in solidworks for data processing
 - Surveyed the harbour where RC & DP moor up
 - 902208 - Mini ROV Operations
 - Purchased DVL and VN100, started looking into integrating into the mini
 - Looking into purchasing stock to build a new swing arm mount as a spare
 - 902402 - CSEM
 - Got final approval for CSEM shipment to Antarctica. Need to finalize palletizing with Matt & ship the pallets out
 - 902504 - Scalable Semantic Mapping
 - Organizing payment for 4Dnav use in the Arctic
 - Out of Office
 - Dec 16th - Jan 10th - Vacation
 - May 30th - June 5th

■ Oct 9-13th