

WeeklyReport

Engineering Weekly Report 12/11/2025 - 12/18/2025

<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
- Danelle Cline
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - Trained RF-DETR models with single-class and multi-class for comparison. 0.95 mAP@0.5 best with single-class cteno sp. A.
 - 901221 - Midwater Time Series
 - Evaluating pseudo-labels. Classification performance improvement ~ 10% when ambiguous categories, e.g. marine snow and marine organisms removed. Object detection model performance needs improvement.
 - 901502 - Ocean Soundscape
 - Continued work on the real-time workflow. Integrated PBP simple API for creating hybrid millidecade netCDF for visualization with algorithm outputs.
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - [Argo workflow](#) created for running RF-DETR object detection model via k3s cluster. Next step is to deploy through the Tator admin console. This will allow any member of the team to process the images post-deployment without a need for programming.
 - 902111 - Carbon Flux Ecology
 - Evaluating [Voxel51](#) enterprise and community versions. So far, data visualization on training data sets is fast; corrections through the embedding lasso based query with our trained models is very intuitive. Model evaluation and integration with our vector database are on the radar. A big thanks to all who have helped, including Andrew McCann, Laura Chrobak, Kevin Gomes, and Henry Ruhl!! Next steps are to evaluate its use on large collections of 200K and 1million localizations.
 - Out of Office
 - Dec 22 - Jan 2: Vacation
- Duane Edgington
 - 901502 - Ocean Soundscape
 - Applying the very recently released model [orcAI](#) to selected Soundscape archive recordings. This is a keras/tensorflow single species detector, with output well integrated with Audacity. I am running on Nvidia DGX-Spark very effectively. Processing a month of recordings from April 2018, which is our test for Orca, dolphins, baleen whales, and background to access specificity and accuracy. So far, performance is encouraging...
 - Overhead
 - Made reservations and registration for OSM conference Feb 2026 Glasgow.

- Jon Erickson
- Kevin Gomes
 - 200105 - Core Navigation - MDUC
 - Fixed bug in DiveLog on Packard
 - Worked with Risi to get wind data flowing and logging after crew fixed sensor wiring to signal distribution box
 - 902403 - Expedition DB Modern
 - Debugged some processing that has been broken since 2022!!
 - Added packard to ship nav loads
 - Out of Office
 - Dec 22 - Jan 2: Vacation
- Andy Hamilton
- Kent Headley
 - 701147 - DMO Support - MARS O&M
 - Worked with Bryan Schaefer and Adriana to load the GUI updates onto the production MARS stack. Initial tests were good, and found a couple of issues exposed by having the real hardware. Those have been addressed, and expected to re-test this week.
 - 901101 - Seafloor Mapping
 - Updated the TRN CMakeLists build configuration files in libtrnav and MB-System to improve readability, remove unneeded stuff, support all libtrnav targets (which may be put into an optional build group).
 - Sync'd trndev branch w/ master and libtrnav
 - Reviewing work started 2025/03 to update ROV TRN to improve TRN plugin algorithm implementations and potentially fix issues, along with other TRN core updates based on input from Steve Rock.
 - 902405 - Precision Control Technologies
 - TRN CMakeLists update for libtrnav (see Seafloor mapping)
 - Overhead
 - Review prep, form review
 - SEE Group Lunch
 - Misc admin
 - Out of Office
 - 12/22-1/2 vacation
- Rich Henthorn
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - More fixes and improvements with testing
 - Overhead
 - RC merchandise
 - Out of Office
 - Dec 18 - WFH
 - Dec 19 - Jan 1: Vacation
- Akshay Hinduja
 - 901809 - Deep Sea Bioinspiration
 - Sync up and attend OceanShot 3d meetings with CVision, prep work for the same
 - 902101 - LRAUV Technology Development
 - Analyze potential issue with frame of reference assumptions, looks ok and normal
 - 902204 - Scalable Robotics
 - Assist team with s7k conversion of harbor survey lcm-logs
 - Improvements made to 7k-writer and mbs-tools yaml file read for sonar settings

- Converted data to s7k to meet EOW deadline for DMO using 7k-writer, and fixed bugs in lcm-logs from 11/26
 - Resume ironing out sonar based navigation troubles with loop closure detection and optimization.
- Brett Hobson
- Irene Hu
 - 901805 - Coastal Biogeochemical Sensing Program
 - Alkalinity: Iterating on 3D printed parts for floating anode design
 - Getting boards ready for alkalinity tests
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Tested GUI with full setup including camera, some bug fixes
 - Measured some blank targets for white balance / normalization
 - Out of Office
 - Dec 25 - Jan 2: vacation
- Scott Jensen
 - Out of Office
 - Vacation December 22- January 2
- Brent Jones
- Chad Key
 - 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
 - 300079 - DMO Support - RV Rachel Carson
 - Mars support for telepresence last friday
 - 901217 - Chemical Sensor Program
 - CPF buildup for RUDICs testing
 - New laptop for testing use, installed .NET Micro
 - Shoreside VM setup
 - 902204 - Scalable Robotics
 - EOY Spending
 - Lab cleanup
 - Mola2 battery checkout
 - Out of Office
 - Vacation 12/22-1/2
- Thom Maughan
 - Out of Office
 - Vacation TBD around Christmas
- Mike McCann
 - 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
 - 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
 - Out of Office
 - Nov 22 through Nov 30, Scotland
 - Dec 26 through Jan 4, San Diego
- Brent Roman
- Carlos Rueda
 - 901809 - Deep Sea Bioinspiration
 - Completed some previously uncommitted adjustments in the Bulk Review UI.
 - 902101 - LRAUV Technology Development
 - Dash4 [4.97.7](#).
 - TethysL [4.8.0](#), a significant release as it removes the prerequisite of having java on the system. VS Code Extension tested on macOS, Linux, and Windows. (Thanks IS for the loaners.)
 - LRAUV: Removed the (nightly) XML mission validation cronjob: Not really needed anymore. (Full TethysL mission validation continues to be done as part of the LRAUV nightly build.)
 - Overhead
 - More preparations of the `tethysdash2-u` vm that will replace current `tethysdash2`.
 - Out of Office
 - Dec 1–11: vacation/sickness/some remote work
 - Dec 19, 23–30: vacation
 - Jan 2–5: vacation
- Karen Salamy

<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.

<http://sinker.shore.mbari.org/sinker/>

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***

*Sinker-Dash: next version **15.3.3**, fixed in **15.3.6***

- 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
 - 500055 - VARS, M3/RS, DSG
 - Update VARS services on the R/V David Packard and Rachel Carson. Addressed migration issues on the RC related to the recent upgrade from CentOS 7 to Rock 8.
 - Working on consolidating various VARS orchestration projects in <https://github.com/mbari-org/vars-quickstart-mbari>. The orchestration requirements have evolved over the years and the older projects, such as <https://github.com/mbari-org/m3-microservices> (testing and ship use) and <https://github.com/mbari-org/m3-quickstart> (external use) have become difficult to update and maintain.
 - Deployed vars-quickstart-mbari on [gehenna](#) for testing. Deployed to David Packard.
 - Continue to work with Paul Rodgers on the [VARS Knowledgebase editor](#). Addressed [some issues](#) related to approving/rejecting changes by an administrator.
 - Fixes for the various VARS house keeping tasks that run on the new server Elrond.
 - Investigating migrating [VARS Annotation](#) to JDK 25. tl;dr avoid using [gradle](#) to build things if you can.
 - 902002 - FathomNet
 - Meeting to review the Bulk UI editor tool
 - 902111 - Carbon Flux Ecology
 - Revisiting <https://github.com/mbari-org/vars-legacy-migrator> to complete the import of image annotations from a very old VARS database into the current system
 - Overhead
 - Updated <https://miw2026.org> web site. Abstract submissions are now open for the 2026 Marine Imaging Workshop in Gibraltar.
 - Continuing to work with University of Hawaii's [DARC](#) lab to update their VARS installation to run the latest web apps.
 - Out of Office
 - Apr 6, 2026 - Apr 24, 2026 - Vacation
 - May 18, 2026 - May 22, 2026 - Marine Imaging Workshop, Gibraltar
- Alana Sherman
- George Stern
 - 300078 - DMO Support - AUV
 - Finally identified and ordered a replacement for the stripchart recorder and pressure controller
 - 902204 - Scalable Robotics
 - Worked with Jose on the HSI light respin layout
 - Ordered light and pcb bom
 - Bracket for light faceplates
 - 1st remote test of the OakD/RPI in a water proof box; camera looks terrible and it kept loosing connection

- 902304 - Piscivore Cam
 - Purchasing and planning for next year
- 902306 - SINKER
 - Programmed and tested 3 in work battery pack assemblies; identified a bug and a hardware problem, updated the 3 + the previously completed assembly with new code to patch the bug.
 - Retested the fully completed assembly by recharging a pack (working); power consumption tests on the remaining 3 in work assemblies indicates 2 are drawing excessive power; awaiting etech support to confirm a suspected manufacturing issue
- 902106 - Niobicon-Based AUV Docking Development
 - Reviewed development kit and transmitter options and resulting phy layers for cable purchase
- Justin Tucker
 - Out of Office
 - Fridays through March 2026
- Johann Voigtlander
 - 902204 - Scalable Robotics
 - Integrated new Cerulean sonar on Blueboat
 - Cleaned lab
 - Added RTC to Blueboat
 - 902208 - Mini ROV Operations
 - Building up a 10" PC rack
 - Purchased Focal GME boards
 - 902402 - CSEM
 - The shipment finally left!
 - Purchased foul-weather gear
 - Organized files
 - 902505 - 2025 Arctic Expedition
 - Made PO for 4DNAV
 - Out of Office
 - Dec 16th - Jan 10th - Vacation
 - May 30th - June 5th
 - Oct 9-13th