

Engineering Weekly Report 1/8/2026 - 1/15/2026

<https://docs.mbari.org/internal/projects/Engineering/Weeklies/2026/>

Executive Council Notes

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Individual Activities

- Michael Anderson
- Kevin Barnard
- Francois Cazenave
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Troubleshooting laser
 - Designing new mooring
 - PTO Compensator modification
 - 902106 - Niobicon-Based AUV Docking Development
 - Project management
 - Planning
 - 902204 - Scalable Robotics
 - Meeting
- Danelle Cline
- Duane Edgington
 - 901502 - Ocean Soundscape
 - Team meeting Jan 14.
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting Jan 13.
 - Preparing to download and analyze benchmark testset through our best RF-detr object detector, to gather metrics. It will be useful to have the metrics and workflow in place to compare data and model performance with our new higher-resolution camera and lens setup.
 - Out of Office
 - January 8, 2026. Thursday. Personal Day
- Kevin Gomes
- Andy Hamilton
- Kent Headley
 - 701147 - MARS O&M
 - Worked with Bryan and Knute to install and test the new SSD image.
 - Put together a spreadsheet to track various SSDs and disk images used for MARS. It includes a lookup area that provides a printable summary to store with devices (e.g. spares).
 - 901101 - Seafloor Mapping
 - Finally resolved a bug that I chased for a couple of weeks. The issue manifested as segfaults caused when some (but not all) references to a particular object were invalid, as most of its data members appeared to be shifted 8 bytes in memory. Furthermore, when it occurred seems to be affected by when the first references were made.
The root cause turned out to be that the class in question was both compiled with application sources, and linked in a library. However, the compilation options - one of which included an

extra class data member - were different for the library and the application code.

This created conflicting (and context-dependent) references for the object memory layout at run time, and hilarity ensued.

Shout out to Tom, Brent, and Dave for their fine debugging ideas.

- Resuming the refactoring effort sidetracked by the deep bug-chasing rabbit hole.

- 902204 - Scalable Robotics
 - project kickoff meeting
- Overhead
 - Annual review prep (mostly)
 - hyperion meeting
 - misc admin
- Rich Henthorn
 - Out of Office
 - Jan 12 to 16 - Vacation next week
- Akshay Hinduja
 - 901809 - Deep Sea Bioinspiration
 - Set up and run NNInteractive in Slicer 3D to determine suitability of the method for segmentation tasks
 - Conclusion is that it can be great manual segmentation tool as long as binary masks are good.
 - Look at SAM3 suitability towards segmentation
 - 902101 - LRAUV Technology Development
 - Attended kick off meetings, learn more about the years tasks
 - 902204 - Scalable Robotics
 - Continue refinements on loop closure and factor graph implementation for Sonar Based Navigation stack
 - Made key fixes and improvements on system.
 - Optimized database look up for reference search, uses 65% less time for the task
 - Unified and tested loop closure and reference matching pipelines to be similar for ease of understanding and changes.
 - Loop closures starting to look better behaved
 - Implementation of NDT matching to complement/replace ICP for more robust multi resolution matching
 - Out of Office
 - Friday, Jan 16, daughters drs appointment 9am -12 pm
- Brett Hobson
- Irene Hu
 - 901805 - Coastal Biogeochemical Sensing Program
 - After various iterations of flowcell and electrode holder for alkalinity floating anode experiment, finally tested it... massive leakage, needs further redesign
 - Some project coordination for mini ISUS
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Revised motor interface board for two motors + minor fixes. New version ordered
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Tested batteries for next deployment. Drawdown under load is higher than expected, but after some convos w/ Paul M and Alana, think it's within reason considering losses through measurement setup
- Scott Jensen
 - 901205 - ESP SURF Center
 - Preparations for Rio. Dug up previous configuration drawings and began working to implement the configuration for the Tupan

- Year planning around deployments and installations throughout the year
- 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Beginning build up of test bench power electronics
 - Support of Battery build
- 902106 - Niobicon-Based AUV Docking Development
 - Project planning meetings for the year
 - Investigated options for copper solutions between surface and floor
- Out of Office
 - March 23-31 (estimate)
- Brent Jones
- Chad Key
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
- Denis Klimov
 - 702106 - CeNCOOS
 - Looking into purchasing spare parts for the IFCB.
 - 902004 - Planktivore
 - Working on the assembly notes for the Planktivore instrument optics.
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Looking how to use the upcoming deployment to have a repeatable fluorescence standard.
 - 902401 - Geo-Sense
 - DAS Jan 12th deployment was postponed to the Feb 3rd; so now we have more time for the Test Tank testing. In mean time, we have to move the Laser Lab A282a into A283, due to the upcoming facilities work, and in case if we would need to open the sphere and work with the laser before the upcoming deployment days.
- Eric Martin
 - 902606 - Low Altitude Survey AUV
 - Kickoff meeting 1/14
 - Overhead
 - Reviews
- Thom Maughan
 - Out of Office
 - Vacation Jan 5 - 9
 - Photonics West, 1 day, likely Jan 20
- Mike McCann
 - 901101 - Seafloor Mapping
 - Considering 3DTiles 1.1 work in MB-System now that Cesium grant is in place for X3DOM
 - 901910 - Plankton Taxonomic Groups from AUVs
 - Created a [set of Jupyter Notebooks](#) useful for evaluating problems with LRAUV data processing
 - Solved Issue of [Inconsistent incorrect LRAUV processing to final_1S.nc file](#)
 - Running auv-python processing for all LRAUV deployments in 2025 and finding more issues
 - Out of Office
 - 5-19 January: Remote work
 - 20-23 January: ESIP Winter Meeting - remote attendance
- Enoch Nicholson
 - Out of Office
 - Thursdays at MLML
- Tom O'Reilly
- Mike Risi

- 200105 - Core Navigation - MDUC
 - Updates to Doc Ricketts processes to report instrument power state
- 300062 - DMO Support - Doc Ricketts
 - Working with Quinn on pan and tilt presets
- 300070 - DMO Support - Ventana
 - Helped bring terminal servers up after network upgrades
- 901101 - Seafloor Mapping
 - Working on LASS simulation for control system refactoring
- 902606 - Low Altitude Survey AUV
 - Kick of meeting for project
- Out of Office
 - Offsite on Tuesday and Friday
 - January 2, 2026 - vacation
 - January 19, 2026 - January 30, 2026 - vacation
- Paul Roberts
 - 901221 - Midwater Time Series
 - Review of field data from new camera and planning for future deployments
 - 901513 - Targeted Sampling by AUVs
 - ESP adaptive sampling video review
 - 901809 - Deep Sea Bioinspiration
 - ScubaEyeRIS assembly and testing
 - ScubaEyeRIS pendant controller design
 - 902004 - Planktivore
 - Timestamp correction for canon 2025
 - 902111 - Carbon Flux Ecology
 - Planning for SINKER March 5 deployment
 - 902204 - Scalable Robotics
 - Planning meeting
 - 902603 - Miniature 4K Subsea Optics
 - Project coordination
 - 902606 - Low Altitude Survey AUV
 - Scoping meeting
 - Out of Office
 - Jan 22 - Photonics West (SF)
 - Feb 21 - Feb 27: OSM 2026, Glasgow
 - Feb 28 - Mar 8: Vacation, Scotland
 - Mar 9 - Mar 13: OI 2026, London
 - April 13 - May 1: Falkor (too) Bioinspiration Lab
- Brent Roman
 - 901205 - ESP SURF Center
 - Working with FIDO team to create a separate /boot filesystem
 - So that the rootfs can be recovered on next boot after FIDO loses power
 - Lots of testing of improved WiFi and cell modem management in ESP Linux
 - Supporting NWFSC NOAA's repairs of their ESP's grippers
 - Discovered that RTL8723DU WiFi chips work on the Parkard
 - When RTL8723BU WiFi chips do not associate with its Cisco APs at all
 - Ported driver for the 8723DU to ESP Linux kernel
 - Testing for long term stability
 - 902304 - Piscivore Cam
 - Readied G3 camera for another deployment

- Altered focus to near infinity
- Carlos Rueda
 - 901502 - Ocean Soundscape
 - Migrated [humpback-whale-song-detection](#) to using [uv](#) as project manager (from poetry).
 - Completed Google/NOAA humpback whale song detection scores for all our time series. Moving forward with a regular update, put in place a daily cronjob to generate the score product for the previous day.
 - PBP:
 - Added a [Release Notes](#) page to the PBP documentation.
 - Migrated type checker from mypy to [ty](#), which already proves its power by uncovering several issues. A future modernization update is to also migrate to [uv](#).
 - (From EC note being submitted by JR). The Ocean Soundscape team met with personnel from NOAA Fisheries and the NOAA Office of National Marine Sanctuaries this week. We are supporting their adoption of [open source software](#) co-developed by MBARI and a European colleague. The software processes voluminous passive acoustic monitoring data to compact standard data products, which in turn enable research for scientific and management purposes.
 - 902101 - LRAUV Technology Development
 - Group meeting.
 - Dealing with an issue involving the service behind the dash4 TrackDB feature (which allows the display of other assets on the map, besides the LRAUVs). Dash4 settings that determine the time window for display may be involved when such a window is rather large, which may also happen when selecting a long playback time range.
 - 902504 - Scalable Semantic Mapping
 - Migrated Dial backend to using [uv](#) as project manager (from poetry).
 - Overhead
 - IE group meeting.
 - Out of Office
 - Jan 16: vacation
- Karen Salamy
 - 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
 - [Major new release of Mondrian](#), an image annotation app.
 - Added [NOT LIKE query](#) to [annosaurus](#) to support [gridview](#).
 - Meeting with Kris Walz and Neil Conner to close out the titan to thalassa migration of all MBARI videos.
 - Now that the VARS system includes web applications ([query](#), [kb editor](#)), the microservices need to be put behind a proxy with an SSL certificate. Created [vars-quickstart-public](#) to simplify creating a VARS stack with SSL for non-MBARI labs. This project is based off of [vars-quickstart-mbari](#) which is used at MBARI to run VARS on the ships.
 - 902111 - Carbon Flux Ecology
 - Continuing work on migrating annotations from a legacy VARS database to the current system. Verified that the migrated localization (points, lines, polygons) show up in Mondrian.
 - Overhead
 - Helped Astrid Leitner (OSU) address issues with their labs VARS server.

- Helping Lisa Krigsman (NOAA) address issues with video formats for their VARS system
- Out of Office
 - April 6 - April 24: Vacation
 - May 18 - May 22: Marine Imaging Workshop, Gibraltar
- Quinn Shemet
 - Out of Office
 - Jan 16th - Vacation
 - Jan 19th - Jan 22nd - Offsite
 - Feb 17th - Feb 19th - Vacation
 - Feb 23rd - Feb 28th - OSM, Glasgow
- Alana Sherman
- George Stern
 - 902106 - Niobicon-Based AUV Docking Development
 - meeting
 - 902111 - Carbon Flux Ecology
 - Tested battery #3, may be some manufacturing issues?
 - 902204 - Scalable Robotics
 - Completed build of 2 HSI lights, and the remaining 3 electronics stacks
 - Swapped and tested the new luxonis camera in the mola docking camera assembly; the old camera threw errors on ROS2 kilted but worked on Jazzy, the new camera throws errors on Jazzy but supposedly works on Kilted; looked like a number of people were begging Luxonis to fix for Jazzy, hopefully they come through
 - Continued working on ESC controller software, getting close.
 - 902304 - Piscivore Cam
 - Chasing framos for a quote
- Justin Tucker
 - Out of Office
 - Fridays through March 2026
- Johann Voigtlander
 - 902204 - Scalable Robotics
 - Cleaned up the lab for the National Geographic tour
 - 902208 - Mini ROV Operations
 - The A125 DVL LabVIEW integration is nearing completion.
 - Out of Office
 - Dec 16th - Jan 10th - Vacation
 - May 30th - June 5th
 - Oct 9-13th