

WeeklyReport

Engineering Weekly Report 6/5/2025 - 6/12/2025

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

Executive Council Notes

- All regression and integration tests for the new **MSC3 (MBARI Sensor Controller version 3) electronics** and **MoSoS v5.1.7 (MBARI Oceanographic Sensor Operating System)** were successfully completed at the University of Washington. This is perfectly timed, as we've recently run out of the **Persistor CF2-based MSC1** units, which are no longer produced due to hardware end-of-life. Nitrate and pH sensor production will continue for the bio-geochemical enabled Argo floats. Hu, Maughan, Metter, Davis, Plant, Takeshita, Johnson

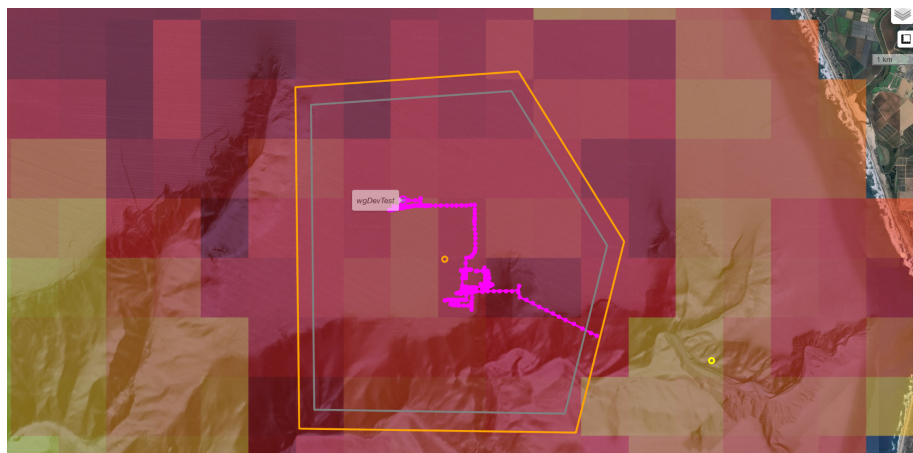
Individual Activities

- Michael Anderson
- Kevin Barnard
 - Out of Office
 - May 8, 2025 - May 9, 2025 – vacation
 - May 22, 2025 - May 23, 2025 – vacation
 - Jun 3, 2025 - Jun 10, 2025 – vacation
 - Jun 11, 2025 - Jun 15, 2025 – CVPR
 - Jun 23, 2025 - Jun 26, 2025 – HPE Discover
 - Aug 7, 2025 – vacation
 - Aug 11, 2025 - Aug 12, 2025 – vacation
- Francois Cazenave
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Monitoring buoy
 - 902106 - Niobicon-Based AUV Docking Development
 - Assembling Brizo
 - Working on proposal
 - 902204 - Scalable Robotics
 - Designing Ventana Mapping drawer
- Danelle Cline
 - Out of Office
 - Vacation 5/26-5/30
- Duane Edgington
 - 901502 - Ocean Soundscape
 - Project planning meeting with intern Fanny Oppenheimer
 - Looking into pcen (per channel energy normalization) of data input to kaggle google multi-species whale model, as alternative to the denoising/normalization I have been applying.
 - Out of Office
 - Doctor appt June 9; recovery at home June 10-11
 - Dentist appt Jun 18, 2025
- Jon Erickson
- Kevin Gomes
- Andy Hamilton
- Kent Headley

- 901101 - Seafloor Mapping
 - Performing timing tests on new decimation code. Dave C is reporting significantly increased run times when comparing new code to tag used for 2024 Axial. Working to reproduce those results.
 - The TRN performance does seem to be improved in the new code, which may be due to the new decimation, or another change recommended by Steve Rock recently that was implemented after Axial 2024.
- 901221 - Midwater Time Series
 - Trying to determine what codebase is used for chamber controllers. Bob H indicates is it O5 expander, but the hardware is quite different; it may actually be O4 chamber controller, or it's possible that the O5 firmware works for both.
 - Got O4 chamber to build, but could not get the Java Unified Host Bootloader App (UHBA) to work on macOS. So much for "write once, run everywhere"...I was able to run UHBA on a windows machine. I could get UHBA running on macOS only using the Java 1.8 runtime that ships with MPLABX; however, the serial port stuff didn't work. I suspect a combination of old 32-bit JNI code that ships with UHBA and/or purejavacomm serial libraries that it depends on.
 - Got some test software for the O5 expander working; it's modbus RTU, so rather painful to debug, but working now.
- 902204 - Scalable Robotics
 - reviewed some changes to mb1stream proposed by Bastian, and pushed a test implementation to try. The changes are intended to simplify his workflow by flattening file output paths and enable mirroring in images.
- Overhead
 - Hiring: scheduled a new internal tech interview for next week.
 - Misc admin
- Out of Office
 - May 23 (vacation)
 - Jul 14-31 (vacation)
- Rich Henthorn
 - Out of Office
 - Occasional sick days Apr 21 to May 12
 - May 19 - May 29: Vacation, email contact
- Akshay Hinduja
 - Out of Office
 - July 3 - July 8 Vacation
- Brett Hobson
- Irene Hu
 - 901217 - Chemical Sensors
 - Help troubleshooting MSC3 - broken spec, broken mcap, etc
 - 901805 - Coastal Biogeochemical Sensing Program
 - Mini ISUS build BOM
 - Start organizing to order boards for mini ISUS, mods as needed
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Started organizing notes for "manual", updated battery sphere - MARS schematic for Sense wire issue
 - Overhead
 - Helping to fly drones
- Scott Jensen
 - Out of Office
 - 7/3-7/25 vacation
 - 7/17-22/25 vacation

- Brent Jones
- Chad Keczy
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - 300083 - DMO Support - LRAUV
 - Makai, Pontus, Ahi, Daphne all deployed this week! Lots of on call support.
 - 902101 - LRAUV Technology Development
 - Met to discuss piscovore gen 3 integration
 - Found issue with nav in sci2 and other regular science missions.
 - 902106 - Niobicon-Based AUV Docking Development
 - Docking in full swing with Pontus this month. Had to defoul yesterday but going fairly well otherwise.
 - Overhead
 - Some AUV tutorial work and collab work
 - Out of Office
 - 05/27-06/02 (MST)
 - 6/16-24 (MST)
 - 9/15-30 (UTC+2)
- Denis Klimov
- Eric Martin
 - 901101 - Seafloor Mapping
 - Lab setup
 - Board meeting materials for Dave.
 - 902204 - Scalable Robotics
 - Intern onboard, PM'ng
 - Mola fiber term repair failed, ordering new parts from NZ
 - Board meeting support for Javi
 - 902504 - Scalable Semantic Mapping
 - Final checkout of POECan2
 - Cable assembly and Test
 - Laser work with Denis
 - 3D sonar checkout and test
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 - Out of Office
 - Jun 10, 2025 - Jun 22, 2025 : Vacation
- Thom Maughan
 - 901217 - Chemical Sensors
 - Milestone achieved. MSC3 revD + Tiva 1290 revB running MoSoS v5.1.7 firmware passed linux regression tests and APF11 controller testing and is now moving forward to several weeks of FloatSim integration testing. On track to at sea testing mid August in Monterey Bay.
 - ChemSensors production is using MSC3 as the Persistor CF2 based MSC1 is officially at an end having recorded 4 million pH and 3 million Nitrate samples.
 - 902004 - Planktivore
 - Ahi+Planktivore V2 was deployed for Plankton Proxies along with MBTS mission
 - Benthic Planktivore V1 is charged and being readied for deployment next week by the Barry Lab for deep-sea coral and sponge community observatory.
 - Out of Office
 - Vacation: June 16 to July 8
- Mike McCann

- Out of Office
 - 6 June – Sick day
 - 23-26 June – Vacation
 - 21-25 July – ESIP Summer Meeting
 - 28 July - 8 August – Remote work
 - 10-14 August – SIGGRAPH
 - 18 August - 5 September – Vacation
 - 8-13 September – Web3D & Digital Heritage Conference
- Paul McGill
 - 701147 - MARS O&M IV
 - Bringing George S up to speed on UW work for MARS MVPS
 - Overhead
 - Packing up my office—so many boxes!
 - Helping DJ with power monitor for 480 V feed to Ventana
- Enoch Nicholson
- 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
- Paul Roberts
 - Out of Office
 - June 20 - June 29, Whistler, BC
- Brent Roman
 - Out of Office
 - May 30 – June 23
- Carlos Rueda
 - 901502 - Ocean Soundscape
 - PBP software maintenance
 - Group meeting with intern, Franny O.
 - 901513 - Targeted Sampling by AUVs
 - Very successful first run of new chlorophyll patch tracking exercise using the development wave glider. Thanks much to Chris W. for the assistance. The tracking logic per se behaved as designed. I'm now working on refining the logic for handling boundary conditions (i.e., for when the vehicle gets inside/outside boundary polygon) while also improving simulation and visualization.



- 902101 - LRAUV Technology Development
 - Dash4:
 - The user can now star ★ stations (info saved in the browser's local storage). Complementary to this, the station list is now ordered by name, with the starred ones at the top. This ordering is also applied in the dropdown when selecting waypoints in the waypoint editor.
 - For better legibility, set some transparency for the display of tile layers on the map.
 - Dash system: Two issues have been observed recently, one apparently involving the new authentication system (refresh token related?); the other, delayed responses from the backend, possibly involving a recent adjustment in the default event sorting. Investigating, but some tests will have to wait until some ongoing vehicle deployments are completed.
- Out of Office
 - Beginning of June: 4-6 days vacation
 - June 30–July 2: vacation
- Karen Salamy
 - 200103 - Core CTD Data - MDUC
 - Updated the EXPD with the most recent ROV CTD O2 data flags from Rob Sherlock.
 - 300057 - Mooring Maintenance
 - Working with Jared to set up the M1 202507 test system for deployment in July. The system is currently set up in the Bird Cage.
 - 901101 - Seafloor Mapping
 - Discussed helping Jenny P. in late July with the SMDB GUI.
 - 902101 - LRAUV Technology Development
 - Worked on a quick issue last week for the project.
 - 902306 - SINKER
 - Building up the new SINKER DASH for the team preparing for their mid-July deployment.
 - Discussed my time for 2026 proposals.
 - 902403 - Expedition DB Modern
 - I attended team meetings.
 - Overhead
 - Various festivities for the DOEST, Board Meeting, Ship christening, etc., etc.,
 - Out of Office
 - June 17, 2025 - Personal vacation day
 - June 19-20, 2025 - Personal vacation day
 - On-campus 3 days/week (**T, W, TH**). New OFFICE - G106.
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - Updates to [Oni](#) to support [Kb](#) development
 - 902002 - FathomNet
 - Review responses to reviewers comments on submitted paper.
 - Continuing [re-vamp of backend](#). Working on [flyway](#) migrations to help support future updates.
 - 902403 - Expedition DB Modern
 - Working on 2026 project proposal
 - Out of Office
 - Jun 12 - Vacation
 - Jul 21 - 24 - Vacation
 - Aug 11 - 12 - Vacation
 - Aug 18 - 21 - Vacation
- Alana Sherman
 - 901904 - Deep-Sea Coral-Sponge Community Observatory

- Trying out some bigger memory cards
- 902401 - Geo-Sense
 - Got budget transfers in order and figured out where we are at financially
 - Tank test of linden cable, all looks good
 - Ordered shipping case for linden cable
 - Working on logistics for Norway deployment
- Overhead
 - DOEST presentation last week
- Out of Office
 - June6-june9, vacation
- George Stern
 - 701147 - MARS O&M IV
 - Few meetings to begin picking up Paul's knowledge
 - 902204 - Scalable Robotics
 - Spent far too much time learning the overly complicated boxfish fiber termination; then broke it after following the process. New parts on order.
 - 902208 - Mini ROV Operations
 - Began looking at converters in 400-700V tier as most of the 800V products announced last year still aren't available yet.
 - 902304 - Piscivore Cam
 - Printed and began fit checking the chassis
 - Kitted boards for Etech build
 - Attempts to capture sundown to compare video noise/illumination between the next gen and gofish cameras hasn't gone to plan due to buggy cameras and a few software glitches
 - 902306 - SINKER
 - MARS meetings and mars cable design - for some reason it does not match the ROVs; thank you to Alana for saving the project by having a Ti MINK10 connector available.
- Justin Tucker
 - 300078 - DMO Support - AUV
 - INS housing assembly drawing update
 - INS housing post test analysis
 - 901101 - Seafloor Mapping
 - LASS Lidar position estimate
 - AUV proposal, 6DOF cost and mass estimate
 - Out of Office
 - Out Monday 6/9, traveling and partially available 6/6 and 6/10
- Johann Voigtlander
 - 902204 - Scalable Robotics
 - Laser assembled in new housing
 - 3D printed PoE can mount brackets and laser/camera caps
 - Tested PoE gear: cameras, lights, multibeam, laser...
 - Ordered parts to daisy chain additional lights
 - 902402 - CSEM
 - Engineering drawings of the datalogger protective housing were made
 - Out of Office
 - Dec 16th - Jan 10th - Vacation
 - May 30th - June 5th