

WeeklyReport

Engineering Weekly Report 6/19/2025 - 6/26/2025

<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
 - 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
 - Buoy inspection dive
 - 902106 - Niobicon-Based AUV Docking Development
 - Brizo assembly
 - Proposal
 - 902204 - Scalable Robotics
 - Assembly of ventana mapping drawer
- Danelle Cline
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - Performance improvements to Vector Search System (VSS) vector database for scalability to search for vellela in archives
 - 901221 - Midwater Time Series
 - Minor exploration of tracking using botsort
 - 901502 - Ocean Soundscape
 - Intern mentoring weekly meeting and modifications to [topic modeling](#) code to support Franny's project. Addressing many questions. Humpback Topic Modeling for olive humpback phrase
 - Addressed PBP issue #78
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Annotation system moved to <https://drone.mbari.org> debugging issues with SSL failure through python API. Shark localizations verified by external collaborators.
 - Intern meeting with Tim. Addressing many questions. Kelp coverage using Meta Segment Anything Model (SAM).
 - 902111 - Carbon Flux Ecology
 - Finalizing processing pipeline for clustering ~3 million ROIs from ISIIS video taken during Hawaii expedition. This pipeline uses both a fine-tuned plankton model and a foundational model. Many thanks to Fernanda for her help generating ROIs and brainstorming ideas for the pipeline.
 - Planktivore team labeling second iteration of clustered labels.
 - 902306 - SINKER
 - Researching ideas for backend design.

- Overhead
 - Updated AI docs <https://docs.mbari.org/internal/ai/>
- Duane Edgington
 - 901502 - Ocean Soundscape
 - Intern Fanny Oppenheimer weekly meeting.
 - Proposal 2025 work
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting
 - Intern Tim Sananikone weekly meeting.
 - Out of Office
 - Dentist appt Jul 2, 2025
- Jon Erickson
- Kevin Gomes
- Andy Hamilton
- Kent Headley
 - 300078 - DMO Support - AUV
 - started reviewing I2MAP mission to streamline using macros
 - 901007 - Benthic Biology & Ecology
 - checked in new chamber controller programming doc and included on oasis5 doc website (<http://fangtooth2.shore.mbari.org/oasis5>)
 - 901221 - Midwater Time Series
 - trying to develop on wbs outline for M1 software for different options
 - 902504 - Scalable Semantic Mapping
 - updated oculus sonar GUI and mb1stream for upcoming cruise
 - Overhead
 - hiring: internal tech interviews and discussion
 - contributing to job description updates
 - resource requests
 - proposal input
 - misc admin
 - Out of Office
 - Jul 14-31 (vacation)
- Rich Henthorn
 - Out of Office
 - June 19 - Rachel Carson
 - June 30 - July 7: Vacation, email contact
 - Aug 7 - Aug 11: Vacation, email contact
- Akshay Hinduja
 - 902204 - Scalable Robotics
 - Testing Sonar based navigation stack
 - Improved matching metrics with Hausdorff distance implemented
 - Wrote new lcm publisher for state estimate
 - Wrote MB system point cloud to database script
 - Bug fixes to Norbit driver + standalone gui
 - Cruise preparations for Thursday 26th June
 - Out of Office
 - July 3 - July 8 Vacation
- Brett Hobson
- Irene Hu
 - 901805 - Coastal Biogeochemical Sensing Program

- BME280 errors on mini ISUS baseboard traced to soldering issues. Baseboard checks out again, succeeded in running overnight scans
 - Pushing through mini ISUS parts orders
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Picked up SES and TT on Monday
 - Start troubleshooting TT modem
 - Start SES conversion to MARS, beginning with SIIM can conversion
 - Overhead
 - Continued measurements and data processing for ORP sensor
 - Out of Office
 - 6/27-7/4: vacation
- Scott Jensen
 - 706008 - READI-Net
 - Continued work on the code's conversion to exceptions. Mostly cleaning up loose ends.
 - Setting up the build environment to reflect that it is running on the FIDO PCB
 - 808015 - Monitoring McCloud
 - Still watching the power stations
 - 901205 - ESP SURF Center
 - Supporting build up to CANON
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Meetings and discussions about state machines and the best implementation for the battery.
 - Out of Office
 - 7/(3-7)/2025 vacation
 - 7/(17-22)/2025 vacation
- Brent Jones
 - Out of Office
 - Vacation
- Chad Key
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - Out of Office
 - 05/27-06/02 (MST)
 - 6/16-24 (MST)
 - 9/15-30 (UTC+2)
- Denis Klimov
 - Out of Office
 - Vacation 6/11/2025-6/16/2025
- Eric Martin
 - Out of Office
 - Jun 10, 2025 - Jun 22, 2025 : Vacation
- Thom Maughan
 - 901217 - Chemical Sensors
 - Simulation at UW is half complete, no issues reported. Float deployment in Monterey Bay first week in August.
 - 901805 - Coastal Biogeochemical Sensing Program
 - Modified phfetsos v4.2.4 to ensure cr-lf transmit prior to sleep for LRAUV integration. Sounds like other problems encountered so a switch to polled mode is likely.
 - 902004 - Planktivore
 - Proposal

- Out of Office
 - Vacation: June 16 to July 8
- Mike McCann
 - Out of Office
 - 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
 - Out of Office
 - Medical appts all day Tue
- Enoch Nicholson
- Tom O'Reilly
- Mike Risi
 - 200105 - Core Navigation - MDUC
 - Continuing navproc integration on David Packard
 - 300062 - DMO Support - Doc Ricketts
 - Working on pan and tilt integration
 - 901101 - Seafloor Mapping
 - LASS AUV scoping meeting
 - Working on GOB computer board firmware for LASS
 - 902405 - Precision Control Technologies
 - Working on testing midwater tracking control loop response to frequency sweep, still trying to eliminate the pitch oscillation
 - 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
- Paul Roberts
 - Out of Office
 - June 20 - June 29, Whistler, BC
- Brent Roman
 - 708184 - ESP Monitoring PNW
 - Testing updated telebuoy power supply
 - But, still seeing undervoltage failures
 - ESPeddie over half through its samples
 - But, its Forearm is suffering from a bad case of cage creep
 - Often needs manual intervention to get bearings aligned
 - 808015 - Monitoring McCloud
 - ESPgordon and ESPwaldo appear to be running well!
 - 901205 - ESP SURF Center
 - Helped Preston and Nadia rediscover old LRAUV bug preventing vehicle from starting its pppd
 - 901913 - Wet Wifi
 - Still debating what to do for next year
 - 902304 - Piscivore Cam

- Seem to have fixed the timing deadline failures by turning off sync mode in the queue for monitoring video.
 - Working with Brian on a “backseat” software interface for Piscivore
- Out of Office
 - May 30 – June 23
- Carlos Rueda
 - Out of Office
 - June 30–July 2: vacation
- Karen Salamy
 - Out of Office
 - June 19-20, 2025 - Personal vacation time
 - On-campus 3 days/week (**T, W, TH**). New OFFICE - G106.
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - VARS and [associated microservices](#) updated and installed on new machines on the David Packard and Rachel Carson.
 - 902002 - FathomNet
 - Continuing work on the [Micronaut to Quarkus port](#) of the REST API. The port of the API has been completed. Brian is working on full test coverage at the moment.
 - Overhead
 - Working on proposals
 - Paper “Assisting human annotation of marine images with foundation models” accepted to Marine Science. Congrats to the authors: Eric Orenstein, Benjamin Woodward, Lonny J Lundsten, Kevin Scott Barnard, myself, and Kakani Katija.
 - Helped an intern, Jamie Liu, set up a custom [worms-server](#) that includes the full plankton taxonomy.
 - Analyze anomalies in video files that were migrated from Titan to Thalassa for IS.
 - Discussions with University of Gibraltar about the 2026 Marine Imaging Workshop
 - Out of Office
 - Jun 12 - Vacation
 - Jul 21 - 24 - Vacation
 - Aug 11 - 12 - Vacation
 - Aug 18 - 21 - Vacation
 - Aug 26 - Sep 9 - Out of Office
- Alana Sherman
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Testing new larger card for macro- research and testing seem to indicate it will work
 - Remove and disposed of Li batt from Macro
 - 902208 - Mini ROV Operations
 - Proposal work
 - 902401 - Geo-Sense
 - Lots of details to get things set for Norway
 - Proposal work
 - Out of Office
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- George Stern
 - 902204 - Scalable Robotics
 - After many failed attempts finally got mola fiber reterminated and tested, thank you to Bryan, James and DJ for recommendations, tool loans and support

- After 2mths and some skillful prodding from Eric to their BD folks, luxonis responded to my help request providing new hardware requirements and previously undocumented code snippets to make FrameSync work. Initial testing indicates my current hardware solution will not meet the new requirements and must be reworked; testing with external TE to ensure the new solution will actually work this time once the hardware conforms to the new requirements is in progress.
- 902304 - Piscivore Cam
 - Meeting and continued work to integrate electrical and mechanical hardware for the Gen3 camera build
 - Finished initial comparative video between Gen2 and Gen3 cameras; there is a material improvement in low light capability, image quality and file sizes in the gen3 camera; FOV is smaller so a different lens may be needed
- 902306 - SINKER
 - Dry testing on the MARS simulator node did not go as planned, an odd link layer issue was found where auto negotiation failed to establish a link; hopefully Adriana will have time to work through some additional troubleshooting when she returns from the conference next week.
- 902106 - Niobicon-Based AUV Docking Development
 - Project proposal discussions and retesting power line modems with a shorter pole indicated that the giant capacitor theory is not the only problem.
- Justin Tucker
- Johann Voigtlander
 - 902204 - Scalable Robotics
 - Constructed the Ventana mapping drawer
 - Blueboat is back together
 - Working on battery safety
 - 902208 - Mini ROV Operations
 - Working on Arctic shipping logistics with KOPRI
 - 902402 - CSEM
 - Working on Arctic shipping logistics with KOPRI
 - Out of Office
 - Dec 16th - Jan 10th - Vacation
 - May 30th - June 5th