

# WeeklyReport

# Engineering Weekly Report 2/6/2025 - 2/13/2025

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

## Executive Council Notes

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## Individual Activities

- Michael Anderson
- Kevin Barnard
- Francois Cazenave
- Danelle Cline
  - 901221 - Midwater Time Series
    - Processing single i2MAP video with different models + BioTrack
  - 901502 - Ocean Soundscape
    - PBP job agent and Dask execution for speed-up of Soundtrap hydrophones
  - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
    - Pipeline load, detect, classify working. Need to teach the team how to use.
    - Evaluating YV11 model
  - 902111 - Carbon Flux Ecology
    - Fecal pellet subclass and discussion with Fernanda about ROI preprocessing and model comparisons
  - 902306 - SINKER
    - Backend prototyping to understand better how to create and populate the SVG. Many thanks to Steve Haddock for sharing his code
  - Overhead
    - Planktivore cluster exploration
    - Group meeting to discuss workflow tools
  - Out of Office
    - Vacation 2/21, 2/28-3/7
- Duane Edgington
  - 901502 - Ocean Soundscape
    - Continued work decimating/adjusting 256kHz RAW MARS 10 minute audio files to 24kHz. There is a frequency shift in the SoX decimated files (to 24kHz) that I am trying to understand and then eliminate.
    - Worked on batch processing of RAW files to decimated/normalized/offset-removed files
  - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
    - Generated yolo11x model for detection, using all verified object data in training/val/test split. Danelle to evaluate.
  - Out of Office
    - Feb 17 - 21, 2025. [International Symposium on Orcas](#). Online/Tarifa Spain UTC/GMT +1 hour
- Jon Erickson
- Kevin Gomes
  - 200105 - Core Navigation - MDUC
    - Working on local UDP proxy on navproc as transition period for API
    - Added Nav4D service to push raw 4D Nav out of a serial port as requested by Ethan/DJ

- Added more data/features to simulator
- 300057 - Mooring Maintenance
  - Met last week to discuss future proposals/plans
- 300079 - DMO Support - RV Rachel Carson
  - Deployed new ArcMapNav Add in for ArcGIS Pro that was written from scratch since the SDKs were so different.
- 706008 - READI-Net
  - Built another RockPi to have back for deployment
- 902403 - Expedition DB Modern
  - Working on documenting current scripts, batch files and stored procedures to scope replacement
- Overhead
  - Did walkthrough of ship data architecture with small group of interested folks
  - Tech brown bag about workflow tools
- Andy Hamilton
- Kent Headley
- Rich Henthorn
  - Out of Office
    - Feb 17 - 19: WFH and PTO
    - Mar 16 - 19: WFH and PTO
    - Mar 31 - Apr 3: WFH and PTO
- Akshay Hinduja
  - 902101 - LRAUV Technology Development
    - Finding simulator bug in LRAUV application
    - Causes some data to not be transferred through from gazebo from csv
  - 902204 - Scalable Robotics
    - Met with Mauro to go over S7K conversion tool, and discuss with Dave
    - Get frontend lcm log reader reader and converge WBMS and Navigation data together
    - Start formal exploration of wbms based relocalization module to supplement visual SLAM and usbl readings
- Brett Hobson
- Irene Hu
  - 901217 - Chemical Sensors
    - Tiva1290 rB modules complete and sent out for quotes; looked at interference w/ baseboard rD; various meetings and decisions on which versions of baseboard to go forward with, when
  - 901805 - Coastal Biogeochemical Sensing Program
    - Mini ISUS baseboard finished and sent out for quotes
  - 901904 - Deep-Sea Coral-Sponge Community Observatory
    - Trying to order some LEDs using new accounting system
    - Some discussions w/ Paul re: circuits and code; set up new code on bitbucket
  - 902305 - Event Detection Using the Sedimentation Event Sensor
    - Reviewed wiper situation based on photos
  - Out of Office
    - Feb 10: WFH
    - Feb 26 - Mar 9: vacation
- Scott Jensen
  - Out of Office
    - Feb 10 - 24 Tasmania Deployment
    - Feb 25 - March 7 vacation
- Brent Jones

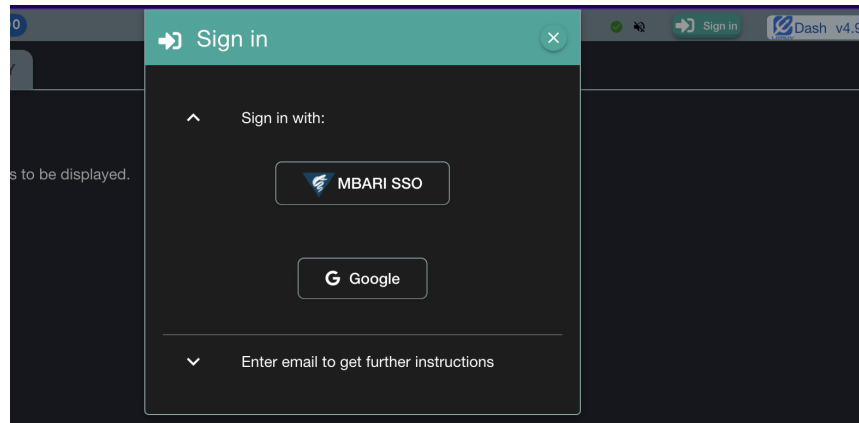
- Chad Key
  - Out of Office
    - Out of office on Fridays
- Brian Kieft
  - 300083 - DMO Support - LRAUV
    - Wrapped up mbts deployments last week with Daphne/Ahi
  - 901513 - Targeted Sampling by AUVs
    - Working with Yanwu on edge detection behavior concepts
  - 902101 - LRAUV Technology Development
    - Aku engineering deployment. Cut short due to battery issue
  - Overhead
    - Visiting Open Ocean robotics to test their ASVs. Will add a report to Erik's folder upon return. Chilly but sunny ops with lots of vessel traffic to deal with. Today we'll focus on software and more application space.



- - Out of Office
    - 02/10-14 Open Ocean (PST)
    - 02/25-28 (MST)
- Denis Klimov
- Eric Martin
  - Out of Office
    - Vacation 12/23-1/3
- Thom Maughan
  - Out of Office
    - Vacation 10 Feb to 18 Feb, Colorado and Texas
- Mike McCann
  - 901009 - CANON
    - Processed Dorado Gulper mission 2025.036.00
  - 902403 - Expedition DB Modern
    - Got tests to run in a fresh empty EXPD database in GitHub Actions
    - Team meeting to discuss contributing, workflows, and design
    - Continuing to iterate on Precruise & Postcruise functionality and tests
  - Overhead
    - Some software/workflow archeology regarding Pilot's Dive log synchronization
  - Out of Office
    - 14 - 24 February 2025: Some vacation, some WFH
- Paul McGill
- Enoch Nicholson
  - 706008 - READI-Net
    - Received trial production run of FIDO parts.
    - Testing printed components.

- 901205 - ESP SURF Center
  - Supporting SURF Center Team in Australia
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
  - Submitted paperwork to visit AMES at the end of the month for SCOAR meeting
- 902306 - SINKER
  - Created PCB cover plate for SINKER battery.
- Tom O'Reilly
- Mike Risi
  - 200105 - Core Navigation - MDUC
    - Preparing for one more navproc 2.0 test day in February before March deployment
    - Fixed Ventana CSP string parsing bug
  - 901101 - Seafloor Mapping
    - LASS AUV scoping meetings
    - Loon configuration and documentation largely complete
    - Getting prototype firmware ready for LASS board
  - 902405 - Precision Control Technologies
    - Working on Ventana interface for mwt-control code
    - Working on unit testing for RovLib framework
    - Fixed several bugs in the trajectory generator code
  - Out of Office
    - Offsite on Tuesday and Friday
    - March 3 - March 6, 2025 - vacation
    - June 2 - June 6, 2025 - vacation
- Paul Roberts
  - 702108 - Deployable AI
    - Planning for compute purchase
    - Planning for camera system build out
  - 901221 - Midwater Time Series
    - Opening i2MAP housing, swapping fans
    - Planning for 4k recorder upgrade
  - 901904 - Deep-Sea Coral-Sponge Community Observatory
    - SWIR controller layout
  - 902004 - Planktivore
    - Coordinating with CFE lab on planktivore data pipelines using aidata and sdcats
  - 902306 - SINKER
    - System controller updates with RTC and event scheduler
    - Sediment camera bulkhead upgrades to Ti
    - Orin Pylon camera acquisition software
  - 902405 - Precision Control Technologies
    - Purchasing hardware for universal AC/DC upgrades to interface housing
- Brent Roman
  - 708184 - ESP Monitoring PNW
    - Wrote scripts to reroute between cell and sat comms depending on service availability
  - 901205 - ESP SURF Center
    - Supporting the Tasmanian Away Team
    - EE Techs providing good support bringing up SPR boards
      - Identified and the software issue that was causing serial comms to fail
      - Still have a number of boards with unidentified hardware problems.
  - 901913 - Wet Wifi
    - Spoke with OceanComm about can flooding. Agreed to delay further work until April.

- Board bullets
- 902304 - Piscivore Cam
  - Researched more open alternative hardware architectures.
  - Advocated for higher power alternative architectures which also provide a much more open and well developed software ecosystem that would make it easier to establish optical requirements and iterate on optical parts
- Overhead
  - The office move in continues. Spec'd and ordered light filtering cellular shades.
- Carlos Rueda
  - 901513 - Targeted Sampling by AUVs
    - Still deciding on a practical approach to incorporate new patch tracking.
  - 901809 - Deep Sea Bioinspiration
    - Brief chat with Joost re planning next steps for the CMS UI.
  - 902101 - LRAUV Technology Development
    - TethysDash: As previously indicated, <https://oceanids.mbari.org/dash49/> now as a separate location with the new authentication mechanism in place for testing purposes. Updated [google doc](#) with the motivation and the (super easy!) steps on how to test.



Also, reverted <https://oceanids.mbari.org/dash4/> to having the traditional one. Keeping core LRAUV folks up-to-date with all of this.

- TethysL 4.3.6 (maintenance release)
- Overhead
  - Some technology exploration. Attended ACM TechTalk.
  - IE group meeting.
- Karen Salamy
  - Out of Office
    - Vacation March 3-11, 2025 - Holiday Vacation
    - On-campus 3 days/week ( **T, W, TH** ). New OFFICE - G106.
- Brian Schlining
- Alana Sherman
  - 902208 - Mini ROV Operations
    - Met with team to discuss work needed before the arctic
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  - 902401 - Geo-Sense
    - Went out to sea Thursday to survey cable
    - Connected to instrument but could not talk to DAS, got very depressed
    - Working on plans for our recovery beginning of March
  - Overhead
    - Finished personnel reviews
    - Had my own review

- Evaluated postdoc applications
- George Stern
  - 902204 - Scalable Robotics
    - Tested luxonis camera triggering which didn't seem to be working as specified; it isn't and luxonis is now debugging
  - 902304 - Piscivore Cam
    - Continued looking for rhonda/ambarella alternatives; evaluating some much higher power alternative architectures which also provide a much more open and well developed software ecosystem that would make it easier to establish optical requirements and iterate on optical parts
  - 902306 - SINKER
    - Tested and charged all remaining battery packs; boards\design are working as intended.
    - Finished harnessing design for pack bulkheads and connecting cable/harnessing for the controller
- Justin Tucker
  - 300078 - DMO Support - AUV
    - Work on INS vibration isolation design
  - 901007 - Benthic Biology & Ecology
    - Continue work on valve design tolerances
    - Redesign of ball check valve
    - Source FKM u cup seal
  - 901101 - Seafloor Mapping
    - Update AUV battery mass estimates
- Johann Voigtlander
  - 902204 - Scalable Robotics
    - MiniROV In test tank for camera and laser calibrations
  - 902208 - Mini ROV Operations
    - Dissassembled clump EPOD
      - Fixed vicor 850 degree C reading. I added an additional PT100 temperature probe.
      - Updated schematics with new changes
    - I opened up the thruster housing and found 'milky' oil and some metal particles. We are replacing that thruster in hopes it will clear the ground fault on the clump.
  - Out of Office
    - Dec 16th - Jan 10th - Vacation