

WeeklyReport

Engineering Weekly Report 9/4/2025 - 9/11/2025

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

Executive Council Notes

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Individual Activities

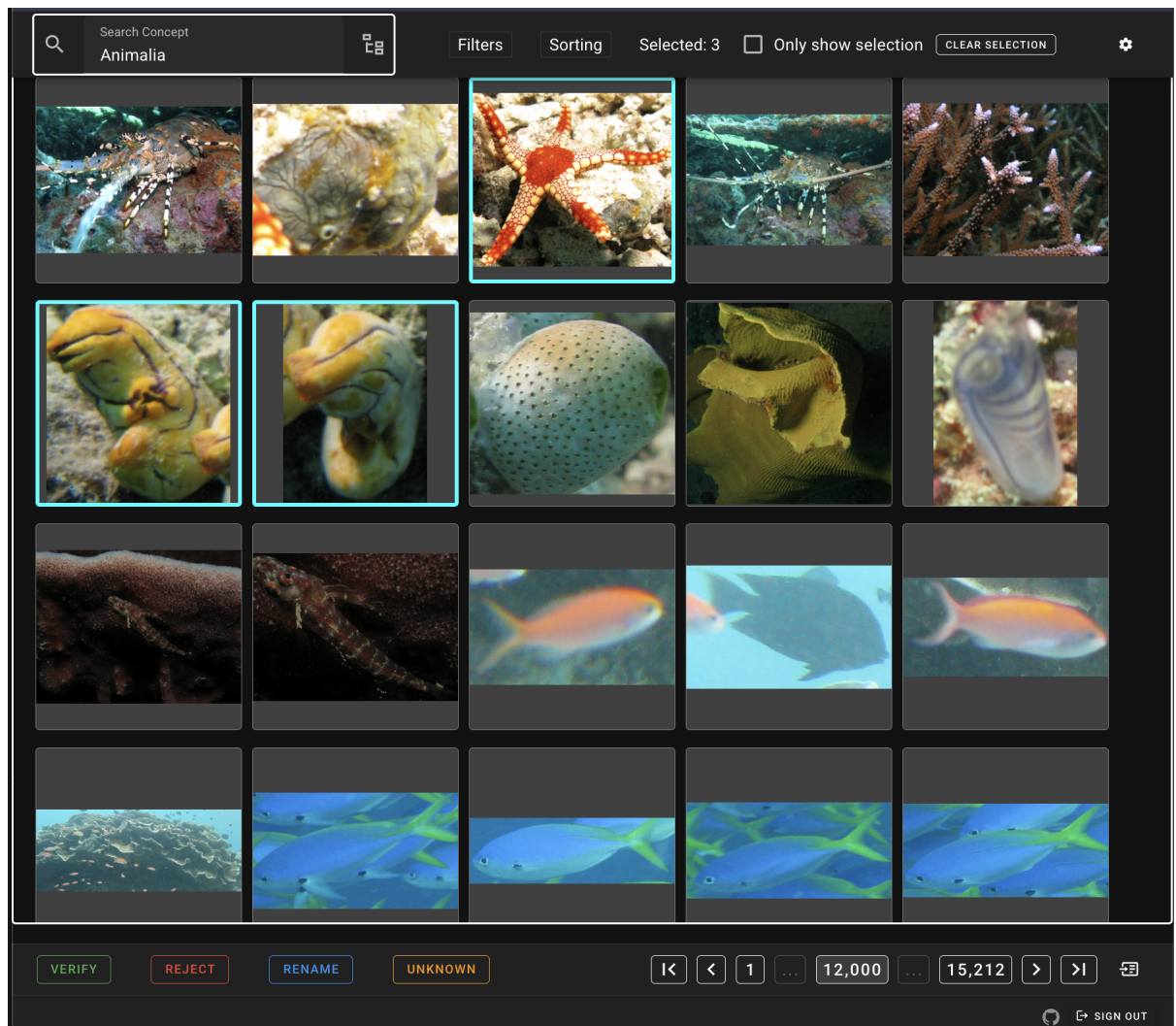
- Michael Anderson
- Kevin Barnard
- Francois Cazenave
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Monitoring buoy
 - Dove on the buoy to close the heave cone, install the acoustic modem for canon and refill the oil.
 - 902106 - Niobicon-Based AUV Docking Development
 - Assembling/designing new power transfer device
 - Out of Office
 - 1 day Vacation
- Danelle Cline
 - 901502 - Ocean Soundscape
 - Deployed near realtime resampled wav files with ZMQ messaging for downstream ML pipeline
 - Team meeting to discuss summer intern collaboration next steps
 - Some rsync maintenance on EOL Centos7 machine. Need to replace this VM.
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Minor maintenance to remove some duplicate loads
 - Some refactoring of the ML pipeline to move Tator image loads earlier with Axiom image sync as needed for better downstream processing
 - Backlog processing.
 - 902111 - Carbon Flux Ecology
 - Testing [elemental_id loading feature #26](#)
 - Planktivore High Mag. Starting batch process using VSS (Vector Search System - a system designed that uses a vector database, embeddings from ViTs models, and a FastAPI to mine for rare examples in planktivore high mag data.
 - 902306 - SINKER
 - Fixed [image brightness issue #10](#)
 - Trying to track down a strange issue with REDIS time series query not returning full data for multiple days as expected. Thanks to Karen S. for identifying this.
 - Overhead
 - Project management training
- Duane Edgington
 - 901502 - Ocean Soundscape
 - Project team meeting
 - Continued work testing Google Kaggle multispecies whale model. Processed month of 2020 October for scores of 4 classification targets, to compare with previously run models against that month's archive.

- Enabled workstation Olivia as a GPU-enabled (for tensorflow) model inference and processing platform (Soundscape's Gizo VM is often very heavily loaded, and is not GPU enabled). Mounts to Thallasa PAM archive and Analysis shares added by IS, and tested.
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Project team meeting
- Out of Office
 - Doctor appts.
- Jon Erickson
- Kevin Gomes
 - Out of Office
 - 8/29: Out of the office
 - 92-9/4: Working from home
- Andy Hamilton
- Kent Headley
 - 3000xx - DMO Support - MARS O&M
 - cloned test node hardware stack SSD
 - reviewing node control software logging
 - 902405 - Precision Control Technologies
 - editing and reviewing draft release of TRN documentation w/ Steve Rock, Rich Henthorn
 - Overhead
 - Proposal review, labor planning
 - SE hiring process
 - misc admin
 - Out of Office
 - 10/17-20 vacation
- Rich Henthorn
 - Out of Office
 - Sept 2 - 4: WFH with phone, email, network access
- Akshay Hinduja
 - 901809 - Deep Sea Bioinspiration
 - Met with CVision for project update meeting and to touch base on further development on OceanShot 3D pipeline
 - Identified approach for image stabilization, installed several SOTA models to test with DeepPIV data
 - Concluded that no current SOTA model works for the kind of data we have
 - Proposed using segmentation models with fixed aspect ratio framing works 80%
 - Identified potential approach for data denoising and masking for 3D slicer
 - Testing Diffusion models for automated image masking
 - Testing with a small dataset to train model on DeepPIV data
 - Overhead
 - Attended project management workshop
- Brett Hobson
- Irene Hu
 - 901805 - Coastal Biogeochemical Sensing Program
 - Check in on mini ISUS- one fiber is a little too short
 - Mphox rB broke, waiting for rC to test alk board
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Comms to motor controller from cpu via RS485 board works; made various cables
 - Code for motor controller

- System diagram updates
- Overhead
 - Rec comm meeting
 - MBuddy training session
- Out of Office
 - Sept 1 - 5: vacation
- Scott Jensen
 - 706008 - READI-Net
 - Preparing instrument for dock deployment on sept 4
 - Out of Office
 - 9/(8-12) Vacation
- Brent Jones
 - 901112 - Monterey Bay Time Series
 - Finally got new SIPPER PIC32 to program. Found 2 floating processor inputs that caused ICSP programming to fail. Tied the lines and am now off porting PIC24 code to PIC32 code
 - 901502 - Ocean Soundscape
 - Running Triton click detection on all of 2018. Taking forever!
 - 901405 - Power Buoy
 - Drove paragon in support of power buoy dive ops
 - Out of Office
 - vacation
- Chad Keczy
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - Out of Office
 - 07/23
 - 07/28-08/01 (MST)
 - 08/25-29 (PDT)
 - 9/15-30 (UTC+2)
- Denis Klimov
- Eric Martin
 - 901101 - Seafloor Mapping
 - Phase II feedback last week on 902606
 - Starting INS work, checking in with the team.
 - 902204 - Scalable Robotics
 - Phase II feedback last week.
 - 902504 - Scalable Semantic Mapping
 - Phase II feedback last week.
 - 902505 - 2025 Arctic Expedition
 - Last Saturday we completed the part of the expedition where MBARI assets were being used to explore the Mackenzie River Outflow. In total, we had 2 AUV deployments, 6 ROV dives, and 3 CSEM deployments.
- Thom Maughan
 - 300078 - DMO Support - AUV
 - Hyperion mvc baseboard detailed design review and pcb layout, about 80% complete.
 - 300083 - DMO Support - LRAUV
 - Delivered two BPC2 battery packs for software testing on the LRAUV. Chris B made 3 cables that addressed noise issues. Reconfiguring for use without multi-drop rs232 for the first phase.

- Testing constant current charging and limit / fault testing. Found an issue with shore power adc values in certain test configurations, debugging it.
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- Mike McCann
 - 901101 - Seafloor Mapping
 - Presented [Interactive 3D Visualization of the Seafloor paper](#) at the Web3D Conference
 - Overhead
 - Chaired a paper session and served on best paper committee at the Web3D Conference
 - Out of Office
 - 8-13 September – Web3D & Digital Heritage Conference
 - 15-18 September – Vacation
- Paul McGill
 - Out of Office
 - I've been busy sleeping in because I'm retired!
- Enoch Nicholson
 - 706008 - READI-Net
 - Built first new FIDO cylinder assembly
 - Deployed FIDO on the dock
 - Installed camera mounting system in bucket for puck trials
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Working on camera payload
 - Overhead
 - Rec Comm meeting
 - M-Buddy training session
 - 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
- Paul Roberts
 - 901221 - Midwater Time Series
 - 4k upgrade, fiber port testing, chassis assembly
 - 901809 - Deep Sea Bioinspiration
 - Oceanshot imaging system design
 - SOI cruise prep, interface documentation
 - CANON Triton camera data management
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - SWIR camera and backlight chassis assembly
 - 902306 - SINKER
 - ZMQ system monitor
- Brent Roman
 - 708184 - ESP Monitoring PNW
 - Review of debug log info indicates that 2G ESP camera is not very linear
 - Tweaked autoexposure algorithm on deployed ESPfriday to better cope with this

- 901205 - ESP SURF Center
 - Configured ESP on David Parkard to allow both local and remote access
 - Only to discover that IS blocked all remote connections and VPN offshore
 - Worked with Andrianna to restore necessary connectivity.
 - Again.
 - Trouble with WiFi concurrent mode on RockPI-S
 - Seems OK in typical scenarios, but reconnects repeatedly on campus networks
 - Suspect some problem with roaming – more work needed
 - Installed RockPI-S with Raspberry PI on Dock to gain more data on connection stability
- 902304 - Piscivore Cam
 - 2nd deployment of 3rd Gen Piscivore
 - Increased record data rate from 4Mb/s to 13.24Mb/s
 - Discovered that record rate is limited by SDcard write rate of 20Mb/s
 - Reworked file naming convention per Lonnie's request
- Carlos Rueda
 - 901809 - Deep Sea Bioinspiration
 - Advancing the [Fathomnet Bulk Review UI](#).



- 902101 - LRAUV Technology Development
 - Dash4 is now [4.97.0](#); and TethysDash backend [4.98.1](#).
 - Some monitoring of the several deployed LRAUVs these days, with the TethysDash system proving stable and performant AFAICT.
- Karen Salamy
 - 300057 - Mooring Maintenance

- Just found out about an upcoming OA2 deployment on Sept. 16th. I have created the proper directory structure for testing and deployment. There will be a new CTD (RBR Concerto3) instead of a microcat. I have asked both Jared F. and Chris W. to potentially help me set up this new device accurately prior to the deployment.
 - 902101 - LRAUV Technology Development
 - I have added several of the new issue requests for the Dash5 LRAUV project during the last week (CANYON). I still have a few more to go but will finish these this week.
 - 902306 - SINKER
 - Much of my time over the last week was spent testing and preparing some major SINKER-DASH updates for the [SINKER production server](#). These updates were implemented last night.
 - Overhead
 - Had a bit of a family emergency the last 2 weeks but am now back in the office T, W, Th.
 - A lot of my overhead this past week was more for keeping my household going while the family situation progressed. I continued to work albeit remotely.
 - Out of Office
 - See Overhead comments above.
 - On-campus 3 days/week (**T, W, TH**). New OFFICE - G106.
- Brian Schlining
 - Out of Office
 - Aug 18, 2025 - Aug 21, 2025 - Vacation
 - Sep 3, 2025 - Sep 17, 2025 - Out of Office
- Alana Sherman
 - 902401 - Geo-Sense
 - Trying to work out details for Gaia blu proposal, mostly in deployment options
 - Running down details with winches here and on ship
 - Looking into ROV-free recovery strategy with pop-up buoy
 - Overhead
 - Helped with project management workshop
 - Phase 2 labor budget revisions
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 - Out of Office
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- George Stern
 - 902204 - Scalable Robotics
 - Integrated camera/light controller board with luxonis card and discovered uC pll was not sufficiently stable/jitter was still too high at low frame rates and each camera type needed an independently adjustable strobe timing. Respun a new board in kicad with external oscillator/multiple strobe signals and updated software.
 - Ordered parts for HSI light build
- Justin Tucker
 - Out of Office
 - Out 8/29 and 9/3
- Johann Voigtlander
 - Out of Office
 - Dec 16th - Jan 10th - Vacation
 - May 30th - June 5th