

Engineering Weekly Report 9/12/2024 - 9/19/2024

<https://docs.mbari.org/internal/projects/Engineering/Weeklies/2024/>

Executive Council Notes

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Individual Activities

- Michael Anderson
- Kevin Barnard
 - 500055 - VARS, M3/RS, DSG
 - Packaged V4426 and V4430 MBARI 452k YOLOv8 tracking runs for ingest to VARS
 - 701165 - OVAI Phase II
 - Began development of FathomVerse: Aquarium Explorer with contractor Imagine Studio
 - Prepared content for FathomNet Marine Imaging Workshop interactive session
 - 902204 - Scalable Robotics
 - Ported lcm_action_server library to Python
 - Implemented prototype control/navigation/mission servers as part of Mola Routing System (MolaRS)
 - Began implementation of REST API for MolaRS
- Francois Cazenave
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Trip to buoy to turn off switch
 - Recovery planning
 - Cable order
 - Mooring design
 - 902106 - Niobicon-Based AUV Docking Development
 - Photosensor design
 - 902204 - Scalable Robotics
 - Bracketry design and assembly
 - Out of Office
 - Vacation
- Danelle Cline
 - 902111 - Carbon Flux Ecology
 - Initial training labels are being tested with ResNet18 model. Next steps are to mine for rare examples to balance the training data using vss.
 - Evaluating Argo Workflows as a way to orchestrate integrated machine learning workflows in mantis
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - Discussion with team about project review feedback.
 - 901502 - Ocean Soundscape
 - Preparing blue whale data for sharing as a HuggingFace dataset
 - Working with the team on materials for the upcoming SoundCOOP workshop to present PBP/PyPAM notebooks. This is a small hybrid conference with NOAA to discuss tools and methods for creating sound standards. They are interested in our work on cloud and scaling.

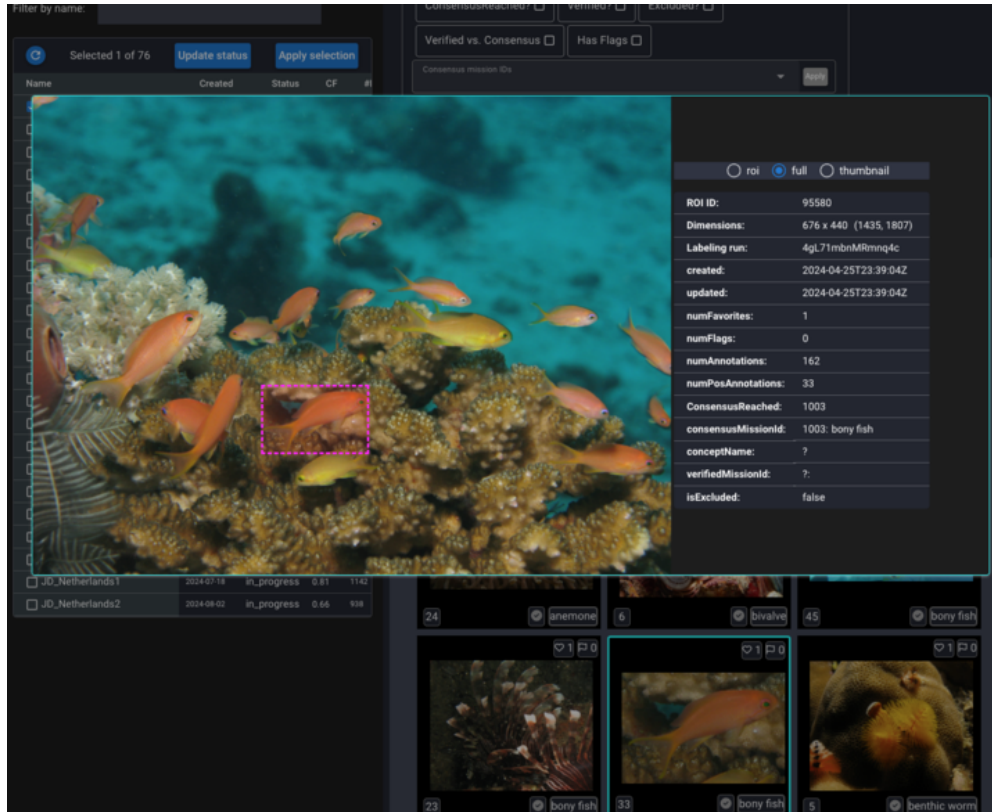
- Tested the just-released Google MultiSpecies model on blue whale A calls (performance not great, top-3 looking decent) <https://www.kaggle.com/models/google/multispecies-whale>
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Labeling mission with batrays for inclusion in our vss library
 - Fixed some issues in the augmentation features of the aidata tool
 - Evaluating Argo Workflows as a way to orchestrate integrated machine learning workflows in mantis
 - Out of Office
 - September 24/25 NOAA SoundCoop workshop Boulder, CO
 - Oct 7-10 - 5th Marine Imaging Workshop in Monterey
- Duane Edgington
 - 901502 - Ocean Soundscape
 - Continued work on investigating Whisper LLM fine tuning for sound detection and classification. Next step Orca sounds...
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting
 - Continuing work, with Danelle, on building new yolo detection model with our ~full dataset, with aidata transform slices plus full rescaled image at 1280x1280. Model training started 9/18.
 - Gearing up to make poster for MiW 2024.
 - Experimented with DETR transformer, transfer learned for object detection.
 - 902111 - Carbon Flux Ecology
 - Some project administrative support of the tator login
 - Overhead
 - Safety training completed, and test ached.
 - Out of Office
 - Oct 21 - Nov 8, 2024. Vacation UTC+1
 - Dec 8 - Dec 17, 2024. [Neurips](#) Conference. Vancouver, BC.
- Jon Erickson
- Kevin Gomes
 - Out of Office
 - Aug 16: Vacation
 - Sep 16: Vacation
 - Oct 7-11: Vacation
- Andy Hamilton
- Kent Headley
 - 902204 - Scalable Robotics
 - Tested oculus GUI and driver in tank test. Added several new GUI features, and am currently chasing down a distortion in the sonar data visualization.
 - Overhead
 - Misc admin
 - Helping Paul Barter from Cawthron with an OASIS driver issue
 - Proposal phase 2 review
 - Out of Office
 - 10/10-17 Vacation
- Rich Henthorn
 - Out of Office
 - Sick leave, WFH Aug 14 - 22
 - Aug 26 - Sep 11: Vacation
- Akshay Hinduja
 - 702108 - Deployable AI

- Setup Nvidia Orin AGX for new sensor head
 - 902204 - Scalable Robotics
 - Continue Norbit WBMS development, working on visualizing bathymetry data
- Brett Hobson
- Irene Hu
 - 901217 - Chemical Sensors
 - Tiva module sent out, baseboard in final stages
 - Started pinmapping for TM4C1290 replacement
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Tank testing on 9/11 went well, no issues
 - Deployment on 9/16 went well, lots of images
 - Preliminary analysis of images
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Collected SES and trigger trap on 9/18
 - Overhead
 - Rec com cookie break (midautumn)
 - Out of Office
 - Sept 4-10: sick
 - Sept 16, 18: planned Carson day
 - Sept 23-Oct 2: IEEE OCEANS / trip to Boston
- Scott Jensen
 - Out of Office
 - September 16-20
 - October 7-9
- Brent Jones
 - 901009 - CANON
 - Prepped and deployed Ahi + ptvr for CANON
 - 901112 - Monterey Bay Time Series
 - Diagnosing a moving Wire Walker!
 - Fixing water ingress in new Sampler. Required board rework
 - Refining software to better work with existing LRAUV sampling scheme
 - 901502 - Ocean Soundscape
 - Meeting
 - 902004 - Planktivore
 - Recovered Ahi+ptvr for test mission
 - Out of Office
 - 1 sick day
- Chad Keczy
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
- Denis Klimov
- Eric Martin
 - Out of Office
 - Vacation last week.
- Thom Maughan
 - 901217 - Chemical Sensors
 - Isus driver is now scanning spectra, working on timing, formatting output. Working towards calibration in ChemSensors lab. Working on data formatting and serial protocol.
 - pH driver is working, output format is close.

- Workstation isus calibration program c source files from Ken.
 - Tested two more baseboards, Irene fixed one of them
 - Review MSC3 Tiva revB and baseboard revB
 - Received TM4c1290 rapid proto Tiva Module. EE-tech assembly and rework for swapped MISO/MOSI. Started porting, board bringup
 - Second rev of Tiva 1290 board updated to add development features and fix SPI, sent out for fab 5pm.
 - Captured nitrate and pH serial between calibration workstations and MSC1.
 - Listened in on GO-BGC Argo float meeting
- 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Planktivore V1 frame and brackets are ready.
 - Denis is working to finish the battery pack. Looks like it's about 83A-Hr.
- 902004 - Planktivore
 - Helped with deployment prep of Ahi for CANON
 - Planktivore weekly - Patrick Daniel presented progress on Planktivore image classification
 - Ahi will be recovered Friday and then charged, prepd and deployed Monday for EcoHAB.
- Out of Office
 - Oct/Nov two to three weeks vacation Colorado.
- Mike McCann
 - 902403 - Expedition DB Modern
 - Phase 1 feedback answers provided
 - Explored various API methodologies for browser delivery of CSV formatted rovctd and nav data
 - Continuing to develop replacement Postcruise processes for the legacy EXPD web application
 - Overhead
 - Accepted invitation to serve on best paper jury for the Web3D Conference
 - Helped co-authors prepare presentation for Web3D Conference paper: "Interoperable 3D Geospatial Data Visualization with X3D and OGC 3D Tiles"
 - Out of Office
 - 18 September: Vacation day
 - 25-27 September 2024: Web3D Conference
 - 30 September - 3 October 2024: Vacation
- Rob McEwen
- Paul McGill
 - Out of Office
 - Medical appt Mon, sick day Wed
- Enoch Nicholson
 - 706008 - READI-Net
 - Ordering Gaskets
 - 902306 - SINKER
 - Supporting frame construction
 - Out of Office
 - April 5-10 Vacation (Available via Slack & Email)
 - April 14-18 IEEE Oceans (Available via Slack & Email)
 - April 19-23 Vacation (Unavailable)
 - September 4-5 Vacation
 - September 19-24 Vacation (Unavailable)
- Tom O'Reilly
- Mike Risi
 - Out of Office
 - Offsite on Tuesday and Friday

- January 16 - January 19, 2024
 - February 22, 2024
 - March 4 - March 8, 2024 - vacation
 - April 24, 2024 - vacation
 - May 20 - May 24, 2024 - vacation
 - June 17 - June 18, 2024 - vacation
 - September 3 - September 9, 2024 - vacation
- Paul Roberts
 - 702108 - Deployable AI
 - RL modeling support
 - 702108.99 - 6-eye camera-compute mod
 - Hardware procurement
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Multispec deployment and analysis
 - MIW poster
 - 902004 - Planktivore
 - ECOHAB deployment
 - CANON deployment
 - Data management
 - 902306 - SINKER
 - Side-looking camera assembly and testing
- Brent Roman
 - 708165 - NOAA-MERHAB-UW
 - Reworking/documenting 2G ESP Elevator calibration procedure
 - 901913 - Wet Wifi
 - Arranged to repackage one of our H150 OceanComm's modems in 1km rated canister
 - For deployment on next month's MiniROV dives with Mola
 - Also will receive a pair of 1km range 50kb/sec modems to evaluate
- Carlos Rueda
 - 701165 - OVAI P2

- CMS UI now 0.8.9.



- 901502 - Ocean Soundscape
 - As part of preparations for the upcoming workshop in Boulder, **mbari-pbp** has been updated, now at 1.4.8. Team working on finalizing notebooks.
- 902204 - Scalable Robotics
 - Helped set up Dial during recent Mola and MiniROV exercises in the test tank.
 - Dial is now at 0.0.91, with several fixes and performance improvements.
- Overhead
 - IE brown bag about Json-schema. After Kevin B.'s great presentation, I took the opportunity to briefly talk about the relevant **tscfg** tool (<https://github.com/carueda/tscfg/>).
- Karen Salamy
 - Out of Office
 - US React Summit Conference: November 19-24, 2024, NYC.
 - On-campus 3 days/week (**T, W, TH**).
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - Met with Paul Rogers to review work on new KB interface.
 - Testing feasibility of using no-build/web components for new web interface for querying VARS.
 - 902403 - Expedition DB Modern
 - Work on prototyping, cleaning up, and greatly simplifying the database schema.
 - [Started work](#) on porting data from existing database into the prototype
 - 902404 - 5th Marine Imaging Workshop
 - Lots of time spent wrangling attendees, [the web site](#), and the science program.
 - Out of Office
 - Oct 7-10 - 5th Marine Imaging Workshop in Monterey
- Alana Sherman
 - Out of Office
 - Out helping with school field trip Tuesday.
- George Stern

- 902204 - Scalable Robotics
 - Laser mount design
- 902304 - Piscivore Cam
 - Proposal planning
- 902306 - SINKER
 - Tested and troubleshot SAMD module boards
- 300078 - Dorado AUV Thruster
 - Began to scope effort
- Overhead
 - Oceans final planning
- Out of Office
 - IEEE Oceans Sept 23 -27
- Justin Tucker
- Johann Voigtlander
 - 902204 - Scalable Robotics
 - Reprinted WBMS Blueboat mount with correct mounting hole sizes
 - 902208 - Mini ROV Operations
 - Test tank operations for Giancarlo
 - Debugged dropout issue
 - Took apart EPOD, tested with Alana - repaired EPOD and remounted
 - Fixed some network wiring in Focal box
 - 902402 - CSEM
 - Purchased GPS loggers, programmed and tested them
 - Purchased winch -> fulmar power adaptor cable
 - Working with Mike Conway for CSEM repairs/fulmar compatibility
 - Out of Office
 - April 16th - May 7th Germany CSEM
 - May 8th - May 12th Vacation