

Engineering Weekly Report 11/2/2023 - 11/9/2023

<https://docs.mbari.org/internal/projects/Engineering/Weeklies/2023/>

Executive Council Notes

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Individual Activities

- Michael Anderson
- Kevin Barnard
 - 500055 - VARS, M3/RS, DSG
 - Fixed VARS GridView issue with bounding boxes on framegrabs re-capturing frame from video
 - Sorted out video/image reference association in VARS GridView
 - Out of Office
 - LASS on Ventana/Rachel Carson cruise: Oct 10, 2023 – Oct 12, 2023
 - CSIRO: Oct 20, 2023 – Nov 5, 2023
 - MiniROV/Fulmar cruise: Nov 6, 2023 – Nov 9, 2023
- Francois Cazenave
 - 901221 - Midwater Time Series
 - Testing new dome cover
 - 901405 - PowerBuoy Development
 - Getting quotes for new tether
 - 902106 - Niobicon-Based AUV Docking Development
 - Designing new latch
 - Buoy maintenance and troubleshooting
- Danelle Cline
 - 500055 - VARS, M3/RS, DSG.
 - Dockerizing tools for large-scale batch processing are up and running on doris.shore.mbari.org. Processed three 2023 dives, which auto-loaded into our M3_EVENT_TRACKS database. These can be viewed on the [deepsea-ai dashboard](#).
 - The team discussed workflow changes, including report generation next steps, and year-end goals.
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - Loaded training data for visualizing and clearing into mantis. This included Ctenophora sp. A examples augmented with [albugementations](#) and other examples that may be confused to create an effective model. Removed blurry and small examples. Haddock to verify before training.
 - 901206 - Coastal Profiling Float
 - Flowflow repo created for development. Discussion with the team on requirements.
 - 901502 - Passive Acoustic Sensing
 - Team meeting. Pending work to add JSON metadata generation code to pybam to simplify example use.
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Brought processing up to date in preparation for hand-off to D.Edgington and team for labeling and model training
 - 902204 - Scalable Robotics

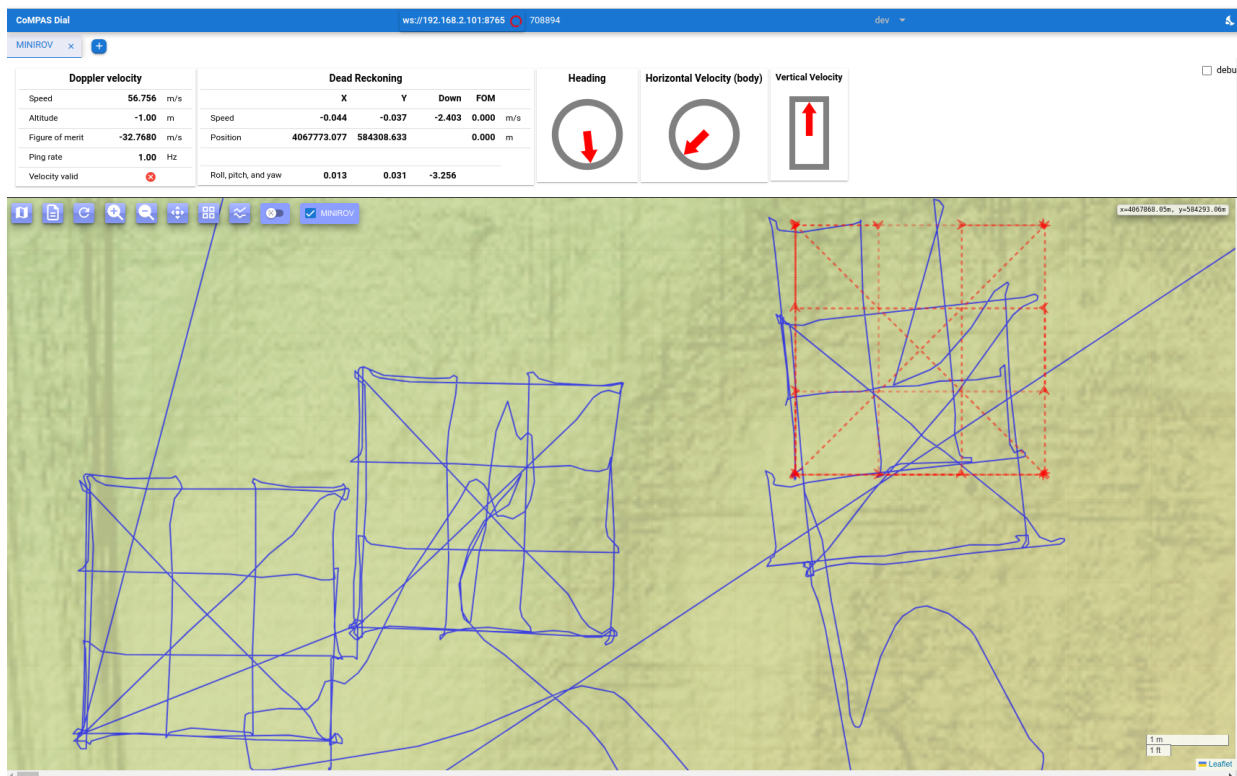
- Testing Python entry point to quadrotor simulations.
- Overhead
 - Stanford and Cal Poly student mentoring
 - Attended CENCOOS meeting to discuss 3-5 year plans
- Out of Office
 - Thanksgiving, November 22nd-November 24th.
- Duane Edgington
 - 500055 - VARS, M3/RS, DSG
 - Continued testing/tuning production system on DORIS for launching/monitoring AWS inference jobs. 3 recent dives identified by Lonny have been processed, now to completion. Working through CDK stack behavior tuning.
 - Team meeting
 - 901502 - Passive Acoustic Sensing
 - Team meeting.
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Team meeting. Planning training session to team on clustering/labeling toolset.
 - 902004 - Planktivore
 - Data handling and model building discussion.
 - Out of Office
 - Nov 15: (virtual) Generative AI (AI World Barcelona) 5pm-9pm (GMT +2)
- Jon Erickson
- Kevin Gomes
 - 200105 - Core Navigation Data - MDUC
 - Configured the VM created by IS to be a ZeroMQ proxy for the David Packard simulator. The simulator navproc is now forwarding messages outside of what would be the 'rov network' (in theory) to keep the 'other' data clients separate from the ROV network.
 - 300062 - DMO Divisional Support - Doc Ricketts
 - Starting to work on clients for the new data system: Dataprobe, DiveLog, ArcMapNav
 - 706008 - READI-net
 - Reviewing web application code
 - 901009 - CANON
 - Looking at turning on TimeZero file creation on the shore server so shore-based TimeZero servers can be tested
 - Overhead
 - Finally made a decision on the paid Slack plan that MBARI will be moving to. We are going to be moving to the Enterprise Grid program which will give us more flexibility and capability.
 - Met with John Zicker and Dona Crawford (Board Members) to talk about ML efforts and DOE compute capabilities. More follow on to come.
 - Setting up a time to talk to folks at Argonne National Labs about possible use of their compute facilities for our GPU processing needs.
 - Out of Office
 - Nov 20-22: Vacation
- Andy Hamilton
- Kent Headley
- Rich Henthorn
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - CoNav sim glue app
 - Meet with Rock
 - 902305 - Event Detection using the Sedimentation Event Sensor
 - Next gen controller

- 902306 - SINKER
 - Camera controller board testing
 - Move into lab
- Overhead
 - Vanpools
- Out of Office
 - Dec 18 - 28: Holidays
- Brett Hobson
- Irene Hu
 - 901805 - Coastal Biogeochemical Sensing Program
 - Troubleshoot mfets, missing 5 + need to send all back to rotate RS232 transceiver
 - Hiring for new tech
 - Convo w/ KAUST
 - 901904 - Deep-Sea Coral Community Observatory
 - Getting started on boards
 - Meeting w/ Paul
 - Out of Office
 - Nov 21-22: Thanksgiving vacation
- Scott Jensen
 - Out of Office
 - Family leave
- Brent Jones
- Chad Kecz
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - Out of Office
 - 10/23-10/31 vacation (PDT)
 - 11/06-11/09? Phoenix (MST)
 - 11/20-11/24 vacation (PDT)
- Denis Klimov
- Eric Martin
 - 901206 - Coastal Profiling Float
 - More power consumption tank tests
 - Energy monitor changes from Gene rolled in
 - 901911 - ROVVR
 - HMC mentoring meetings
 - 902012 - Telepresence
 - Support last week for Greensea Testing
 - 902204 - Scalable Robotics
 - Out most of this week on the Fulmar, as weather keeps impacting days.
 - Out of Office
 - Sick day on Tuesday, 11.07.2023
- Thom Maughan
 - 300083 - DMO Divisional Support - LRAUV
 - Debugging surge stopper electronics
 - 901009 - CANON
 - Testing and revising mount instructions on deepedna2
 - Trying various benchmarks
 - 901805 - Coastal Biogeochemical Sensing Program

- Re-write of power management state machine. Testing
 - Forked code and in v5 implementing new serial protocol for machine to machine. In progress implementing command line functions for config and control of sampling.
 - Prelim QA testing of MFETs, found hardware problem. Updating v4.2.x with changes to QA test routine in prep for run of 100 boards.
 - NanoFET spi NAND flash driver
- 902004 - Planktivore
 - 2nd Planktivore deployment Oct 24-27. Water was quite clear based on observation and EcoPUCK. Looks like we recorded 1+ million rois.
 - Improved watch standing and understanding LRAUV commands.
 - Attended plankton image / data management meeting hosted by Henry Ruhl. It is apparent we have a resource gap in 2024 for providing automated plankton identification. We are working to align with other efforts. Taxonomist(s) who can identify plankton is a critical role.
- Out of Office
 - Vacation in Nov. TBD, Colorado
 - Vacation in Dec, couple days around Xmas
 - Jan 9 - 12 CES
 - Feb 18 - 23 OSM24
- Mike McCann
 - 200105 - Core Navigation Data - MDUC
 - Started working on last [3 Bitbucket issues](#) for the ROV nav editing project
 - Working on getting a development EMDB system working on new laptop
 - 200109 - Core Mooring Data - MDUC
 - Virtually attending OceanSITES meeting
 - 901221 - Midwater Time Series
 - Completed work on pulling correct SBE-43 O2 calibrations from Erich's calibration file archive
 - Reloaded [stogs_all_i2map](#) – much better agreement now between port & stbd O2 sensors
 - Overhead
 - Attended 2017 intern Rachel Kahn's PhD defense from MIT-WHOI
 - Rescheduled capstone student tour to Friday 8 December
- Rob McEwen
- Paul McGill
 - 701147 - MARS O&M IV
 - Held another Zoom meeting with ME at UW to work out details of internal chassis design
 - Trying to figure out how to mount Meinberg N2X box with tabs instead of DIN rail
 - Spent some time playing with Meinberg M600 PTP clock to understand its operation
 - 901700 - Acoustical Ocean Ecology
 - Worked on PCB design for new AOS sensor but board house is rejecting my submission
 - 901904 - Deep-Sea Coral Community Observatory
 - Worked on design for rescue float pack for Coral Mega Camera so it can be retrieved on Fri
 - 902304 - Piscivore Cam
 - Had meeting to discuss this year's progress and plans for next year
 - 902305 - Event Detection using the Sedimentation Event Sensor
 - Shipped controller end cap and stepper motor back to McLane for upgrade to Gen3
 - Overhead
 - Attended marathon meeting to choose best candidate for EE Tech hire
- Enoch Nicholson
 - 902306 - SINKER
 - Completed Interface & sediment chassis layout / fabrication drawings
 - 901205 - ESP SURF Center

- G-10 retaining ring fabrication
- Tom O'Reilly
- Mike Risi
 - 200105 - Core Navigation Data - MDUC
 - Implemented ROV UHS process and basic simulator based on preliminary specification from MacGregor.
 - Working on console based debugging tools for navproc messages.
 - 300062 - DMO Divisional Support - Doc Ricketts
 - Working with Drew on misc. control room integration issues.
 - Looking into firmware upgrades for PT-25 pan and tilts.
 - 901101 - Seafloor Mapping
 - Starting to work on a new driver for Octans IX.blue format on Ventana.
 - Working with Andrew and Adriana IEEE 1588 access on David Packard.
 - Working with Chad on debugging one of the rev. b trigger board stacks.
 - Rev. b trigger board firmware changes to accommodate user configurable parameters and MAC address.
 - Out of Office
 - Out of office on Fridays
 - May 30 - June 6
 - August 21
 - September 5 - September 7
 - November 20 - 23, 2023
 - March 4 - March 8, 2024
- Paul Roberts
 - 901809 - Deep Sea Bioinspiration
 - Supporting field work on Fulmar
 - 901904.99 - Corral Camera System
 - Finalizing drawings for ROV camera
 - Ordering parts for ROV camera
 - 902004 - Planktivore
 - Data management and RIMS integration
 - 902204 - Scalable Robotics
 - Supporting field work on Fulmar
 - 902306 - SINKER
 - Preparing for system assembly and testing
 - Out of Office
 - 10/19-10/21
- Brent Roman
- Carlos Rueda
 - 701165 - OVAI
 - Meetings. Review of some materials.
 - 901502 - Passive Acoustic Sensing
 - Group meeting (also with couple of external collaborators as usual)
 - 901513 - Targeted Sampling by AUVs
 - Tested the Iridium connection that Chris and Tom have set up. Actual date for a next tracking exercise offshore still TBD.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - TethysL is now [3.6.0](#).
 - TethysDash backend now [4.55.0](#), including adjustment for WHOI as requested.
 - 902204 - Scalable Robotics

- Dial is now [0.5.7](#), with lots of new features, and some documentation (wip). Have a look at [some screenshots](#). Here's one provided by Giancarlo this week:



- Out of Office
 - Nov 15: (virtual) Generative AI (AI Barcelona)
 - Nov 20–22: vacation
 - Nov 27–30: Working from home some of these days
- Karen Salamy
 - Out of Office
 - On-campus 3 days/week (T, W, TH).
 - **JURY DUTY (until first week of Dec).**
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - Working on a permanent archive for one off machine learning runs on video. Set up a [plutus](#) instance to archive output from the local ML service; both of which are running on maximilian (a GPU box). ATM, ML output will be stored in titan:/DeepSea-AIs
 - Added [code](#) to allow for more types of filters when viewing ML output in Sharktopoda.
 - 902002 - FathomNet
 - Data fixes to support latest model training.
 - 902308 - M3/VARS for the Masses
 - Restructured the video asset manager, [vampire-squid](#), to allow for database specific integration tests.
 - Overhead
 - The website for the 5th Marine Imaging Workshop at <https://miw2024.org/> is up and running. Make sure you share it widely!
 - Involved in video shoot Wednesday.
 - Purged old logs from titan:/devops. You can too ... script is [here](#)
- Alana Sherman
 - 706008 - READI-net
 - Revisiting board schematics

- 901904 - Deep-Sea Coral Community Observatory
 - Providing support for Mega camera recovery
- 902208 - MiniROV Support
 - Providing shore support for logistics and scheduling, also fielding calls as needed for system operation
- Out of Office
 - Still home waiting out my covid isolation
- George Stern