

Engineering Weekly Report 12/14/2023 - 12/21/2023

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

Executive Council Notes

See Tom O'Reilly below; 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach

Individual Activities

- Michael Anderson
- Kevin Barnard
 - Out of Office
 - Vacation Dec 26, 2023 – Dec 28, 2023
- Francois Cazenave
- Danelle Cline
 - Out of Office
 - December 14th, bereavement leave
 - December 25-Jan 2nd, vacation
- Duane Edgington
 - 500055 - VARS, M3/RS, DSG
 - Updated team at last VL meeting
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - Training updated yolov5x6 model for Ctenophora sp. A detections in ROV video based upon confusion input from S. Haddock.
 - Running test inference on V4318 video
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Continued work on labeling
 - Refined augmentation module using Albumentations library for training image augmentation.
 - Preparing for SAHI image slicing for inference on the very large pixel count 7952x5304 UAVS images.
 - Participated in coordinated sampling missions Dec 14. (see Tom O'Reilly below)
 - Out of Office
 - Dec 10 - 16. NeurIPS 2023. (virtual) UTC-6
 - Dec 21 - Jan 5 Holidays vacation
- Jon Erickson
- Kevin Gomes
- Andy Hamilton
- Kent Headley
 - 902204 - Scalable Robotics
 - working w/ Tritech re possible logger bug
 - Overhead
 - hiring
 - misc admin
 - Out of Office
 - Dec 22-Jan 2

- Rich Henthorn
 - Out of Office
 - Dec 18 - 28: Holidays
- Brett Hobson
- Irene Hu
 - 901805 - Coastal Biogeochemical Sensing Program
 - Forked mCAP to LionCAP in OrCAD and made changes
 - 901904 - Deep-Sea Coral Community Observatory
 - Working on junction box board
 - Out of Office
 - Dec 25-29: Holiday
- Scott Jensen
- Brent Jones
 - 901502 - Passive Acoustic Sensing
 - Visit Sanctuary Exploration Center in SC to familiarize myself with MBARI whale exhibit.
 - 901805 - Coastal Biogeochemical Sensing Program
 - Flying Spray29 in support of experiment.
 - Diagnosing issues with data coming back
 - 902311 - Wire-Walker Power Generation
 - Designing piston and cylinder for 1L system
- Chad Keczy
 - Out of Office
 - 12/18 - 1/2 Vacay
 - Out of office on Fridays
- Brian Kieft
 - Out of Office
 - 12/18-12/27 (MST)
 - 12/28-01/01 (MST)
 - 02/12-02/16 (MST)
- Denis Klimov
- Eric Martin
 - 901101 - Seafloor Mapping
 - Aiding in purchase/spec of new INSs for Dorados and LASS
 - 901206 - Coastal Profiling Float
 - Gobacktosleep functionality under test.
 - C++ State machine review
 - 901911 - ROVVR
 - End of year review with Harvey Mudd
 - EOY Purchasing
 - 902012 - Telepresence
 - Paper has been rejected by CSCW, so looking for other options.
 - 902204 - Scalable Robotics
 - Paragon Perception Platform (P3)
 - Final test and verification of software.
 - End of Year Spending
 - Falkor integration documents and meetings
 - Overhead
 - Group lunch
 - Out of Office

- Taking off between Christmas and New Years.
- Thom Maughan
 - 300083 - DMO Divisional Support - LRAUV
 - BPC1 battery diagnosis on Ahi. Pack discharge is 56ah, not 160ah expected. Two banks not reporting after overnight discharge.
 - Got trained on Denis' battery measurement labview and setup another discharge.
 - Using BPC2 to diagnose sticks not behaving on BPC1.
 - Working on BPC2 firmware, pack health message.
 - 901009 - CANON
 - Looking into script for network mount
 - 901805 - Coastal Biogeochemical Sensing Program
 - Working on pHFET-SOS v5 beta, addressing review comments and new features.
 - Parts for two more QA boxes. Procedure for Ik and Ib offset measurement
 - 902004 - Planktivore
 - Year end budget
 - Pcb fab and assembly
 - Out of Office
 - Vacation in Nov. TBD, Colorado (cancelled)
 - Vacation in Dec, couple days around Xmas
 - Jan 9 - 12 CES
 - Feb 9 - 14 Vacation Colorado
 - Feb 18 - 23 OSM24
- Mike McCann
 - 901009 - CANON
 - Deployed updates, including to Django 5.0, to the 3 STOQS production servers
 - 901221 - Midwater Time Series
 - Processed mission i2map_2023.318.00 into stoqs_all_i2map
 - 901910 - Plankton Taxonomic Groups from AUVs
 - Working on Notebooks for Dorado & Pontus fluorometer data transfer function computation
 - Overhead
 - Got STOQS functional tests working on Mac M2 with arm-based containers for Selenium
 - Out of Office
 - Dec 26-29: Vacation
- Rob McEwen
- Paul McGill
 - 901700 - Acoustical Ocean Ecology
 - Working with Brett on noise-reduction strategies for Simrad sonar
 - 902304 - Piscivore Cam
 - Worked with Jared to troubleshoot camera glitches during the last LRAUV mission
 - Overhead
 - Working on SOI Antarctic proposal with Aaron M
 - Out of Office
 - Out on medical appts Thu
 - On vacation Mon and Tue
- Enoch Nicholson
 - 706008 - READI-net
 - Actuator Purchasing
 - 2024 project planning
 - Jan/Feb dock experiment coordination

- 902306 - SINKER
 - 2024 project planning
 - Hardware clean up
 - Destage SINKER
 - Weight Check
- Out of Office
 - 12-15-23 to 01-02-24
- Tom O'Reilly
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - The team demonstrated coordinated sampling between two UAVs and Piscivore-equipped LRAUV *Pontus* last week, just offshore of Moss Landing. Our goal was to assess whether the UAV could observe the surface expression of phenomena also observed by LRAUV. We used MBARI's Trinity UAV with Sony RGB camera payload, and our NOAA collaborator brought his Trinity with multispectral 'Red Edge' imager. We worked with the LRAUV team to design coordinated aerial and underwater surveys shown in the figure below. The LRAUV made repeated transits between yellow pins LRAUV-S and LRAUV-N at a depth of 1.5 meters, while the UAVs flew along the green tracks at 60 meters altitude.



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- The MBARI UAV detected a biofoam/alga front several hundred meters offshore, and in fact captured an image of the LRAUV swimming directly underneath the front, as seen in the contrast-stretched image below.

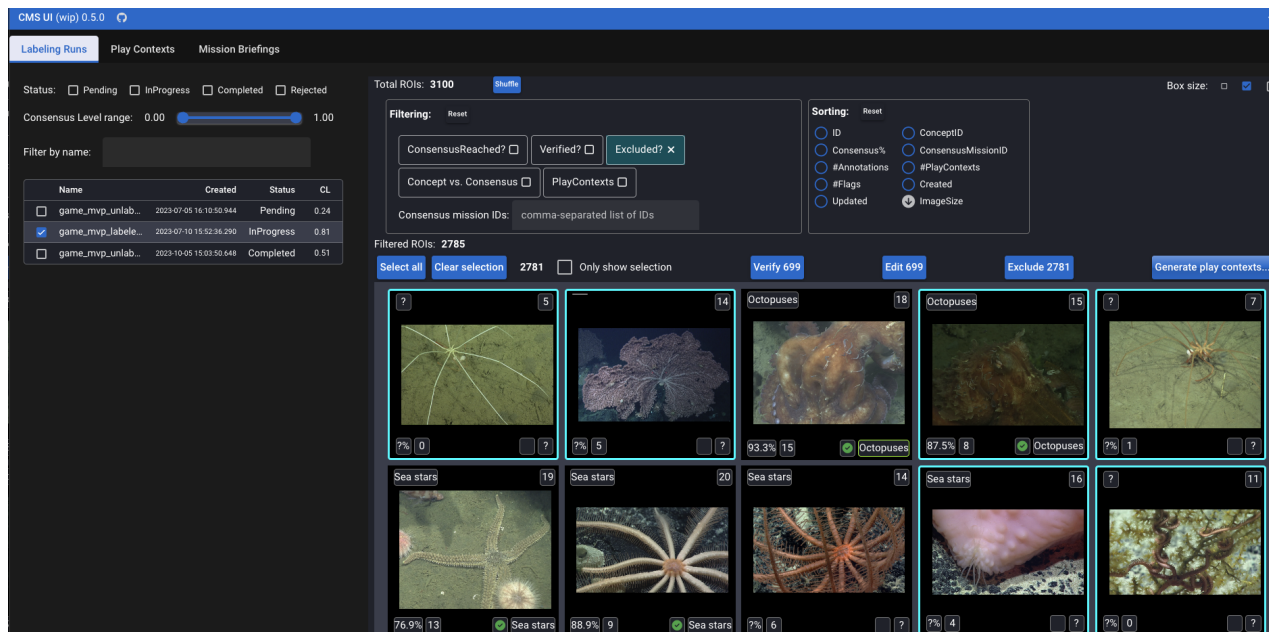


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- Piscivore video shows generally clear water during its survey, but drifting fronds of surfgrass (*Phyllospadix* sp.) and eelgrass under the front. We are currently analyzing the aerial multispectral data as well as LRAUV sensor data (CTD, fluorometer, backscatter, etc).

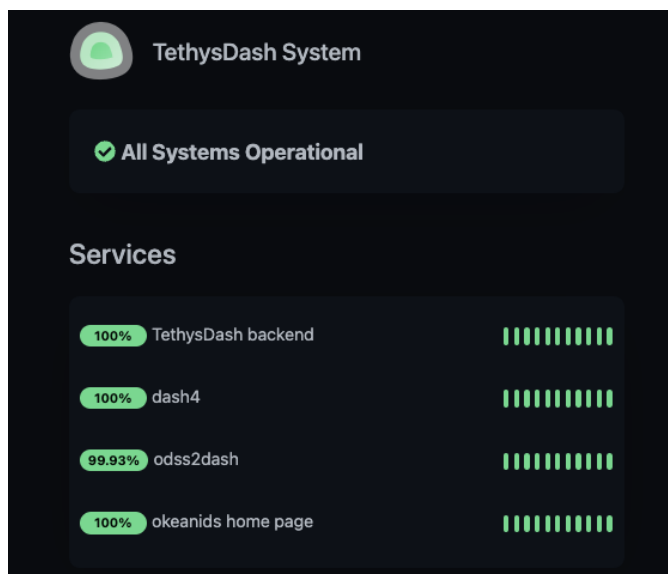
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- Mike Risi
 - Out of Office
 - Out of office on Fridays
 - May 30 - June 6
 - August 21
 - September 5 - September 7
 - November 20 - November 23
 - December 19 - December 22
 - December 26
 - March 4 - March 8, 2024
- Paul Roberts
 - Out of Office
 - Dec. 25 through Jan. 1 2024
- Brent Roman
- Carlos Rueda
 - 701165 - OVAI

- CMS UI prototype now 0.5 – <http://ovaidev.shore.mbari.org/>



- 902101 - LRAUV Technology Development and Fleet Operations
 - Addressing some recently reported issues, reviewing and cleaning up code.
 - Set up an uptime-kuma instance for [monitoring TethysDash related services](#). Really straightforward, thanks Kevin Bernard for the quick guidance. As noted to the team on Slack: “worth keeping in mind that IS might be providing a general service monitoring solution in the future.”



- 902204 - Scalable Robotics
 - Brief discussion with Danelle regarding images and potential incorporation in Dial.
- Out of Office
 - Dec 5, 26–28: vacation
 - Jan 10–11: vacation
- Karen Salamy
 - 200103 - Core CTD Data - MDUC
 - Still awaiting updates from Ed P.
 - 300057 - Mooring Maintenance
 - Worked with Jules and Chris W. to verify that OA2 (ANO) maintenance worked. All is looking good. The next maintenance will be with OA1 which is no longer providing downloads. The battery may have died on the mooring.

- 901101 - Seafloor Mapping
 - Spoke with Jenny P regarding SMDB GUI for 2024. We may work with the ROV pilots on improving some of the bathymetry maps (higher resolution) than they currently are using since the project uses pretty high resolution maps for mapping transects.
- 902101 - LRAUV Technology Development and Fleet Operations
 - Nearly finished with the new Measurement App for the LRAUV Dash5. This process has been a steep learning curve toward understanding React 18.2.
- Overhead
 - Watched various React 18.2 tutorials
- Out of Office
 - Had some personal meetings and doctor visits this week. My daughter was sick today and required that I stay home after taking her to the doctor.
 - On-campus 3 days/week (**T, W, TH**).
- Brian Schlining
 - 902304 - Piscivore Cam
 - [Cleared out a backlog of Piscivore videos](#) from atlas:/M3_Staging that needed to be renamed and migrated to titan:/m3/Projects/Piscivore.
 - 902308 - M3/VARS for the Masses
 - [Renovating the back end of the main annotation service](#) used by VARS. The major goals are : add auto-generated swagger docs, add full testing suite to controllers and endpoints for SQL Server and Postgres, add history tracking.
 - DQ2209 - Ocean AI 2
 - Support for server/proxy at <https://ovai.mbari.org>
 - Overhead
 - Updates to the marine imaging workshop site at <https://miw2024.org>
- Alana Sherman
 - 706008 - READI-net
 - Looking for FETs to switch the pressure sensors
 - Working on the programming header for the processor
 - 902208 - MiniROV Support
 - Piecing together a plan for building up a newer focal stack to allow us a dark fiber
 - Worked with Johan to evaluate what we have in our inventory and what is required to build up a second top side focal box.
 - Purchasing with year end funds, including stocking up on tilt motor drives that are not obsolete
 - 902312 - Seafloor Processes
 - Working on functional requirements for system
 - Working through quote from sintella for first DAS unit
 - Checked out various cables including MARS cbale
 - Overhead
 - Hosted EE holiday lunch
 - Lots of year end purchasing requests
- George Stern