

Engineering Weekly Report 12/7/2023 - 12/14/2023

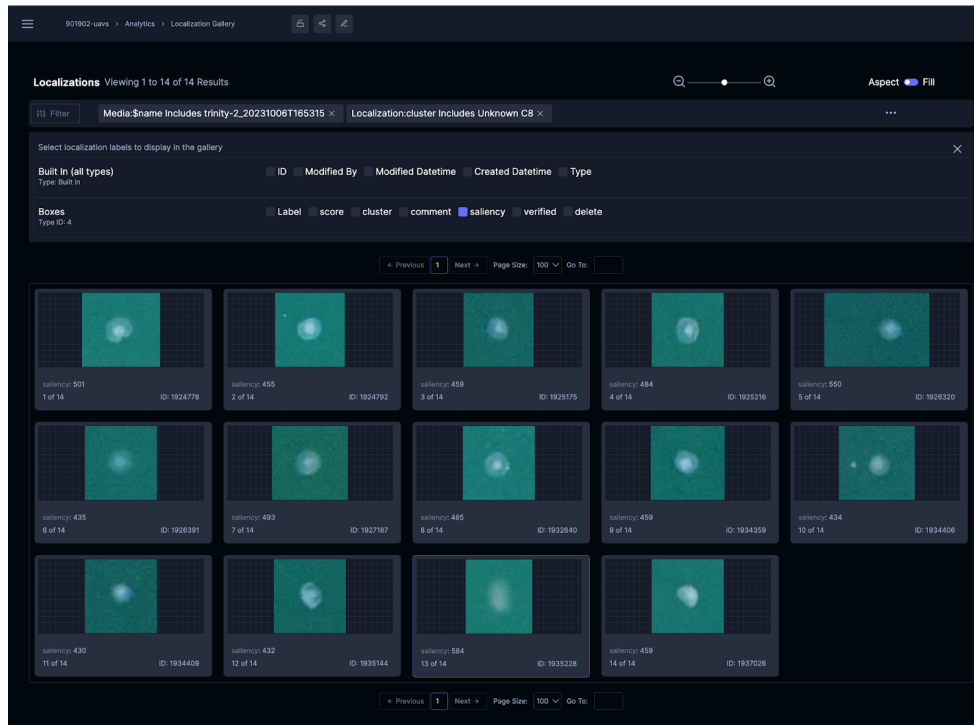
<https://docs.mbari.org/internal/projects/Engineering/Weeklies/2023/>

Executive Council Notes

Individual Activities

- Michael Anderson
- Kevin Barnard
 - 500055 - VARS, M3/RS, DSG
 - Continued working on VARS GridView. Finished implementing:
 - Packaging configuration with Apple code signing and notarization (thanks Joe!)
 - Show all, show verified, show unverified toggles
 - Bring Sharktopoda video player window top-level on open
 - Maintain sort order across updates
 - Sort by bounding box proposal confidence
 - Experimented with visual similarity indices, image hash-based clustering
 - 902304 - Piscivore Cam
 - Started working on YOLOv8 → VARS data loader
 - Out of Office
 - Vacation Dec 26, 2023 – Dec 28, 2023
- Francois Cazenave
 - 901221 - Midwater Time Series
 - Tested new tow setup and designed new light bars
 - 901405 - PowerBuoy Development
 - Prepared recovery
 - Working on new tether
 - 902106 - Niobicon-Based AUV Docking Development
 - Working on latch upgrades
 - 902204 - Scalable Robotics
 - Meeting
 - Prepared documents for Falkor ROV engineer
- Danelle Cline
 - 500055 - VARS, M3/RS, DSG.
 - NTR
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - Waiting for Haddock to verify before retraining.
 - 901206 - Coastal Profiling Float
 - Waiting for hardware to test. Implemented RUDICS simulation mode.
 - 901502 - Passive Acoustic Sensing
 - Added JSON metadata generation code to pypam-based-processing to simplify example use. We need to do further integration. Talks are planned in January with the broader community on handling data in GCP.
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach

- The team is labeling after a few training sessions. Processing data as needed. We have been searching for jellies and have found our first cluster!



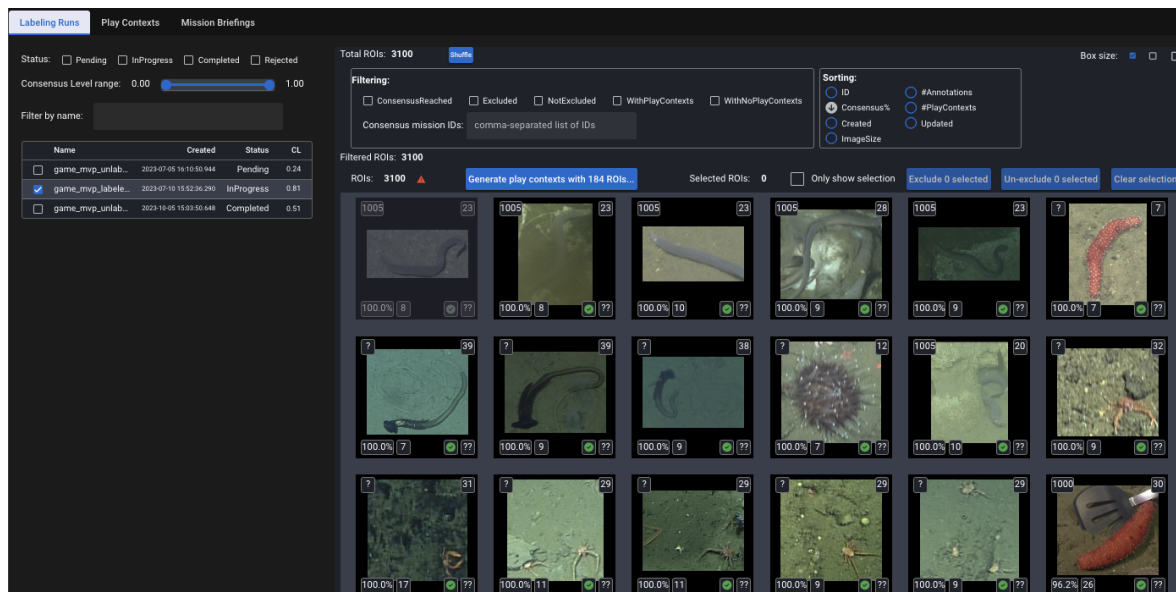
- 902204 - Scalable Robotics
 - 2024 year wrap-up, discussion with a few interested members on cloud tests.
 - Working on workflow for stereo data ingest and visualization.
- Overhead
 - Cal Poly students finished a project on zero-shot clustering of Antedonidae. Thanks to Lonny Lundsten for inspiration to focus on Antedonidae.
 - Quick test to create a few model cards in HuggingFace to facilitate workflow integration with several imaging projects, including UAV, Scalable Robotics, and more in 2024. Many thanks to Duane for setting up the MBARI space.
 - [Listening to Google Woman in Machine Learning Symposium talks](#)
- Out of Office
 - December 14th, bereavement leave
 - December 25-Jan 2nd, vacation
- Duane Edgington
 - 500055 - VARS, M3/RS, DSG
 - Team meeting Dec 13, 2023
 - Reported on VARS-ML-SE tasks
 - Discussed task assignment with project manager
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Continued work on sdcat and labeling localizations in preparation for training a model
 - Setting up amazon account for model training
 - Working on tasks preparing to train the first model and run inference on the very large images.
 - Abstract preparation for EGU 2024 (Due Jan 10 2024)
 - 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
 - coding/testing timestamp updates
 - Overhead
 - SE-EAD : 2 applicant screenings
 - misc admin
 - review prep
 - Out of Office
 - Nov 23-24
- Rich Henthorn
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Simulating two vehicles with TRN and CoNav
 - 901405 - PowerBuoy Development
 - Checked the nav440_server for anomalies
 - 902305 - Event Detection using the Sedimentation Event Sensor
 - Investigating fluorometer light issue - confirmed no issue
 - 902306 - SINKER
 - Testing at the test tank
 - Wednesday test deployment on Ventana canceled due to crew sickness
 - Overhead
 - Director's dialog, reception, silent auction
 - Out of Office
 - Dec 18 - 28: Holidays
- Brett Hobson
- Irene Hu
 - 901805 - Coastal Biogeochemical Sensing Program
 - Got mcaps and nanofet modified for n channel
 - 901904 - Deep-Sea Coral Community Observatory
 - Laid out strobe board
 - Started on remaining boards
 - Overhead
 - Rec com project update
 - Helped spot for drone project
 - Out of Office
 - Dec 25-29: Holiday
- Scott Jensen
 - 706008 - READI-net
 - Flow sensor now works to stop sampling due to rate of volume limits
 - 901205 - ESP SURF Center
 - Support lab tool development to aid in post deployment processing
 - 901405 - PowerBuoy Development
 - Preparing operations manual for power converter
- Brent Jones
- Chad Keczy
 - Out of Office
 - 12/18 - 1/2 Vacay
 - Out of office on Fridays
- Brian Kieft
 - 300083 - DMO Divisional Support - LRAUV

- Supporting MBTS deployment, Piscevore deployment, and previous piscevore deployment last week.
- 902101 - LRAUV Technology Development and Fleet Operations
 - More docking all the time!
 - Met with Elecia to firm up MMP testing. Fix is in, gotta test now.
- 902102 - Multi-LRAUV Simulation Environment
 - Quick sim test for LCM compatibility
- Overhead
 - 2 interviews this week
- 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
 - Rev C stack discussions with Chad, other power can discussions.
 - 901206 - Coastal Profiling Float
 - Whittling down power requirements
 - 901911 - ROVVR
 - HMC Mentorship
 - 902204 - Scalable Robotics
 - End of Year Spending
 - Falkor planning
 - Paragon Perception Platform (P3) bringup.
 - Overhead
 - OES Tour help for Bill Kirkwood.
 - SEE-EAD Zoom interviews
 - Doc Ricketts interview for new pilot.
 - Out of Office
 - Taking off between Christmas and New Years.
- Thom Maughan
 - 300083 - DMO Divisional Support - LRAUV
 - Diagnosing Ahi's battery packs on rev1 BPC1 backplane. Captured bank switching mid-i2c transactions. Two bad banks have been resurrected after removing and re-inserting sticks and in one case, using the stick charger.
 - BPC2 health message implementation.
 - Parts delivered to Indtec
 - Met with Erik to go over the task list and plan for the next month
 - Stuffed Serial Monster Killer base board (20 serial ports) and getting it prep'd for Tad
 - 901009 - CANON
 - Added Steve Haddock and Shannon Johnson to the deepednaZ
 - Deepedna1 is now setup with permission same as Deepedna2
 - 901805 - Coastal Biogeochemical Sensing Program
 - Working on beta release
 - 902004 - Planktivore
 - Board design updates, fab and assembly packages
 - Year end budgets
 - Coming up to speed on plankton identification and recommendations by committees.

- Overhead
 - Staff council
- 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
 - Out of Office
 - Dec 11-15: AGU
 - Dec 26-29: Vacation
- Rob McEwen
- Paul McGill
 - 701147 - MARS O&M IV
 - Finalized design for Serial Splitter board. Fab is next.
 - 901700 - Acoustical Ocean Ecology
 - Fixed problems with AOS PIC24 sensor PCB. Will submit for fab in Jan.
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Attended another training session for machine learning tools to process UAV images.
 - 902304 - Piscivore Cam
 - Ordered multiple cameras and Raspberry Pi boards for evaluation
 - Attended brainstorming session on what hardware might improve Piscivore image quality
 - 902305 - Event Detection using the Sedimentation Event Sensor
 - Processed more fluorometer data
 - Wrote documentation for fluorometer data file format to avoid confusion about recorded values
 - Overhead
 - Continuing to help Jason A with his mooring's ground-fault circuit design
- Enoch Nicholson
 - 706008 - READI-net
 - Puck snap ring machining.
 - 902306 - SINKER
 - Deployment preparations
 - Overhead
 - End of year wrap up & 2024 planning
 - Out of Office
 - 12-15-23 to 01-02-24
- Tom O'Reilly
- 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

- 901809 - Deep Sea Bioinspiration
 - Multicamera design
 - Chiton strobe controller upgrades
- 901904.99 - Corral Camera System
 - System controller brainstorming and design
- 902204 - Scalable Robotics
 - SOI integration and power system upgrades
- 902306 - SINKER
 - Integration and testing of SINKER on Ventana
- Out of Office
 - Dec. 25 through Jan. 1 2024
- Brent Roman
 - 771131 - Great Lakes PCM/HAB
 - Supporting GLERL in their efforts to divorce their ESPs from the locked down NOAA lab networks
 - 901205 - ESP SURF Center
 - Calibrated 7 new 3G ESP heater boards' temperature sensors
 - Before discovering that none of the boards heating elements worked
 - Returned them for rework.
 - Finished calibrating reworked heater boards
 - Supporting Nadia at NOAA in Charleston by phone
 - 901913 - Wet Wifi
 - Lots of work learning the intricacies of gstreamer
 - Managed to get RTSP's AVPF profile working so client can request retransmission of lost packets
 - Forked the standard gst-launch-1.0 utility to allow specification of critical, but hidden, properties
 - Testing very low-power LTE Cat 1.bis USB dongle based on SIMCOM 7672G
 - <https://www.aliexpress.us/item/3256805723538488.html>
 - Works with Verizon sims!
 - Costs all of \$20!
 - Draws average of .15W
 - No GPS 😞
- Carlos Rueda
 - 701165 - OVAI
 - CMS UI prototype now [0.3.7](#).



- 901502 - Passive Acoustic Sensing
 - Group mtg
- 902204 - Scalable Robotics
 - End of year review mtg.
- Overhead
 - Export regulation training
- Out of Office
 - Dec 5, 22, 26–28: vacation
 - Jan 11: vacation
- Karen Salamy
 - 200103 - Core CTD Data - MDUC
 - Still awaiting Ed P. QC updates for the past 2 months. He indicated that he will be working on it this week.
 - 300057 - Mooring Maintenance
 - Spoke with Chris Wahl and Jules regarding the continued issues with the OA1 mooring downloads over the last 6-8 weeks. They are planning another mooring maintenance check in the upcoming weeks to see if the intermittent downloads are related to a cable or a radio malfunction.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Making headway on various map applications for the LRAUV team.
 - Overhead
 - Continue with tutorials for React 18.2 online and via various books.
 - Out of Office
 - Had some personal meetings and doctor visits this week.
 - On-campus 3 days/week (**T, W, TH**).
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - On going support for DSG, VARS
 - <https://github.com/mbari-org/vars-annotation/issues/168>
 - <https://github.com/mbari-org/vars-feedback/issues/84>
 - 902308 - M3/VARS for the Masses
 - Working on backend of annotation service: <https://github.com/mbari-org/annosaurus/issues/18>
 - DQ2209 - Ocean AI 2
 - Meeting with Ocean Networks Canada to give overview of annotation/ML pipeline (with Kevin B and Kakani)
 - Overhead
 - Updated Marine Imaging Workshop website at <https://miw2024.org/>
- Alana Sherman
- George Stern