

Engineering Weekly Report 10/24/2024 - 10/31/2024

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

Executive Council Notes

-

Individual Activities

- Michael Anderson
- Kevin Barnard
 - 500055 - VARS, M3/RS, DSG
 - Fixed issue with erroneous track reactivation in ultralytics causing tracking failures in some videos
 - Ran detection & tracking on D1460 with MBARI 452k YOLOv8 model; packaged for VL review
 - 702108 - Deployable AI
 - Cruise Oct 22, 2024 : ran PID and new RL vehicle controllers with YOLOv5 DeepStream tracking pipeline; conducted online training of RL controller
 - 901809 - Deep Sea Bioinspiration
 - Discussed FathomVerse ID backend and mobile object detection inference with Imagine dev team
 - Made some tweaks to FathomVerse ID configuration schema
 - 902204 - Scalable Robotics
 - Cruise Oct 29, 2024 : ran SLAM at Sponge Ridge; collected data with Arctic sled configuration
 - Ran stereo rectification for OakD cameras on Arctic MiniROV sled
 - Implemented nav goal retrieval, nav pausing in MolaRS
 - Created Dial deployment configuration for MolaRS testing on compaslabdev
 - Out of Office
 - Monday and Wednesday mornings before 9am: physical therapy until Dec 15, 2024
 - Maldives Nov 15, 2024 – Nov 29, 2024
 - Vacation Dec 16, 2024 – Dec 27, 2024
- Francois Cazenave
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - PTO troubleshooting
 - Cable order
 - 902106 - Niobicon-Based AUV Docking Development
 - Photosensor testing and installation
 - 902204 - Scalable Robotics
 - Drawings
- Danelle Cline
 - 902111 - Carbon Flux Ecology
 - Paper review of [X-CLR](#) (graph-based contrastive learning) and PAWS for self-supervised methods with Fernanda
 - Downloaded ISIIS data for testing
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - Testing [Meta Co-Tracker](#) on midwater video

- Added cleanvision to exemplar pipeline. Many examples were removed.
- 901502 - Ocean Soundscape
 - Submitted request for computer replacement for MARS lab soundscape machine with RAID as it has reached the end of life
 - PyPAM/PBP meeting with collaborators to discuss expanding its use with different hydrophones using the pyhydrophone python package
- 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Added cleanvision to exemplar pipeline to remove dark and blurry examples. Very few were removed.
 - Processing mission trinity-2_20241021T184730_MossLanding - there are some jellies in this and pinnipeds, but the reflectance removal is not handling many high-intensity reflections which are larger than normal.
 - Exported labeled data for collaborators Salvador Jorgensen of otters and sharks; Sal tags sharks, and he is interested in the co-existence of these species.
- Overhead
 - Submitted help ticket for replacement computer ADA; she will be replaced with FEIFEI in honor or Fei-Fei Li.
 - i2MAP meeting
 - Export 26K images with 100K localizations for YOLOv11 single-class detector i2MAP exploration with video lab
- Duane Edgington
 - Out of Office
 - Oct 21 - Nov 8, 2024. Vacation UTC+1
 - Dec 8 - Dec 17, 2024. [Neurips](#) Conference. Vancouver, BC.
- Jon Erickson
- Kevin Gomes
 - 200105 - Core Navigation - MDUC
 - Worked on simulator layout and planning
 - 300079 - DMO Support - RV Rachel Carson
 - Still chugging away at the ArcMapNav Add in for ArcGIS Pro
 - Overhead
 - i2MAP meeting (was great!)
 - DeepMind meeting
 - Out of Office
 - Nov 18-22: Vacation/Remote Work
- Andy Hamilton
- Kent Headley
 - 901007 - Benthic Biology & Ecology
 - looked into question re Aanderaa optrode driver and power logic question
 - 902204 - Scalable Robotics
 - Tested Oculus driver/GUI on first leg of Rachel Carson cruise; providing shore support for remaining legs.
 - Working with Blueprint Subsea on Oculus sonar configuration issues to try and extend output image resolution
 - Software updates and testing for cruise
 - 902405 - Precision Control Technologies
 - Studying Steve's TRN notes and transcribing for documentation
 - Overhead
 - hiring process planning
 - misc admin

- Rich Henthorn
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - AHRS server
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Refactor image processing and event detection code
 - Prep for variable event detection parameters
 - Looking at possible redeployment in December
 - 902405 - Precision Control Technologies
 - Double check TRN installation on pontus
 - Overhead
 - SciComm webinar
 - Out of Office
 - Dec 20 - Dec 31: Vacation/Holidays
- Akshay Hinduja
 - 702108 - Deployable AI
 - Test multi-cam setup on AGX Orin
 - Start writing scripts to control cameras through python
 - Write setup documentation
 - 902204 - Scalable Robotics
 - Cruise, Mon Oct 28 2024, all working
 - Write documentation
 - 902101 - LRAUV Technology Development
 - Identified python library issue with lcm in docker image. Turning the python requirement off gives a successful build, but may have missing pieces.
- Brett Hobson
- Irene Hu
 - 901217 - Chemical Sensors
 - Tiva129 module sent off for fab
 - 12V regulator on MSC3 baseboard received feedback from E2E of “very poor layout”. Working on rC of baseboard that cleans up vestigial upstream components. Removing ferrite bead from rB board seemed to get regulator working, but it broke again during probing before could verify
 - Concluded tests of ideal diodes / hib power supplies, wrote a writeup, changes made for rC
 - Discussed mcap inventory procedure with Jess
 - Got Xelteck programmer to work again for MMS digital boards AT17 and PIC programming; working on a writeup for Ben
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Went through second half of images from 10/7 dive to pick out in-focus views
 - Exploring image correction for white balance, some strange results
 - Overhead
 - Rec com meeting; planning Bike to Work
 - Out of Office
 - 11/25-11/29: Thanksgiving holiday
- Scott Jensen
 - 706008 - READI-Net
 - Making progress on the FIDO PCB integration into the FIDO mechanism
 - Fixed a few lingering issues
 - Stuck still with one timing issue
 - 901205 - ESP SURF Center
 - Supporting lab operations
 - 901405 - Wave-Energy Conversion for Oceanographic Applications

- Why does the rangefinder over current ?
 - 902106 - Niobicon-Based AUV Docking Development
 - Still trying to get access to datasheet, got a response today
 - Out of Office
 - October 7-9
- Brent Jones
 - Out of Office
 - 2 sick days
- Chad Keczy
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - Out of Office
 - 10/23-29 (MST)
 - 11/06-12 (CST)
 - 11/15-12/2 (PST)
- Denis Klimov
- Eric Martin
 - Out of Office
 - Sick leave for child doc appts tuesday and wednesday.
- Thom Maughan
 - Out of Office
 - Oct 24 two weeks vacation Colorado.
- Mike McCann
 - Out of Office
 - 14-19 November 2024: Vacation
- Rob McEwen
- Paul McGill
 - 300070 - DMO Support - Ventana
 - Continuing to work with DJ to find suitable thumbsticks for ROV camera control
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Evaluating if we can get the SES and trigger trap back at sea for Dec 16 deployment
 - 902401 - Geo-Sense
 - Filling in for Alana at weekly meetings while she's at sea
 - Got quotes for Seacon connectors but they're too expensive
 - Overhead
 - Spent a couple of days analyzing 23-year-old seismic data to establish background noise levels for upcoming SeismoSands deployment next week (time charged to Charlie's project)
 - Worked with Knute and Bryan to get MARS Wet Node Simulator operational (time charged to MARS O&M)
 - Moved rolling toolbox from Bldg. B Ex attic and emptied it so Paul C can give it to one of his new hires
 - Out of Office
 - Another medical appointment on Monday
- Enoch Nicholson
 - 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
 - November 6- November 7, 2024 - vacation
 - November 26 - November 27, 2024 - vacation
 - December 30 - January 3, 2025 - vacation
- Paul Roberts
 - 702108 - Deployable AI
 - Data review and reporting from Oct 2024 field work
 - 702108.99 - 6-eye camera-compute mod
 - Finished drawings for camera housing
 - 902004 - Planktivore
 - Data management
 - 902306 - SINKER
 - Tank testing data analysis
 - Out of Office
 - Nov 25-29 Vacation
 - Jan 6-10 Vacation
- Brent Roman
 - 708165 - NOAA-MERHAB-UW
 - Looking into how to port libjxl to ESP ARM Linux
 - 901205 - ESP SURF Center
 - Wrote 2G mission for upcoming sampler bakeoff at MBA
 - 901913 - Wet Wifi
 - Deployed on the miniROV Monday and Tuesday
 - High frequency modem works better than long range modem
 - Both struggling with acoustic interference
 - Likely from the USBL
- Carlos Rueda
 - 901502 - Ocean Soundscape
 - Meeting with PyPAM team re synergy with PBP
 - Meeting with NOAA/NEFSC re PBP/PyPAM Soundcoop followup
 - 902101 - LRAUV Technology Development
 - TethysDash backend now [4.81.2](#), Dash4 UI [4.82.0](#). Various fixes seem to have been successfully exercised in recent/ongoing vehicle deployments.
 - 902204 - Scalable Robotics
 - Dial system now at [1.4.0](#) with significant additions related to platform deployment management.
 - Dial documentation updated (mainly [here](#) and [here](#)).
 - Continuing Dial-MolaRS integration.

- Overhead
 - Eng. mtg
 - Attended various online webinars/presentations: [Icechunk](#), [Vite and the future of JS tooling](#) (presentation in the Jetbrains JS Day 2024).
 - Google GDM presentation.
 - Watching some [Google Cloud App Dev](#) presentations.
- Out of Office
 - Nov 11: vacation
 - Nov 18–20: QCon
 - Dec 9–12, 23–24, 30–31: vacation
- Karen Salamy
 - Out of Office
 - US React Summit Conference: November 19-24, 2024, NYC.
 - Vacation: Friday, Oct 25, 2024 - Having another shoulder procedure and will be out the whole day.
 - On-campus 3 days/week (**T, W, TH**).
- Brian Schlining
 - Out of Office
 - Oct 7-11 - 5th Marine Imaging Workshop in Monterey
 - Oct 14-15 - Out sick
- Alana Sherman
 - Out of Office
 - Took vacation day Friday
- George Stern
 - 902204 - Scalable Robotics
 - Completed design of the new laser mount
 - Began assembling OAK500 can
 - Docking station concept design
 - 902304 - Piscivore Cam
 - Completed MOU/project development plan for Rhonda Software and requested updated bid
 - 902306 - SINKER
 - Batteries are on order
 - 706008 - (READI-net)
 - Lot of spinning to try to find alternative cheap/fast pcba supplier for pucks; in the end Indtec seemed best due to board shape and singulation capabilities. Still trying to find the mexican assembly houses the auto industry is using to avoid tariffs.
- Justin Tucker
 - 901101 - Seafloor Mapping
 - Heated plume experiment cart mount and assembly.
 - 902010 - Mesopelagic LRAUV
 - DVL housing, bracketry, and nose frame adapter drawings released for manufacturing.
 - Continued work on nose frame assembly, nose shell, CTD bracketry, puck bracketry, and EyeRis payload adaption.
- Johann Voigtlander
 - 902204 - Scalable Robotics
 - Dismounted Norbit WBMS - going to be installed on MiniROV
 - 902208 - Mini ROV Operations
 - Mobilized MiniROV onto RC
 - 2 days at sea for Kakani
 - MiniROV Maintenance, issue with clump weight thruster ground fault

- 902402 - CSEM
 - Using 2 winch setup, rewiring the black winch to use 240V 3-phase.
- Overhead
 - (Last week 10/14-10/18) STCW training
- Out of Office
 - April 16th - May 7th Germany CSEM
 - May 8th - May 12th Vacation