

Engineering Weekly Report 11/9/2023 - 11/16/2023

<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
 - Assisted with Marimba software development at CSIRO
 - Investigated reported issue about VARS observer changing via VARS GridView
 - Several fixes & improvements to VARS GridView
 - Fix issue of framegrab bounding boxes using video
 - Autorange image view only on image change
 - Apply default chronological sort
 - Add icons for “open settings” and “query” actions
 - Sharktopoda 2 integration working
 - 902002 - FathomNet
 - Met with ONC to discuss potential collaboration
 - 902204 - Scalable Robotics
 - Participated in Fulmar cruise
 - Wrote ROS2 TF → LCM CoMPAS odometry republisher node
 - DQ2209 - Ocean AI 2
 - Supported CMS planning & development
 - 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
- Danelle Cline
 - Out of Office
 - Thanksgiving, November 22nd-November 24th.
- Duane Edgington
 - 500055 - VARS, M3/RS, DSG
 - Completed assigned tasks on VARS-ML-Tasklist including production runs on VM DORIS to shake out bugs and deliver processed video files to Lonny.
 - Working session with Danelle to refactor directories on Doris to make it easy for different projects to keep their work and products separate on DORIS. Updating documentation.
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - Trained a Yolov5x6 1280 model on selected images for targeted detection/classification, using deepsea-ai and bio-ai workflows. Validation statistics are very promising.
 - Running model against selected dive video collection (24 videos) to evaluate performance and usefulness. Using VM DORIS and deepsea-ai PROCESS pipeline.

- Requested quota increase of AWS g4dn EC2 instances, to support running model on ECS elastic compute stack via deepsea-ai ECSPROCESS pipeline
- 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Team meeting. Planning team training session on data management system for ML.
- Overhead
 - Attended Colleen's lab meeting, with a presentation from ML postdoc.
- Out of Office
 - Nov 15: (virtual) Generative AI (AI World Barcelona) 5pm-9pm (GMT +2)
 - Nov 20 - 22: Vacation (PST) UTC-8
 - Nov 27 - Dec 1: Vacation (EST) UTC-5
 - Nov 29 Potential video conf with Tom Uram from Argonne National Labs
 - Dec 10 - 16. NeurIPS 2023. (virtual) UTC-6
- Jon Erickson
- Kevin Gomes
 - 200105 - Core Navigation Data - MDUC
 - Bi-weekly networking meeting for David Packard
 - 300079 - DMO Divisional Support - Rachel Carson
 - Assisted with troubleshooting Dive number issue (and propagation through navproc M3RS)
 - Out of Office
 - Nov 20-22: Vacation
 - Out sick: 11/9-11/15
- Andy Hamilton
- Kent Headley
- Rich Henthorn
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Met briefly with Rock
 - CoNav
 - 902305 - Event Detection using the Sedimentation Event Sensor
 - Meeting with McLane about their TriggerTrap development
 - 902306 - SINKER
 - Dang camera controller testing
 - Overhead
 - Rec-Com stuff
 - Out of Office
 - Dec 18 - 28: Holidays
- Brett Hobson
- Irene Hu
 - 901805 - Coastal Biogeochemical Sensing Program,
 - Hiring committee for new lab tech
 - Housekeeping on new nanofets
 - 901904 - Deep-Sea Coral Community Observatory
 - Edited drawings for ROV housings, talked to Ray about fab
 - Discussed electronics with Paul, started thinking about LED board
 - Overhead
 - Rec com: pancake breakfast
 - Out of Office
 - Nov 15: out
 - Nov 21-22: Thanksgiving vacation
- Scott Jensen
 - Out of Office

- Family leave
- Brent Jones
 - 901112 - Monterey Bay Time Series
 - Flew and recovered Daphne
 - 902004 - Planktivore
 - Investigating clock problems. Figured out we need a time server on LRAUV
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Looking at timeservers on LRAUV. Building LCM on windoze
 - 902311 - Wire-Walker Power Generation
 - Sizing ball screw for piston regen
 - Out of Office
 - 1 day vacation
- Chad Kechy
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - 300083 - DMO Divisional Support - LRAUV
 - Supporting MBTS deployment
 - 901513 - Targeted Sampling by AUVs
 - Working with Yanwu for passive acoustic monitoring
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Lots of docking work! Charging is working and we're honing docking and attempting data transfer.
 - Out of Office
 - 10/23-10/31 vacation (PDT)
 - 11/07-11/10 Phoenix (MST)
 - 11/20-11/27 vacation (PST)
- Denis Klimov
 - 901112 - Monterey Bay Time Series
 - Table for the IFCB repair is configured, IFCB is suspended from the overhead rail system. Ordering a new leak tray for under-the instrument and to hold reagent bags.
 - 902004 - Planktivore
 - We are consolidating parts and tools for Fluume in the ESB building this week.
 - Overhead
 - We are working on the issue on the handling soldering materials flumes, especially with water-soluble soldering materials, from both EE and Safety perspective. The path forward is identified, that is to use flat down-draft boxes similar to one existing box, but make them smaller and easier to swap, and also make options for different size ducts, 6", 4", and 2".
- Eric Martin
 - Out of Office
 - Sick day on Tuesday, 11.07.2023
- Thom Maughan
 - 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
 - Added 2 new cron jobs on emdb: add_new_dives and gen_new_raw_nav

- Glad I wrote [the Workflow documentation](#) a year ago when I last worked on this code
- 901910 - Plankton Taxonomic Groups from AUVs
 - Modifying auv-python's biolume proxy code to support variable flash_threshold values
- Overhead
 - Background checks for capstone student tour completed
- Rob McEwen
- Paul McGill
 - 701147 - MARS O&M IV
 - Had another meeting with UW ME to work on layout of internal chassis
 - Troubleshooting ground-fault issues on Mini Node
 - Still working with Duane T on serial port splitter
 - 901700 - Acoustical Ocean Ecology
 - Met with Kelly and Chad about ground faults on MARS Echosounder and how to move forward
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Started some photogrammetry analysis for Tom O
 - 901904 - Deep-Sea Coral Community Observatory
 - Starting analysis of images from recently recovered Mega Coral Cam
 - 902304 - Piscivore Cam
 - Choosing components for a Raspberry Pi camera system for testing
 - 902305 - Event Detection using the Sedimentation Event Sensor
 - Had a meeting with software team at McLane to work out details of NRE programming
 - Helping Crissy with power issues on the ISSUS camera
 - Out of Office
 - Was on vacation Thu and Mon
- Enoch Nicholson
 - 706008 - READI-net
 - Fixing clamp issues on the second sampler.
 - 902306 - SINKER
 - Wiper Testing
 - Pressure vessel assembly
 - Chassis assembly
- 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 - 23, 2023
 - March 4 - March 8, 2024
- Paul Roberts
 - 901809 - Deep Sea Bioinspiration
 - optim camera control
 - LCM image exporting
 - 901904.99 - Corral Camera System
 - ROV camera fabrication
 - 902204 - Scalable Robotics
 - HSI lighting improvements
 - 902306 - SINKER
 - Project management

- Prep for field work
 - Out of Office
 - 10/19-10/21
- Brent Roman
- Carlos Rueda
 - 701165 - OVAI
 - Initial versions of the CMS UI prototype, which is being deployed on a new 'ovaidev' VM that IS created for us. Thanks Joost for the very productive discussions.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Dash 4.55.2 with more adjustments/fixes related with the handling of changed/unchanged mission boolean parameters. Thanks Quinn S. for reporting.
 - Sent email to a number of LRAUV mission authors kindly asking for their review of tethys language documentation updates, recently contributed by Mike Godin:
 - <https://docs.mbari.org/lrauvmissions/tethys/>
 - <https://docs.mbari.org/lrauvmissions/behaviors/>
 - Submitted [TETHYS-704](#), a proposal for an adjustment in the LRAUV, intended to make TethysDash handling of missions more robust.
 - Some exchanges with WHOI re Steve's widgets. Steve has now incorporated mission parameter defaults as provided by TethysDash API.
 - 902204 - Scalable Robotics
 - Some [Dial documentation](#) updates.
 - Overhead
 - Merlin Sound ID seminar. Very interesting discussion with Grant van Horn in the afternoon (also with John Ryan).
 - Out of Office
 - Nov 15-16: (virtual) Generative AI (AI Barcelona)
 - Nov 20-22: vacation
 - Nov 27-30: Working from home some of these days
- Karen Salamy
 - 200103 - Core CTD Data - MDUC
 - Still awaiting updates from Ed Peltzer on recent ROV dives.
 - 300057 - Mooring Maintenance
 - Looked into the status of the M1, OA1, and OA2 moorings.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Spun back up to the Dash5 GUI work after a month in jury duty.
 - Out of Office
 - On-campus 3 days/week (T, W, TH).
 - **JURY DUTY (until first week of Dec).** - Finished up jury duty late last week. Decompressing a bit.
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - Fixed an issue with viewing raw ML output in Sharktopoda where data sets with 100,000s of localizations would hang.
 - Rewrote the ML loader, then loaded [ML-generated annotations for dive V4464](#) into VARS.
 - Fixed [the map base layer](#) used in the [prototype Deep-sea Guide](#). ESRI retired the old one and turned it off.
 - Investigating methods of using full ML track data to help annotators visualize and correct annotations.
 - Added basic documentation for [Sharktopoda](#), and [vcr4j-remote](#).
 - Switching doc generator to scaladoc for [raziel](#) and [m3-support](#)

- 901618 - Pelagic-Benthic Coupling
 - Setting up a [non-core project for Station M data](#) to be included in the main VARS database.
- DQ2209 - Ocean AI 2
 - Deployed a model Lonny trained on all of FathomNet's data, known as the 'meg[alodon]' detector externally for testing at <http://fathomnet.org:7777/>
 - Meeting with Paul Rogers to discuss CMS development.
 - Setting up VM in DMZ to support CMS app and a postgres db.
 - OVAI team and I met with Ocean Networks Canada to discuss collaborations with FathomNet.
- Overhead
 - Working with Kakani and Bill to get the marine imaging workshop rolling along.
 - Started discussions with Jennifer Durden about setting up the science committee for the marine imaging workshop.
- Alana Sherman
 - 901904 - Deep-Sea Coral Community Observatory
 - Our megacoral camera was recovered after a stressful period of time when it had been released but did not surface.
 - On Monday I connected to the camera and was happy to find it had ~9500 images. It worked for 13 months at Sur Ridge and appears that there were not any significant technical issues. We are investigating whether the focus was set optimally for the scene. Also, for the first time, there was biofouling on the glass port of the camera.
 - 902208 - MiniROV Support
 - Was released from Covid isolation just in time to go on the last day of Fulmar operations on Friday with the Scalable Robotics Group. It was a very successful dive all around.
 - Demobilized from the Fulmar on Monday and then rebuilt control room in the lab Monday and part of Tuesday. The vehicle is now operational.
 - 902312 - Seafloor Processes
 - We are gearing up for our first meetings on the Geosense and CSEM projects.
 - Overhead
 - DMO director search activity
- George Stern