

Engineering Weekly Report 9/28/2023 - 10/5/2023

<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
 - Implementing handling of different-resolution source video (i.e., rescaling) in m3-download dataset generation
 - 902204 - Scalable Robotics
 - Finished and tested implementation of multiple candidate registration for global loop closure in RTAB-Map
 - Created launch configuration files for LASS deployment Oct 10, 2023 – Oct 12, 2023
 - Collected calibration datasets for MiniROV DSPL stereo cameras
 - Resolved several RTAB-Map/LCM to ROS bridge bugs and coordinate frame convention issues
 - DQ2209 - Ocean AI 2
 - Discussed FathomVerse CMS development timeline
 - Out of Office
 - CSIRO: Oct 20, 2023 – Nov 5, 2023
- Francois Cazenave
- Danelle Cline
 - Out of Office
 - SoundCoop Workshop, Boulder, CO October 24-25 2023
- Duane Edgington
 - 500055 - VARS, M3/RS, DSG
 - Continued work on VARS-ML-SE tasks. Finished testing of flags/parameters AWS. Finished testing of handling/logging upload failure from M3 (network hiccup). With Danelle, finished testing of docker cuda service on Olivia local machine.
 - With IS, brought workstation Maximilian up for cuda/ML work, deployed to Brian S. office, with 10G ethernet networking. Nvidia RTX A4000 GPU with cuda/pytorch/docker/AWS stack.
 - MBARI VM doris being brought up for deepsea-ai (dsai) AWS job launching.
 - 901502 - Passive Acoustic Sensing
 - Meeting on prep for Oct demonstration Sept 29.
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Team meeting.
 - Out of Office
 - Oct 11-13 2023. virtual conference on Generative AI. PDT (UTC-7)
 - Oct 16-18 2023. Pytorch conference. SFO (in person). PDT (UTC-7)
- Jon Erickson
- Kevin Gomes
 - 200105 - Core Navigation Data - MDUC

- Architecture discussion with Mike about how to best deal with logger monitoring and process management
- Overhead
 - Wrapping up quarterly check ins
 - Wrapping up 2024 labor reports for engineers
- Andy Hamilton
- Kent Headley
 - 300078 - DMO Divisional Support - AUV
 - dorado linux port
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - reviewing pull request for mbtrnpp sim integration
 - added plugin handler support
 - working on geometry updates and hopefully new handler
 - 901101 - Seafloor Mapping
 - testing multibeam pipeline for cruise next week
 - 902204 - Scalable Robotics
 - testing multibeam pipeline for cruise next week
 - Overhead
 - SE-EAD job reposted, reviewing applications
 - misc admin
- Rich Henthorn
 - 300078 - DMO Divisional Support - AUV
 - Review pull requests
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Meeting with Rock and LRAUV team about the way forward for TRN and CoNav
 - 902306 - SINKER
 - Wrestling with camera board, bootloader
 - Both bootloader and application needed to be built with CRYSTALLESS option
 - Out of Office
 - Oct 16 - 19: Remote work, PDT
 - Dec 18 - 28: Holidays
- Brett Hobson
- Irene Hu
 - 901805 - Coastal Biogeochemical Sensing Program
 - ADV harness rewired; new cables received, wired, tested, potted
 - Packing for KAUST, paperwork, and last minute parts mods
 - Nanofet looks good in wet lab with second ISFET assembly
 - Overhead
 - SINKER cables: online sleuthing / discuss w/ George to figure out wiring for Orin cables
 - DEI focus group
- Scott Jensen
 - 706008 - READI-net
 - Preparations for Omics meeting
 - 708178 - Marine E Development NAV
 - Build of UofW plate
 - 901205 - ESP SURF Center
 - Preparations for Omic meeting
 - Overhead
 - E-Tech hiring committee
 - Out of Office

- Family leave
- Brent Jones
 - 902004 - Planktivore
 - Modifying to send LCM roi avg counts back via dash
 - 902311 - Wire-Walker Power Generation
 - Bench testing SOLOII motor for regen efficiency
 - Out of Office
 - Jury duty
- Chad Keczy
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - Out of Office
 - 09/18-09/21 (EDT)
 - 09/25 - 09/29 (EDT)
- Denis Klimov
 - 901112 - Monterey Bay Time Series
 - Parts for IFCB repair finally received. Looking into configuring a repair space which is challenging due to the instrument size and configuration
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Helped debugging a compass on Thetys which experienced some sort of intermittent fault causing burning out a U14 on the Compass control card. Two cards were damaged. Upon inspecting / removing the damaged component it was found that pin 2 of damaged IC was fused to the pad on both boards, indicative of a high current. This line was then traced through the vehicle and front end-bell for possible parasitic connections and one was indeed found; battery voltage from one of the components which only activated occasionally, was shorted to the suspected compass communication line.
 - Overhead
 - Safety Committee meeting this week
- Eric Martin
 - 901206 - Coastal Profiling Float
 - Another tank test has been requested, minor code changes.
 - 901911 - ROVVR
 - HMC advisement
 - Data Download
 - 902012 - Telepresence
 - Prep for use next week
- Thom Maughan
 - 901009 - CANON
 - Working thru permissions and setup of the deepedna servers. Request was for backup and security patches however additional constraints and permission limitations are encountered.
 - Next step is to setup deepedna2 in the same fashion as DeepRip.
 - 901805 - Coastal Biogeochemical Sensing Program
 - Working on m2m serial
 - NanoFET user's guide for handoff to Scripps
 - NanoFET software testing
 - 902004 - Planktivore
 - Planktivore on LRAUV Ahi deployment on Tuesday 3 Oct 2023 after a push by Chris W and Aaron S. Observed ground fault diagnosis which turned out to be a flooded compass. Planktivore was clean on ground faults. LRAUV team efforts greatly appreciated.

- Gathered lessons learned.
 - LRAUV operator training.
 - Debugging hdd issues on DeepRip
- Out of Office
 - Vacation Sep 27 - Oct 2 Ohio.
 - Vacation Oct 12 - 18 Nevada Eclipse
 - Jan 9 - 12 CES
 - Feb 18 - 23 OSM24
- Mike McCann
 - 200105 - Core Navigation Data - MDUC
 - Got TODO list from Lonny & Linda for Expd and EMDB improvements
 - 300083 - DMO Divisional Support - LRAUV
 - Used MB-System on new Mac to create a 100x vertical exaggerated terrain of Lake Michigan
 - Testing visualization improvement with 100x vertical exaggerated simulation & LRAUV data
 - Overhead
 - Accepted offer to be on the jury for best paper at the Web3D 2023 Conference
 - Out of Office
 - 9-13 October: Web3D 2023 Conference
- Rob McEwen
- Paul McGill
 - 300070 - DMO Divisional Support - Ventana
 - Helped DJ troubleshoot ground-fault issues on Ventana
 - Developed a sampling scheme for ground-fault readings to be implemented by Greenseas
 - 701147 - MARS O&M IV
 - Had two Zoom meetings with UW team to settle technical issues
 - Finally got serial splitter to work, but we may go with relay switching instead
 - 901700 - Acoustical Ocean Ecology
 - Now that attitude sensor is working, trying to figure out how to store offset values in EEPROM or flash
- Enoch Nicholson
 - 706008 - READI-net
 - Sampler build and testing support
 - 902306 - SINKER
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- Tom O'Reilly
- Mike Risi
 - Out of Office
 - Out of office on Fridays
 - May 30 - June 6
 - August 21
 - September 5 - September 7
- Paul Roberts
 - 901809 - Deep Sea Bioinspiration
 - Multicamera testing on MiniROV
 - 901904.99 - Corral Camera System
 - Design review planning
 - 902004 - Planktivore
 - First deployment on LRAUV Ahi
 - 902204 - Scalable Robotics
 - PoE camera software

- 902306 - SINKER
 - planning for tank testing and instrument assembly
- Brent Roman
 - 901205 - ESP SURF Center
 - Identified that one of our 3G sampling pumps DOES NOT pulsate!
 - Older pumps seem to work better. What changed?
 - Automated 3G firmware update procedure.
 - Improved lysate recovery protocol so better detects and corrects a stuck plunger.
 - 901913 - Wet Wifi
 - Added RSTP server to LRAUV galene's backseat cpu and camera
 - Stitched together a series of router forwarding rules to make this video stream available on MBARI network via WetWifi when galene is deployed.
 - DQ2210 - READI-net
 - Attended conference call

Carlos Rueda

- 901101 - Seafloor Mapping
 - Some exchanges re MB-System docker image status
- 901502 - Passive Acoustic Sensing
 - Group meeting in preparation for NCEI workshop
- 901513 - Targeted Sampling by AUVs
 - Possibly a new wave glider front tracking exercise coming up(?)
- 902101 - LRAUV Technology Development and Fleet Operations
 - TethysDash backend now [4.54.0](#)
 - Dash4 frontend now [4.54.2](#)
 - TethysL: significant additions in TethysL [3.2.3](#)!
- 902204 - Scalable Robotics
 - Struggling a bit setting up lcm-webserver+websockets locally for development/testing purposes. (All good on [atuncita](#) and [compaslabdev](#) though)
- Overhead
 - DEIA focus group mtg
 - /etc/sudoers (and other files) corrupted on my Mac (thanks IS for the assistance to fix!)
 - Ocean Visions seminar
 - IE meeting (reviewing change management/cybersecurity document)
 - Started migrating tethystest from CentOS to Ubuntu
- Out of Office
 - Oct 16-19: 1-2 days working remotely (school break)
 - Nov 15: (virtual) Generative AI (AI Barcelona)
 - Nov 20-22: vacation

● Karen Salamy

- 300057 - Mooring Maintenance
 - Waiting on Francisco's group to finalize OA1 maintenance as to why it has stopped downloading data.

I continue to work on fine-tuning various functionality of the LRAUV Dash5 UI for the team.
- Overhead
 - I am spending some time with React 18+ tutorials
 - Added comments to the Change Management and Software Development Policy doc.
- Out of Office
 - On-campus 3 days/week (**T, W, TH**).
 - I *may* have to serve on jury duty (final jury selection will be next Monday). If chosen, I will be asked to serve ~8 weeks..... NOT kidding.....

- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - Investigating performance issues with bulk updates made to annotations (See [annosaurus](#))
 - Met with Paul Rogers to discuss differences in seek time into a video between ffmpeg and sharktopoda. This is a key issue to resolve for the machine learning pipelines.
 - IS setup a new GPU box for our group to use for local ML video processing.
 - 902308 - M3/VARS for the Masses
 - Continuing work on adding docs/tests/apidocs to the video asset manager, [vampire-squid](#). Switched from [eclipselink](#) to [hibernate](#) as a JPA provider due to lazy loading issues. Implementing [cross database](#) testing (SQL Server, Postgresql, Oracle, Derby) using testcontainers. Postgres' [handling of UUIDs is so weird](#).
 - DQ2209 - Ocean AI 2
 - Discussion with the team and Paul Rogers to have Paul start work on the games' [content management system](#).
 - Out of Office
 - Sep 20 - Oct 13 - Working remotely
- Alana Sherman
 - 902208 - MiniROV Support
 - Testing new sled for GT
 - Tracking down losses on fibers
 - Trying to check in software, much fun with git
 - Worked with Dale on a couple fixes and plans for fixes post Fulmar cruise
 - Out of Office
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- George Stern