

Engineering Weekly Report 2/9/2023 - 2/16/2023

Executive Council Notes

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Individual Activities

- Michael Anderson
- Kevin Barnard
 - 500055 - VARS, M3/RS, DSG
 - Implemented several feature requests in vars-gridview
 - 902002 - FathomNet
 - Planned milestone 2.3 tasks Feb-April
 - 902204 - Scalable Robotics
 - Wrote Python library for CoMPAS LCM types; to be published on PyPI
 - Wrote AprilTag detection script
 - Collected dataset with Mola to test AprilTag detection/pose estimation
 - Overhead
 - Assisted with RRE interviews 2/14
- Francois Cazenave
- Danelle Cline
 - Out of Office
 - Few sick days
 - Tentative out of office vacation Jan 25, 26, 27
- Duane Edgington
 - 500055 - VARS, M3/RS, DSG
 - Continued exploration of the EFS file system attached to SageMaker Studio issue. Will be pursuing suggestions received from AWS Support Feb 15.
 - 901009 - CANON
 - Attended team meeting (zoom) and reviewed campaign plan presentation materials.
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - Working session with Danelle. Installed VARS system on my M1 workstation. Brian/Lonny tells me I need to be updated to MacOS Ventura (13.2.1) for recent VARS video viewers/localization viewers to work. IS has set up my system at MacOS Monterey (12.6.3). I will check with IS if that upgrade will cause issues.
 - Brian has a patch, for me to try: VARS Annotation-1.4.8.zip
 - Continuing research on Active Learning for object detection/classification.
 - 901502 - Passive Acoustic Sensing
 - Alexa MBARI Ocean Soundscapes: Verified live streaming restored after IS system patching and needed reboot
 - 902004 - Planktivore
 - Reviewed kickoff presentation materials.
 - Out of Office
 - Plan remote work from home Feb 15 - 16.
- Jon Erickson
 - 300079 - DMO Divisional Support - Rachel Carson

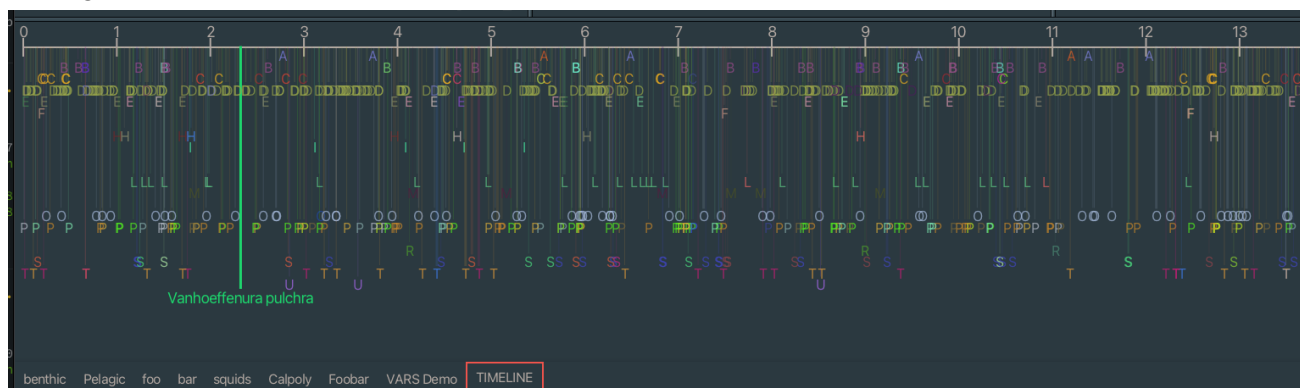
- Lifting bullet mod. For Talkcovic
 - Still doing assembly on the optics. Waiting on the strobe circuit boards and connectors.
- Kevin Gomes
 - 200105 - Core Navigation Data - MDUC
 - Updating Mac dev environment to better support local dev of navproc/logging
 - Review of Packard materials to date to start documenting a signal mapping that will be needed to capture all data streams
 - Tracing downstream use of status items in navproc code.
 - Build up of Ubuntu 22.04 NUC to see how CoreNav build goes ... looks like there is problem with dependencies for libbot2, might cause issues.
 - 300057 - Mooring Maintenance
 - After linux patches applied, found lock file was preventing mooring downloads. Cleared lock file and data looking good again.
 - 300079 - DMO Divisional Support - Rachel Carson
 - Helping DJ with GSS setup in ROV pilot areas (cables, ubuntu issues)
 - Debugged some issues with hardware on the machines in DJ's area. Looks like it was yet another bad/fried NVidia card.
 - Starting to work on upgrading DiveLog app
 - 901915 - Improving MBARI Data Impact
 - Reviewed notes to reset goals for project and will meet with Mike to start thinking about next steps.
 - AWS is offering to talk about helping with this effort, should talk to Monique and John to see if they are interested
 - Overhead
 - Meeting with robotics research engineering candidate
 - Wrap up of performance reviews
 - Met with AWS to discuss SageMaker/EFS issue and submitted a help ticket.
 - Met with AWS Global Impact Computing folks to see if there is work we can do together. More work needs to be done with group and maybe Monique and John to scope some ideas.
 - Dealing with fall out of Linux patching.
 - Scheduled almost all quarterly meetings
 - Talking to Paul R about options to host a web application that is being served from DeepRip as it will need to be externally available for a report.
 - Group meeting where we talked through Docker issues that cropped up with the last round of patches. I also talked about the AWS meeting which we will need to reschedule.
- Andy Hamilton
- Kent Headley
 - Out of Office
 - medical (3/10 a.m.)
- Rich Henthorn
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Setup spare Nano for LRAUV lab use
 - 901405 - PowerBuoy Development
 - Porting Logger to buoy sim platform for future use on target
 - Overhead
 - Ubuntu MATE distro problematic with nvidia hardware, going with straight Ubuntu
 - Out of Office
 - Feb 13 - 16: Vacation this week (MWTh), WFH (Tu), PDT
 - Mar 13 - 16: Vacation (MWF), WFH (TuTh), PDT
- Brett Hobson

- Scott Jensen
 - 706008 - READI-net
 - Lots of work and adjusting to get the vacuum prototype functional. It now loads and samples.
 - 901805 - Coastal Biogeochemical Sensing Program
 - nanoFET continues to be noisy. Late last week an anomaly was discovered that looks like it answers the noise question.
 - Overhead
 - E-tech hiring
- Brent Jones
 - 901112 - Monterey Bay Time Series
 - Redesigning sediment trap housing so can use newer comp system
 - 901805 - Coastal Biogeochemical Sensing Program
 - Beginning design for more automated ballast scale readings. Matlab code to take measurement readings and run through a low pass filter
 - Mechanical design for scale apparatus
 - Out of Office
 - Sick with covid
- Chad Keczy
- Brian Kieft
 - 300083 - DMO Divisional Support - LRAUV
 - On call for Daphne/Pontus MBTS runs this week. Recovering Daphne today.
 - 901009 - CANON
 - Met with team to discuss coordinated sampling missions for June CANON
 - 901513 - Targeted Sampling by AUVs
 - Working with Yanwu to design/test multivehicle coordinated sampling mission for CANON
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Fixed Joystick control on Galene and made a local (mbari) repo for further development
 - Reconfigured and pushed Galene cradlepoint config to IS repo.
 - Selected various missions to either delete, deprecate, or transition to TethysL (i.e. housecleaning)
 - Added B&T and compass cal documentation to deployment plan template. Updated B&T mission with more lenient default values for convergence.
 - Working with Benthos/Elecia to develop lat/lon/depth data return with range. MMP component testing will commence soon.
 - Set up backseat computer (BSC) on sim rig in lab. Will integrate LCM data flow to mimic a real vehicle/BSC.
 - 902102 - Multi-LRAUV Simulation Environment
 - Push to docker worked thanks to Ivan. Planning to automate this task as part of our nightly build scripts.
 - Worked with Ivan to get BSC driving the vehicle around. Now to add range/bearing ingest.
 - Overhead
 - Investigated grounding incident with WHOI vehicle Stella. While multiple factors contributed to the incident, the primary cause was a faulty DVL.
 - Out of Office
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- Denis Klimov
- Eric Martin
 - 901101 - Seafloor Mapping
 - Troubleshooting microcontroller issues with Chad and Mike
 - 901206 - Coastal Profiling Float

- Tankside testing sleep features.
- 901911 - ROVVR
 - Reviewing intern candidates
- 902204 - Scalable Robotics
 - RRE Interviewee
 - Getting new team members George and Francois tasked.
 - Boxfish interface emails
 - Stereo Camera software
 - Project meetings with intern candidates
- Overhead
 - MINIROV meetings and interview last week and this thursday
 - SEE hiring committee
 - Learning ROS2 basics
- Thom Maughan
 - 300083 - DMO Divisional Support - LRAUV
 - Met with Erik, Brian, Brett and Quinn to discuss battery board. Dropped parts to Indtec. Reviewed WHOI software protocol design doc.
 - 901805 - Coastal Biogeochemical Sensing Program
 - Joseph found a noise issue on the nanoFET. We chased it down to an incorrect MUX setting in the nanoFET. Fixed and in test.
 - Weekly ISFETology meeting / techfest.
 - 902004 - Planktivore
 - Kitting parts, cam ctrl is ready for assembly. The remaining boards should get here by next week.
 - Found a way to lower the ESR on the Strobe Energy board. Finished the design change and layout. Will work housing fitment with Jon before sending out for fab.
 - Planktivore kickoff meeting. Also, weekly Planktivore engineering meeting.
 - Overhead
 - DMO requested help with a XOJO modbus GUI for FO Micro board. Put together a prelim and reviewed with DJ. Moving forward with making it an official app.
 - Out of Office
 - Take son to school day (2/8, 3/8, 4/5), work at home am, on campus 1-4
 - week vacation possibly in March.
- Mike McCann
 - 200105 - Core Navigation Data - MDUC
 - Preparing to load edited _by_dive.txt files into EXPD's tracking and CleanRovnavData tables
 - 901910 - Plankton Taxonomic Groups from AUVs
 - Monique is reviewing another iteration of the 5.2-mpm-bg_biolume-PiO-paper.ipynb notebook
 - Fixed some STOQS bugs for loading stoqs_auv_compare for evaluating proxy calculations
 - Overhead
 - Some flails over trying to keep Docker services running during underlying updates
 - Met with capstone team to advise on their project plan for MB-System's mbgrd2gltf
 - Out of Office
 - Feb 17 Vacation
 - Feb 21-24 Vacation days
- Rob McEwen
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Reviewing Docking runs from last December.
 - Making block diagram of the homing and control loops.
- Paul McGill

- Tom O'Reilly
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Finished setting up, calibrating Trinity UAV in preparation for first flight
 - Coordinating first flight plan with project team and collaborators
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Working with Kieft and Rueda to make LRAUV acoustic messages relayed by Wave Glider Hotspot visible in the LRAUV 'dash'
 - Overhead
 - Discussing potential mobile IFCB project with interested science and engineering colleagues
 - Developing outline for paper submitted to Oceans 2023: "Ocean-based carbon dioxide removal: Role of standards and best practices"
 - Adopted a SOCCOM float on behalf of Friends of Hue shelter in Vietnam, working with kids there to design a logo for their float, the 'Jenny Do'
- Mike Risi
 - Out of Office
 - Out of office on Fridays
- Paul Roberts
 - 701164 - SnoCam+ Research
 - Lighting brainstorming, concept diagrams for illumination and optics
 - 901809 - Deep Sea Bioinspiration
 - Wrapping up EyeRIS octopus paper
 - Testing DeepSTARia on MiniROV in Test Tank
 - 901904.99 - Corral Camera System
 - Starting requirements for ROV multispectral camera
 - 902001 - Ventata 4k camera
 - Moving into temp space to complete build of second camera
 - 902004 - Planktivore
 - Kickoff meeting
 - 902204 - Scalable Robotics
 - Review of flat port OAK housing design
 - Testing DSPL Machine vision cameras
 - 902306 - SINKER
 - Completing requirements documentation
 - Power path and power isolation design
- Brent Roman
 - 708165 - MERHAB19:ESP
 - Experimenting with snaking thermocouples through ESP 2G puck clamp tops to make thermal calibration more repeatable.
 - Updating decade old scripts to automate thermal calibration using new model thermometers.
 - Updated ESPfriday and ESPeddie with new ESP root filesystem and Linux kernel
 - 771131 - Great Lakes PCM/HAB
 - Updated their 3 ESPs with Linux kernel that fixes long standing serial driver bug.
 - 901205 - ESP SURF Center
 - Improved logic in ESP OS and kernel for detecting and reacting to Ethernet cable plug/unplug events.
 - DQ2210 - READI-net
 - Starting looking at potential SOC from Toradex
 - Read over initial proposal for controller serial protocol design
 - Out of Office
 - March 8-15 visiting my dad in Sarasota, FL

- Carlos Rueda
 - 901502 - Passive Acoustic Sensing
 - Putting together pypam-based data processing code, starting with parsing of timekeeping files (json) provided by Danelle. Some exchanges with Clea P.
 - Group meeting
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Various exchanges in the lrauv-ux channel re new UI implementation, in particular, I have emphasized the need for a more “formal spec” of the logic to provide various vehicle status information pieces in terms of the required support from LRAUV/TethysDash for the associated API for the new UI.
 - Did some testing of the new UI while updating the google [doc](#) accordingly.
 - Enabled a functional, but preliminary [TethysDash Slack App](#). Thanks Steve for the testing and great feedback. WHOI also interested. Awaiting reactions from LRAUV folks.
 - Dash System is now [4.30.1](#). (Per exchanges with WHOI, it includes more relaxed requirements for “dlist” generation, only requiring the startEvent for the deployment.)
 - TethysL: Updated the [“Other editors” section](#) in the documentation. In short, besides VSCode (which remains the primary target for powerful features), there is also basic syntax highlighting support for all JetBrains IDEs (including Fleet), TextMate, Vim, Emacs, Bat, and Sublime.
 - Overhead
 - Peter notifies me there’s some docker-related issue with ‘tsauv’ upon the recent patches; the [gpdviz](#) service is currently down... Then, I “discovered” that MXM is also down. Planning to have a closer look at both machines and keep in touch with Peter.
 - IE meeting
 - Attended Internal seminar: Computer Vision Navigation for Space Applications
- Karen Salamy
 - Out of Office
 - Now in the office 3 days/week M, T, Th..
 - Feb 9-17: vacation/father’s estate finalizations.
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - The last round of server patches broke the docker daemons on a few servers. Worked with IS to get those back up.
 - Updated the vars-kb and vars-query apps to build on Java 19.
 - Working with Paul Rogers on [improvements to Sharktopoda based](#) on video lab feedback.
 - Released [VARS Annotation 1.4.8](#). This release replaces the [JavaFX TableView](#) component with a [Swing-based one](#) to work around long-standing, hard-to-squash bugs: [#128](#), [#129](#).
 - With the recent major changes in VARS. Brian is running through a bug hunt exercise to chase down edge cases.
 - Testing out a timeline view to VARS.



- 902002 - FathomNet
 - Much work on laying out the [FathomNet beta 2.3 roadmap](#).
 - [Work on integrating branches of MBARI's knowledgebase with the WoRMS concept tree](#).
 - Prepping for next week's FathomNet workshop.
 - Met with the new Ocean Vision AI program manager, Tapas Dwivedi.
- Out of Office
 - Feb 27 - Mar 3 - Vacation (Backpacking Haleakala so no internet)
 - Jul 28 - Aug 6 - Vacation
- Alana Sherman
 - 902204 - Scalable Robotics
 - Interview of RE candidate
 - 902208 - MiniROV Support
 - Working on preparing the vehicle for test tank deployments
 - Troubleshooting two issues:
 - Noise on funnel cam- resolved, was an issue with the Analog to SDI converter
 - Overlay software working but not showing up on display
 - Talked with Jean and Wyatt trying to get April dates for the Fulmar in order and figure out logistics like payment, weights of loads, etc
 - Overhead
 - The past week: interviews of candidates for MiniROV, ASOE, REE (Troni), and ME
- George Stern