

Engineering Weekly Report 11/28/2024 - 12/5/2024

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

Executive Council Notes

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Individual Activities

- Michael Anderson
- Kevin Barnard
 - 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 repairs
 - 902106 - Niobicon-Based AUV Docking Development
 - Actuated valve upgrades
 - Documentation of docking systems
 - Overhead
 - 2-day trip to LA to visit TMT
- Danelle Cline
- Duane Edgington
 - 901502 - Ocean Soundscape
 - Continued work preparing MARS data for analysis with Whisper and Google Kaggle multi-species whale detector. Using [OpenSoundscape](#)
 - Stepped through Whisper as an endpoint on AWS Sagemaker
 - Out of Office
 - Dec 8 - Dec 17, 2024. [Neurips](#) Conference. Vancouver, BC.
- Jon Erickson
- Kevin Gomes
 - 200105 - Core Navigation - MDUC
 - Moved simulator for current Carson to VM and it's working. Will move others too.
 - New Terminal Server for Packard sim installed
 - Progressing on VM navproc running currently deployed Navproc/Logging software
 - 300070 - DMO Support - Ventana
 - Small stuff to bring things back up after power outage on Carson.
 - 300079 - DMO Support - RV Rachel Carson
 - More and more work on the ArcMapNav re-write for ArcGIS Pro.
 - Overhead
 - After network maintenance a couple weeks ago, AIS data feed to Marine Traffic has been dropping and needs a restart every day or so. Trying to troubleshoot with IS
 - End of year budget stuff
 - Out of Office

- Dec: 12: Vacation
 - Dec: 23-26: Vacation
- Andy Hamilton
- Kent Headley
 - 901101 - Seafloor Mapping
 - MB-System TRN maintenance and updates
 - 902405 - Precision Control Technologies
 - Libtrnav build system maintenance and updates
 - Overhead
 - Office cleanout
 - Review prep
 - Purchasing
 - Crane training
- Rich Henthorn
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Prep for SES deployment at MARS rescheduled for Wed Dec 4
 - Variable thresholds, trigger trap setup, and modems
 - 902401 - Geo-Sense
 - ONYX system training
 - 902405 - Precision Control Technologies
 - TRN on LRAUV
 - Overhead
 - Sexual Harassment Prevention Training
 - Out of Office
 - Dec 4 - Rachel Carson
 - Dec 5 - WFH for local appointments - network, phone, zoom, I'll get back to you ASAP
 - Dec 20 - Dec 31: Vacation/Holidays
- Akshay Hinduja
 - 702108 - Deployable AI
 - RMA request sent for JCB005 board which had anomalous behavior in 4 and 6 cam mode, making it difficult to get full resolution images at 60fps.
 - 902204 - Scalable Robotics
 - Add LCM broadcasting for water column and snippet raw data for Norbit to beta python driver
 - Work on waterfall visualizer with Javiera
 - 902101 - LRAUV Technology Development
 - Go through tethys visualizer tool reading nc4 data. Will reverse engineer to work on reading nc4 data and see inroads to gazebo sim.
 - Out of Office
 - 12/5, 12/6 WFH
 - 12/16-12/23 out for wedding
- Brett Hobson
- Irene Hu
 - 901217 - Chemical Sensors
 - Testing and troubleshooting Tiva129 module; fixed some assembly errors, working on TM4C129 failure to hibernate
 - Troubleshooting mcaps with Jess (some 0ohm capacitors)
 - Troubleshooting and testing MSC3 baseboard revC. 12V regulator seems to work well, some assembly errors
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Meeting to discuss future of project

- 902305 - Event Detection Using the Sedimentation Event Sensor
 - Changing batteries and other prep for deployment Dec 4
- Out of Office
 - 11/25-11/29: vacation
 - Dec 4: Carson day
 - 12/23-12/27: vacation
- Scott Jensen
 - 706008 - READI-Net
 - Prepared and delivered instrument to 219 Design for manufacturing review
 - 901205 - ESP SURF Center
 - Preparations for Australia deployment
 - Overhead
 - Assisting with Lab move
 - Out of Office
 - November 26-27
- Brent Jones
 - 901112 - Monterey Bay Time Series
 - Making mods to SIPPER drawings
 - Modifying existing SIPPER parts
 - 901502 - Ocean Soundscape
 - Meetings going over Julia environment
 - 902004 - Planktivore
 - Checking out new board build
 - I2C drivers for batt charger
 - 902111 - Carbon Flux Ecology
 - Deployed and recovered CPF with multicam
- Chad Keycy
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - 300083 - DMO Support - LRAUV
 - Supporting Daphne deployment
 - 706007 - LRAUV USGS Great Lakes Prey Fish Assessment
 - Handled a missing data issue per their request and updated for stoqs
 - 901513 - Targeted Sampling by AUVs
 - Deployed ahi for planktivore adaptive sampling testing which was successful.
 - 902101 - LRAUV Technology Development
 - Tested os build
 - Tuned motor controller and tested at 1.5 m/s. 33% increase in speed now available.
 - Debugging oil leak on Aku
 - 902405 - Precision Control Technologies
 - Deployed Pontus for revised TRN testing
 - 90210150 - LRAUV Tech Tsr Saab
 - Minor support for TDP
 - 90210151 - LRAUV Tech Tsr WHOI
 - Worked on support for host sim and various other system questions
 - Overhead
 - Nature conservancy meeting to discuss future of whale tracking device
 - Meeting with Oshen to review the latest engineering mods. They have added a thruster now and redesigned the sail for better upwind and light air sailing.

- Out of Office
 - 12/5-6 (MST)
- Denis Klimov
- Eric Martin
 - 901101 - Seafloor Mapping
 - NSF Proposal Work
 - Lidar is delayed again.
 - 901911 - ROVVR
 - End of year efforts for new computer system for the Packard
 - 902204 - Scalable Robotics
 - Last 2 weeks were in the Maldives on expedition, lots accomplished. 10 dives with Mola and 4 surveys conducted with the Blueboat, along with lots of testing on both.
 - Out of Office
 - Maldives Expedition 11/15-11/28, and will be highly out of communication.
- Thom Maughan
 - 300083 - DMO Support - LRAUV
 - Backplane pcbs are expected Dec 5, working with Varsha on Indtec kitting. EE Techs will be building 2 backplanes.
 - Charger boards expected from Indtec mid Dec.
 - Serial protocol doc updated to v0.81 and sent to Quinn.
 - Tasks/status meeting with Quinn and Varsha. Hardware is on track for RevB builds. Varsha has two packs assembled and multi-drop rs232 dev/test starting after we get cabling and cart setup complete.
 - Working with Brett on WHOI needs
 - Many thanks to Kent for budget transfer to cover backplane assembly - a big help to the schedule.
 - 901009 - CANON
 - DeepEdna1 and DeepEdna2 servers have been moved to building G. IS added to Hipp-Edna slack for improved communications.
 - 901217 - Chemical Sensors
 - Working on serial protocol functions. Development on Tiva 123g is getting very tight.
 - Transitioning from Tiva 123g to 1290. Line by line code merge / review produced a build that did not communicate on console, suspecting something with the pll or clock setup. Second merge is line by line, but module at a time and now have the interrupt i2c code merged and working on 1290 rapido board.
 - Sent Jacob Schloss a RevA Tiva 1290 and an additional Tiva 1290 Rapido v1.2 along with a RevB Baseboard. Emphasis is on getting the hibernate function working and assist on code merge.
 - Built up a 2nd 'test box' for use by Jess in calibration. Jess is working on a python version for calibration.
 - Used the ESP environmental chamber to characterize the Fiberlite UV lamp from 15C to -15C. Also tested with dew and changing the guard shield distance to the high voltage. Prelim result is Fiberlite can handle the temperature range and frost/dew with little change in output intensity.
 - 902004 - Planktivore
 - Ahi was deployed Monday and recovered Tuesday with a successful targeted sampling experiment.
 - Out of Office
 - Dr appt on 11 Dec 2024
 - One to two weeks in the later part of December
- Mike McCann

- 901221 - Midwater Time Series
 - Revised expd-django's rovctdbbindata service to return edited nav data and data by dive number
 - Wrote some rudimentary tests that pass – will need to look a Playwright for better tests
- 901910 - Plankton Taxonomic Groups from AUVs
 - Looking at reloading stoqs_all_dorado to fix an inconsistency in backscatter variable naming
- 902101 - LRAUV Technology Development
 - Finally fixed up stoqs_denmark2024 so that all the ESP Samples are properly represented
 - Reloaded stoqs_greatlakes2024 after a missing 20-hour log set was made available
- 902403 - Expedition DB Modern
 - Wrote up an Issue regarding how we should be doing user authorization in expd-django
 - Reading up on alpinejs and sweetalert2 for creating the best Precruise forms in expd-django
- Out of Office
 - 23 December 2024 - 3 January 2025: Vacation
- Rob McEwen
- Paul McGill
- 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
 - 702108.99 - 6-eye camera-compute mod
 - Internal chassis drawings
 - Thermal design
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - SWIR imaging design
 - 902004 - Planktivore
 - Targeted sampling deployment
 - Data management
 - 902306 - SINKER
 - Meetings and planning for 2025 development work
 - Out of Office
 - Nov 25-29 Vacation
 - Jan 6-10 Vacation

- Brent Roman
- Carlos Rueda
 - Out of Office
 - Nov 11: vacation
 - Nov 18–20: QCon
 - Dec 9–12, 23–24, 30–31: vacation
- Karen Salamy
 - Out of Office
 - On-campus 3 days/week (**T, W, TH**).
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - Migrated publishing of artifacts from Sonatype OSSHR to Maven Central Repository and republished updated libraries (Note: Getting Maven to work with new Maven Central was super easy. Gradle, not so much, but I found this plugin that worked: <https://github.com/medivh-project/medivh-publisher>):
 - [Uuid-gen](#)
 - [Vcr4j](#)
 - [Commons](#)
 - [Annosaurus-java-sdk](#)
 - [imgfx](#)
 - I currently use hand-built libraries for accessing microservices. Did an investigation of using [openapi generator](#) and [kiota](#) to evaluate them for generating client SDKs from openapi docs. Currently starting integration testing with Kiota using <https://github.com/mbari-org/annosaurus-java-sdk>.
 - Some refinements to the new VARS Query at <http://m3.shore.mbari.org/query/query>
 - Set up an SSL/HTTPS server for debugging SSL issues in VARS tools at <https://gehenna.shore.mbari.org/>.
 - Set up a test environment for the new DSG (which requires SSL) at <https://gehenna.shore.mbari.org/kbeditor>
 - [New release of VARS annotation](#) with fixes to support SSL.
 - Investigation for performance of different computers for video transcoding. tl;dr, the number of media engines (i.e. hardware encoders/decoders for specified codecs) is the biggest factor in performance. The winner was the Mac M2 Ultra Studio running about twice as fast as the next contender, Mac M4 Pro.
 - 902002 - FathomNet
 - [Generated test dataset for upcoming Kaggle competition](#)
 - 902404 - 5th Marine Imaging Workshop
 - Coordinating for the 6th Marine Imaging Workshop handoff.
 - Out of Office
 - Oct 7-11 - 5th Marine Imaging Workshop in Monterey
 - Oct 14-15 - Out sick
- Alana Sherman
- George Stern
 - 902306 - SINKER
 - Reviewed battery interface board layout
 - Schedule and shield board planning
 - 300078 - Dorado AUV Thruster
 - Began schematic capture for the isolated 3.3v supply and layout for test proto board since sim parameters for the transformer are not available and the worksheet calculators are complaining
 - Overhead

- MARS IPB new risk review
- Justin Tucker
 - 902010 - Mesopelagic LRAUV
 - Continued optimization on on nose shell shape
- Johann Voigtlander
 - 902204 - Scalable Robotics
 - Built up blueboat after Maldives trip
 - 902208 - Mini ROV Operations
 - Ballasted MiniROV
 - 902402 - CSEM
 - Completed schedule
 - Mobed on Fulmar
 - Out of Office
 - April 16th - May 7th Germany CSEM
 - May 8th - May 12th Vacation