

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

<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 maintenance
 - Valve upgrades
 - Overhead
 - Visit at TMT
- Danelle Cline
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - Completed [biotrack](#) code
 - Processing select dives with representative biodiversity. Workflow loads top-2 predictions based on ViTs model and gradcam coverage.
 - 901502 - Ocean Soundscape
 - Recording computer setup. RAID and new user account done and in the MARS lab.
 - Soundscape OpenAI Whisper model pipeline
 - Overhead
 - Setting up new Mac FEIFEI. Apple CoreML library is pretty decent
 - Meeting with visitor Amy Mueller
 - Expense reports
- Duane Edgington
 - Out of Office
 - Dec 8 - Dec 17, 2024. [Neurips](#) Conference. Vancouver, BC.
- Jon Erickson
- Kevin Gomes
 - 200105 - Core Navigation - MDUC
 - Working on VM instance of Navproc simulator running currently deployed system.
 - 300079 - DMO Support - RV Rachel Carson
 - ArcMapNav port is coming along. Ship/ROV tracking operational. Waypoint management is next
 - 706008 - READI-Net
 - Very frustrating few days trying to debug networking level stuff on Rock Pi/Armbian. Networking is VERY unstable it seems and part of the problem was that the combination of the RockPi and

Armbian distro assigned the same MAC address to ALL devices! This isn't the only issue, but it's a doozy.

- Out of Office
 - Dec: 12: Vacation
 - Dec: 23-26: Vacation
- Andy Hamilton
- Kent Headley
 - 902405 - Precision Control Technologies
 - TRN guide (documentation)
 - Overhead
 - Office cleaning
 - Harassment prevention training
 - Misc admin
- Rich Henthorn
 - 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
 - Sent JCB005 for RMA
 - Test new boards to see if issue is resolved
 - 902204 - Scalable Robotics
 - Provided lcm broadcast enabled watercolumn and snippet additions to norbit driver
 - Check in with Mauro for s7k integration
 - 902101 - LRAUV Technology Development
 - Looked at nc4 logs and netCDF4 library to read LRAUV data
 - Wrote python script to extract most pertinent information relating to vehicle state
 - Looking at gazebo interface with lrauv-applications to see how to feed this information to the simulator
 - Out of Office
 - 12/16-12/23 out for wedding
- Brett Hobson
- Irene Hu
 - 901217 - Chemical Sensors
 - Hibernation problem with TM4C129 solved by contractor, tested his solution
 - Troubleshoot and checked out three new 129 modules
 - Rehabilitated remaining two revC baseboards
 - Measuring hibernation current using revC baseboard. Unfortunately layout did not solve issue with current spikes when module's hib power is connected to baseboard
 - Trying to tune snubber circuit on revC baseboard; two scales of oscillation
 - Changes made to revD baseboard, awaiting snubber circuit results
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Meetings to discuss future of project
 - Out of Office
 - 11/25-11/29: vacation
 - Dec 4: Carson day
 - 12/23-12/27: vacation
- Scott Jensen
 - 706008 - READI-Net

- Continued development and preparation for Australian deployment of FIDO1
 - 901205 - ESP SURF Center
 - Preparations for Australian deployment
 - Overhead
 - Helping with lab move
 - Out of Office
 - December 23 through January 1
- Brent Jones
 - 901502 - Ocean Soundscape
 - Getting clustering routines to work in newer Julia env
 - Spinning up Julia on a Mac
 - 902004 - Planktivore
 - Bringing up planktivore V2 main boards
 - Firmware for I2C switch
- Chad Key
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - 300083 - DMO Support - LRAUV
 - Supporting Daphne piscivore deployment this week
 - 706007 - LRAUV USGS Great Lakes Prey Fish Assessment
 - Attended workshop presenting our 22-23 data
 - 708143 - EcoHAB
 - Will back charge per Jim's e-mail (40 hrs)
 - 901513 - Targeted Sampling by AUVs
 - Worked with Yanwu on testing
 - 902101 - LRAUV Technology Development
 - Investigated oil leak on Aku
 - Investigated navigation issues on Ahi
 - Pontus deployed for Docking, TRN, PAM testing
 - 902405 - Precision Control Technologies
 - Lots of TRN work this week debugging ingest and reviewing data
 - Running more tests on Pontus. So far TNR is looking good.
 - 90210151 - LRAUV Tech Tsr WHOI
 - Working a bit on build environment
 - Overhead
 - Crane training
 - Oshen collab motor controller debug
 - TNC collab advise on next steps for testing
 - Out of Office
 - 12/23-27 (MST)
 - 12/30-01/03 (PST)
- Denis Klimov
- Eric Martin
 - 901101 - Seafloor Mapping
 - End of year DVL Purchase
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Meeting last Friday to go over tasks, just a few to watch.
 - 901911 - ROVVR
 - Cleaned up lab

- End of year purchases
 - Data Manufacturing for students
- 902204 - Scalable Robotics
 - Maldive cleanup
 - Permit application
 - OAK1500M Camera build
 - MiniROV coordination.
- Overhead
 - NOEF Write Up
 - Scoping for Google Deep Mind Project
- Out of Office
 - Part time through 12/20
 - Vacation 12/23-1/3
- Thom Maughan
 - 300083 - DMO Support - LRAUV
 - BPC2 revB parts kitting, PO, handbuild bpc2, discussed with jose about resource availability next couple weeks.
 - Parts kit for 10 BPC2 revB delivered to Indtec by Varsha. Waiting for PO to be signed.
 - Two (half) packs on a cart and an RS232 multidrop cable has been made
 - BPC2 RevA boards are all updated to LPC11e37 (more program space). Debugging odd behavior, looking into datasheet differences between the lpc11e14. Details: RevA backplane is reading 15 sticks and not reading the other 16 sticks after getting the processor updated to LPC11E37 - debugging it..
 - Parts for BPC2 Rev B handbuild expected to arrive on Tues Dec 10. \$1100 spent (budget available is \$400).
 - Evan has modified the spacer to fit the charger board and to tweaked some of the holes for better connector access. Evan 3D printed and verified the fit on RevA. Evan will hold off making proto build until we get the RevB BPC2 handbuilt for final verification.
 - Duane delivered a 'how I do this' document for PCB layout and fab. I shall miss working with Duane and wish him the best in retirement.
 - 901217 - Chemical Sensors
 - Migrating to Tiva 1290 from 123g is in progress. Working through merge issues. Switching between projects is affecting progress. I2C is working, hibernate appears to be working. Irene has tested Jacobs fix but there is work remaining to integrate and test. pH driver is working on 1290 but ISUS driver is not yet working on 1290. Planning Thurs/Fri to work with Jacob (modulo LRAUV project) as his next availability is January.
 - 'Dev / Test Box' build quantity has been bumped to six. Provided bill of materials and ordered most of the parts. Ben Davis is taking care of the box build.
 - Was pushing to get UW a box on Dec 17 with a preview of the software. Reset the delivery to second week of January and am planning to fly up and meet the UW team.
 - In progress on Serial command implementation and test. Working on test plan and command status spreadsheet.
 - 902004 - Planktivore
 - Delegating and dropping the ball on a few things.
 - Out of Office
 - Dr appt on 11 Dec 2024
 - One to two weeks in the later part of December
- Mike McCann
 - 901910 - Plankton Taxonomic Groups from AUVs
 - Explored dorado backscatter processing methods for inconsistencies found

- 902403 - Expedition DB Modern
 - Working on new Precruise entry, tracking at <https://github.com/mbari-org/expd-django/issues/37>
- Out of Office
 - 20 December 2024 - 3 January 2025: Vacation
- Rob McEwen
- Paul McGill
 - 300070 - DMO Support - Ventana
 - Helped DJ troubleshoot a fan error message on the Miranda video box
 - 902401 - Geo-Sense
 - Had monthly meeting with Sintela—they won't ship DAS until just before Christmas
 - Testing Deepsea Connect power and comms functions with ROV toast
 - Got battery spheres wired and will install batteries just before we seal the spheres
 - Overhead
 - Rich H and I spent most of Tue showing the Rover to NOAA PMEL in the hopes they'll adopt it
 - Troubleshooting Ryan hydrophone failure with Bryan S to determine why fuse blew
- Enoch Nicholson
 - 706008 - READI-Net
 - Fido design finalization
 - Starting to submit parts for fabrication
 - Purchasing components for 10X build
 - 901007 - Benthic Biology & Ecology
 - Scoped design changes and reviewed with Barry Lab
 - 902306 - SINKER
 - Battery development
 - Elevator Frame design
 - 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
 - 200105 - Core Navigation - MDUC
 - Misc. navproc maintenance on Rachel Carson
 - Developed on device viewer for pan and tilt debug debugging
 - Developed some generic navproc input processes for navproc 2.0
 - 300062 - DMO Support - Doc Ricketts
 - Testing KPT-45 pan and tilt unit with control software and working on a few interface fixes
 - 901101 - Seafloor Mapping
 - Continuing design and prototyping of new LASS stack
 - Starting to bring up new Linux computer for LASS control
 - Overhead
 - Completed Sexual Harassment Prevention Training
 - 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
 - Out of Office
 - Nov 25-29 Vacation
 - Jan 6-10 Vacation
- Brent Roman
 - 706008 - READI-Net
 - Corrected some troublesome networking misconfigurations for Kevin Gomes
 - 708165 - NOAA-MERHAB-UW
 - Added support for generation of PNG images (in addition to TIFF)
 - 901205 - ESP SURF Center
 - Helped Nadia just a bit with the lab move to Bld G
 - 901913 - Wet Wifi
 - Deployed on ventana. Housing flooded. Modems returned to OceanComm.
- 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
 - [Finished importing ML inference](#) for a batch of Ventana dives. [Import code](#) seems pretty bomber, so handing it off to the video lab so they can run it.
 - New release of mlviz to video lab that includes a script for pushing ML annotations into VARS. (mlviz-0.0.18)
 - Added SSL/HTTPS to the nginx proxies on dsg.mbari.org, m3.shore.mbari.org. Updated many/most/almost all(?) services and applications to use https. Also updated all pointers to data in the various VARS databases to use https.
 - Additional refinements to the [new VARS Query](#). With https in place, I was able to add image downloads as an option for the search results.
 - Set up a new Mac Ultra Studio and [threw together some code](#) to support transcoding dives recorded as 4k HEVC to HD h.264.
 - Consolidating client codes for the services for better reuse. Migrating the annosaurus client from VARS Annotation into [annosaurus-java-sdk](#). Started working with on the oni-client-sdk for the VARS Knowledgebase too.
 - 902002 - FathomNet
 - Shout out to Travis for testing SentinelOne for trapping malware as part of the FathomNet to NOAA pipeline. It's been installed and is running on the main FathomNet server.
 - 902304 - Piscivore Cam
 - Meeting to discuss merging LRAUV data with piscivore video annotations.
 - 902404 - 5th Marine Imaging Workshop

- Met with researchers from various groups in Perth to discuss hosting the 6th Marine Imaging Workshop.
 - Overhead
 - Working on presentation for the Deep-sea Biology Symposium
 - Out of Office
 - Jan 10-17 - [Deep-sea Biology Symposium, Hong Kong](#)
- Alana Sherman
 - Overhead
 - Week of Dec 2-6 - coast guard basic training course
 - Monday, Tuesday - Rover transfer discussions with PMEL/UW (prep Monday, meeting Tuesday)
- George Stern
 - 902204 - Scalable Robotics
 - Reprinted hardware broken on maldives trip
 - 902306 - SINKER
 - Battery housing shield board layout and review
 - First batteries arrived
 - 300078 - Dorado AUV Thruster
 - Began schematic entry/detailed design
 - Kicad design, layout and testing of a prototype transformer isolated flyback supply rail I couldn't sim; the paranoia was well founded; the architecture is not optimal for this project.
- Justin Tucker
 - 300078 - DMO Support - AUV
 - Incorporate updates to INS housing design
 - Working through 2D drawing updates
 - 901101 - Seafloor Mapping
 - Scope and cost estimates for LASS integration with WHOI's Jason ROV
 - 902010 - Mesopelagic LRAUV
 - Nose shell fabrication Jig design and printing
 - VR camera port structural analysis
- Johann Voigtlander
 - 902402 - CSEM
 - CSEM successfully deployed twice.
 - Coordinated logistics for deployment
 - Out of Office
 - April 16th - May 7th Germany CSEM
 - May 8th - May 12th Vacation