

Engineering Weekly Report 11/14/2024 - 11/21/2024

<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
 - Valve upgrade
 - Out of Office
 - One vacation day
- Danelle Cline
- Duane Edgington
 - 500055 - VARS, M3/RS, DSG
 - Team meeting. Discussion of performance metrics.
 - 901502 - Ocean Soundscape
 - Returning to ocean soundscape work, including Whisper eval and Google multispecies-whale Kaggle model eval
 - Team meeting
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting
 - 902111 - Carbon Flux Ecology
 - Working session, simCLR and PAWS
 - Out of Office
 - Dec 8 - Dec 17, 2024. [Neurips](#) Conference. Vancouver, BC.
- Jon Erickson
- Kevin Gomes
 - Out of Office
 - Nov 18-22: Vacation/Remote Work
- Andy Hamilton
- Kent Headley
 - 300078 - DMO Support - AUV
 - Used qemu emulation/virtualization to set up a QNX (Intel) VM that runs on an M1 mac. Includes an NFS file share with the host, so that repo and editing can take place on the host, and build and run takes place on the guest VM. This provides a development environment for upcoming Dorado work.

- Reviewing the state of code to support TRN in the loop for Dorado sim. Rob and I worked on that, though it's been a while; there is a pending pull request, and currently syncing with the main branch.
 - Reviewing layered control for 2025 work to enable remote commands in support of tow-out missions.
- 902204 - Scalable Robotics
 - Giancarlo and team are enjoying some success in the Maldives, they posted that they've completed their second MOLA dive, and are collecting some good data in the Magoodhoo heart lagoon.
- Rich Henthorn
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Implementing event detection with variable trigger limits using input from Yanwu
 - Improved acoustic communication interface
 - Preparing for deployment scheduled for Dec 6
 - 902401 - Geo-Sense
 - Preparing for arrival of our modified Sintela DAS unit
 - Looking for possible assembly and test areas (Bldg G, ESB, etc.)
 - 902405 - Precision Control Technologies
 - Testing TRN on LRAUV and reviewing results with Rock
 - Out of Office
 - Nov 21 - WFH, doc appts in AM and PM
 - Dec 6 - Rachel Carson
 - Dec 20 - Dec 31: Vacation/Holidays
- Akshay Hinduja
 - 702108 - Deployable AI
 - Troubleshoot camera board issue with Connect Tech. Unable to use all ports, with at least 2 not showing camera feed
 - Contact allied vision onto why we are not getting advertised fps at full resolution
 - 902204 - Scalable Robotics
 - Implement water column and snippet data reading for Norbit driver
 - Assist Mauro with s7k file generation
 - Start beta development for C++ driver
 - 902101 - LRAUV Technology Development
 - Go through lrauv-application documentation and decoding log files
- Brett Hobson
- Irene Hu
 - 901217 - Chemical Sensors
 - Troubleshooting Tiva129 failure to hibernate
 - Bug testing for MSC3; look through code
 - MSC3 rC baseboard sent out
 - Working w/ Jess to set up mcap checkout process for Johnson lab
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Fixing up checklist for upcoming deployment
 - Overhead
 - Chad design review
 - Organized Bike to Work 11/19/24
 - Out of Office
 - 11/25-11/29: vacation
 - Dec 6: Carson day
- Scott Jensen

- 706008 - READI-Net
 - Switched over to new valves and clap configuration
 - Working on FIDO2
- 901205 - ESP SURF Center
 - Cleaned up from the Aquarium comparison study
- 902106 - Niobicon-Based AUV Docking Development
 - Finally got access to Qualcomm datasheets for QCA6410. Reading and learning about the IC and how signal output power might be boosted.
- Overhead
 - ESP lab move
- Out of Office
 - November 26-27
- Brent Jones
- Chad Keczy
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - 300082 - DMO Support - Wave Glider
 - Recovered Tiny on Thursday
 - 901513 - Targeted Sampling by AUVs
 - Paper reviewed and edits submitted
 - Reviewing and testing new peak detect for backseat variables
 - Assisted with fixing build issue
 - 902101 - LRAUV Technology Development
 - First bioacc sea trial with Aku. Recovered today following a mass shifter failure and oil leak. Diagnosing and will get back out.
 - 902405 - Precision Control Technologies
 - First TRN ingest deployment on an LRAUV occurred on Pontus. Met with Steve today to go over results which were generally favorable. Fine tuning various parameters and will run again soon.
 - 90210150 - LRAUV Tech Txr Saab
 - More repo access
 - 90210151 - LRAUV Tech Txr WHOI
 - Worked with team on build environment and recent deployment for near bottom survey. Deployment was a huge success.
 - Investigated issue with sim data on host.
 - Overhead
 - Oshen ASV launch/recovery last week. Issues sailing upwind in autonomous mode were observed and manual control and emergency recovery had to be performed to get the vehicle back safely. Good hydrophone data was recorded and will be processed.
 - Out of Office
 - 11/25-12/2 (PST)
 - 12/5-6 (MST)
- Denis Klimov
- Eric Martin
 - Out of Office
 - Maldives Expedition 11/15-11/28, and will be highly out of communication.
- Thom Maughan
 - 300083 - DMO Support - LRAUV

- Working with Varsha and Duane on 2nd rev of BPC2 backplane and charger. Delivered Charger parts kit to Indtec and introduced Varsha to Trinh and Loni - got a quick tour.
 - Duane finished backplane layout, reviewed and boards are sent out.
 - All four first rev backplanes are updated to LPC1137 which has enough flash to finish development
 - Delivered draft of serial protocol to Quinn.
- 901217 - Chemical Sensors
 - Working with contractor and testing code drop on 123g and 1290 hardware.
 - I2c low level driver is working on rapid proto 1290 boards. Hibernate / sleep is not yet functioning. Irene is working on revA 1290 and launchpad and has opened support case at TI. Progress is being made
 - Software is coming along. Working to get the serial protocol for all commands finished. Irene, Ben and Jess are setup to file bugs
 - Working with Ben on 3x builds with pH and Nitrate. One for Dev, One for Test and one for Irene and contractor.
 - Thanks to Jim Birch and Nadia for granting access to the big environmental chamber for low temperature testing the deuterium UV lamp.
 - RevC baseboards should be in by first week in December and we'll begin integration tests soon after.
 - Working a plan to build more RevA 1290 processor modules.
- 902004 - Planktivore
 - Weekly meeting.
 - Shadowgraph housing fabrication will be shifted to 2025. Purchasing cameras and Orin NXs is complete.
 - Delegated camera controller hardware bringup to Brent.
- Out of Office
 - Oct 24 two weeks vacation Colorado.
- Mike McCann
 - Out of Office
 - 14-19 November 2024: Vacation
- Rob McEwen
- Paul McGill
 - 701147.99 - MARS IV Node Upgrade
 - Met with UW for progress report
 - 901700 - Acoustical Ocean Ecology
 - Got wiring for MARS interface can for MARS Echosounder modified so it will fit in the small space better
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Working with Bill K on ground station wiring
 - 902304 - Piscivore Cam
 - Had pre-meeting meeting to discuss requirements doc for Rhonda Software and will have Zoom with them in Kazakhstan tonight
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Preparing for upcoming deployment on Dec 6, lots of work changing batts, fixing beacons, etc.
 - 902401 - Geo-Sense
 - Got battery sphere penetrator cables wired so they're ready for molding this week
 - Worked with Denis and Alana on low-voltage disconnect circuit
 - Worked with Aaron S to fit the Deepsea Connect hardware in a small housing
 - Overhead

- I forgot to report our huge success last week in deploying 11 seismometers and 2 moorings in four days on the Carson (charged to Charlie's project)
 - Worked with MARS team to get John R's hydrophone back on MARS, but alas it only worked for a day before its power failed. Will recover it Dec 6 on Crissy's cruise.
- Enoch Nicholson
 - 706008 - READI-Net
 - Continuing Production version design changes
 - Preparing for 219 design kickoff meeting
 - Created costed BOM
 - 901007 - Benthic Biology & Ecology
 - Supporting Jim & Chris's testing
 - 902306 - SINKER
 - Mars Deployment frame
 - Battery updates
 - 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
 - Chassis mechanical design
 - 901221 - Midwater Time Series
 - Sony F55 bring up
 - Atomos Connect interfacing
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - SWIR camera scoping
 - 902001 - Ventana 4k Camera
 - Assembly and testing
 - 902004 - Planktivore
 - Shadowgraph design
 - 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
 - US React Summit Conference: November 19-24, 2024, NYC.
 - On-campus 3 days/week (**T, W, TH**).
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - Working through issues with the [new KB web app](#) (ReactJS) with deploying behind a proxy.
 - Changes to [Oni](#) to support the new KB app
 - Continuing to refine the [new VARS Query](#) based on video lab feedback
 - Database replication between the Rachel Carson and the shore side database is failing in a spectacular fashion. Working with IS to unwind the data.
 - Starting work to secure all the video related microservices with SSL.
 - 902404 - 5th Marine Imaging Workshop
 - Coordinating with groups interested in hosting the next workshop.
 - Overhead
 - Set up a shiny new M4 laptop
 - Spent some time with NOAA helping work through issues with registering media in their VARS system.
 - Out of Office
 - Oct 7-11 - 5th Marine Imaging Workshop in Monterey
 - Oct 14-15 - Out sick
- Alana Sherman
 - 902208 - Mini ROV Operations
 - Spent last week finishing mob then waiting for weather to improve
 - Once it was decided to scrub the dives due to weather we had to demob from the Fulmar and then build everything back up in the lab for the BBC video shoot during the first week of December
 - Ordering spares
 - 902401 - Geo-Sense
 - Trying to push the pedal on this one. Working through details on every aspect from connectors to reviews and IP.
 - Overhead
 - Led tour of building G, many discussions about lab and office space
 - Out of Office
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- George Stern
- Justin Tucker
 - 902010 - Mesopelagic LRAUV
 - Nose shell design for EyeRis and Planktivore
 - Background review of prior work to minimize prey response to vehicle movement in imaging volumes.
 - Baseline characterization of bow wake on LRAUV and Meso LRAUV
 - Training on Fluent Adjoint optimization
- Johann Voigtlander

- Out of Office
 - April 16th - May 7th Germany CSEM
 - May 8th - May 12th Vacation