

Engineering Weekly Report 10/3/2024 - 10/10/2024

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

Executive Council Notes

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Individual Activities

- Michael Anderson
- Kevin Barnard
- Francois Cazenave
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - PTO repairs
 - Heave cone disassembly
 - 902106 - Niobicon-Based AUV Docking Development
 - Designed deflectors for LRAUV elevators
 - Ordering new mooring hardware
- Danelle Cline
 - Out of Office
 - Oct 7-10 - 5th Marine Imaging Workshop in Monterey
- Duane Edgington
 - Out of Office
 - Oct 21 - Nov 8, 2024. Vacation UTC+1
 - Dec 8 - Dec 17, 2024. [Neurips](#) Conference. Vancouver, BC.
- Jon Erickson
- Kevin Gomes
 - Out of Office
 - Aug 16: Vacation
 - Sep 16: Vacation
 - Oct 7-11: Vacation
- Andy Hamilton
- Kent Headley
 - 902204 - Scalable Robotics
 - Resolved open question about Oculus sonar 16-bit image format appearing darker; turns out that the sonar firmware applies gamma correction to 8-bit images but not 16-bit images (due to memory limitations, according to Blueprint Subsea).
 - Added gamma correction option for image export
 - Working on feature request to support Oculus v2 protocol, which contains accelerometer info that may be useful for navigation. Support hooks are already in place, but some details and testing are pending.
 - Overhead
 - reviewing some OASIS code issues with Paul Barter.
 - planning hiring process
 - misc admin
 - Out of Office

- 10/10-17 Vacation
- Rich Henthorn
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Moving shore side utilities to new Ubuntu server
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Analyzing the event detection to explain differences between the bench and deployed processes
 - Identifying modifications necessary for Jan 2025 deployment
 - 902306 - SINKER
 - Motor control interfaces
 - 902405 - Precision Control Technologies
 - TRN mission prep on pontus
 - Out of Office
 - Oct 21 - 25: Next week WFH, phone, email, zoom, slack, vpn, you name it.
- Akshay Hinduja
 - 702108 - Deployable AI
 - Setup allied vision camera on AGX
 - 902204 - Scalable Robotics
 - Finished python driver lcm broadcast and viewer
 - 902101 - LRAUV Technology Development
 - Get started with Gazebo log playback on Omega Omen
- Brett Hobson
- Irene Hu
 - 901217 - Chemical Sensors
 - Tiva TM4C1290 module- pinout done, finalizing some things
 - Jim is building Baseboard revB. Tiva modules revB built in house were delivered to Thom and work; Indtec is making 20 more
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Reviewed video from 9/23 cruise and made metadata
 - Mob for cruise 10/4, Carson cruise on 10/7
 - MIW poster
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Weekly meeting
 - Out of Office
 - Sept 23-Oct 2: IEEE OCEANS / trip to Boston
 - Oct 7: Carson day
 - Oct 8-11: Marine Imaging Workshop
 - Oct 10: medical procedure
- Scott Jensen
 - Out of Office
 - October 7-9
- Brent Jones
 - 901112 - Monterey Bay Time Series
 - Final button up of new SIPPER after minor repairs
 - 901502 - Ocean Soundscape
 - Comparing reprocessed clicks to previous processing in 2021
 - Out of Office
 - 2 sick days
- Chad Keczy
 - Out of Office

- Out of office on Fridays
- Brian Kieft
 - 300083 - DMO Support - LRAUV
 - Assisting in testing Daphne satcom issue. Water detected in connector.
 - 901513 - Targeted Sampling by AUVs
 - Looking into acommms issues during preCANON trials involving coordinated ops and terminate mission flag for CANON sampler. DATMMP seems to be missing incoming data though depths were quite shallow from the vehicle sending.
 - Troubleshoot issue with nan values for ESP sample volume and sample number. Values are being requested after component is powered off.
 - 902101 - LRAUV Technology Development
 - A couple bugs fixes in JIRA and a couple added.
 - Overhead
 - Planning to launch Oshen ASV for an overnight test Thu-Fri. Sanctuary clearance issued for the plan through Q4. LNM covers us for this deployment and I'll re-issue for mid-Oct through Q4.
 - Out of Office
 - 10/23-29 (MST)
 - 11/06-12 (CST)
 - 11/15-12/2 (PST)
- Denis Klimov
 - 901112 - Monterey Bay Time Series
 - Power Buoy had been recovered and IFCB opened up. The instrument looks to be in a good shape, and in the lab, for cleaning and periodic operation
 - 901809 - Deep Sea Bioinspiration
 - At the Marine Imaging Workshop this week.
 - 902401 - Geo-Sense
 - Ordering optical parts from Sintela
 - Overhead
 - Safety: interviews for CSO this week
- Eric Martin
 - Out of Office
 - Vacation last week.
- Thom Maughan
 - 300083 - DMO Support - LRAUV
 - Reviewed the hardware changes with Erik and Varsha. Delivered the hardware changes to Duane Thompson for layout. Varsha will be point of contact with Duane and we'll meet to discuss. Working on bringing up two backplanes.
 - 901009 - CANON
 - Met with NASA regarding microfluidics implementation. Looks like a collaboration might happen.
 - 901217 - Chemical Sensors
 - pHFETSOS was made open source on 26 Sep 2024 by Ken Johnson and Yui Takeshita
 - Working with Jacob Schloss, contractor from Suburban Marine on Tiva1290 and I2C peripheral drivers
 - ISUS driver appears to be functioning though it has different timing than the CF2 running the continuous sample menu item. Captured timing and scrutinizing the ported code. Almost 8 months of hard push to get this milestone.
 - Approval to make the 3rd rev of rapid proto hardware. This time when JLCPCB handles all the part stuffing with order delays for parts not in stock.

- Still developing for both Tiva 123g and 1290. Will cut to 1290 after getting the HIB working provided all the other drivers work also. pH driver is working on the 1290.
- 902004 - Planktivore
 - DeepRip has had 4 incidences or sudden reset including the one were we lost the SSD a couple weeks back. We may have a damaged motherboard or processor. Both are pricey ~7K.
 - Planktivore V1 was mobd. Deployment interrupted due to a config error. Will deploy on Friday.
 - MIW Poster and Lightning talk
- Out of Office
 - Oct/Nov two to three weeks vacation Colorado.
- Mike McCann
 - 902403 - Expedition DB Modern
 - Working on [Issue 12](#): Implement Postcruise entry forms – fleshing out entering Dives
- Rob McEwen
- Paul McGill
 - 300070 - DMO Support - Ventana
 - Researching miniature joystick options for *Ventana* camera
 - 902401 - Geo-Sense
 - Working on DAS sphere schematic
 - Overhead
 - Attending Marine Imaging Workshop in Monterey Tue–Thu
 - Out of Office
 - Sick days last Wed, Thu
- Enoch Nicholson
 - 706008 - READI-Net
 - Large Linear Actuator integration
 - 902306 - SINKER
 - Full Camera system ROV test dive
 - 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
 - Working on a few remaining processes for the David Packard
 - Working on fix for Rachel Carson navproc GPS process failures to be installed during next maintenance period
 - 300062 - DMO Support - Doc Ricketts
 - Finalized pan and tilt integration plan with Drew B.
 - Developing KPT-45 pan and tilt interface process, waiting on KPT-45 for final testing and development.
 - 901101 - Seafloor Mapping
 - Continuing work on new LASS control system
 - Working on test for RP2350 TCP/IP communications
 - Prototyped RP2040 interprocessor communications for new trigger board
 - Working with Chad on prototyping timerblox sections of new trigger board
 - 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
- Brent Roman
- Carlos Rueda
 - 901502 - Ocean Soundscape
 - Group meeting.
 - Technical meeting about using Notebooks in Google Cloud (thanks Duane for the intro). We made very good progress toward running PyPAM/PBP. Initially we hit issues with dependencies... which I was then able to figure out ;. Also, Vertex AI Colab Enterprise proved to be more effective compared to Workbench. (But these are all preliminary explorations.)
 - The [/PAM_Analysis](#) volume mapping for our Jupyterlab@gizo got broken. I fixed it by just restarting the container.
 - 902204 - Scalable Robotics
 - Dial system now [1.3.0](#).
 - Successful testing of the new integrated system on a separate ("atuncita") machine: all the critical comm channels, APIs, and recent UI enhancements exercised satisfactorily.
 - [Deployment documentation](#) updated.
 - Various TODOs captured for future discussion.
 - Out of Office
 - Sept 19: out sick
- Karen Salamy
 - 300057 - Mooring Maintenance
 - Weekly monitoring of Mooring data downloads. OA2 still has download issues during the days but tends to catch up at night. OA1 is still on the dock for testing. It is to be deployed sometime later this month.
 - 902101 - LRAUV Technology Development
 - Continue working with modals to properly update VehiclePath information on Dash5.
 - Overhead
 - Helped with issues related to precruise posts and access to the EXPD by Marine Ops.
 - Out of Office
 - US React Summit Conference: November 19-24, 2024, NYC.
 - Monday, Oct. 7, 2024 - Vacation day.
 - Friday, Oct 11, 2024 - School Chaperone Activity for my daughter's class to UCSC
 - On-campus 3 days/week (**T, W, TH**).
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - [Adding support for ad-hoc queries in the annotation microservice](#).
 - Investigating some CORS related nits in the [m3-quickstart](#) project that need to be addressed for Paul Rogers work on the [new VARS KB web interface](#).
 - 902404 - 5th Marine Imaging Workshop

- The workshop went off smoothly and we've had nothing but positive feedback from attendees.

Thank you to everyone who pitched in and helped make it a success!

- Out of Office
 - Oct 7-11 - 5th Marine Imaging Workshop in Monterey
- Alana Sherman
 - 902208 - Mini ROV Operations
 - Practiced flying the Mini and worked on my manipulator skills before tool sled change
 - 902401 - Geo-Sense
 - Spoke with Linden about cable spool and solidified plans for that
 - Met with visiting engineer from JPL to discuss DAS
 - 901205 - ESP/Readinet
 - Continued working with Scott to bring up Fido board. All circuits have gone through initial testing
 - Measured current sense circuit
 - Modifying schematics for rev B
 - Overhead
 - Hoping to go to the Marine Imaging Workshop Thursday, and then lead a tour for them Friday morning
 - Out of Office
 - Took vacation day Friday
- George Stern
 - 902306 - SINKER
 - Troubleshoot module board
 - Made fixturing for battery testing
 - 300078 - Dorado AUV Thruster
 - Reviewed STM motor shield and identified possible alternative solutions to reduce board size
 - 706008 - (READI-net)
 - Retuned antenna for new NFC IC
- Justin Tucker
 - 300078 - DMO Support - AUV
 - INS pressure test trip scheduling
 - 902010 - Mesopelagic LRAUV
 - DVL housing design and continued nose assembly modeling
 - AHRS mounting path resonant frequency analysis
 - Out of Office
 - Oct 22-23 - INS 6000m pressure test San Diego DSPL
- Johann Voigtlander
 - 902204 - Scalable Robotics
 - Tested the BlueBoat in the harbour and ran a small survey
 - Integrated a time server on the blueboat network
 - Worked with Akshay to integrate his WBMS logging code and tested it
 - 3D printed bracketry for WBMS swivel
 - 902208 - Mini ROV Operations
 - 3D printed multiple HD camera mounts at different angles
 - Ordered manipulator joystick switch to add a "stop" position on the wrist
 - Built cable for wetwifi and 3D printed potting mold
 - Inspected RC SDI coax minirov connection, working with DJ to test the corroded termination to see if it needs to be reterminated.
 - Set up the MiniROV and control van to include ROVVR equipment
 - Went in the test tank with the ROVVR students from Harvey Mudd
 - Installed software for 2x spare NUC PCs for the MiniROV

- 902402 - CSEM
 - Met with Capitan of Fulmar to discuss deployments
 - Investigating power requirements for the black winch
 - Purchased waterproof housings for the GPS loggers
- Out of Office
 - April 16th - May 7th Germany CSEM
 - May 8th - May 12th Vacation