

Engineering Weekly Report 8/15/2024 - 8/22/2024

Engineering Weekly Report

<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
 - MBARI Open House comp day Jul 19, 2024
- Francois Cazenave
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Monitoring buoy
 - 902106 - Niobicon-Based AUV Docking Development
 - Project management
 - 902204 - Scalable Robotics
 - Designing brackets for Mini ROV
- Danelle Cline
 - Out of Office
 - September 24/25 NOAA SoundCoop workshop Boulder, CO
 - Oct 7-10 - 5th Marine Imaging Workshop in Monterey
- Duane Edgington
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Trained an "18k" and a "30k" localizations [yolov5x6](#) detection model on [cropped and augmented](#) images from the 901902-uavs dataset, using [aidata](#) and [deepsea-ai](#) toolkits. Evaluating the results.
 - Out of Office
 - Aug 15, 2024. Doctor Appt.
 - Oct 21 - Nov 8, 2024. Vacation UTC+1
 - Dec 8 - Dec 17, 2024. [Neurips](#) Conference. Vancouver, BC.
- Jon Erickson
- Kevin Gomes
 - 200105 - Core Navigation - MDUC
 - Met to discuss winch data with Mike
 - Working with Adriana, Doug, Marko, Mike, and Drew to spec terminal server.
 - 706008 - READI-Net
 - Working through source code and creating detailed documentation so we can dry run the development cycle before we lose our contractors time.
 - 902403 - Expedition DB Modern
 - Meeting

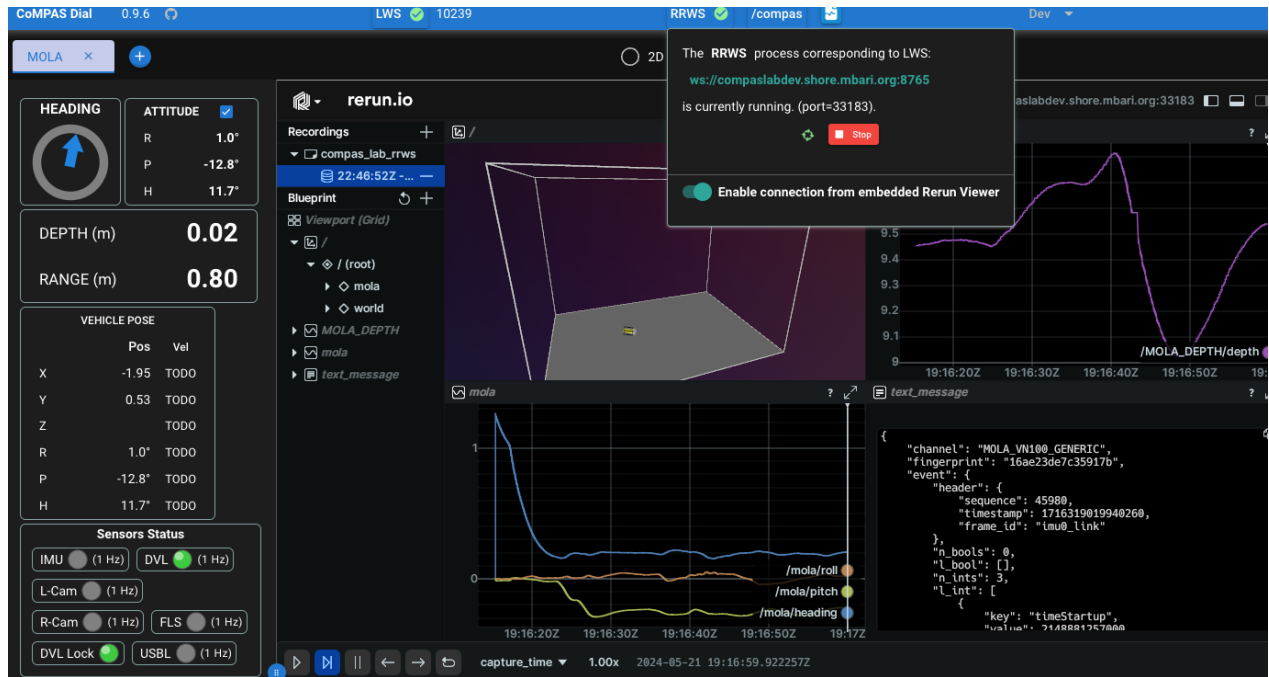
- Overhead
 - More proposal and budget work
 - Met with Slack to discuss audit, new contract and workspace migration
 - Met with a new AWS representative who took over for previous contact to get discussions started.
 - Organizing an invited trip to NVidia and preparing slides for introductory talk.
- Out of Office
 - Aug 16: Vacation
 - Sep 16: Vacation
 - Oct 7-11: Vacation
- Andy Hamilton
- Kent Headley
 - 901101 - Seafloor Mapping
 - preparing for cruise
 - 902204 - Scalable Robotics
 - Nearly done with prototype oculus viewer
 - preparing for cruise
 - 902405 - Precision Control Technologies
 - quick meeting with Steve Rock re covariances, correlation, and multibeam filtering
 - Overhead
 - staffing plan
 - misc admin
 - Out of Office
 - 08/27-29 Rachel Carson (tentative)
- Rich Henthorn
 - 902405 - Precision Control Technologies
 - TRN and CoNav on LRAUV
 - Overhead
 - Rec-Com
 - Out of Office
 - Sick leave, WFH Aug 14 - 22
 - Aug 26 - Sep 11: Vacation
- Akshay Hinduja
 - 902101 - LRAUV Technology Development
 - Osrif docker image would not compile, got image from Michael which runs example script
 - Facing issue with running tethys simulation, working on bug finding
 - Writing reports on bugs faced and outdated packages to work around.
- Brett Hobson
- Irene Hu
 - 901217 - Chemical Sensors
 - Timing measurements on MSC3 startup and shutdown
 - Convo w/ Dana Swift at UW, subsequent circuit mods
 - 901805 - Coastal Biogeochemical Sensing Program
 - Continued testing of current draws
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Further testing and enhancements of code; implemented LED flash sequence
 - Got images off of camera software, preliminary data processing in MATLAB
 - Wrote instructions sheet for running system on desktop
 - Spent awhile trying to get second controller to work, but it is broken.
 - Testing LED pucks as they are made

- Scott Jensen
 - Out of Office
 - September 16-20
- Brent Jones
 - 901112 - Monterey Bay Time Series
 - Diagnosing CPF GPS and batt recharge failures. Determined Antenna MUX for GPS+Iridium not working. Still working on batt recharge
 - 901502 - Ocean Soundscape
 - Python filter code producing different results than Julia filter. Investigating
 - 901805 - Coastal Biogeochemical Sensing Program
 - Flying and recovering Spray 34 in support of Yui's experiment
 - Overhead
 - Reconfiguring deployed M1 telemetry to report 1x/day. Trying to characterize energy usage
 - Out of Office
 - 2 days sick
- Chad Key
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - Out of Office
 - 07/29-0802 (EDT)
- Denis Klimov
- Eric Martin
 - 901101 - Seafloor Mapping
 - Prep for offshore taking place next week, no lidar but many changes to test.
 - Rebuilt the sensor suite on the sled.
 - Troubleshooting strobe triggering, leading to improvements in camera drivers.
 - 901911 - ROVVR
 - Offshore 8/20 to troubleshoot and test new features.
 - The camera has some internal issues where video is dropping. Will need further inspection.
 - The quest pro works poorly in the high motion and dark environment. Disabling tracking works but then controllers are unresponsive when the meta quest link is active to pc
 - Adding more lighthouses fixed the issues seen on the Varjo in the past.
 - 902204 - Scalable Robotics
 - Offshore last week with new sonar drawer for a direct forward looking sonar experiment comparing Tritech, Norbit, and BluePrint sonars.
 - Arctic Prep
 - Camera submission to shop
 - Mola2 ordering
 - New student acclimation, intern sendoffs.
 - Prep for LASS cruise.
 - Overhead
 - Hours assessment for 2025 proposals.
- Thom Maughan
 - 300083 - DMO Support - LRAUV
 - Working with Varsha on 2nd battery pack build. Serial terminal debugging, etc. Git pulled the code and Varsha/Tad found and fixed chip support lib linkage - great teamwork.
 - 901217 - Chemical Sensors
 - Review of MSC3 tiva module and baseboard schematics. Inrush current measurement, Fiberlite testing for inrush and current usage. Working to understand the large cap.

- Meeting with UW to review system design differences between Persistor CF2 sleep and Tiva hibernate. Learned that the large cap was likely added to prevent power glitches from corrupting the PCMCIA card. Also learned there may be humidity in the float housing.
 - UW is ok with the consequences of low power hibernate on RTS from MSC3.
 - Auto-sleep feature of pHFET-SOS will need to be disabled.
 - Aadu from UW will be traveling to MBARI next week. He's bringing the computer I sent with the UW test suite installed. Focus will be on MSC1 testing.
 - Making interrupted progress on the ISUS driver development. No blocking issues in the hardware and nearly complete on board bringup.
 - Designed a buck-boost converter with TI Webench tool. Used the design for intern bakeoff. Boards received and tested 21 Aug 2024.
- 902004 - Planktivore
 - Met with Denis re progress on battery for upcoming Barry lab deployment of Planktivore v1. Cables ordered and received, load testing and charging not done yet. Denis called Craig to get details and to understand 20amp charge current.
 - I'm mostly out of the loop on upcoming Proxies deployment of Ahi, but all seems ready to go.
- Overhead
 - Forrest Milner Intern. Presentation practice and review for bidirection Argos feasibility. On the last day, held electronics EDA 'bakeoff' between Kicad v8 and EasyEDA on Thursday. Contest: schematic capture, pcb layout, fab and assembly, rapid prototype style. Impressive results. Boards sent for Fab on Thurs 15 Aug 2024, assembled boards received on 20 Aug 2025 (minus switching reg), switching reg added by Chris B on Wed 21 Aug, tested and working.
- Out of Office
 - Aug 16 to Aug 19 - b'ment
 - Aug 26. Vacation. Tahoe Swim.
 - Aug 30 Vacation day
 - Oct/Nov two to three weeks vacation Colorado.
- Mike McCann
 - 901009 - CANON
 - Helping several people with data export from STOQS
 - 902403 - Expedition DB Modern
 - Buffing out postcruise update form, mimicking the Legacy form as much as possible
 - Out of Office
 - 25-27 September 2024: Web3D Conference
 - 30 September - 3 October 2024: Vacation
- Rob McEwen
- Paul McGill
 - 300070 - DMO Support - Ventana
 - Built circuit to test joystick range scaling
 - Attempted to repair potentiometer on old joystick without success. New pots on order.
 - 701147.99 - MARS IV Node Upgrade
 - Reviewed new IPB board design with George S and UW engineers
 - Dealing with fallout of another funding request from UW
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Mapped out connector pinout of Trinity battery pack
 - 902306 - SINKER
 - Working with Knute to figure out how to order ODI connectors for MARS connection
 - 902401 - Geo-Sense
 - Finished initial version of battery sphere schematic
 - Overhead

- Finally finished updating OS and antivirus software on desktop computer
 - Troubleshooting failure of MARS hydrophone
 - Finding parts for replacement hydrophone to be deployed Sep 19
- Out of Office
 - Took vacation day Fri
- Enoch Nicholson
 - 706008 - READI-Net
 - Finished collecting parts
 - Began assembly
 - 901007 - Benthic Biology & Ecology
 - BRS tub test runs in the seawater lab
 - 902306 - SINKER
 - Received Tube Combiner
 - 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 19-24 Vacation (Available via Slack & Email)
- Tom O'Reilly
- Mike Risi
 - 200105 - Core Navigation - MDUC
 - Fixed some pt-control bugs after testing with Helios pan and tilt simulator
 - 300062 - DMO Support - Doc Ricketts
 - Working with ROV pilots on McGregor winch interface for SMD control system
 - 901101 - Seafloor Mapping
 - Continuing work on new LASS control system
 - Working on LASS tank testing in preparation for next week's cruise
 - More testing/fixes of gss-telem-bridge and mbari-effort-repeater for next week
 - 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
- Paul Roberts
 - Out of Office
 - Aug. 16 2024 - CES Northstar
 - Aug. 30 2024 - CES China Peak
- Brent Roman
 - Out of Office
 - June 20 - June 31 (gunkholing in the Sacramento Delta)
 - July 1 - Aug 31 (Vacation in Japan)
- Carlos Rueda
 - 701165 - OVAI P2
 - Resuming work on CMS UI.
 - Productive discussion with Joost re status of things and next steps.
 - 901502 - Ocean Soundscape

- Meetings/exchanges.
- **mbari-pbp** is now 1.4.0. JupyterLab@gizo also updated.
- Enabled access to a titan share from within JupyterLab@gizo.
- 902101 - LRAUV Technology Development
 - With Quinn, troubleshooted issues affecting TethysDash's ability to handle emails (they turned out caused by MBARI email server updates).
- 902204 - Scalable Robotics
 - Consolidating new component orchestration behind the Dial UI.
 - Dial is now [0.9.6](#).



- Out of Office
 - TBD a week or so in Aug/Sep: vacation
- Karen Salamy
 - Out of Office
 - Vacation: August 20-28, 2024
 - US React Summit Conference: November 19-24, 2024, NYC.
 - On-campus 3 days/week (**T, W, TH**).
- Brian Schlining
 - Out of Office
 - Aug 19-22 Vacation
 - Sep 5-9 - Vacation
 - Oct 7-10 - 5th Marine Imaging Workshop in Monterey
- Alana Sherman
 - 902208 - Mini ROV Operations
 - Helped as needed with integration of new focal boards. Mostly just trying to track down why a short list of things were not working as they are supposed to.
 - 901205 - ESP/Readinet
 - Double checking all the connections
 - Made a few small adds and one pin assignment fix
 - Overhead
 - Finishing up a few loose ends on EE group labor assignments
 - Out of Office
 - On vacation Mon Aug 26-Tues Aug 27.
- George Stern

- 902204 - Scalable Robotics
 - Updated camera control software to gate exposure time, retested system in the test tank and discovered all the lighting originally planned will likely be needed
 - Began solid models for the power and control hub
- 902304 - Piscivore Cam
 - Meeting to discuss Rhonda Software bid, development options and funding
- 706008 - (READI-net)
 - Verified compatibility of proposed and existing NFC chips and began transferring design from kicad to cadence
- Overhead
 - Completed MARS IPB review and met with UW MARS EE team to convey comments
- Justin Tucker
 - Out of Office
 - Aug 20-21 - Port Hueneme pressure testing
- Johann Voigtlander
 - 902204 - Scalable Robotics
 - Replaced Navigator flight controller to connect VN300
 - 902208 - Mini ROV Operations
 - Solved many issues after upgrading the Focal stack. Vehicle is operational again.
 - Updated schematics
 - Out of Office
 - April 16th - May 7th Germany CSEM
 - May 8th - May 12th Vacation