

Engineering Weekly Report 7/18/2024 - 7/25/2024

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
 - Trouble-shooting and repairing photosensor
 - 902204 - Scalable Robotics
 - Designing brackets for sonar and camera
- Danelle Cline
 - Out of Office
 - Vacation July 26th
 - Oct 7-10 - 5th Marine Imaging Workshop in Monterey
- Duane Edgington
 - 901502 - Ocean Soundscape
 - Continued exploration of orca work. Data sets, published work.
 - Discussion with Intern Suzanne Statatos.
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Team meeting
 - 902004 - Planktivore
 - Image processing discussion planned for June 25.
 - 902111 - Carbon Flux Ecology
 - Discussion on database versioning.
 - Out of Office
 - Sept 17 - 20, 2024. PyTorch Conference, San Francisco
 - Oct 21 - Nov 8, 2024. Vacation UTC+1
- Jon Erickson
- Kevin Gomes
 - Out of Office
 - Jun 21
- Andy Hamilton

- Kent Headley
 - 901007 - Benthic Biology & Ecology
 - Among some issues Enoch is troubleshooting with MRS/BRS, there is a curious periodic power spike that seems to be associated with an Aanderaa optrode or related OASIS hardware/software. To help, I took a look at OASIS configuration and reviewed O5 modbus architecture.
 - 901101 - Seafloor Mapping
 - Implemented code to support libproj in addition to gctp for geo coordinate transformation in TRN. libgctp supports lat/lon to UTM, but Dave Caress determined that UTM has an inherent rotational bias that produces offset errors when using TRN at axial; the errors increase with distance from the UTM zone origin. By using libproj, it is possible to use a local arbitrary mercator projection, which may be centered in the survey area, thereby reducing errors. Dave tested this at Axial in June, and it worked well. I've made a general implementation that can be configured at run time. That is now being reviewed.
 - 902204 - Scalable Robotics
 - Did a burn-in test of the new oculus driver last week, and checked to ensure that it is compatible with the Gemini sonar driver. That is ready for the August 6 deployment.
 - Overhead
 - Developing Akshay's work plan
 - Group lead meeting with Antje Boetius
 - Proposal review
 - Starting to plan next hire process
 - Attended Workplace Violence Prevention training
 - Misc admin
- Rich Henthorn
 - Out of Office
 - July 16: SINKER test on Carson
 - Aug 5 - 8: WFH
 - Aug 26 - Sep 11: Vacation
- Brett Hobson
- Irene Hu
 - 901217 - Chemical Sensors
 - Taking over TIVA module from Thom while he's gone. Thom fixed I2C problem in code. Next hangup in init traced to bad grounding of oscillator (schematic copy-paste error). Next to tackle is hangup during hibernation
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Hacked a connector for JTAG. With help from Paul and Rich, uploaded a bootloader and was able to upload code
 - Two controller boards have different issues related to power control of camera
 - Overhead
 - MEtech interviews
 - Out of Office
 - July 10 - Aug 5: regularly out of office
- Scott Jensen
 - Out of Office
 - July 18-23 vacation
 - July 24-29 vacation
- Brent Jones
 - 701164.99 - SnoCam+ Build

- Deployed CPF sed trap 4x (!!!) over the past week in support of Durkin experiment. Drove Paragon numerous days in support of experiment
- 901112 - Monterey Bay Time Series
 - Analyzing real time data for Wire Walker. Seeing if its sufficient for the science Yui and Francisco desire
- 901502 - Ocean Soundscape
 - Finishing conversion of click detection code from Julia to python
- Chad Key
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - 300083 - DMO Support - LRAUV
 - On call for Daphne/Pontus deployments
 - 706007 - LRAUV USGS Great Lakes Prey Fish Assessment
 - Launched LRAUV Triton in Lake Huron for coordinated bioacoustic ship survey



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- 901513 - Targeted Sampling by AUVs
 - Investigating vertical mode toggling
- 902106 - Niobicon-Based AUV Docking Development
 - Pontus docking has reached a milestone as of yesterday: LRAUV docked, charged, and communicated from underwater via the rod up through cell back to shore. Full dash command and control was demonstrated while the vehicle was on the dock. This opens up a vast array of new applications including event response observing and persistent presence.
- Out of Office
 - 07/29-0702 (EDT)
- Denis Klimov
- Eric Martin
 - 901101 - Seafloor Mapping
 - Power Can Bringup, minor issues
 - Lidar seems to be heading towards a delay in delivery
 - Working with Mauro to familiarize with the Norbit FLS
 - 901217 - Chemical Sensor Program
 - Sleep feature working, going for long term test.
 - 901911 - ROVVR
 - HMC project scoping
 - 902204 - Scalable Robotics
 - Norbit to POE Can Adaptor cable
 - Ventana coordination/prep
 - OAK1500 pressure test was good, moving to build.
 - Overhead
 - Telepresence paper was accepted, minor edits to follow.
 - Out of Office

- Vacation Friday July 29-30
- Thom Maughan
 - Out of Office
 - July 1-5 Vacation canceled, working on the 4th
 - July 20 to July 26 Vacation
 - Aug 2nd half, maybe a week or so
 - Oct two to three weeks vacation Colorado.
- Mike McCann
 - Overhead
 - ESIP meeting
 - Out of Office
 - 20 June - 19 July: Vacation
 - 22 - 25 July: ESIP Federation Summer meeting, Asheville, NC
 - 28 July - 1 August: SIGGRAPH, Denver, CO
- Rob McEwen
- Paul McGill
 - 300070 - DMO Support - Ventana
 - Helped pilots fix two broken ROV joysticks that would've prevented science dives this week
 - 701147.99 - MARS IV Node Upgrade
 - Reviewed and approved project budget status reports
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Met to discuss battery problems and upcoming flight ops
 - 902101 - LRAUV Technology Development
 - Ordered and received second power supply for sonar payload
 - 902401 - Geo-Sense
 - Met to discuss details of fiber-optic cables and connectors
 - 902402 - CSEM
 - Met with Steve Constable to discuss our deployment of the SWAN CSEM system
 - Out of Office
 - Was out sick with COVID last week
- Enoch Nicholson
 - 706008 - READI-Net
 - Began to address mechanical issues with first FIDO prototype before ordering #2.
 - 901007 - Benthic Biology & Ecology
 - Ran BRS in the test tank over the weekend. Currently reviewing data with Barry Lab
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - BVLOS Con ops discussion. Began reaching out to others who have successfully applied for a waiver from the FAA.
 - 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
 - David Packard navproc updates after switch to new SMD control system NUCs
 - 901101 - Seafloor Mapping
 - Testing for rev. D trigger board
 - Working on gss-telem-bridge for August 27th cruise

- Started LASS control system refactoring
- 902204 - Scalable Robotics
 - Tested August 6th deployment config on Ventana and SPRINT INS serial interface
- 902405 - Precision Control Technologies
 - Producing simulated Delta-t LCM data of Portuguese Ledge
 - Working on tool to process Delta-t sonar LCM data in real-time
- 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
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Planning for Sept engineering tests
 - 902001 - Ventana 4k Camera
 - MxD camera settings cards
 - 902004 - Planktivore
 - Automated plankton detection software updates
 - 902204 - Scalable Robotics
 - Splitter can PTH board
 - Mola optics simulation
 - 902306 - SINKER
 - Planning for Oct 9 cruise
 - Procurement of acoustic current sensor
 - Overhead
 - Intern mentoring
- Brent Roman
 - Out of Office
 - June 20 - June 31 (gunkholing in the Sacramento Delta)
 - July 1 - Aug 31 (Vacation in Japan)
- Carlos Rueda
 - Out of Office
 - July 22–25: vacation
- Karen Salamy
 - 200103 - Core CTD Data - MDUC
 - Entered the last 5 Ventana ROV CTD O2 updates from Ed P. into the EXPD this week.
 - 300057 - Mooring Maintenance
 - Monitoring a download issue with OA2. Downloads have been failing since midnight. There appear to be no lock file issues. Jared thinks the downloads may be “stepping on one another” but nothing in the cronjob has changed for either in the last year. I will keep an eye on this until I hear back from Jules on whether they know of an issue with the mooring.
 - 902101 - LRAUV Technology Development
 - I was able to finally implement a large Dash5 Map update earlier this week. Some bugs may remain but the system on okeanids server is now running the most recent version of the code.
 - Out of Office
 - Vacation: August 20-28, 2024

- On-campus 3 days/week (**T, W, TH**).
- Brian Schlining
 - Out of Office
 - Jul 15-24 - Vacation
 - Aug 19-22 Vacation
 - Sep 5-9 - Vacation
 - Oct 7-10 - 5th Marine Imaging Workshop in Monterey
- Alana Sherman
- George Stern
 - 902204 - Scalable Robotics
 - Completed detailed design and layout of the light power and control board
 - Ordered parts/boards for the 3 completed designs and began initial testing of the light board
 - Installed an anode on Mola
 - 902304 - Piscivore Cam
 - Continued effort to get NDAs and proprietary datasheets for potential image sensor candidates
 - 902306 - SINKER
 - Began testing Battery Interface board
 - Overhead
 - Reviewed ESP Sampler Schematic for Alana
- Justin Tucker
 - 300078 - DMO Support - AUV
 - Lower INS housing end cap made it through the shop and is ready for electronics integration.
 - 901101 - Seafloor Mapping
 - Misc. hardware ordered for LASS integration
 - Thermal experiment, continuing to work through ordering and assembling subcomponents.
Working through challenges with uniform flow through nozzle array
 - 902010 - Mesopelagic LRAUV
 - Comparison NL buckling model setup with LS-Dyna Implicit solver
 - Overhead
 - Working through LS-DYNA node perturbation methods for initiating buckling.
- Johann Voigtlander
 - 902204 - Scalable Robotics
 - Added ethernet switch to blueboat
 - Started designing multibeam mount
 - 902208 - Mini ROV Operations
 - Continued on Labview VN-300 integration upgrade
 - 902402 - CSEM
 - Met with Steve Constable and brainstormed on CSEM upgrades
 - Out of Office
 - April 16th - May 7th Germany CSEM
 - May 8th - May 12th Vacation