

Engineering Weekly Report 7/4/2024 - 7/11/2024

<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
 - Vacation Jul 5, 2024
- Francois Cazenave
 - 902106 - Niobicon-Based AUV Docking Development
 - Wrote the proposal
 - Out of Office
 - Return from vacation
- Danelle Cline
- Duane Edgington
 - 500055 - VARS, M3/RS, DSG
 - Plan to generate new YOLOv5 model scrubbed. The lab generated a YOLOv8x6 1280 model on Ultralytics and is evaluating that model's performance.
 - 901103 - Biodiversity & Biooptics
 - Proposal work
 - 901502 - Ocean Soundscape
 - Returning to exploration of orca sounds and ML models
 - Discussion / meeting with intern Suzanne and John Ryan
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Proposal work
 - 902004 - Planktivore
 - Proposal meeting
 - Out of Office
 - June 10 - 21, 2024. Vacation UTC-8
 - June 24 - July 3 Covid :(
 - June 15 - 16. Medical leave
 - 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
 - Out of Office

- Jun 20 (a.m. only, ETA ~10:30)
- Rich Henthorn
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Check-in service
 - 902405 - Precision Control Technologies
 - Verifying simulation results
 - Overhead
 - Proposal stuff
 - Out of Office
 - July 3 - 11: Vacation and WFH
 - July 9: SINKER test from Carson
 - Aug 26 - Sep 11: Vacation
- Brett Hobson
- Irene Hu
 - 901217 - Chemical Sensors
 - Troubleshooting MSC3 baseboard - faulty connections on load switches
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Continued troubleshooting of puck board using logic analyzer, several possibly related issues identified. Some issues seem related to quirks of the demultiplexer
 - Overhead
 - Proposals
- Scott Jensen
 - Out of Office
 - June 17-21 vacation
 - July 18-23 vacation
 - July 24-29 vacation
- Brent Jones
- Chad Key
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - 706007 - LRAUV USGS Great Lakes Prey Fish Assessment
 - Working with team back home and on shipping logistics. We plan to ship tomorrow 7/11
 - Overhead
 - Proposals!
 - Out of Office
 - 05/27-06/21 (GMT+2)
 - 07/08-07/12 (GMT -10)
 - 07/16-07/22 (EDT)
 - 07/29-07/02 (EDT)
- Denis Klimov
- Eric Martin
 - Out of Office
 - Vacation Friday June 7th
- Thom Maughan
 - 300083 - DMO Support - LRAUV
 - Getting a BPC2 ready for work with Varsha.
 - 901009 - CANON
 - Proposal discussions
 - 901217 - Chemical Sensors

- Working on Tiva processor module
 - USB power supply and portable dev environment to enable round the globe/clock dev.
 - Working on tracking milestones for Ken/Yui/Kent.
- 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Proposal discussions
- 902004 - Planktivore
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- Overhead
 - Planktivore project proposal
 - ODSS Enhancements project proposal
- 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
 - 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
- Enoch Nicholson
 - 706008 - READI-Net
 - Updated high level scripts to run sample and load puck using valve state commands.
 - Started to work on improving positioning (arm and cyl) with Scott
 - Met with Jim and Scott to plan the course of action leading to building Instrument #2
 - Refocusing on reagents & fixing design issues ahead of ordering new parts.
 - 902306 - SINKER
 - Third SINKER 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 19-24 Vacation (Available via Slack & Email)
- Tom O'Reilly
- Mike Risi
 - 200105 - Core Navigation - MDUC
 - Finalized wind sensor process
 - Installed 4K lapbox simulator for pan and tilt testing
 - Working on finalizing the UHS process, final spec. still pending
 - 901101 - Seafloor Mapping
 - Trigger board firmware finalized
 - Trigger board user interface completed and deployed on TCU and Euler
 - Meeting with LASS team to scope 2025 development efforts
 - Procman GUI testing with Ubuntu 24
 - 902204 - Scalable Robotics
 - Working on deployment folder for August 6th cruise
 - 902405 - Precision Control Technologies
 - First cut of simulated sonar working

- Performed some simulated runs at constant depth using Portuguese Ledge octree map
 - Proposal input for 2025
- 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
 - 902306 - SINKER
 - Field work July 9 / 18
 - Data processing
 - Overhead
 - Proposals
 - 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
 - 902101 - LRAUV Technology Development
 - Dash4 is now [4.70.2](#), with refined options for sending commands.

The screenshot shows the 'Send via:' section of the Dash4 interface, which is currently in a '(under testing)' state. It features three radio button options: 'Cell then Sat' (selected), 'Cell only', and 'Sat only'. A 'Cell timeout' of 5 minutes is set for the 'Cell then Sat' option. To the right of these options are two buttons: 'Submit' and 'Submit to alternative address'. Three red arrows point from the options to explanatory text boxes:

- An arrow from 'Cell then Sat' points to a box stating: "If the vehicle does not connect to the dash backend and fetch it within the given timeout, then the command will be sent via Sat, and a note event will be generated as notification."
- An arrow from 'Cell only' points to a box stating: "The command will only be sent via email to Iridium or alternative email address"
- An arrow from 'Sat only' points to a box stating: "If the vehicle does not connect to the dash backend and fetch it within the given timeout, then the command will be discarded and a note event will be generated as notification."

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- Overhead
 - Proposals (discussions, preparation)
- Out of Office
 - July 2–3, 22–25: vacation
- Karen Salamy
 - 200103 - Core CTD Data - MDUC
 - Updated some ROV CTD O2 QC data in the EXPD for various dives.
 - 300057 - Mooring Maintenance
 - Check ins for the newly deployed M1 Mooring.
 - 901101 - Seafloor Mapping
 - Working on various requested updates for the SMDB team.
 - 902101 - LRAUV Technology Development

- Working on Dash5 code upgrades most of this week. Meeting with Jim Jeffers to go over various code aspects in our weekly meetings.
- Out of Office
 - On-campus 3 days/week (**T, W, TH**).
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - While deploying our new Knowledgebase service, [Oni](#), I discovered that [JDBC and Java's new virtual threads don't play well together](#). Virtual threads don't yet play well with connection pools, like [HikariCP](#), with the result that virtual threads will eventually not be able to acquire a db connection. Without a connection pool, virtual threads will basically run a DOS attack on your own database. I've switched out the underlying service in Oni [from Helidon Webserver to vertx](#).
 - Beginning work with Paul on the new Knowledgebase web interface
 - 902404 - 5th Marine Imaging Workshop
 - On-going preparation
 - Overhead
 - Work on 2025 project proposals
 - [Upgraded DARC's](#) video annotation system to our latest and greatest versions. They are starting localization work for NOAA to generate training data for ML. Set them up with FathomNet's megalodon detector (integrated with VARS) to help get them familiar with ML's capabilities. Added FathomNet export to their system. They wrote up an interesting annotation review tool that I'll get the video lab to check out when I return.
 - Out of Office
 - Jul 8-11 - Updating video lab at DARC
 - 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
 - Detailed design of CTD interface and lighting for mola
 - 902304 - Piscivore Cam
 - More computer vision chip research and trying to get proprietary camera data sheets
 - Proposal write up for camera testing and quote for camera drivers
 - 902306 - SINKER
 - Carson trip to test new seal/motors- it worked!
- Justin Tucker
 - 901101 - Seafloor Mapping
 - Thermal experiment - Continuing to work on setting up the motor and VFD. Worked through the BOM of the rest of the experiment design.
 - Overhead
 - Working through a general setup of two way coupling between solidworks and ANSYS to pass and control geometry parameters from ANSYS for design studies and repeat templates.
- Johann Voigtlander
 - 902204 - Scalable Robotics
 - IMU Datalogger simplified and enhanced
 - 902208 - Mini ROV Operations
 - Refurbished benthic sled interface can bulkheads
 - 902402 - CSEM
 - Proposal submitted

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