

Engineering Weekly Report 5/2/2024 - 5/9/2024

<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
 - Preparing buoy for deployment
 - 902106 - Niobicon-Based AUV Docking Development
 - Preparing AUV and mooring for deployment
- Danelle Cline
 - 902111 - Carbon Flux Ecology
 - Working on optimizing FastAPI for bulk changes
 - Evaluating ARGO + Kubernetes integrated ML workflow
 - 500055 - VARS, M3/RS, DSG
 - Added [ecsshutdown](#) command to support clean shutdown of elastic clusters
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - Working on optimizing FastAPI for bulk changes
 - 901502 - Passive Acoustic Sensing
 - Working on PBP time metadata feature improvements
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Project update presentation
 - Working ML whitepaper draft/proposal abstract input
 - Submitted IS help ticket to revive 4-GPU bo which has a failing SSD drive. Long-term solution needed with either on-premise GPUs or cloud compute.
 - 902204 - Scalable Robotics
 - Sprint kick-off. Preparing for test-tank stereo capture using sightwire
 - Loaded sdcats generated output and documented steps for dial integration
 - Overhead
 - IE group meeting
 - Out of Office
 - Vacation June 5-19
- Duane Edgington
 - 500055 - VARS, M3/RS, DSG
 - Preparing to test ecsprocess shutdown
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Project update
 - Team meeting
 - Work on Realtime-onboard UAV machine-learning whitepaper
 - Out of Office

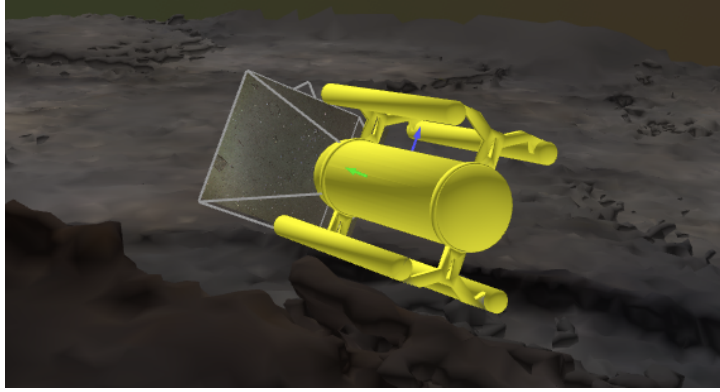
- June 10 - 21, 2024. Vacation UTC-8
 - Sept 17 - 20, 2024. PyTorch Conference, San Francisco
 - Oct 21 - Nov 8, 2024. Vacation UTC+1
- Jon Erickson
- Kevin Gomes
 - 200105 - Core Navigation - MDUC
 - Added publisher to logrs to push logged messages over LCM so that we can monitor loggers and replicate bcserver/UDP functionality of previous system.
 - Developed Python multithreaded server to serve all UDP ports to replicate previous bcserver functionality.
 - 300070 - DMO Support - Ventana
 - Working on web application replacement for DiveLog app
 - Overhead
 - Proposal kickoff meeting
- Andy Hamilton
- Kent Headley
 - 902405 - Precision Control Technologies
 - Looking at role of sensor type and IO data structures in TRN code with an eye towards developing multi-input TRN and/or a sensor- and geometry- independent data structure
 - Working on documentation outline
 - Meeting with Steve to discuss these activities
 - Overhead
 - hiring: application review, interview planning, misc.
 - misc admin
 - Out of Office
 - Tue 5/7 (a.m., on line in afternoon)
 - Fri 5/10 after 12 pm (on line in afternoon)
- Rich Henthorn
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Check-in service reporting issues
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Testing controller system
 - Issues with full-auto system need to be addressed
 - 902306 - SINKER
 - Engineering meeting to go over critical tasks for July deployment
 - 902401 - Geo-Sense
 - Prep for Thursday PDR
 - Out of Office
 - May 8: WFH morning, intermittently in the afternoon
 - May 9 - 10: WFH
 - May 28 - June 5: Vacation
 - July 3 - 11: Vacation and WFH
 - Aug 26 - Sep 11: Vacation
- Brett Hobson
- Irene Hu
 - Out of Office
 - May 3-15: Taiwan
- Scott Jensen
 - Out of Office
 - June 17-21 vacation

- July 18-23 vacation
 - July 24-29 vacation
- Brent Jones
- Chad Keycy
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - 300083 - DMO Support - LRAUV
 - Lots of work with existing deployments: optim, piscivore, Durkin Lab, Monique, and engineering tests.
 - Worked with WHOI/Carlos to get backup dash up and running to facilitate power off Friday recovery and provide future backup if/when MBARI goes dark.
 - Provided beacon ids to ship for current deployments. Working on automation in ODSS.
 - 706007 - LRAUV USGS Great Lakes Prey Fish Assessment
 - Standing by on booking. Got initial shipping quote
 - 901513 - Targeted Sampling by AUVs
 - Worked with Yanwu on missions for current science deployment
 - 902101 - LRAUV Technology Development
 - Got power numbers for Monique for planning purposes for deployment
 - Implemented cell only for chl back to shore
 - Vehicle prep for all these deployments
 - Various minor bug fixes and added functionality of rudder angle during go to surface behavior following an incident attempting to recover a heavy vehicle caught mid water.
 - Fixed buoyancy neutral issue first noted at WHOI where buoyancy setting from B&T was not being set properly.
 - 902405 - Precision Control Technologies
 - On hold until after 5/14
 - Met with Steve/team last week to go over results from simulation
 - DQ2322 - Denmark Windfarm
 - ATA carnet submitted for shipping
 - Shipping date 5/14!
 - Troubleshooting charts issue
 - Prepping Makai
 - Packing
 - Housing wrapped except for 2 more nights at the end of trip
 - Overhead
 - Assisted WHOI with their camera deployment with Stella troubleshooting. They recovered yesterday and had a successful mission.
 - Working with Saab on bringing up application.
 - Investigated Stella grounding incident and provided fixes.
 - Out of Office
 - 05/27-06/21 (GMT+1)
 - 07/08-07/12 (HST)
 - 07/16-07/22 (EDT)
- Denis Klimov
 - 901112 - Monterey Bay Time Series
 - We did a pre-deployment test of IFCB with Power Buoy in the Buoy Room, utilizing the second-level platform to lift the instrument up to the Power Buoy level; discovered the network issues controlling from UCSC while from inside the MBARI network things seem to be working ok; however, we need reliable data upload connectivity to UCSC server.

- The IFCB is closed/ buttoned up and prepared to deployment this week
- 901809 - Deep Sea Bioinspiration
 - Participating in the job interview for OVAI MLOps position
- 902401 - Geo-Sense
 - We conducted the cable selection review where we were able to collect useful feedback. Working on the system design review this week.
- Eric Martin
- Thom Maughan
 - 300083 - DMO Support - LRAUV
 - Sent hardware change list to Duane T
 - Working on pcal6416 driver
 - Brizo battery diagnostics
 - 901805 - Coastal Biogeochemical Sensing Program
 - GoBGC/SOCCOM. New board for mini-ISUS digital is out for fab/assembly
 - Irene is on vacation, working with Jose on MSC3_baseboard and MSC3 Tiva module layout.
 - Blg push to get ISUS running on Tiva processor using MSC2 setup.
 - Finalizing with contractor Bill Keeler. Received hardware and latest PSoC software. Forwarded his invoice to accounting.
 - 902004 - Planktivore
 - Ahi is out with Durkin Lab Trap Tracking.
 - Weekly meeting
 - Out of Office
 - May 10 days. May 20 - 30 (or so). Colorado
 - Aug two to three weeks vacation Colorado.
- Mike McCann
 - 901101 - Seafloor Mapping
 - Made some changes to mbgrd2gltf's C++ code to open various versions of .grd files
 - Tested mbgrd2gltf's draco compression and provided [feedback](#) to the capstone team
 - 902101 - LRAUV Technology Development
 - Fixed ESP name and cartridge number parsing problems from latest brizo deployment
 - Out of Office
 - 24 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
 - Helping DJ with a load-cell problem on the ROV winch
 - 902304 - Piscivore Cam
 - Finally found the weird timing bug in the camera control firmware. Problem is caused by bug in Arduino real-time clock library and I'm programming around the issue. Now bench-testing the fix.
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Inspected wiper on SES carousel and found it full of gritty sediment
 - Cleaned camera viewport and what we thought were scratches are gone. Determined that other blemishes in image are caused by small bubbles that will disappear at depth.
 - 902401 - Geo-Sense
 - Preparing for design review on Thu morning
 - Have drawn most of schematic for Deepsea Connect can
 - Overhead

- Helping Kavi with a shore-power wiring issue with the Carson
- Enoch Nicholson
 - 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
 - Working on a few remaining navproc processes
 - Configuring navproc machines for R/V David Packard
 - Working with Kevin on finalizing navproc process configuration
 - 300062 - DMO Support - Doc Ricketts
 - Misc pan and tilt support with ROS
 - 901101 - Seafloor Mapping
 - LASS planning meeting
 - Completed first cut of GUI for rev-c trigger board
 - Working on bridge to bring GSS control system data into LASS
 - 902405 - Precision Control Technologies
 - Working on sonar simulation for obstacle avoidance
 - 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
- Paul Roberts
 - 901809 - Deep Sea Bioinspiration
 - Optim video review
 - 902004 - Planktivore
 - RIMS data management and deployment support
 - 902111 - Carbon Flux Ecology
 - Chiton deployment and data management
 - 902204 - Scalable Robotics
 - PoE chassis rebuild
 - 902306 - SINKER
 - Planning for July cruises and MARS installation
 - Out of Office
 - May 17
- 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
 - Tethysdash backend is now [4.70.2](#).
 - Checking with WHOI about planning for their upgrade to the latest dash version; this time this is specially important due to the significant recent updates.

- Scheduled meeting with Saab engineer about TethysDash system.
- 902204 - Scalable Robotics
 - Rerun evaluation/learning continues toward adoption.



- Overhead
 - Got new laptop, and now going through the “hassle” of setting it up, transferring things, etc.
 - Brief talk with Thom M./Kevin G. re ODSS related abstract.
 - IE meeting.
- Out of Office
 - June 10–13: vacation
- Karen Salamy
 - 200103 - Core CTD Data - MDUC
 - Spent some time updating the EXPD with ROV CTD O2 flags provided this week by Ed Peltzer. He has now updated almost 50% of the backlog of CTD O2 flags from VNTA dives since September 2023. Thanks Ed!
 - 300057 - Mooring Maintenance
 - Weekly monitoring of data downloads and maintenance of coredata8 server.
 - 901101 - Seafloor Mapping
 - I have spent quite a bit of time this week attempting to bring the SMDB local build up on my new laptop which contains the Apple M2 Max chip. This has caused some delays in requested UI edits as well as trouble building and integrating MB System (which does not currently support the new chip).
 - 902101 - LRAUV Technology Development
 - I have spent less time this week on this project due to the SMDB build issues. I do have another meeting with Jim Jeffers tomorrow morning however to continue discussion of updating and editing the Dash5 to better support the LRAUV team.
 - 902403 - Expedition DB Modern
 - Spent a little time going over various needs that the new EXPD would need to be addressed in order to provide Science Users with their various requests.
 - Overhead
 - Attended various ZOOM meetings including project updates throughout the week.
 - Out of Office
 - I will be out several days this month (May 21-22) for shoulder surgery.
 - On-campus 3 days/week (**T, W, TH**).
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - Working on retiring the [old VARS knowledgebase](#) and [user account services](#), as well as the [knowledgebase maintenance app](#). The first phase is a [new web service](#), the second phase will be a web interface for editing and maintaining the knowledge base data.
 - 701165 - OVAI Phase II
 - Interviewing MLOps Candidates

- 902002 - FathomNet
 - [Investigating missing images from Okanos dives](#)
 - [Coordinating with NOAA on a data hosting pipeline](#)
 - Along with Kakani, met with Jessica Kendall-Bar to discuss 3D visualization opportunities.
- 902304 - Piscivore Cam
 - Ingested the [recent deployments](#) to m3.
- Overhead
 - Setting up a meeting with NOAA (Deep Coral group) on setting up a VARS/Video lab
 - Coordinating with UofH/NOAA/DARC about updating their video lab. They have a feature requests from NOAA to address
 - [Imported Coral Observatory images from the Macro Coral Cam](#), into VARS, so Jim Barry's lab can annotate them using [Mondrian](#)
- Out of Office
 - Apr 11-12 - Vacation
 - May 16-20 - Vacation
 - Jun 10-14 - Setting up video lab at OSU
 - Jul 15-24 - Vacation
 - Sep 5-9 - Vacation
 - Oct 7-10 - 5th Marine Imaging Workshop in Monterey
- Alana Sherman
 - 902208 - Mini ROV Operations
 - Troubleshooting Manip comms
 - 902401 - Geo-Sense
 - Preparing for System review thursday
 - 901205 - ESP/Readinet
 - Working through my list of tasks on the sampler control board
- George Stern
 - 902204 - Scalable Robotics
 - Completed Orin Nano/NX adapter fixturing design and fabrication
 - Updated camera rack design so mola lights could be added and point down
 - Identified camera sensor options for Mola 2
 - 902304 - Piscivore Cam
 - Collected first images from 7 potential image sensor/complete camera candidates and ran initial low light testing on 5 of them against the current GoFish cam. Waiting on 2 more likely better sensors to be stocked to complete testing
 - Dissassembled and ran some tests on 2 cameras which performed much better than the existing gofish cam to check compatibility with the existing system; unfortunately no easy swaps
 - Researched electrical and magnetic field reception in salmon/tuna and sharks and existing fishing attractors
 - 902306 - SINKER
 - Reviewed battery interface board PWB
 - Began detailed design for linear motor interface and reviewed existing bldc "dye injector motor"
- Johann Voigtlander
 - 902402 - CSEM
 - Successful CSEM trip in the North Sea April 22 - May 6th on the R.V. Alkor
 - Gear should be shipped within the next week to the US
 - Compiled manual to connect, change settings, deploy, and retrieve CSEM instruments
 - Out of Office
 - April 16th - May 7th Germany CSEM
 - May 8th - May 12th Vacation

