

Engineering Weekly Report 9/14/2023 - 9/21/2023

<https://docs.mbari.org/internal/projects/Engineering/Weeklies/2023/>

Executive Council Notes

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Individual Activities

- Michael Anderson
- Kevin Barnard
 - 500055 - VARS, M3/RS, DSG
 - Added pass-through for confidence field from ML inference to VARS bounding boxes
 - 902204 - Scalable Robotics
 - Began implementing feature to consider multiple candidates for loop closure in RTAB-Map
 - Fixed some bugs in RTAB-Map SLAM pipeline
 - Tested loop closure detection in May 2023 LASS dataset
 - DQ2209 - Ocean AI 2
 - Led OVAI PWG discussion 9/20
- Francois Cazenave
 - Out of Office
 - 3 days of vacation
- Danelle Cline
 - Out of Office
 - SoundCoop Workshop, Boulder, CO October 24-25 2023
- Duane Edgington
 - 500055 - VARS, M3/RS, DSG
 - Continued testing deepsea-ai process and ecsprocess ml inference updates.
 - Worked on tasks as assigned VARS-ML-SE-tasks
 - 901502 - Passive Acoustic Sensing
 - Alexa monitoring
 - Out of Office
 - Oct 11-13 2023. virtual conference on Generative AI. PDT (UTC-7)
 - Oct 16-18 2023. Pytorch conference. SFO (in person). PDT (UTC-7)
- Jon Erickson
 - 901217 - Chemical Sensor Program
 - Spectrometer boards in production. Batch No.2 of carbon tube hulls in production.
 - 901805 - Coastal Biogeochemical Sensing Program
 - New flow cell parts for nanoFET.
 - 902010 - Mesopelagic LRAUV
 - Waiting on thruster motor selection.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - EK-80: Almost have a solution for cable interference. Think I have 3/8 " offset on the xducer cables.
- Kevin Gomes
 - 200105 - Core Navigation Data - MDUC

- Digging in to the new logr code and got it generating new log files that look just like the old based on the new processes Mike has for the single LCM type.
 - Picking up the LCM bridge project to see if this could serve as an API that then could be leveraged by Dataprobe successor.
 - 901009 - CANON
 - Some small ODSS support
 - Overhead
 - Some time digging out from being on vacation
 - Working on 2024 project summaries for my team for next week's quarterly check ins.
- Andy Hamilton
- Kent Headley
 - 901101 - Seafloor Mapping
 - Refactoring stream handlers for ROV TRN utility; tried out an implementation using dynamic shared libraries, but decided to use a simpler approach instead. It made the code more modular without making configuration more complicated, and required less code.
 - Figuring out instrument configuration for october dive and working on test plan
 - 902204 - Scalable Robotics
 - Installed mb1stream on atuncita, built docker image
 - Tested X windows forwarding and fixed a couple of issues for linux build, and a GMT error that affected both linux and macOS
 - Overhead
 - Hiring
 - Sent job description and screening questions to HR
 - Met w/ Andy re requirements
 - met w/ Norm re questions
 - Questions re Irauv software licensing
 - Trying out tmux (terminal mux util)
- Rich Henthorn
 - 300078 - DMO Divisional Support - AUV
 - Porting modules in Dorado code
 - Ready for next phase after merge
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Issue with LCM communications between BSC and conduit
 - 902306 - SINKER
 - Issues with bootloader on camera control boards
 - Out of Office
 - Oct 16 - 19: Remote work, PDT
- Brett Hobson
- Irene Hu
 - 901805 - Coastal Biogeochemical Sensing Program
 - Reassembled seaphox with aluminum fasteners
 - Emergency packing and paperwork for KAUST trip
 - Planning out second AEC setup
 - Keeping an eye on nanofet tests- nano-dfet very noisy in seawater lab (bubble?), less noisy in a bucket in lab; nanofet+DSD had low noise in lab setup; nano-dfet is back to seawater lab to repeat test
 - 901904 - Deep-Sea Coral Community Observatory
 - Glued velcro to Teflon piece
 - Overhead
 - Helping George with SINKER cable diagrams

- Rec com meeting; chasing down strange budget entries
 - Sept 20: PCB West convention w/ Jose and James
- Scott Jensen
 - 708178 - Marine E Development NAV
 - Preparations for plate arrival
 - 901205 - ESP SURF Center
 - Preparations for Sampler demonstration
 - LysNGo elf build
 - Out of Office
 - Family leave
- Brent Jones
 - 901805 - Coastal Biogeochemical Sensing Program
 - Bug detection on integration of Nanofet. New code should take all flavors of MFET controllers. Bench testing in progress
 - 902004 - Planktivore
 - Final testing for integration on ahi
 - 902311 - Wire-Walker Power Generation
 - Test setup is finished. Looking to begin testing with old SOLOI pump
 - Out of Office
 - Sick leave
- Chad Kechy
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - Out of Office
 - 09/18-09/21 (EDT)
 - 09/25 - 09/29 (EDT)
- Denis Klimov
 - 901112 - Monterey Bay Time Series
 - We are still waiting for parts for IFCB from McLane
 - 902101 - LRAUV Technology Development and Fleet Operations
 - We had the issue with one operating a PAR sensor on Ahi, with debugging, turned out it was an incorrectly configured controller card, not the sensor itself
 - Overhead
 - Lab reconfiguration is close to completion. Importantly, storage of Thorlabs optomechanical parts had been figured out.
- Eric Martin
 - 901101 - Seafloor Mapping
 - LASS software
 - Sled Prep
 - Lab cleanup
 - 901911 - ROVVR
 - Harvey Mudd support
 - Ventana deployment Sept 19th, got 6 hours of good data.
 - Lab cleanup
 - 902012 - Telepresence
 - Paper writing is nearly done, drafts due friday
 - 902204 - Scalable Robotics
 - Working with ETs on chassis build
 - Cable design

- Overhead
 - Interview of MiniROV candidate
 - DMO consult with Bryan on CV for the Carson piloting
- Thom Maughan
 - 901009 - CANON
 - Working with IS on deepednaZ server setup. Re-partitioning is complete and IS tickets have been filed for the backup and account setups.
 - 901805 - Coastal Biogeochemical Sensing Program
 - Calibration coefficient import via Ymodem coding is complete.
 - Adding defaults and edit capability for the Cal coefficients
 - Testing on new nanoFET and MFET
 - 902004 - Planktivore
 - Prep for LRAUV deployment. Fault found with the battery charging module. The small component size on the board, footprint, and soldering / hand assembly are suspects in the case.
 - Battery charger removed from test deployment. Housing has been sealed and Planktivore tested and wheeled into LRAUV lab
 - LRAUV Ahi checkout is complete and housing assembly is next step. Once the LRAUV housing is in place we will attach Planktivore.
 - Air weight and estimate on water weight indicate we need far more foam than originally designed. Working with Aaron. Hoping to get into the test tank this week.
 - Out of Office
 - Vacation Sep 27 - Oct 2 Ohio.
 - Vacation Oct 12 - 18 Nevada Eclipse
 - Jan 9 - 12 CES
 - Feb 18 - 23 OSM24
- Mike McCann
 - Overhead
 - Mostly vacation, but did get the STOQS mapserver container to work on Mac M2 arm
 - Out of Office
 - 29 September: Vacation
 - 9-11 October: Web3D 2023 Conference
- Rob McEwen
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Ran B&T step tests in the tank to test the damping of the moving mass control
 - It was overdamped. Thus the underdamped response previously seen requires the vehicle to be in flight.
 - The simulator presented a similar underdamped response.
 - I was able to obtain a well-damped response in the simulator by adjusting the deadband and gains.
 - I'm hoping to try this at sea soon.
- Paul McGill
 - 300070 - DMO Divisional Support - Ventana
 - Reorganized ground fault system docs and am helping Ethan B. to understand the new system
 - 701147 - MARS O&M IV
 - Working on requirements docs for MARS LVPS
 - Working on NSF budget request for UW's subcontract
 - 901700 - Acoustical Ocean Ecology
 - Spent 3 days troubleshooting code for new Bosch attitude sensor for Simrad transducer position, and finally got it to work
 - 902305 - Event Detection using the Sedimentation Event Sensor

- Went to storage at end of island to look at our Sediment Traps and pick the best one to modify for remote triggering
 - Got quote from McLane for new Gen3 Sed Trap controller and NRE for modification for remote triggering
 - Overhead
 - Helping Drew B. find a housing for Rickett's new camera system
- Enoch Nicholson
 - 706008 - READI-net
 - Prototyping sampler side plates for fluidics / electronics mounting
 - 902306 - SINKER
 - Completed check of housing drawings with FC. Released and submitted final drawings to Scripps.
- Tom O'Reilly
- Mike Risi
 - Out of Office
 - Out of office on Fridays
 - May 30 - June 6
 - August 21
 - September 5 - September 7
- Paul Roberts
 - 901809 - Deep Sea Bioinspiration
 - Optim camera deployment
 - MiniROV interfacing
 - 901904.99 - Corral Camera System
 - Planning for design review
 - 902001 - Ventata 4k camera
 - Laser testing / troubleshooting
 - 902004 - Planktivore
 - LRAUV deployment
 - 902204 - Scalable Robotics
 - MiniROV interfacing
 - HSI camera design
 - 902306 - SINKER
 - Internal chassis design
 - firmware troubleshooting
- Brent Roman
- Carlos Rueda
 - Out of Office
 - Oct 2–4: [QCon](#) (tentative)
 - Nov 20–22: vacation
- Karen Salamy
 - 200103 - Core CTD Data - MDUC
 - Awaiting EXPD ROV QC updates from Ed P.
 - 300057 - Mooring Maintenance
 - I spent quite a bit of time working to help Francisco and his team with their deployment and data download issues for OA2 over the last week. In addition, OA1 has stopped downloading data (could not acquire TNC port). I am working with Francisco on trying to bring that back up and online this week.

I continue to work on fine-tuning various functionality of the LRAUV Dash5 UI for the team. The use of the MBARI Google API Key in Dash5 to display Google Maps has initiated my editing the new

code on TethysDash2 as the API key will NOT work on a localhost connection. Access to these maps is important as I am currently working on personal edits to a newly developed React Measuring Tool plugin for Dash5.

- Out of Office
 - On-campus 3 days/week (**T, W, TH**).
 - I will be out this coming Monday (September 25) on personal leave.
 - I have been called for jury duty for the week of October 2-6 and will send a note should I be chosen to serve on a trial during that week.
- Brian Schlining
 - Out of Office
 - Sep 20 - Oct 13 - Working remotely
- Alana Sherman
 - 902208 - MiniROV Support
 - Spent much of the week troubleshooting small issues with the rewired j-box. Was able to resolve:
 - Comms issue with clump due to fiber connection
 - No comms with core j-box micro due to loose wire on a SS relay
 - No power to the heading sensor due to the 5V power wires being put in the wrong slots on the wago thus blowing a fuse
 - Given that we rewired easily over a hundred wires, it all went pretty smoothly
 - 902312 - Seafloor Processes
 - Speaking with contacts at Sintella about the schedule and specs for the stand alone DAS.
 - Overhead
 - ASOE interviews hopefully completed
 - Finished MiniROV/engineer interviews and made an offer
 - Out of Office
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- George Stern