

Engineering Weekly Report 1/25/2024 - 2/1/2024

<https://docs.mbari.org/internal/projects/Engineering/Weeklies/2024/>

Executive Council Notes

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Individual Activities

- Michael Anderson
- Kevin Barnard
 - 500055 - VARS, M3/RS, DSG
 - Support for VARS GridView issues
 - Reworking m3-download logic to support VL for next training data download
 - 702108 - Deployable AI
 - Exported core MiniROV STL from SolidWorks and converted to optimized OBJ mesh for hydrodynamic simulation
 - Set up simulation environment for MiniROV
- Francois Cazenave
 - Out of Office
 - Took Friday off
- Danelle Cline
- Duane Edgington
 - Out of Office
 - April 12 - 21, 2024. EGU
 - June 10 - 21, 2024. Vacation
 - Oct 21 - Nov 8, 2024. Vacation GMT
- Jon Erickson
- Kevin Gomes
 - 300070 - DMO Support - Ventana
 - Restarting my efforts on upgrading the DiveLog application. There are serious problems with ODBC on Mac and thinking we should migrate this to an API to get rid of the ODBC dependency.
 - Overhead
 - Wrapping up reviews
 - Out of Office
 - March 12-21: Vacation
 - March 25-29: Data Council Conference: Austin, TX
- Andy Hamilton
- Kent Headley
 - 902204 - Scalable Robotics
 - Resolved issue: range/gain initialization not working. A 750 ms delay was needed after connection before the sonar would accept configuration commands
 - Prep for cruise 2/9
 - Sprint kickoff meeting

- Added Istream docker image, and did some experiments with opengl forwarding to macOS. Seems that OpenGL is deprecated on macOS, so while some bits are supported, some of the 3D features don't work when forwarding X11 apps to mac. It is perhaps related to support for direct vs indirect rendering. While there is glxgears test program available for macOS that works, when glxgears is run on a linux machine and forwarded to macOS, it requires LIBGL_ALWAYS_INDIRECT=1 and runs very slowly..
- Overhead
 - Reviews: submitted, followup
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- Rich Henthorn
 - 300078 - DMO Support - AUV
 - Investigating some multi-queue strategies for OTH missions
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Installing Python tools on the new SES controller
 - Installed the other image processing tools on the new controller
 - Removed the SES controller chassis from the housing
 - 902306 - SINKER
 - Installed bootloaders and updated software onto the camera and system control boards
 - Overhead
 - Eval
 - Out of Office
 - Jan 31: WFH
 - Feb 6: Rachel Carson to test SINKER wiper at depth
- Brett Hobson
- Irene Hu
 - 901805 - Coastal Biogeochemical Sensing Program
 - Evaluating mphox integrations
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Finished controller board, prepping materials for design review
 - Discussed w/ Aaron and need to split controller board into two
 - Out of Office
 - May 3-15: Taiwan
- Scott Jensen
 - 300078 - DMO Support - AUV
 - A little searching for possible bridge solutions
 - 706008 - READI-Net
 - Great progress toward full sampling.
 - Nearly complete subsystems, only missing NFC
 - Discovered possible solution for reagent storage
 - 901205 - ESP SURF Center
 - Evaluated NFC for possible use elsewhere in ESP program
 - Out of Office
 - Due to covid exposures
 - April 5-9 vacation
 - June 17-21 vacation
 - July 18-23 vacation
 - July 24-29 vacation
- Brent Jones
 - 901112 - Monterey Bay Time Series

- Continuing to hack CAN bus and explore new Maxon EPOS4 controller
 - Updating SIPPER pic24 to work with Maxon EPOS4
- 901805 - Coastal Biogeochemical Sensing Program
 - Validating new NanoFET Spray software
- Chad Key
 - Out of Office
 - Jan. 22- Potential Jury Duty
 - Out of office on Fridays
- Brian Kieft
 - Out of Office
 - 02/12-02/16 (MST)
 - 04/04-04/10 (CST)
 - 04/15-04/19 (GMT+8)
 - 06/03-06/18 (GMT+1)
- Denis Klimov
- Eric Martin
- Thom Maughan
 - Out of Office
 - Feb 8 - 12 Vacation Colorado
 - Feb 18 - 23 OSM24
 - Apr 5 - 10 Eclipse
- Mike McCann
- Rob McEwen
- Paul McGill
- Enoch Nicholson
 - 706008 - READI-Net
 - Updated team on design status of 2024 sampler.
 - 901007 - Benthic Biology & Ecology
 - Moved BRS to B232
 - Obtained laptop for project
 - Located OASIS5 documentation
 - Powered and connected to BRS
 - 902306 - SINKER
 - Prepared hydrowiper for testing on 02-06 ROV dive
 - Robust hydrowiper comp design.
 - Overhead
 - Jan ME Meeting
- Tom O'Reilly
- Mike Risi
 - 200105 - Core Navigation - MDUC
 - Implementing remaining Doc Ricketts processes for integration later this year
 - Working on final configuration of system for navproc
 - 300062 - DMO Support - Doc Ricketts
 - Met with Drew to discuss Doc Ricketts integration tasks occurring later this year
 - 902204 - Scalable Robotics
 - Tested Sprint INS serial driver on Ventana using GSS port with LNav message
 - Reviewed logs from January 18th and modified roV-control to address scripting issues
 - Met with Sebastian to review roV-control changes and deployment configuration for February 9th
 - Out of Office

- Out of office on Fridays
 - January 16 - January 19, 2024
 - March 4 - March 8, 2024
 - May 20 - May 24, 2024
- Paul Roberts
 - 901809 - Deep Sea Bioinspiration
 - EyeRIS on SCUBA concept design
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Weekly meeting and data format discussion
 - 902004 - Planktivore
 - RIMS software integration
 - 902111 - Carbon Flux Ecology
 - Planning for LRAUV operations
 - 902204 - Scalable Robotics
 - Tank testing with updated PoE interface for SOI
 - 902306 - SINKER
 - Preparations for Feb 6 field work
 - Out of Office
 - Jan 9-Jan12 at CES
 - Feb 19- Feb 24 Ocean Science Meeting
- Brent Roman
 - 708165 - NOAA-MERHAB-UW
 - Discussed pump and flow meter test procedure ideas with Stephanie Moore
 - 901205 - ESP SURF Center
 - Continuing to help Nadia bring up the redesigned ESPkoa
 - Prepared replacement ESPchris CPU board for shipment to Greg Doucette's lab
 - Packaged and Documented new ESP 2G MSP430 firmware programming dongle
 - Found and fixed a long-standing bug in the ESP Linux networking scripts
 - 901913 - Wet Wifi
 - OceanComms reports they will ship updated modems in a couple weeks
 - Met with LRAUV and Wavegliders teams to plan for deployment in mid-March
- Carlos Rueda
 - 901502 - Ocean Soundscape
 - Based on an initial version by Danelle (thanks!), created (and [published](#)) dockerized image for running PBP in jupyter notebooks, with all requirements in place. Successful testing with NOAA datasets, which are located in Google Cloud storage.
 - Exchanges with collaborators.
 - Meeting with OrcaSound
 - 902101 - LRAUV Technology Development
 - Exchanges with WHOI and LRAUV teams regarding compilation of tethysl missions outside the lrauv-application codebase.
 - Exchanges with Kevin N. (WHOI) while diagnosing issues with the VSCode extension for TethysL. It turned out they had a very old version of tethysl in their PATH.
 - 902204 - Scalable Robotics
 - Preliminary implementation of image display in Dial, including stereo ones (which are just displayed side-by-side).

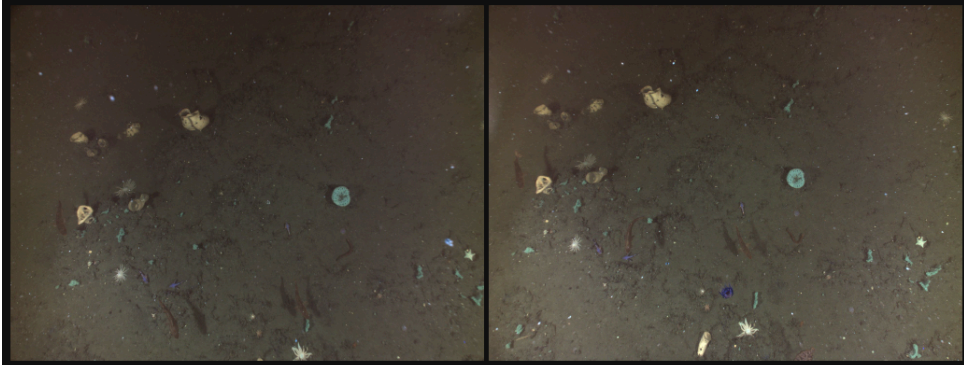
LCM Spy clone (very initial sketch)

Channel	fingerprint	#Msgs	Hz	1/Hz (ms)
PROSILICA_L		140	2.00	500.00
PROSILICA_R		140	0.00	∞

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☒ Show images

Left: 1970-01-20T15:22:34.151Z 205376 (Δ: 0.006818223s)
 Right: 1970-01-20T15:22:34.148Z 930324 (Δ: 0.002272727s)
 Left-right Δ: 0.002275052s



Left image channel
PROSILICA_L

Right image channel
PROSILICA_R

- Image generation rate characteristics still unclear but they seem rather demanding in principle: per the included timestamps in the payload they seem of high frequency but only received up to a couple of Hz in Dial, presumably due to latencies in LCM and/or websocket traffic.
- Overhead
 - Reviewing Postdoc applications (8).
 - Moved the Kuma based monitoring service from tethysdash2 to a new VM 'statusdev'. Thanks again to Kevin B. for the good finding. Since IS is also interested in exploring this kind of monitoring services, and to avoid risks/conflicts with production servers, I decided to ask for a new VM. I'm happy to share the credentials with anyone interested in defining new monitors. Examples:
 - <http://statusdev.shore.mbari.org/status/tethysdash>
 - <http://statusdev.shore.mbari.org/status/mxm>
 - IE group mtg
- Out of Office
 - Jan-22 Feb 8: Dentist appt.
- Karen Salamy
 - 200103 - Core CTD Data - MDUC
 - Awaiting updates from Ed Peltzer.
 - 300057 - Mooring Maintenance
 - Monitoring and service of coredata8 and daily downloads from mooring systems.
 - 901101 - Seafloor Mapping
 - Will meet next week for 2024 project kickoff.
 - 902101 - LRAUV Technology Development
 - Making small changes this week as I am taking the React 18.2+ course.
 - 902403 - Expedition DB Modern
 - Attended bi-weekly meeting last week. I will be assembling all science input for the new EXPD mockups for the team.
- Overhead
 - Take the online React 18.2+ course (just out!) called "The Ultimate React Course 2024" by Jonas Schmedtmann which includes Context API, React Query, Redux Toolkit, Tailwind, advanced patterns in React 18.2+. The online course is with Udemy and is 67 hours long. Certification is at the end.

- Out of Office
 - **Feb. 29 - Mar 10** - Trip to east coast for personal family reasons
 - On-campus 3 days/week (**T, W, TH**).
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - Writing integration tests for applications that will be affected [by the major updates to back end services](#) supporting video annotations.
 - 701165 - OVAI Phase II
 - Migrating **dev** endpoints to **stage** endpoints.
 - Providing access to database snapshots to contractors. Also provided code for them to spin up postgres containers.
 - Set up backup for all configuration and static content for ovai.mbari.org into titan:/OVAI_PGDB
 - 902404 - 5th Marine Imaging Workshop
 - Working on putting together a Science committee
 - Updated website with abstract submission and student assistance applications.
- Alana Sherman
 - 902208 - Mini ROV Operations
 - Working through scheduling issues for the year
 - 902401 - Geo-Sense
 - Got PO for instrument and batteries sent out
 - Working on housing and connectors next
 - Overhead
 - Completed 10 reviews and submitted them - YAY!!!
 - Reading postdoc apps
- George Stern
 - 902204 - Scalable Robotics
 - Took camera calibration dataset
 - Created a few different calibration targets
 - 902306 - SINKER
 - Initial power on testing of next two Control boards
 - 706008 - (READI-net)
 - Started reader antenna tuning
- Johann Voigtlander
 - 902208 - Mini ROV Operations
 - Removed CoMPAS tool sled
 - Finalized Focal box schematic updates
 - Configured Labview miniROV libraries to open the main program and updated documentation