

Engineering Weekly Report 1/6/2022 - 1/13/2022

Executive Council Notes

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Individual Activities

- Kevin Barnard
 - 200103 - Core CTD Data - MDUC
 - Set O₂ sensor QC flags for several dozen dives
 - 701139 - ML Tracking
 - Forming data analysis database for LCM log files
 - Wrote script to auto-generate Postgres schema from LCM type descriptors
 - Spun up GraphQL interface via Postgraphile
 - Wrote loader script to populate database from log file
 - 902002 - FathomNet
 - Started preparing materials for project update and workshop
 - Looking into better workflow to accelerate process of updating exemplary images in VARS KB (images that show up in DSG for a particular concept)
 - 902005 - VARS Annotation Assistance
 - Finished implementation of track split, batch rename, and merge features in BoxJelly
- Francois Cazenave
 - 902106 - Niobicon-Based AUV Docking Development
 - Spec'd and ordered tilt sensor
 - Weekly meeting
 - Preparations for upcoming deployment
 - Out of Office
 - Working part time from home due to quarantine
- Danelle Cline
- Duane Edgington
 - 901603 - Video TAG
 - Reviewing AWS SageMaker Pipelines
 - Checking updates to FAIR unsupervised learning efforts
 - 901915 - Improving the Impact of MBARI's Data
 - Looked into AWS SageMaker Canvas "no-code" ML tool
 - 902004 - Planktivore
 - Project kick off meeting Jan 12.
 - Engineering meetings planned weekly starting Jan 24.
- Jon Erickson
 - 901217 - Chemical Sensor Program
 - ISUS-APEX Pressure tester still leaks
 - Assembling ISUS-APEX Composite case for Buoyancy testing.
 - 902004 - Planktivore
 - Remote Batt. Case parts in the shop - 4wks.
- Ben Erwin
- Kevin Gomes

- 300057 - Mooring Maintenance
 - A little troubleshooting on message flow after Jared replaced the batteries on the SPOT on the mooring.
- 300058 - DMO Support - Western Flyer
 - Getting back to ArcMap nav stuff.
- 300070 - DMO Support - Ventana
 - Troubleshooting the network configuration on Tigrillo
 - Get new Network Attached Storage replacement up and running in my office and configured with drives from old NAS. All the data is still there and the configuration was mostly intact. Doing some last minute configuration before moving to the boat and setting static IP(s)
 - Helping with touch screen issues when I can.
- 300079 - DMO Support - Rachel Carson
 - Trying to get back to the ArcMap nav upgrade that I started before the holidays. Fix is in, I just need to get the build done so that it can be installed on both ships.
- 901009 - CANON
 - Not sure why, but the trackingdb httpd service does not survive restarts and IS patching kills the tracking DB REST interface that CeNCOOS uses. Had to restart it from inside the tracking-clients container.
- 901915 - Improving the Impact of MBARI's Data
 - 4 hour workshop with Visceral who is the contractor for the external website upgrade. We worked through Information Architecture ideas as a group which loosely informs how the product of improving impact will plug into the external web site and search engine.
- 902012 - Telepresence on MBARI Research Vessels
 - In development environment, but got data flowing to a Postgres database from both ships using a push from the boat to RabbitMQ and then consuming the data and storing in Postgres DB. This will be for the data graphs in the application.
 - Working on OIDC connection with the telepresence app so users can log in to the App using Slack (and then we can interact with Slack APIs on behalf of the user). This security stuff is always very tedious and painstaking!
- Overhead
 - Review prep and feedback gathering
 - Met with Todd for weekly IS/SEIE meeting
 - Assistance with some ClickUp requests
- Out of Office
 - Mar 21-25: Vacation
- Andy Hamilton
- Kent Headley
 - Out of Office
 - Jan 11 (jury duty, tentative)
- Rich Henthorn
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - CoNav data logging - almost finished
 - 800139 - EyeRIS (Remote Imaging System)
 - Kickoff meeting
 - 901618 - Pelagic-Benthic Coupling and the Carbon Cycle
 - Some bad connectors discovered after observing flakey comms
 - Weekly meeting
 - Out of Office
 - Jan 24 - 28, vacation & WFH
 - Feb 1 - 4, Sta.M Cruise

- Feb 14 - 18, vacation & WFH
 - Sep 21 - 30, Sta.M Cruise
- Brett Hobson
- Scott Jensen
 - 901205 - SURF Center
 - The puck heater is being redesigned and working on a means to layout the heater elements in a circular pattern
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Diagnose the load cell failure
 - 901805 - Coastal Biogeochemical Sensing Program
 - Finalized and sent out nanoFET
 - 902106 - Niobicon-Based AUV Docking Development
 - A little support in getting rid of the low voltage warning
 - DQ2113 - Tidal Turbine
 - Meetings and discussions about how to handle the encoder
 - Overhead
 - Building G with Flad
- Brent Jones
 - 901112 - The Monterey Bay Time Series
 - Piloted Daphne in support of MBTS
 - Meetings
 - 901502 - Soundscape Research and Education
 - Quarterly processing of click data
 - Writing conversion utilities for working with click data in python
 - 901805 - Coastal Biogeochemical Sensing Program
 - Investigating noise source from last run of 2021
 - Overhead
 - Online course and test for CA Boater Card. Needed to be Paragon Captain
 - Monthly meeting
- Chad Keczy
- Brian Kieft
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Added check for
- Denis Klimov
 - 800139 - EyeRIS (Remote Imaging System)
 - Initial discussions of plans for a year
 - 901809 - Deep Sea Bioinspiration
 - Discussions of potential concept design reviews for multi-camera system
 - 902004 - Planktivore
 - We are ramping up work on this, resuming lab testing, and starting outfitting a Flume set up in the Rock Lab
 - Overhead
 - BEDS: data from 3 experiments are provided to Mike McCann and Roberto for decoding and visualizing
- Diana LaScala-Gruenewald
- Eric Martin
 - 901101 - Seafloor Mapping
 - 3DatDepth scoping effort
 - Initial meeting
 - SOW review

- Wishlist generation
 - New Multibeam Sonar
 - Reviewing past selections, soliciting new quotes
 - General search for new systems
 - Cruise Prep, at sea Feb 17-24 Octopus Garden
- 901206 - Coastal Profiling Float Transition to Science Applications
 - Aiding in troubleshooting the buoyancy engine issues at depth.
 - Reclassifying the buoyancy engine for depths < 150 meters temporarily.
 - Working with Paul Coenen to get Floats 1 and 2 operational.
- 901405 - Wave-Energy Conversion for Oceanographic Applications
 - New modem cabled/tested, in Todd Ruston's hands for configuration.
 - Testing radar data converter, getting Rob involved in the analysis
 - Installed rotating safety light on top hat to ensure notice of live 300V in hazardous areas.
- 902012 - Telepresence on MBARI Research Vessels
 - Start of year meetings
 - L. Takayama Collaboration Paperwork
- DQ2032 - DOE Wave-Energy Control
 - Welcome to Michael
- Thom Maughan
 - 901009 - CANON
 - Meetings with Nate and Johns Hopkins team over next steps on eDNA effort. The portable battery operated eDNA lunchbox is the focus.
 - My order for 2 made in Nov 2021 was cancelled in Jan with refund. Purchased a Xavier NX off ebay in order to return the loaner to another project. Told to hold off purchasing a 2nd.
 - 901805 - Coastal Biogeochemical Sensing Program
 - Working on v4.x release, bug fixes, features.
 - Spray planning meeting
 - 902004 - Planktivore
 - Found a copper pour problem on the Camera Controller pcb, fixed and sent out to Bay Area Circuits for fab on the 9th, boards due on the 13th.
 - Held project kickoff on Wednesday. Great discussion and appreciated Colleen Durkin's interest, thanks to Francisco for inviting her.
 - Parts are coming in from the Aliexpress order.
 - Harddrive failed on Larry's mill, ordered a refurbished drive and channeled Zorba to do the fix. Got the floppy drive working, Win 95 mill software installed and parameters loaded in the 25+ year old Sony industrial PC.
 - Larry has the compute node housing machined and is starting on the microscope housings.
 - Meeting with Paul to discuss requirements for imaging section on Fluum, fast turn optics frame prototype options for Fluum. 3D printed housings are planned for Fluum and thanks to Paul we have a thermal management plan as well.
 - Overhead
 - Contact tracing departure on Wednesday, packed up project boxes, tested on Friday, brought everything back on Monday. Worked a day on the weekend.
 - Out of Office
 - Vacation delayed but needed.
- Mike McCann
 - 901009 - CANON
 - Wrote [Notebook](#) to compare ESP Sample data in STOQS vs. data from Katy
 - 901101 - Seafloor Mapping
 - Reloaded database with log messages detailing Compilation/Mission associations

- 901111 - AUV Infrastructure Support
 - Struggled processing 2026.006.00 with important comments removed from devices.cfg
 - Added mb-system container to STOQS for future terrain processing capabilities
- Overhead
 - Evaluated new BEDS-Qualification-2021 data format and decoding software
 - Evaluating STOQS software changes needed to support LRAUV mission off Woods Hole
- Rob McEwen
 - 708167 - WEC Dynamics and Control
 - Reworking Matlab code to read in Eric M's radar data format.
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Meeting + working on Believer 3 build.
- Paul McGill
 - 300070 - DMO Support - Ventana
 - Jose and I are working through issues with the Ground Fault Channel Isolator
 - 701145 - Penguin Hotspots
 - Put final details on sonar payload schematics
 - Working with John F to get last copper shield parts made
 - 901618 - Pelagic-Benthic Coupling and the Carbon Cycle
 - Replaced all accessible connector o-rings on Rover, inspected and cleaned all connectors
 - Getting faulty Rover cables rebuilt
 - Analyzed Loop and Cross data from last Wave Glider deployment
 - Had online meeting with collaborators Kathy Dunlop and Nigel Keely to discuss SES
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Starting UAV schematics
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Worked with Alana to get camera and test equipment to her to work at home
- Tom O'Reilly
- Craig Okuda
- Doug Pargett
 - 901205 - SURF Center
 - Running thermal and pressure FEA models of new cartridge with the mods needed for injection molding.
 - Out of Office
 - Working from home until testing clears.
- Ben Raanan
- Mike Risi
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Getting rovs-control to work with new PCF code
 - 902204 - Scalable Marine Robotics Foundations
 - Meeting with GIM to start work on SLAM framework
 - Working on getting getting data sets to GIM
 - Out of Office
 - Vacation on alternate Fridays
- Paul Roberts
 - 800139 - EyeRIS (Remote Imaging System)
 - Strobe assembly planning and material sourcing
 - Opaleye software review
 - 901809 - Deep Sea Bioinspiration

- Multicamera system interface requirements
- 902004 - Planktivore
 - Optical modeling of illumination system
- Overhead
 - Performance eval materials
- Brent Roman
- Carlos Rueda
 - 901502 - Soundscape Research and Education
 - Ran the NOAA/Google Humpback Whale Song Detector on our Sept–Dec, 2021 data.
 - mbari-org/humpback-whale-song-detection repo now public (thanks, John).
 - 901513 - Targeted Sampling by Autonomous Underwater Vehicles
 - Tom's still looking into LR's hints to possibly solve issues with pip on the SMC.
 - Completing modernization of the Gpdviz tool: backend in scala, frontend now on Vue3/Quasar2/Typescript. (This is in part an overhead task).
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Dash v4.8.9 with generation of grid waypoints. Writing associated [doc section](#) including a [screencast](#). Docker image released and already installed by WHOI.
 - Preparing for the planned removal of the legacy UI (lots of cleanup and testing coming up).
 - Overhead
 - [Doc-gen](#): Removed the previous bash-based dispatch upon good testing with the new python based implementation for the last few weeks. Advanced the support for private Github repos. [Moved the repo](#) to Github as the primary location.
 - Perf eval materials.
 - Out of Office
 - Jan 21 (JChampions conference and/or vacation)
- Karen Salamy
 - Out of Office
 - Vacation: December 22, 2021 - January 4, 2022. May extend this to spend some more vacation time with my daughter.
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - Started work on converting some core JavaScript in the Deep sea guide to TypeScript so that it's easier to hand off to other team members.
 - Upgraded all M3 microservices on the ships. Testing the new VARS (with [raziel](#) integration). VARS works but still sorting out framecapture with [libbmagic](#). The (much) older VARS build is still currently being used for now.
 - Ingested the latest Iron Mountain video drop.
 - 901618 - Pelagic-Benthic Coupling and the Carbon Cycle
 - Scoping and prototyping work to port image annotation tools from the older VARS system into the new system. <https://github.com/hohonuuli/imgfx>
 - Out of Office
 - Jan 31 - Feb 11 - Brian will be a visiting scientist at [DARC](#) to upgrade their video annotation system.
 - Due to potential COVID exposure at MBARI, Brian is working at home waiting for the results of his COVID test.
- Alana Sherman
 - 800139 - EyeRIS (Remote Imaging System)
 - Trying to look into the budget and make sense of what is left for deeper rated systems
 - 901618 - Pelagic-Benthic Coupling and the Carbon Cycle

- Helping as I can to find spare pieces and parts as Paul has discovered some corrosion on the connectors.
- 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Integrated Canon R6 in coral macro chassis. James made up some cables for me and I have just begun to test it out and initial results are promising. As of Tuesday I was running the camera in deployment and took 50 images over several hours. Next step is to look into low power modes and see how I can minimize energy consumption.
- Overhead
 - Started annual performance review process
 - Strategic Roadmap: edited draft outline, participated in meeting
 - Building G meeting on casework for project lab spaces