

Engineering Weekly Report 6/3/2021 - 6/10/2021

Executive Council Notes

- LRAUV Development (Hobson)
 - We wrapped up three weeks of intensive vehicle operations with the recovery of Makai and Daphne on Monday. Two ESP equipped vehicles, Makai and Brizo, collected over one hundred samples along and performed on-board analysis for HAB toxins during the EcoHAB deployment. Daphne and Pontus were deployed as well to perform automated patch tracking and general science surveys around the sampling vehicles.
 - LRAUV Tethys, Pontus and Brizo were deployed at Portuguese Ledge for Dr. Rock to demonstrate how LRAUVs can use the position of nearby vehicles, using acoustic communications and tracking along with Terrain Relative Navigation to refine their position estimates.
 - LRAUV Triton will head offshore next to test the new bio-acoustic payload for Dr. Benoit-Bird
 - LRAUV Galene is being configured for some midwater imaging work for Dr. Katija next week.

Individual Activities

- Francois Cazenave
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - I am helping test the PTO
 - Adding to dorn fittings to controller box
 - Designing hardware to mount IFCB on buoy
 - 902106 - Niobicon-Based AUV Docking Development
 - I helped prepare, and participated in, a demonstration of docking in the test tank for DOEST.
 - I am testing a tantalum sample to determine if it can be used instead of niobium
- Mark Chaffey
 - Out of Office
 - Will be OoF May 1 - 22 and unavailable.
- Danelle Cline
 - Out of Office
 - May 28th
- Duane Edgington
 - 902005 - VARS Annotation Assistance
 - Conference call with Danelle and Carlos regarding graphGL work to integrate output of VAA into M3
 - Continuing Vue training (Vue mastery)
- Jon Erickson
 - 701145 - Penguin Hotspots
 - Electronics chassis and pressure case to go out for Fab.
 - 800139 - EyeRIS
 - CJ Machine is re-making the strobe ring.
 - 901217 - Chemical Sensor Program
 - ISUS-APEX: Have all the parts for pressure testing the carbon fiber cases. Three tests to failure.
 - 902010 - Mesopelagic LRAUV

- Adapting LRAUV parts to the deep vehicle layout. Still waiting on AMALGA for the carbon tubes.
- Kevin Gomes
 - 300057 - Mooring Maintenance
 - Got all the SSDS side of things ready for next week's mooring turn. Moving documentation from Confluence to our docs.mbari.org structure as I'm going through it. Test data can be found here: http://dods.mbari.org/data/ssdsdata/deployments/m1test/current_gcPlots.html
 - Small amount of meetings around this
 - 901915 - Improving MBARI Data Impact
 - Just now getting back to this. Starting to research architectures that will meet requirements both on cloud and on-prem.
 - Researching AWS Data Analytics
 - 902100 - Telepresence on MBARI Research Vessels
 - Looking over messages options to get data into pipeline back to shore.
 - Looking at WebEx SDKs
 - Overhead
 - Meetings with Rich
 - Assisted DJ and Mike B with testing the Novatel GPS on the Carson and with the NAS they have for storing GreenSeas log files.
 - Ran science data processing for AUV mission at end of last week.
 - Getting COVID ducks in a row to get on the Flyer to start documenting existing structure and test Rich's new XOJO-based DataProbe for the Flyer - thanks Rich!!!
 - Starting discussions for cloud exploration proposal along with looking into AWS non-profit grant that MBARI could apply for.
 - Check in meetings with group (cannot believe it's JUNE!)
 - Slack support for various requests
 - Meetings to assist with RFP for web refresh, will start meeting with possible vendors next week
 - Attended seminar on the deep water horizon which was really, really interesting.
 - Cloud budget monitoring
 - Out of Office
 - June 21-25: Vacation
- Andy Hamilton
- Kent Headley
- Rich Henthorn
 - 901101 - Seafloor Mapping
 - Dorado heading oscillation
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - ROS 2
 - Controller Logger work
 - 901618 - Pelagic-Benthic Coupling
 - Weekly meeting
 - Rover manuscript
 - Overhead
 - DOEST
 - Out of Office
 - July 7 - 9, vacation
 - July 26 - Aug 9, mostly vacation, network and phone access
 - Sept 22 - Oct 1, vacation
- Brett Hobson
- Scott Jensen

- 901205 - ESP SURF Center
 - Preparing Waldo and Gordon for Yellowstone deployment
 - Waldo had trouble with hand but problem identified and fixed
- 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Worked on new Battery BMS communication schemes
- 902101 - LRAUV Technology Development and Fleet Operations
 - Last challenge, fingers crossed, transition from bus to boost. Circuit has been designed and now needs to be tested.
- Brent Jones
 - Out of Office
 - Last Friday and ½ day tues
- Chad Key
 - 901101 - Seafloor Mapping
 - Incorporating some changes Eric requested from their last cruise (parts on order)
 - 901206 - Coastal Profiling Float
 - Met with Gene and I will be doing some energy measurements at different locations in the CPF
 - 901700 - Acoustical Ocean Ecology
 - Finalizing electronic parts for Hydrophone testing. Performing load tests on new DC-DC's
 - 901704 BOSS
 - Due to another break in their tether, I am getting things together to swap out their tether with the other unused half.
 - Planning a review-style meeting with various engineers and op folks to discuss their operational procedures (to minimize future issues with their tether)
 - 901713 - Nearshore FOCE
 - I'm troubleshooting a solid state relay issue (Crydom). I ordered some EM relays as potential replacements for one location of the SSRs.
 - 902107 - Consequences of a Changing Ocean: Manipulative Microbiology Experiments at MARS
 - Working with Jim M and Paul C on the wiring/mech of IP66 box.
 - Out of Office
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- Brian Kieft
 - Out of Office
 - Jun 8-11 (vacation)
 - Jul 1-9 (vacation)
 - ~~Aug 5-6 (vacation)~~
 - Aug 1-11 (Great Lakes LRAUV)
 - Sep WHOI?
 - October 25-31 (PLOCAN glider school tentative)
- Denis Klimov
 - 300083 - DMO Support LRAUV
 - Working on an insert for PAR sensor as a substitute for painted optical surface
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Finalizing LED source housing
 - Overhead
 - Figuring out remote intake configuration for IFCB. Effect of small ID tubing on dynamic pressure differential estimated, which could affect microorganisms transported. IFCB controls had been tested for purging additional volume of remote intake.
 - Out of Office
 - June 14-18
- Diana LaScala-Gruenewald

- Out of Office
 - ½ day vacation on Wednesday 5/26
- Eric Martin
 - Out of Office
 - Tuesdays until summer break for schools.
- Thom Maughan
 - 300070 - DMO Support Ventana
 - Getting Xojo app up and running, familiarizing.
 - 901009 - CANON
 - Truelove-M eDNA box was highlighted in DOEST.
 - 901805 - Coastal Biogeochemical Sensing
 - User testing. Found a bug with fatfs.
 - Working on PWM for solenoid valve and pump soft start
 - Released both MFET and MpHOX code for lab use / testing.
 - 902004 - Planktivore
 - Project management, working labor and budget for team meeting.
 - Overhead
 - Attended DOEST
 - Tatjana Ellis released her podcast interview of me.. <https://anchor.fm/csinmarineresearch>
 - Out of Office
 - Second Moderna vaccine received on 4/30.
 - Vacation 14-18 Jun (5 days) Camping a night on USS Iowa, then Catalina Emerald Bay with Scouts
 - Dental appointment on June 23
- Mike McCann
 - Out of Office
 - Vacation: 1-18 June 2021
- Rob McEwen
 - Out of Office
 - Taking today and this coming Monday off as vacation.
- Paul McGill
 - 901618 - Pelagic-Benthic Coupling
 - Did calculations to figure out where Rover should be so WG Tiny can find it
 - Working with Kent H. on algorithm for Loop and Cross code
 - 901700 - Acoustical Ocean Ecology
 - Working with Chad W. to figure out best design for next MARS Echosounder extension cable
 - Helped Chad figure out ground fault on current MARS Echosounder
 - 901800.98 - Bioacoustic Payload
 - Settled on design for Remus payload chassis, going to fabrication
 - 901803 - Carbon Wave Glider Development
 - Ordered more parts for Craig O.
- Ed Mellinger
- Tom O'Reilly
- Craig Okuda
 - 901007 - Benthic Biology and Ecology
 - Overhaul brs chambers
 - 901220 - Midwater Ecology
 - Assemble midwater frame
 - 901803 - Carbon Wave Glider Development
 - Assemble new fluid manifold

- Out of Office
 - Vacation day
- Doug Pargett
 - 708146 - NOPP Saildrone
 - Rebuilt some parts to the Koa ESP
 - Installed Koa on Saildrone Surveyor for Hawaii mission
 - 881135 - 3G ESP Cartridge Redesign
 - Running FEA of Alpha 3 design. Looks promising, still have some questions on a seal arrangement.
 - Overhead
 - Solving network issues and remote access.
- Ben Raanan
 - Out of Office
 - June 8-22
- Mike Risi
 - Out of Office
 - April 26-30: Ocean Imaging Cruise
 - May 3-7: Vacation
 - June 4-11: Vacation
 - September 3-14: Ocean Imaging Cruise
 - Vacation on alternate Fridays
- Brent Roman
 - 706005 - eDNA Grass Carp Sandusky
 - Readyng 2 ESPs for deployment
 - These were to be the first using the Linux 3.18 Kenrel with “Wireguard” VPN
 1. Discovered a slow memory leak due to the 3.x kernel
 2. May have to revert to the 2.x kernel and ditch Wireguard for now :-(
 - 708146 - NOPP Saildrone
 - Rejiggered IP address assignment so ESP works with or without DHCP on Saildrone Surveyor
 - 901205 - ESP SURF Center
 - Created a cartridge leak test script for Doug Pargett
 - Ensure that 2G’s big carousel motor shuts down entirely when not in use
 - Helped Nadia tension the finicky carousel drive belt properly
 - 901913 - Demonstrating high-speed communication with a submerged AUV
 - Finally received modem electronics and dummy load
 - Installed in the corner of B137 near roll up door
 - Modems should emulate an ethernet bridge
 1. But they do it imperfectly. Need to investigate TCP tuning parameters.
 - DQ2025 - L. Erie HAB
 - Testing new comms scheme with espshore2.mbari.org
- Carlos Rueda
 - 708168 - DHS Y7
 - Latest TethysDash version [4.5.3](https://lrauv.whoi.edu/dash4/) already installed at <https://lrauv.whoi.edu/dash4/> . Thanks again WHOI team for the great exchanges and continued feedback and suggestions.
 - 901009 - CANON
 - Some code revision and cleanup, but still looking into a next phase of “real” development.
 - 901513 - Targeted Sampling by AUVs
 - Some code revision and cleanup. Will talk to Yanwu about plans for 2nd semester.

- 902005 - VARS Annotation Assistance
 - GraphQL discussion.
- 902101 - LRAUV Technology Development and Fleet Operations
 - TethysDash system now [4.5.3](#),
 - Updates to LRAUV Mission and Behavior Documentation: <https://docs.mbari.org/internal/lrauv-mission-doc/>
 - TethysL is now version 2.8.9, both [CLI](#) and [VSCode extension](#).
- Overhead
 - Looked into a (“non-urgent”) issue reported by Adriana involving okeanids connection to tethysdash2. Planning to have a discussion to get more details and determine a solution.
 - Attended some DOEST presentations.
 - Check-in meeting.
- Out of Office
 - Jun 11: vacation
- Karen Salamy
 - Overhead
 - Last week before M1 mooring deployment. Initiated SSDS data ingest testing for the new mooring. So far the data looks good and charts accurate.
 - Met with Rich and Kevin over ZOOM this week to go over the various steps for the mooring deployment cut over. Oasis M1 deployment is currently scheduled for this Monday,, June 14th.
 - Looked into a few issues with the post cruise web form.
- Brian Schlining
 - 500055 - Video Annotation DM
 - Iron Mountain is now delivering about 4,500 videos (ripped from our tapes) every two weeks. Brian has been working on processing them and getting them correctly registered in M3/VARS and lined up in time with the existing tape annotations.. As part of the registration process, we are uncovering many instances of incorrect metadata (bad dive times in EXPD database, incorrect dive numbers, etc) and are working on correcting them. Brian has recruited Lonny, Kris Walz, and Diana to help with working through manual corrections. Supporting code is in the [tapemigration](#) repo. Docs are [here](#).
 - Added support for the [Midwater's TopoCam videos in M3](#).
 - Imported Mini ROV dives 169-173 into the shore side database.
 - Overhead
 - Brian will be presenting FathomNet to the IOOS DMAC working group this afternoon.
 - Out of Office
 - May 27-June 1 - Vacation
- Rich Schramm
 - 300057 - Mooring Maintenance
 - Everything seems ready now for M1 turn 6/14
 - 300058 - DMO Support Western Flyer
 - New dataprobe port to Xojjo ready for testing on WesternFlyer
 - Overhead
 - Wrapping up all handoffs
 - Out of Office
 - 7/1 - forever
- Alana Sherman

