

Engineering Weekly Report 6/10/2021 - 6/17/2021

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
 - Integrating IFCB to buoy
 - 901700 - Acoustical Ocean Ecology
 - Started design of new housing
 - 902106 - Niobicon-Based AUV Docking Development
 - Continued testing of the AUV dock in the tank
 - Overhead
 - Helped clean up the test tank
- Mark Chaffey
 - Out of Office
 - Will be OoF May 1 - 22 and unavailable.
- Danelle Cline
 - Out of Office
 - May 28th
- Duane Edgington
 - 901603 - Video TAG: Visualizing Ocean Change
 - Working through FAIR ViSSL framework and open implementations of self-supervised learning systems for vision.
 - 902005 - VARS Annotation Assistance
 - Meetings with Carlos, Danelle on GraphQL interface to VARS and Vue app
 - Overhead
 - Group meeting
 - Cloud abstract/proposal meeting (Discuss AWS non-profit grant opportunity)
 - Out of Office
 - June 18 - 27 CVPR Virtual conference
- Jon Erickson
 - 701145 - Penguin Hotspots
 - Chassis and PV parts are in Fab.

- 800139 - EyeRIS
 - Waiting on parts for LRAUV assembly
- 901217 - Chemical Sensor Program
 - As soon as I can get back in the office we'll start pressure testing the ISUS-APEX housings. At least three tests to failure.
- 902010 - Mesopelagic LRAUV
 - Integrating the new Thruster motor controller into Dp motor tube.
- Kevin Gomes
 - 300057 - Mooring Maintenance
 - Mooring turn was monday. Went well despite the 150m inductive CTD failing. Data products are processing and available here:
http://dods.mbari.org/data/ssdsdata/deployments/m1/current_qcPlots.html
 - 901915 - Improving MBARI Data Impact
 - Started drafting up docs to catalog data collection systems at MBARI
 - Overhead
 - Working with others to decide if we will apply for AWS grant for non-profits
 - Office(s) cleanout to prep for more time on site
 - Troubleshooting some data logger issues on the Carson
 - Spent time on Flyer doing walkthrough with Rich and getting feedback from pilots. Will be deploying upgrade to Dataprobe in coming months (also small fix to DiveLog will be deployed)
 - Met with vendor who will be submitting a proposal for web site re-design to answer questions they had
 - Helped Diana get set up in her office and met in person(!). Did a walkthrough of the facilities.
 - Out of Office
 - June 21-25: Vacation
- Andy Hamilton
- Kent Headley
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Using Rob M's matlab scripts, made some plots of last week's Dorado test data as part of an investigation into a vehicle oscillation that developed in the early June cruise. Erik T, Eric M, Dave consulted w/ Hans and it seems like it may be a DVL hardware issue.
 - 901803 - Carbon Wave Glider Development
 - Working with Paul and Craig on relative humidity/temp sensor. We've made use of the micro's pins, and are working out the best way to shoehorn in this sensor.
 - Overhead
 - Worked with Chris Wahl and Brian Kieft to test my implementation of Paul McGill's loop and cross waveglider acoustic asset location algorithm. Comms conditions were marginal, so took a while to get code uploaded. Initial test timed out in transit, and testing will continue today. Good progress in that it's my first time running on the platform and the code paths exercised (including error handling) worked as designed.
- Rich Henthorn
 - 800139 - EyeRIS
 - Weekly meeting
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Weekly meeting
 - Prep controller with setup in Bldg D
 - 901618 - Pelagic-Benthic Coupling
 - Weekly meeting
 - Telepresence training
 - 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
- Brent Jones
 - Out of Office
 - Last Friday and ½ day tues
- Chad Keczy
 - Out of Office
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- Brian Kieft
 - 300082 - DMO Support - Wave Glider
 - Ran some tests at Station M in an effort to make contact with Benthic Rover
 - 708168 - DHS Y7
 - Lots of prep and testing for upcoming salinity ingress deployment
 - Debugging some issues from last test deployment
 - 901800.98 - Bioacoustic Payload
 - Met to discuss results of test deployment #2. Noise from thruster was less and vehicle stability improved. Plans are made for test #3 potentially as early as next week.
 - Integrated new HV motor controller that Scott made. It's really cool and low power. And we can go much faster with boost mode!
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Most of this week's work centered around docking
 - DQ2025 - L. Erie HAB
 - Planning has begun and dates are nearly firmed up for Lake MI and Erie in August. Science plan is also clear.
 - Overhead
 - Wrote mission and lots of docking tests for DOEST presentation
 - Out of Office
 - Currently still awaiting covid test to return in person following vacation last week.
 - Jul 1-9 (vacation)
 - ~~Aug 5-6 (vacation)~~
 - Aug 1-11 (Great Lakes, Great LRAUVs)
 - Aug 16-21 (Great Lakes, Great LRAUVs)
 - Sep WHOI?
 - October 25-31 (PLOCAN glider school tentative)
- Denis Klimov
 - Out of Office
 - June 14-18
- Diana LaScala-Gruenewald
 - 200103 - Core CTD Data - MDUC
 - Continued setting QC flags as needed
 - 500055 - Video Annotation DM
 - Met with Brian to review progress on DSG concept maps - putting this on hold for now
 - Learned how to help rename LTO tapes, and started working on that
 - Overhead
 - Weekly meeting(s)
 - Some orientation/getting settled at MBARI
- Eric Martin

- 901101 - Seafloor Mapping
 - Met with 3D at Depth regarding proposed work for 2022.
- 901206 - Coastal Profiling Float
 - Getting ready for sea trials.
- 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Getting wifi and spot parts together.
- 901911 - ROVVR
 - We are working with Leila Takayama UCSC to conduct HCI trials aimed at determining the benefit of the VR system over conventional multi-camera 2D presentation.
 - We are using the mini and will test 14 MBARians from W-F.
- 902100 - Telepresence on MBARI Research Vessels
 - Supporting telepresence on WF for Bruce Robison.
 - Sur Ridge Live prep and coordination.
- 368000 - DMO AUV
 - At sea last week, advising Dorado group as I can with tailcone and keel issues still remaining.
 - The PNW expedition was approved, I will be gone for 4 weeks in support of this
- Out of Office
 - July 19-Aug16 Pacific Northwest for Dorado support.
- Thom Maughan
 - 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
 - Prepared laser target to adjust lasers before next week's cruise.
 - Worked with Alana to test Macro Camera in Test Tank.
 - Ordered connectors for Squirty stirrers
 - Did calculations to try to locate Rover based on sparse data from WG Tiny
 - 901700 - Acoustical Ocean Ecology
 - Met with Chad W. and François to start design of MARS Echosounder frame and housings
 - 901803 - Carbon Wave Glider Development
 - Helped Craig O. with assembly of manifolds
 - Ordered many parts for DIC analyzers
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Worked with Alana to test Coral Camera Tripod in Test Tank
- Ed Mellinger
- Tom O'Reilly
- Craig Okuda
 - 901007 - Benthic Biology and Ecology
 - Update pump housing end cap design
 - 901803 - Carbon Wave Glider Development

- Assemble chassis and fluid manifolds
- Out of Office
 - Vacation day
- Doug Pargett
- Ben Raanan
 - Out of Office
 - June 8-22
- Mike Risi
 - 300070 - DMO Support Ventana
 - Misc. navproc support
 - 901101 - Seafloor Mapping
 - Working on DeltaT integration
 - Out of Office
 - April 26-30: Ocean Imaging Cruise
 - May 3-7: Vacation
 - June 4-11: Vacation
 - June 28-July 2: Vacation
 - September 3-14: Ocean Imaging Cruise
 - Vacation on alternate Fridays
- Brent Roman
- Carlos Rueda
 - 708168 - DHS Y7
 - [WHOI Dash](#) on latest [4.5.5](#).
 - 901513 - Targeted Sampling by AUVs
 - Checking with Yanwu about plans for the remainder of 2021.
 - 902005 - VARS Annotation Assistance
 - Met with Danelle and Duane. Updated SageMaker metric UI to show the ModelArtifacts member of the DescribeTrainingJobCommand response for quick inspection. Next steps in terms of use of this trained model information are still to be determined in more detail.
 - 902009 - AUV UI
 - Enabled [CORS](#) for data file access from TethysDash, so a file like this [shore.csv](#) can now be retrieved and used by javascript code clients running in the browser itself even from a different "origin." This in particular will facilitate ongoing development of status widgets by UCSC collaborators, as well as some other possible enhancements in the future.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - TethysDash system now [4.5.5](#). Includes new admin option in the UI to remove "sim" vehicle events timestamped in the future, as well as an initial version of "API Keys" to be used by external client applications, in concrete, now used by the "odss2dash" service.
 - LRAUV documentation: Behavior pages are now automatically generated! Example page: <https://docs.mbari.org/internal/lrauv-mission-doc/behaviors/Trigger/PeakDetectVsDepth/> . Again, implementation based on TethysL infrastructure for validation of mission scripts.
 - Met with Mike Godin. Productive discussion. Mike to work on [TETHYS-629](#) and [TETHYS-631](#) as core elements for integration of TethysL in typical vehicle preparation workflows.
 - Overhead
 - Director's dialog.
 - Out of Office
 - Jun 11: vacation
 - Jun 14: sick

- Karen Salamy
- Brian Schlining
 - 500055 - Video Annotation DM
 - Received yet another video drop from Iron Mountain. Working on ingesting those.
 - Working with the video lab and Diana to recruit help with the Iron Mountain video ingest.
 - Continue to refine the tools for managing the iron mountain videos. New this week are:
 1. [move-tape](#) - Tool for re-organizing annotations and media information for tapes that are identified as mislabeled. Modified the [video asset manager](#) to accommodate this tool
 2. [inspect-tapes](#) - Tool for displaying information about how tapes were labeled and annotated. Very useful for identifying tapes that were mislabeled, a common occurrence in the early ROV days when multiple dives occurred in a single day.
 - 902002 - Fathomnet Detect and Classify
 - New article in [Marine Technology Society Journal](#)
 - Out of Office
 - May 27-June 1 - Vacation
- Rich Schramm
 - 300057 - Mooring Maintenance
 - M1 turn checks
 - 300062 - DMO Support Doc Ricketts
 - Document existing Navproc/SMD telemetry strings
 - Overhead
 - Disk and file system cleanup.
 - Out of Office
 - 7/1 - 8/30 Vacation
- Alana Sherman
 - 901618 - Pelagic-Benthic Coupling
 - Prepared close-up camera for its deployment next week off the Rachel Carson. Worked through a couple issues, set camera focus, laser position and ran overnight test. Working on pulling together tools and documentation.
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Worked on preparing DiSCO (Coral time-lapse camera) for deployment at Sur Ridge during the Barry Flyer cruise at the end of June. Check focus and image quality in the tank, ran overnight test of the system in tank. Working on training Steve to set up the deployment through the ROV during cruise.
 - Testing new tilt motor and limit sensors with maxon software, this should be the last task before it is ready to deploy.