

Engineering Weekly Report 4/15/2021 - 4/22/2021

Executive Council Notes

- 902101 LRAUV
 - The lab is busy preparing the fleet of vehicles for upcoming deployments over the next few weeks:
 - CANON with Brizo+ESP, EcoHAB with Makai+ESP+SPR and Pontus+Biolum and Daphne, Rock's Multi-vehicle (3) position sharing with Tethys, Pontus and Brizo, Low-altitude obstacle avoidance with Pontus and Bio-acoustics testing with Triton and finally AUV docking tank tests with Tethys.

Individual Activities

- Francois Cazenave
 - 902106 - Niobicon-Based AUV Docking Development
 - I have been testing the power transfer device.
 - Planning AUV docking on MARS
- Mark Chaffey
 - Out of Office
 - Will be OoF May 1 - 22 and unavailable.
- Danelle Cline
 - Out of Office
 - March 29-April 2nd. I will be off-the-grid for a good part of this.
- Duane Edgington
 - 901603 - Video TAG: Visualizing Ocean Change
 - Reading Barlow Twins: Self-Supervised Learning via Redundancy Reduction and LeCunn The Energy-Based view of Self-Supervised Learning [GTC S33268]
 - 902004 - Planktivore
 - Walking through GraphicsMagick and exiftool tools used to implement framegrab data flow.
 - 902005 - VARS Annotation Assistance
 - Working through AWS SageMaker Studio Pipelines and Lambda functions.
 - Weekly meeting with CSUMB capstone students
 - Overhead
 - Group meeting
 - Starting "Kubernetes in a month of lunches"
 - MBARI seminar April 21
 - Out of Office
 - Vacation April 23
 - NVIDIA GTC virtual conference April 12 - 16
- Jon Erickson
 - 300079 - DMO Support Rachel Carson
 - Hand calcs for the M. Conway in support of the aquarium.
 - 701145 - Penguin Hotspots
 - I think we've got a design to solve the electrical noise issues in the EK80 sonar electronics that we can actually build and fit in a Hydroid.
 - 800139 - EyeRIS

- Assembling the camera case. Will pressure test as soon as the handle/guard is done.
 - 902107 - Consequences of a Changing Ocean: Manipulative Microbiology Experiments at MARS
 - Just meetings.
 - Overhead
 - Spent one day tank testing with the Quest group and Craig Dawe for their Mars deployment.
- Kevin Gomes
 - 901009 - CANON
 - Support for experiment/ODSS
 - Helped Monique debug/fix layers on the ODSS
 - Revival of the WG acoustic tracking code
 - At the request of the LRAUV team, added a feature to the acoustic tracking code that will send an email/SMS if the waveglider loses acoustic tracking for 20 minutes
 - Finally got the Ubuntu version of the ODSS test server deployed at <https://odss-testu.shore.mbari.org>
 - It seems like the Ubuntu installation is very similar and seems to operate fine as compared to the CentOS8 version.
 - Overhead
 - PE Hiring committee
 - Working with group on job description
 - Group meeting(s)
 - Small amount of effort monitoring/tweaking navproc/datamanager/dataprobe stuff on Carson
 - Weekly meeting with Todd R.
 - Some follow up with Navy/sanctuary related to aircraft engine
 - Out of Office
 - A couple days sick leave at the end of last week
 - May 12-24: Vacation
 - June 21-25: Vacation
- Andy Hamilton
- Kent Headley
 - 901803 - Carbon Wave Glider Development
 - Data structure updates for simpler alignment between raw and summary record logs
 - Syntax changes for consistency/simplification
 - Bug fixes
 - Overhead
 - SR committee meeting
 - PE hiring committee meeting
 - Site access policy questions
 - Multi-vehicle sim design review
 - Home network issues (AT&T outage)
 - Out of Office
 - Tue 5/25 - medical (late a. m.)
- Rich Henthorn
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - TRN
 - 800139 - EyeRIS
 - Weekly meeting
 - ELI refinement
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Updating CANbus packet structures
 - 901618 - Pelagic-Benthic Coupling

- Weekly meeting
- 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Weekly meeting
 - Assist with camera controller software
- 902101 - LRAUV Technology Development and Fleet Operations
 - OA
- Brett Hobson
- Scott Jensen
 - 901205 - ESP SURF Center
 - Preparing for second terrestrial housing fabrication
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Doing final generator checkout
 - 901805 - Coastal Biogeochemical Sensing
 - Submitted updated DuraFET bias front end PCB prototype.
 - Reviewing MCAP tester results
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Nearly complete layout of boosted driver is waiting for model fit check
 - 902106 - Niobicon-Based AUV Docking Development
 - Supporting latest brush configuration testing
- Brent Jones
 - 901009 - CANON
 - Continued support of all assets deployed for CANON/ECOHAB
 - Deployed two more Wire Walkers for SIO
 - Multiple Paragon trips for deployments/recoverys/maintenance
 - 901805 - Coastal Biogeochemical Sensing
 - Flying Sprays 29 and 34 in support of Yui's work and CANON.
- Chad Key
 - Out of Office
 - Possibly out 4/26 (right after 2nd Pfizer shot)
 - May 18-24/25 Vacation (staying local)
- Brian Kieft
 - 901009 - CANON
 - Supported spring CANON field program
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Currently supporting spring EcoHAB program
 - Out of Office
 - Apr 2-9 (vacation)
 - Jul 1-9 (vacation)
 - Aug 5-6 (vacation)
- Denis Klimov
- Diana LaScala-Gruenewald
 - 200103 - Core CTD Data - MDUC
 - Reviewed docs and ran through ROV CTD data reprocessing/updating calibration coeffs with Rich and Mike
 - Chased down some missing info on O2 flags for 2020 ROV dives
 - Had a chance to see how these data are collected as part of RC cruise 4/14-4/15
 - 500055 - Video Annotation DM
 - Working on static concept distribution maps for deep sea guide
 - Got annotation data into a reasonable format and drafted some initial maps, after sorting out a bunch of issues related to Python package management in Windows

- Eric Martin
 - 708167 - WEC Dynamics and Control
 - Attended 2 meetings, trying to get offline data analysis set up.
 - 901101 - Seafloor Mapping
 - Prepping for the cruise next week. Lots to do.
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Bi-weekly meeting
 - 901911 - ROVVR
 - Submitted abstract for Oceans 2021
 - Prepping for tank test Friday.
 - 902100 - Telepresence on MBARI Research Vessels
 - Training with Jenny for next week's Caress Expedition on the Flyer
 - 368000 - DMO AUV
 - Training for I2MAP acoustics sphere charging.
 - Out of Office
 - Tuesdays until school is back in session.
- Thom Maughan
 - 901805 - Coastal Biogeochemical Sensing
 - Majority of time working on new release for MpHOx, MFET. Getting close, reviewed progress with Yui.
 - Spent time measuring the analog sims (Jensenian V2) and doing variability analysis on 5 MCAP boards for a qa test procedure. Found 2 of the 5 MCAPS have problems. Test results and procedure handed to Scott J for hardware debug.
 - 902000 - Multi-Spectral StealthCam
 - Working with James M to get cables built, bootloader flashed, etc. James has burned the bootloader thru the tagConnect using the cable adapter with the new atmel-ice.
 - 901713 - Nearshore FOCE
 - Working to get a known good cable, durafet2 and mphox+mcap.
 - Testing pre-release with nsFOCE a Durafet2. Found a wiring issues. Found I had a bad Durafet. Worked it with Yui to verify, we found other bad sensors. Preparing a test setup for the nsFOCE team to QA cables, sensors and MpHOx boards.
 - Out of Office
 - Vacation 9 Mar 2021 (1 day)
 - Vacation 6,7,10 Apr (3 days)
 - Vacation 31 May - 4 Jun (5 days)
 - Vacation 14-18 Jun (5 days)
- Mike McCann
 - 901009 - CANON
 - Continuing to see that data flow into [stogs_canon_april2021](#)
 - Need to schedule a time to switch over to kraken's replacement
 - 901101 - Seafloor Mapping
 - Using Docker with current versions of Postgis and Django to for a development platform
 - 901111 - AUV Infrastructure Support
 - Processing Dorado surveys for CANON
 - Overhead
 - Group and ROVCTDO meetings
- Rob McEwen
 - 708167 - WEC Dynamics and Control
 - Merging my wave-crest location Matlab code with Umesh's sea-surface-elevation prediction Matlab code.

- Will clearly define inputs and will produce a plot showing the predicted elevation against that measured by the AHRS.
 - Umesh will need to work on this after me to consolidate and configure his code.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Pushed logging code onto the feature/config-file branch.
 - Still need to add commanded depth as an input from the MVC through the LCM interface to OA.
 - Out of Office
 - Taking one day of vacation per week for the next 6 weeks or so.
 - Taking vacation on Friday
- Paul McGill
- Ed Mellinger
- Tom O'Reilly
- Craig Okuda
 - 901007 - Benthic Biology and Ecology
 - Test BRS flush valve
 - 901803 - Carbon Wave Glider Development
 - Assemble test stand and instrument
 - Out of Office
 - Vacation day
 - Overhead
 - Lab clean up
 - Misc wireless system clean up
- Doug Pargett
 - 901205 - ESP SURF Center
 - Meetings
 - Overhead
 - Seminars
 - Out of Office
 - A few days off
- Ben Raanan
 - 300083 - DMO Support LRAUV
 - On call for CANON/EcoHAB ops
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Data analysis for multi-vehicle TRN data collection run at Portuguese Ledge
 - 901009 - CANON
 - CANON almost done!
 - 901513 - Targeted Sampling by AUVs
 - Dev/test support for Yanwu
 - 902101 - LRAUV Technology Development and Fleet Operations
 - EcoHAB!
 - 902102 - Multi-LRAUV Simulation Environment
 - Successful design review for milestone 1
 - Q2 milestone 2 kickoff!
- Mike Risi
 - Out of Office
 - April 26-30: Ocean Imaging Cruise
 - May 3-7: Vacation
 - September 3-14: Ocean Imaging Cruise
 - Vacation on alternate Fridays

- Brent Roman
 - 708146 - NOPP Saildrone
 - Worked with their network engineer on Certus comms stability
 - No indication of when Surveyor will leave Alameda
 - 901205 - ESP SURF Center
 - Fixed bug in onESPclient script. Pushed fix to LRAUVs running ECOHAB
 - 901913 - Demonstrating high-speed communication with a submerged AUV
 - Continuing to wrestle equipment loan agreement and NDA
- Carlos Rueda
 - 708168 - DHS Y7
 - New dash 4.4.1 pushed to Docker Hub. WHOI may be able to help with some additional testing of the new async notifications mechanism (their instance does not use the Pusher option).
 - 902009 - AUV UI
 - Met with Andy Le to discuss UCSC team ideas for a battery monitor widget and possible ways to make available a prototype for users to test.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - New Dash system [4.4.1](#) with various updates, most notably the new support for all async notifications using proper websockets endpoint.
 - Looking into issues noted by operators as they get to exercise the TethysDash/Dash system.
 - 902102 - Multi-LRAUV Simulation Environment
 - Milestone 1 design review
 - Overhead
 - IE meeting.
 - My new laptop seems now in pretty good shape.
 - Migrated a bunch of my git repositories to use “main” as the primary branch name.
- Karen Salamy
- Brian Schlining
 - 500055 - Video Annotation DM
 - Continue to add functionality to the new [Deep-sea Guide](#)
 - [Ingested latest batch of videos](#) from Iron Mountain (tape to video project). There’s also been follow up on [adding docs](#) and [additional reporting](#).
 - Overhead
 - Continue to meet with CSUMB capstone students
- Rich Schramm
 - Out of Office
 - 5/12 thru 5/14
 - 6/3 thru 6/7
- Alana Sherman
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Working on the macro camera. Worked out my initial issues with USB switching and strobe sync.
 - Updated the Snappy software to have the proper timing for the new strobes, seems to be working well in testing.
 - Set up test to check strobe sync with camera shutter and light signal with Paul R’s help. Hoping to start overnight test of system soon.
 - Making schematic for the

