

Engineering Weekly Report 7/23/2020 - 7/30/2020

Executive Council Notes

- LRAUV PAYLOAD DEVELOPMENT 901800 (HOBSON): LRAUV operations for the summer CANON experiment finished up today with the recovery of Makai. Makai was at sea for 9 days, and had 4 days of energy still available, but the ESP cartridges were all successfully processed. LRAUV Brizo had a tougher time during the experiment that included a collision with the seafloor, some ESP problems and finally a white shark attack that required an early recovery and the MBARI's COVID-related closure prevented us from repairing and re-deploying. On Tuesday the LRAUV team used our tiny Blue ROV to recover a disabled sediment trap equipped Coastal Profiling Float from 78 meters of water.



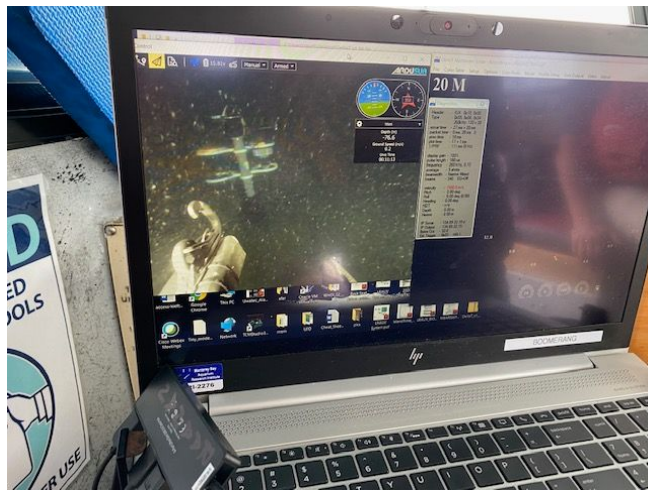
Individual Activities

- Francois Cazenave
 - 901405 - PowerBuoy Development
 - Preparation for deployment
 - 902000 - Multi-Spectral StealthCam
 - Designing camera housing
- Mark Chaffey
- Danelle Cline
 - 901502 - Passive Acoustic Sensing

- Tested optimized decimation filter with shorter filters and disseminated to team for inspection. New filters are ~20% faster in the most rate-limiting step for the soundscape analysis. We think the faster decimation is working but needs a time adjustment for the filter lengths which P. McGill will investigate.
 - Meetings with summer intern, Madison. She's doing a great job exploring topic coherence methods. Added similarity test for her to find two runs with similar topics based on [ARI](#) for her coherence analysis.
 - Doing some clean-up of blue whale batch inference code.
 - 902005 - VARS Annotation Assistance
 - Fixed an issue with metrics failing to log correctly following object detection training.
 - Meetings with summer intern, Peyton who is working on evaluating performance metrics for our multiple object [video tracker](#) for the VAA project. We are using Amazon Web Services AWS and [CVAT](#) for this effort.
 - Out of Office
 - Off Fridays for summer duration
- Duane Edgington
 - 901009 - CANON
 - Updated my STOQS development environment. Thanks, Mike M. for help on the needed modifications.
 - 901602 - Data TAG: Addrss Eng Chng
 - Proposal reading comments to Kevin G.
 - 901603 - Video TAG: Vis Ocean Chng
 - Proposal reading.
 - 902005 - VARS Annotation Assistance
 - Intern teleconferences
 - Overhead
 - Returned to "Learn Docker in a month of lunches" book over noon hour.
 - Out of Office
 - Friday July 31. Vacation.
 - Aug 3 - 7. Telluride Neuromorphic Engineering Workshop. Virtual.
 - Aug 23 -28. ECCV. Virtual conference. Workshops, tutorials and presentations.
- Jon Erickson
 - 901217 - Chemical Sensor Program
 - I'm burning a large amount of time on ISUS_APEX trying to achieve neutral buoyancy.
- Kevin Gomes
 - 901009 - CANON
 - Support for CANON experiment
 - Overhead
 - All proposal, all the time
 - Out of Office
 - Jul 29-31: Vacation
- Andy Hamilton
- Kent Headley
- Rich Henthorn
 - 901618 - Pelagic-Benthic Coupling
 - SES system microSD file system IO extremely slow during testing
 - Causing intermittent reboots of the control board
 - Spare will be installed ASAP
 - MARS Tank Testing when MBARI reopens
 - 901800 - LRAUV Payload & Support

- Imagenex Delta T driver ported from Dorado codebase to target Ubuntu system
 - Ready for testing on target CPU with updated Linux beamformer
 - Researching logging and configuration options
 - Prototyping Obstacle Avoidance app
- Overhead
 - Meetings and such
- Out of Office
 - This Week! July 27 - July 31, vacation in PDT with email and networking
- Brett Hobson
- Scott Jensen
 - Out of Office
 - Current schedule is Sunday-Tuesday
- Brent Jones
 - 901112 - Change in MB & CA Current
 - Prepped and deployed 2 Sediment Trap equipped CPF's. Recovered both CPF's, one normally, and one emergency recovery with the Blue Robotics ROV. Spent time with logistics for emergency recovery. Also went over CPF code looking for possible reasons why CPF never came to surface.
 - Supported CANON activities including LRAUV watch
 - 901805 - Coastal Biogeochemical Sensing
 - Prepped and deployed Spray 29. Continued flying Sprays 29 and 34 in support of CANON and pH sensor objectives
 - Overhead
 - Mentoring intern
- Chad Kecz
- Brian Kieft
 - 600034 - Control Tech - Rock
 - Sent latest Portuguese ledge data off
 - 708133 - eAUV Technology
 - Support for ESP during CANON
 - 901009 - CANON
 - Supporting ongoing summer experiment
 - Recovered Brizo and discovered shark bite
 - Used hotspot to locate missing CPF
 - Assisted building up blue ROV for this and future shallow recoveries





- Denis Klimov
- Eric Martin
 - 901101 - Ocean Imaging
 - Intern advisement.
 - 901405 - PowerBuoy Development
 - NSF project meeting
 - Aiding in data reduction for radar data, some has gone missing.
 - 901807 - Next Gen Acoustic Dorado
 - Investigating python package `echopype` for parsing ek80 data
 - 901200 - Telepresence
 - Met regarding Katija cruise in August.
 - Out of Office
 - I am at MBARI Mon, Tues, and Friday
 - Vacation days on thursday when available.
- Thom Maughan
 - 901009 - CANON
 - Set up Xavier NX board for install of minimap2 package and dependencies.
 - 902004 - Planktivore
 - Reviewing Scripps Zooglider paper.
 - In progress on SOW for housing and bracket ME contractor quotes. The goal is to get three quotes, but this may be challenging given the times. There is a possibility of getting some design files for Zoocam from Scripps.
 - Working on design of optics and lighting, looking into global shutter camera option.
 - 901713 - Nearshore FOCE
 - Attended meeting, gave status. 38 MpHOx boards from Indtec are ready for pickup.
 - Out of Office
 - Returned from vacation on Jul 23
- Mike McCann
 - 901009 - CANON
 - Improvements to automated data loading into STOQS
 - Created 3D animation of Brizo's shark bite and [shared on Slack](#)
 - 901111 - AUV Infrastructure Supprt
 - Conferred with Hans on "creating" Navigation data from Dorado run
 - Overhead
 - ESIP Federation summer meeting
 - Helped with some project labor resource leveling
- Rob McEwen

- Paul McGill
 - 701145 - Penguin Hotspots
 - Got filter board modified for testing of sonar in REMUS chassis. Awaiting reopening for testing.
 - 901618 - Pelagic-Benthic Coupling
 - Got SES into Test Tank but controller is having problems so we'll have to pull it when MBARI reopens.
 - Finished schematics for Larval Sampler motor controller, but can't get it built until MBARI reopens.
 - Gave new Laser Measure calibration target specs to Mariah and she'll work on it this week.
 - 901700 - 2017 Acoustical Ocean Eco
 - Implemented data augmentation on sonar data and achieved new high of 77% accuracy with neural network. Still tuning hyperparameters.
 - Overhead
 - Working on OrCAD online training.
- Ed Mellinger
- Tom O'Reilly
 - 901101 - Ocean Imaging
 - Released MB grid viewer prototype which combines tools from the Visualization Toolkit (VTK) for 3D surface rendering with Qt, which enables rapid user interface development. This looks to be the best approach so far to upgrading MB-System
 - 901902 - Aerial Drones for Sci&MO
 - Met with Haddock, Ruhl and Bahr to discuss processing software plans for MBARI's UAV program and CENCOS/collaborator programs. Discussing how we can easily exchange data/images between the processing systems.
- Craig Okuda
 - 300057 - Mooring Maint
 - Test M1 and OA comms
 - 901220 - Midwater Ecology
 - Design chamber modification
 - 901803 - Carbon Wave Glider Development
 - Finalize drawings for shop fab
 - Out of Office
 - Vacation day
- Doug Pargett
- Ben Raanan
- Mike Risi
 - 200105 - Core Nav - MDUC
 - Working on plan with Rich to test hardware on ships
 - ZMQ interface design for navproc software
 - 600034 - Control Tech - Rock
 - Preparing Vision-only registration survey test on Ventana in September
 - 901809 - Deep Sea Bioinspiration
 - Misc. MOB meetings for BioInsp August Flyer cruise
 - Out of Office
 - February 19-22: Ocean Imaging Cruise
 - March 9-12: Vacation
 - May 26-29: Vacation
 - June 29 - July 1: Vacation
 - September 30 - October 2: Vacation
 - October 12-17: Ocean Imaging Cruise

- Brent Roman
 - 901205 - ESP SURF Center
 - Calibrating dozens of ESP3G heater controller boards (tedious)
 - CANON support
 - 901913 - Wet Wifi
 - Starting work on modifying modem simulator
 - DQ1870 - NOAA Merhab
 - Discussing integration of LTE-M modem into University of Washington's ESP mooring
 - DQ1904 - NOPP Saildrone
 - Conference call covering integration issues
 - Out of Office
 - At MBARI Tuesdays after 2PM
- Carlos Rueda
 - 901009 - CANON
 - Continued monitoring experiment activities on a regular basis (also see LRAUV bullet).
 - 901602 - Data TAG: Addrss Eng Chng
 - Proposal reviews and feedback
 - 901800 - LRAUV Payload & Support
 - Lots of work on Dash3/TethysDash as CANON progressed, with some fixes and various significant additions and improvements, see <https://docs.mbari.org/tethysdash/dash/changes/> and related new/updated pages. Also, more review and PR related with mission validation.
 - Overhead
 - ESIP Summer meeting
- Karen Salamy
 - Out of Office
 - Out sick with some non-COVID "bug" this week. Feeling better.
 - Will be working on MBARI campus ONLY on Tuesdays until further notice.
- Brian Schlining
 - 500055 - Video Annotation DM
 - Addressed a bottleneck (due to parallel processing of videos,checksum creation) in the video registrar.
 - Fixed misnamed videos from recent Mini ROV cruises.
 - 902002 - Fathomnet Detect and Classify
 - [FathomNet API](#) is now being written using [Micronaut](#).
 - API for CSV uploads and archiving of boundingbox/images is implemented
 - Swagger docs/ui are implemented
 - Testing using Docker/SQL Server container implemented
 - Docker compose stack (SQL Server/Kafka/Zookeeper) is implemented
 - Exploring authentication/user id management. ([Otk](#), [Auth0](#), [Firebase](#))
 - API access logging is implemented
- Rich Schramm
 - Out of Office
 - Aug-10 -21 Vacation
- Alana Sherman