

Engineering Weekly Report 10/22/2020 - 10/29/2020

Executive Council Notes

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Individual Activities

- Francois Cazenave
 - 901405 - PowerBuoy Development
 - I modified the power transfer device to include ball bearing and tested in the tank
 - I am working on two cable capture mechanism in solidworks
 - 902000 - Multi-Spectral StealthCam
 - I made drawings and ordered component for the main housing
- Mark Chaffey
- Danelle Cline
 - 901009 - CANON
 - Discussion w/Kevin on ODSS script migration.
 - 901502 - Passive Acoustic Sensing
 - Working on scripts to describe and share our entire 5-year archive in the Amazon Open Data Sharing program. Cloud push and testing planned this week for 2020 data.
 - Found a normalization issue in the blue whale call prediction code which reduced the effective prediction accuracy. Reprocessing the blue A and D calls with this patch. Accuracy is now 93 and 95% for each model respectively. Models take approximately 30 minutes to train.
 - 902005 - VARS Annotation Assistance
 - Instrumentation of efficientdet for spot training almost complete. Testing in SageMaker Studio. Many issues in the entire stack from the Docker/CUDA libraries, SageMaker and Wandb logging to resolve.
 - Overhead
 - Volunteer for SACNAS virtual conference most of last week. Targeted students interested in ML/AI based on poster presentations for summer internships.
- Duane Edgington
 - 901618 - Pelagic-Benthic Coupling
 - With Paul McGill installed 3-laser laser measure system on Doc Ricketts, and captured in-air calibration images. Images have been corrected and calibration performed.
 - Using matlab to perform in-water calibration of images from ROV video of checkerboard pattern.
 - Updated matlab to 2020b on matlab mac system.
 - 902005 - VARS Annotation Assistance
 - Continuing AWS SageMaker Studio work with Danelle on tfEfficientDet detector/classification code
 - Successfully ran multi-epoch spot training (70% cost saving over on-demand run)
 - Overhead
 - Engineering department zoom meeting
 - Refreshing knowledge of matlab programming
 - Reviewing papers for upcoming Underwater Image Analysis workshop IAPR CVAUI
 - Reviewing papers for ICPRAM 2021
- Jon Erickson

- 800139 - EyeRIs
 - Still waiting on parts from the shop to finish the light array
- 901217 - Chemical Sensor Program
 - Now we're supporting Yui's glider work, by providing a modified version of the ISUS-APEX_2000m float design.
- 901800 - LRAUV Payload & Support
 - Bits and pieces of design modifications.
- 901809 - Deep Sea Bioinspiration
 - Try to finalize a motor shaft design in order to purchase a maxon motor/gearbox assembly for the particle injector pump assembly on PIV.
- 902010 - Mesopelagic LRAUV
 - We have 2 preliminary designs. Working on the pros and cons.
- Kevin Gomes
 - 901009 - CANON
 - Working on ODSS migrations from CentOS 6 to 8 (odss-test, normandy, malibu and zuma)
 - Overhead
 - Migration of services.mbari.org from CentOS 6 to 8 (moved ESP Portal to esp-portal.mbari.org)
- Andy Hamilton
 - Out of Office
 - On vacation until October 26
- Kent Headley
 - 901803 - Carbon Wave Glider Development
 - Integrated cron-style scheduler for carbon waveglider payload
 - Working on doc
 - Handed off first hardware release to Jacki, w. Draft documentation
- Rich Henthorn
 - 901618 - Pelagic-Benthic Coupling
 - Annual Sta.M cruise started Tuesday. Great weather so far.
 - Deployed SES and BLISS this AM. Rover will be recovered this afternoon.
 - 901800 - LRAUV Payload & Support
 - Obstacle avoidance progress with Rob.
 - Overhead
 - Division meeting
 - COVID testing drama
 - Out of Office
 - Oct 27 to Nov 5: WF cruise to Sta. M
- Brett Hobson
- Scott Jensen
 - Out of Office
 - Current schedule is Monday-Wednesday
- Brent Jones
 - 901112 - Change in MB & CA Current
 - Spending time creating an automated stoqs loader for CPF data. Refactoring CPF code to take scientific data while parked at pressure or on the bottom
 - 901805 - Coastal Biogeochemical Sensing
 - Recovered 2 sprays and doing post processing of data
 - Overhead
 - Mentoring Cal Poly students doing a senior project using hydrophone data.
- Chad Kecy
 - Out of Office

- Took sick days T/W this week (non-COVID related!)
- Brian Kieft
 - 708158 - DHS Y7
 - Wrapped up reverse thrust testing and debug. Ready to test in the tank
 - Preparing for deployment in Buzzard's Bay
 - Updated repo for new bootloaders
 - 901800 - LRAUV Payload & Support
 - Preparing for deployment in Monterey Bay on Monday
 - 901800.96 - Whisker Capture Box
 - Met to discuss our own design
 - Overhead
 - Covid testing
 - Out of Office
 - Wednesday 10/28
- Denis Klimov
 - 118000 - Safety Office - LSO activity
 - Revising procedure for DeepPIV use on ship's deck
 - 800139 - EyeRIS
 - Setting up the test of the thermal limiter on the LED cluster
 - 901800 - LRAUV Payload & Support
 - Testing PAR sensor boards and modifying two PAR sensors into amplified version
 - 901903 - Bio Raman
 - Looking for a bumper design for panel lock
- Eric Martin
 - 901101 - Ocean Imaging
 - Converting drawings from Altium to Orcad.
 - Soliciting quotes for replacement cables.
 - Discussing internship and Compas Lab future efforts post-cruise.
 - 901206 - Coastal Profiling Float
 - Running test profiles to polish out science files getting generated
 - Bringing up hardware on the second gen 3 build.
 - 901807 - Next Gen Acoustic Dorado
 - Looking at EK60 data conversion needs.
 - 901911 - ROVVR
 - Tank calibration this past monday.
 - Working with Olin student group, who are excelling at presenting realtime data for us.
 - DQ1942 - Buoy Power Generation
 - Handed over AHRS data to Rob McEwen
 - Attended bi-weekly meeting with collaborators
 - 901200 - Telepresence
 - On break until the Carson returns from shipyard.
 - Attended an introductory meeting with Toyota Robotics Institute organized with Steven Litvin centered around a potential collaboration on telepresence products for subsea engagement.
 - Out of Office
 - Tuesdays
 - Nov 1-7 Vacation upcoming
- Thom Maughan
 - 901009 - CANON

- Bio-informatics workflow on XavierNX - getting close, but still working thru issues with MinKNOW gui recognizing Minion dna sequencer.
 - 2TB ssd setup and configure for ONT workflow
 - 901805 - Coastal Biogeochemical Sensing
 - Worked with Scott to diagnose two failed MFETs. Fixed one, the other is likely ESD damaged after deployment.
 - The laptop used (personal) for development is dead, setting up on an older machine for now. Newer ver
 - Out of Office
 - Working remote with regular access as needed at MBARI Tues,Wed,Thurs
- Mike McCann
 - 901009 - CANON
 - Writing Jupyter Notebook to plot LRAUV ESP Sample details from STOQS and the ESP log
 - 901111 - AUV Infrastructure Supprt
 - Processed mission 2020.301.03
 - Overhead
 - Met with Steve Ruberg from NOAA for STOQS instruction to access Lake Erie LRAUV data
 - Out of Office
 - Vacation: 19-23 October 2020
- Rob McEwen
 - 901800 - LRAUV Payload & Support
 - Continuing with port of OA code from Dorado to stand-alone application for LR "backseat" computer.
 - Working on an OA test program that reads in simulated Imagenex and Kearfott data from the Dorado simulator, and flows it through the new OA code.
 - 901101 - Ocean Imaging
 - Vetting nav440 data from September's radar test on the Paragon.
 - Investigating converting Dave's boulder data from last week into an octree map. Will then verify Imagenex simulation using this map.
 - Out of Office
 - WFH on Thursday and Friday.
- Paul McGill
- Ed Mellinger
 - 300083 - DMO Support - LRAUV
 - Tracked down Analog LCB configuration drawing (that it turned out Denis had already tracked down), for PAR-Preamp. Will work on formalizing this doc (which has been left hanging a couple of times) so it is readily accessible in future.
 - 901206 - Coastal Profiling Float
 - Looking at possible custom battery pack vendors
 - 901800 - LRAUV Payload & Support
 - Evaluating strobe-voltage buffer battery option for EyeRIS
 - Out of Office
 - Scheduled in-office days Tuesday, Friday
 - Minor family medical issues will affect my availability for the next 2-3 weeks.
- Tom O'Reilly
 - Out of Office
 - Was on vacation last week
- Craig Okuda

- 901007 - Benthic Biology & Ecology
 - Valve actuator PCB
- 901803 - Carbon Wave Glider Development
 - Update docs
- Out of Office
 - Vacation days
 - Out sick
- Doug Pargett
 - 901205 - ESP SURF Center
 - Helped get the Koa instrument set up for going out on the WF.
 - Started rebuilding the damaged LRAUV dome for use with the FrankenTower instrument.
 - Ordered lots of ESP parts from the shop.
 - Modifying frame components of the bulkhead valve assembly to be 3d printed rather than several machined components.
- Ben Raanan
- Mike Risi
 - 200105 - Core Nav - MDUC
 - Tested new core nav software on Western Flyer
 - Continuing process development
 - 901101 - Ocean Imaging
 - Participated in cruise to survey Sur Ridge, clam fields, and test sled and software improvements.
 - Out of Office
 - February 19-22: Ocean Imaging Cruise
 - March 9-12: Vacation
 - May 26-29: Vacation
 - June 29 - July 1: Vacation
 - September 7 - September 11: Vacation
 - October 12-17: Ocean Imaging Cruise
 - October 19-23: Vacation
- Brent Roman
 - 901205 - ESP SURF Center
 - Installed ESP 3G on the Flyer with SSH reverse tunnel for comms
 - Wrote mission scripting capability for ESP 3G as Unix command interpreter
 - Testing this now on the Flyer's Smith Cruise
 - The same scripting capability will be used for upcoming Saildrone deployments
 - Working with Brian Kieft to figure improve SBD comms to ESP
 - Most of the trouble seems to be with quoting Ruby command arguments in shell scripts.
 - 901913 - Wet Wifi
 - Hosted virtual meetings with LRAUV and Waveglider teams for plan integration of modem onto those platforms
 - DQ1865 - Bryde Whale
 - More damage identified: 5 of the 13 conductors in the Falmouth tether broke
 - Shipping damaged cables back to APL this week
 - The Iridium antenna was filled with water (this is not unexpected given that it was submerged)
 - Out of Office
 - At MBARI Tuesdays and Thursdays after 1PM
- Carlos Rueda
 - 901009 - CANON
 - Planning to resume working on MXM.

- 901502 - Passive Acoustic Sensing
 - More HMM, Naive Bayes, and Markov classification exercises. Generating and reviewing scatter plots of classification rank vs. sequence length. Reviewing literature, resuming writing of technical report, and preparing ASA poster.
- 901800 - LRAUV Payload & Support
 - Email exchanges triggered by IS re Tethysdash dependencies and mechanisms to prepare for Disaster Recovery. This will need coordination with the LRAUV team especially in terms of the use of the LRAUV Atlas share from tethysdash2 and other tethys* machines.
- Overhead
 - CentOS6 EOL: [Migration of TethysDash production server still to undergo verifications](#) by the LRAUV team (little feedback so far). All looks OK from my side but ideally at least one or two OKs from others would be great to declare completion of this task. All services on the previous tethysdash VM have been disabled (apache, tomcat, cronjobs). Reminder email sent to LRAUV team to help with verifications.
 - CentOS6 EOL: With reference to other past emails regarding the long unmaintained kelp.mbari.org server (which is behind <http://aosn.mbari.org/>), emailed LRAUV team again, in this case indicating that unless I'm told otherwise, no action will be taken wrt to CentOS6 EOL on that machine. Mike Godin forwarded the email to J. Bellingham.
- Out of Office
 - Nov 4: VueConf Toronto (virtual)
 - Nov 11: vacation
 - Nov 12-13: Scale by the Bay (virtual)
 - Dec 9: ASA Conference (virtual)
- Karen Salamy
 - 704109 - NavDORISS
 - Still awaiting go-ahead from team to test through full Operating system on NavDORISS.
 - 901200 - Telepresence
 - Still awaiting a response from Telepresence group on when to launch changes to the MBARI precruise web form that includes Telepresence cruise requests.
 - Overhead
 - Working up Purchase Orders for software renewals for 2021 year. Hope to have these completed and paid by early next week.
 - Continuing to work on Apache Superset Dash.
 - Out of Office
 - November 4-6, 2020: Vacation
 - Will be working on MBARI campus ONLY on Tuesdays until further notice.
- Brian Schlining
 - 902002 - Fathomnet Detect and Classify
 - Created code for exporting data from VARS into FathomNet.
 - VARS images have had copyright info added and are now staged on atlas:/FathomNet and service via <https://fathomnet.org>. A subsample of VARS annotations have been loaded into the fathomnet database for testing and development purposes.
 - Still working through podman/SSL/CORS issues on the external server
 - Continue to work on REST API.
 - Continue to work with <http://makemodel.co> on user interface
- Rich Schramm
 - 200103 - Core CTD Data -MDUC
 - Minor routine RovCtd O2 QC flags maintenance
 - 200105 - Core Nav - MDUC
 - Continue navproc upgrade work (Risi)

- 300057 - Mooring Maint
 - OA Mooring turn support
- 300070 - DMO Support- Ventana
 - Debug and improvements to GroundFault testing app for DJ.Osborne
 - Ventana UPgrade telecon w/Greensea
- Alana Sherman
 - 901618 - Pelagic-Benthic Coupling
 - Packed for Flyer cruise
 - Loaded Flyer
 - Updated procedures for instrument turn around
 - 901809 - Deep Sea Bioinspiration
 - Still working on motor spec for pump
 - 901904.99 - Coral Camera System
 - Working on schematics for camera housing
 - Made up test setups for current limited circuit to power new strobes
 - Made expense spreadsheet for the rest of the Macro project, reviewed spending tradeoffs
 - Ordered all connectors and cable assemblies