

Engineering Weekly Report 9/24/2020 - 10/1/2020

Executive Council Notes

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Individual Activities

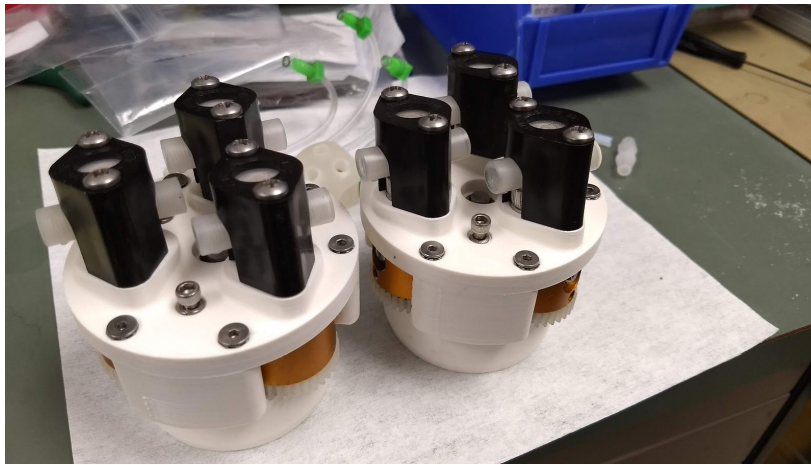
- Francois Cazenave
 - 901405 - PowerBuoy Development
 - Preparing for niobium dock test
 - 901704.99 - 8 Camera Obs Lander
 - Read and annotated documentation
 - Out of Office
 - Currently working part time at home during 2 week quarantine.
- Mark Chaffey
 - 902001.99 - 4K ROV Camera Development
 - Worked up slides for design review. Review is the next big milestone.
 - Minor mechanical modifications for simplicity and manufacturing
 - Dome design now has 1700 cycles on it at DSP&L.
 - Adapter optics glass (5 sets) has shipped. Adapter mechanical parts are in fabrication.
 - Revisiting connector specification in coordination with both ROV's.
 - Substantial progress on the electrical design.
 - Overhead
 - Migrated most work to replacement workstation.
 - Out of Office
 - Planned vacation canceled - not enough water in the river. Still going to try and take a few days off in early October TBD.
- Danelle Cline
- Duane Edgington
 - 901009 - CANON
 - Virtual meeting Sept 24
 - 901603 - Video TAG: Vis Ocean Chng
 - AWS Summit session Sept 29 (Latest SageMaker Studio features)
 - Working through SageMaker Studio Debugger
 - Learning TensorFlow 2
 - NOAA AIASI monthly telecon Oct 5
 - Overhead
 - From Docker Straight to AWS webinar Sept 30
 - Board bullets submitted
 - MBARI seminar (NOAA) Set 23
- Jon Erickson
- Kevin Gomes
 - 901009 - CANON
 - Some prep for deployments and CANON experiment
 - ODSS development (new version)
 - 901205 - ESP SURF Center

- Setup and configuration for helping with WHOI ESP deployments and the ESP portal
- 901502 - Passive Acoustic Sensing
 - Moved LTSA web site to S3 and am evaluating performance and looking to enable SSL, Route53 DNS entry and enabling CloudFront, then testing performance again.
- 901915 - Improving MBARI Data Impa
 - Catalog API work and enabling Firebase auth for APIs
- Overhead
 - Working with Todd on external security audit
 - Attending and preparing for assistance with another run at web site overhaul
 - Some AWS attention, quota changes, event bridge modifications, etc.
 - Wrapping up 2021 proposal stuff
- Andy Hamilton
- Kent Headley
 - 901101 - Ocean Imaging
 - Minor post-cruise code maintenance
 - 901803 - Carbon Wave Glider Development
 - Refactored macro code using table-based structures that better support manifold versioning and are stored in flash.
 - Updated macros to support latest manifold revision
 - Got confirmation/validation from Microchip on the issue I found in their bootloader library. They plan to fix it in an upcoming release
 - Found and fixed a couple of critical issues in the firmware (remnants of earlier refactoring in March) during testing
 - Software testing and updating doc
- Rich Henthorn
 - Out of Office
 - This week, Sept 23 - 30 vacation, MDT timezone, spotty email-only, returning Oct 1
 - Oct 27 to Nov 5: WF cruise to Sta. M
- Brett Hobson
- Scott Jensen
 - 901205 - ESP SURF Center
 - Uncovered a cold solder joint in one of the Elf boards for G3. This means all Elf are going to need to be inspected.
 - 901405 - PowerBuoy Development
 - Uncovered an undocumented "feature" of the DSPic. Really it was a missed reality of the circuit but had a catastrophic effect. That has been cleared and the clunk is gone.
 - Circuit changes have been made to deployment hardware.
 - Overhead
 - Continued learning the EDM system for Orcad. We have almost all corners explored and the major functions operational. There are however a few details that need to be understood.
 - Out of Office
 - Current schedule is Sunday-Tuesday
- Brent Jones
 - 901112 - Change in MB & CA Current
 - Tore down both CPF's for inspection before CANON and battery pack diagnosis
 - Working with Del Mar Oceanographic on the purchase of a wire walker
 - Daphne was deployed and collected water samples for shipless MBTS run
 - 901502 - Passive Acoustic Sensing

- Setting up collaboration with CalPoly students who will be working with hydrophone data for their class project.
 - 901805 - Coastal Biogeochemical Sensing
 - Bench testing additional logging functions for pH data. Diagnosing Fluorometer issue. Swapped in new pH sensor for Spray 34
 - Overhead
 - Meetings
- Chad Keycy
 - 901704.99 - 8 Camera Obs Lander
 - Reviewing documentation
 - 901713 - Nearshore FOCE
 - Assembly parts for next integration stage
 - 902000 - Multi-Spectral StealthCam
 - Spec'ing some IR and UV LEDs
 - Overhead
 - Helping out Acoustic Ecology lab with noise isolation effort
 - Finished review of journal paper
- Brian Kieft
 - 600034 - Control Tech - Rock
 - Sent off logs for analysis to Steve
 - 708158 - DHS Y7
 - Assisting with Polaris deployment in Buzzards bay
 - Troubleshooting new SOM and updating bootloaders to be backward compatible with the new/old NAND flash device on the latest revision of the SOM.
 - 901009 - CANON
 - Preparing for upcoming experiment. Modifying behavior/mission for dual sampling
 - Out of Office
 - 9/30 - 10/05 (mom AZ)
- Denis Klimov
 - 118000 - Safety Office - LSO activity
 - Assisted Dave Caress group with revised TWA on issues of combined use of laser PPEs and masks; and goggles disinfection; reviewed LIDAR run in Test Tank
 - 901800 - LRAUV Payload & Support
 - Ordered and organising 1/4-20 hardware for the optical bench (biolum low light test chamber); mounting cable penetrators.
 - 901809 - Deep Sea Bioinspiration
 - Revising fiber optic penetrator assembly report; and working on the drawings for laser target for the lab
 - 901903 - Bio Raman
 - We did a test fit of the mounting brackets to DORISS sample chamber this week and found an issue; 2 base brackets need to be aligned; working on the drawing for an alignment plate. Also location of control points (X-Y-Z) was reviewed and determined that Y control needs to be reversed; which seems to be possible; Ed Peltzer will try to reverse it.
 - Overhead
 - Elecia White had found an issue of reversed interrupt lines on the BEDS Bridge Board; figuring out what would be a good way to correct and re-test.
- Eric Martin
 - 901101 - Ocean Imaging
 - Preparing for the Western Flyer cruise October 12-17.

- Working with Giancarlo Troni and Jose Antonio Eyzaguirre Dominguez from Pontificia Universidad Católica de Chile to implement new camera drivers
 - Working with Domenic at 3DatDepth to adjust issues found during tank testing of the lidar.
 - Preparing telepresence needs for the cruise
 - Purchasing Spare linden cables.
- 901206 - Coastal Profiling Float
 - Bug fixes are queued after successful profiles
 - Met with Gene to discuss next steps.
- 901807 - Next Gen Acoustic Dorado
 - Reviewing 2021 schedule. Some tasks from this year have been descoped and moved into 2021.
- 901911 - ROVVR
 - Olin students continue to make excellent progress, we have weekly check ins to mark their progress and adjust efforts and priorities.
- DQ1942 - Buoy Power Generation
 - Another Paragon trip this past Monday to collect 3-4 hours of radar data, and now our collaborators will
- 901200 - Telepresence
 - Ken Smith had 2 successful telepresence enabled dives Monday and Tuesday.
 - Charlie Paul wrapped up 3.5weeks of continued telepresence on the Western Flyer this Tuesday. We had very few outages, and a consistently good enough performance for the USGS collaborators to make a meaningful contribution.
- Overhead
 - Handing over design files for valve pack electronics to Chad Kecz and Andy Hamilton
- Out of Office
 - Tuesdays until 2:30PM
 - This tuesday took the whole day, doctor's appointment.
- Thom Maughan
 - 901009 - CANON
 - Working to get Oxford Nanopore basecalling software running on the Xavier, hitting some roadblocks, working with support. In the meantime, setting up a TX2 with older ubuntu and dependent components to be compatible with ONT MinIT in hopes that might solve the problem.
 - Optimizing clock speed and cores for running alignment software.
 - Sent 'power aware computing' cable and power supply to collaborator at Johns Hopkins
 - Attended the 'dry processing' meeting and after a productive meeting on the embedded workflow, JHU folks showed some of the Monterey C1 DNA data - I'm hooked!
 - 901805 - Coastal Biogeochemical Sensing
 - Meeting with Yui and Joe to discuss software updates needed for MFET and MpHOx.
 - 902004 - Planktivore
 - Meeting with Larry Bird to go over changes for the Planktivore housing design.
 - Working camera selection, carrier board selection, wiring plan, first proto lighting and connector.
 - Overhead
 - Zoom call with a EE student at Cabrillo College for class project
 - Relocating home workspace from the dining room to a room vacated by my son who has returned to SLO.
 - Out of Office
 - Working remote with regular access as needed at MBARI Tues,Wed,Thurs
- Mike McCann
 - 901009 - CANON
 - Dealt with a very full glidermail inbox – full of a bunch of waveglider position reports

- 901111 - AUV Infrastructure Supprt
 - With Brian's help configured auv-rawdata-server on public server stoqs.mbari.org
 - Running Bitbucket Pipeline CI in auv-python using the public auv-rawdata-server
- 901910 - Plankton Taxonomic GrpAUV
 - Using pytest framework in the auv-python project and liking it
 - Successfully processing HS2 data with pytests against the legacy Matlab results
- Overhead
 - Moved stoqs.org to a new CentOS 8 VM (actually Joe and Pat did most of the work)
- Out of Office
 - Vacation day: 2 October 2020
- Rob McEwen
- Paul McGill
- Ed Mellinger
 - Out of Office
 - Scheduled in-office days Tuesday, Friday
- Tom O'Reilly
 - 901009 - CANON
 - Working with Carlos Rueda to test and refine our MXM "planning service" which will enable planning and operation of a variety of robotic vehicles, e.g. Wave Gliders, LRAUVs, UAVs, Dorado, and many others. Third-party and platform-specific such as Neptus, LRAUV dash, wgms and others can be integrated with MXM to enable easier and more robust coordination in the field.
 - 901902 - Aerial Drones for Sci&MO
 - Attended Marine Technology Society workshop on oceanographic UAV applications, with presentations very relevant to MBARI's UAV science goals. Gary Wick described NOAA's work to UAV animal surveys, air-sea chemistry and aerosol studies and weather forecasting applications. Iain Kerr described use of "Snot-Bot" to sample whale exhalations for genetic material, microbiome, and stress hormones. Discussion during the webinar and afterwards with Iain via email provided useful tips on how to accurately measure target sizes in images, which is very relevant to our science objectives. You can view a recording of last week's MTS webinar at this link: <https://register.gotowebinar.com/recording/97752491093738767>
 - Out of Office
 - Was on vacation last week
- Craig Okuda
 - 901007 - Benthic Biology & Ecology
 - Test assemble BRS chamber valve actuator
 - 901803 - Carbon Wave Glider Development
 - Update sequence spreadsheets
 - Update pneumatic diagrams
 - Out of Office
 - Vacation days
- Doug Pargett
 - 901205 - ESP SURF Center
 - Additional progress on upgrading the Tower portable to use the function cartridges. The new cartridge deck is built and handoff +valves setup. Not tested yet. No pump or pressure dome yet.
 - Cleaned and rebuilt 2 G3 ESP pumps with new 3d printed bodies and new bearings. Needs tubing and flow testing, + alignment checks still. These are slated for MV2 and MV3.



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- DQ1904 - NOPP Saildrone
 - Built up a check valve system for Koa to use weak bleach as a back flush fluid. This should help keep the instrument cleaner between samples.
- Out of Office
 - Leave days
- Ben Raanan
- Mike Risi
 - 200105 - Core Nav - MDUC
 - Working on UHS process
 - Configuring prototype for testing on October 12th cruise
 - 901101 - Ocean Imaging
 - Misc. prep for upcoming cruise
 - Way-point processing completed, testing on scripts from previous expeditions
 - 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
 - September 30 - October 2: Vacation
 - October 12-17: Ocean Imaging Cruise
- Brent Roman
 - 901205 - ESP SURF Center
 - Delivered 50+ calibrated heater boards to Preston
 - Ongoing support of DTU in Denmark
 - Organized call with WHOI to discuss future of their 7 ESPs
 - Moved 2 of them to our ESPshore server, more to follow
 - DQ1904 - NOPP Saildrone
 - Worked with Preston to implement sample line bleaching protocol
 - Last minute calibration tweaks
 - Out of Office
 - At MBARI Tuesdays after 2PM
- Carlos Rueda
 - 901009 - CANON
 - Met with Tom O. regarding Neptus adapter for MXM.
 - 901800 - LRAUV Payload & Support

- Satisfactory non-simulated testing with Pontus and ESP of recent adjustments in ESPComponent for [TETHYS-612](#). Thanks Brian for your assistance and Brent R. for checking the resulting logs. Hopefully, relevant PRs will be merged soon.
 - Assistance during WHOI's vehicle deployment related to issues involving SBD receipt email handling, a bug I inadvertently introduced back in July but only noted today even though it was also there in our own MBARI instance with nobody complaining since then. I fixed the issue, updated our instance, made a hotfix release for WHOI, which was applied and apparently all seems to be working great there as well.
 - Doing further adjustments in various code repos for a proper version 4 release of the Dash UI (user/admin webapp; dash itself; tethysdash-docker...)
- Overhead
 - Resuming work on final steps for [migration of the tethysdash VM](#) due to CentOS 6 EOL. Sent an email to key LRAUV folks to plan for the necessary coordination and participation.
 - XDOMES: provided input for the upcoming Project Outcomes Report to NSF.
- Karen Salamy
 - Out of Office
 - Will be working on MBARI campus ONLY on Tuesdays until further notice.
- Brian Schlining
 - Out of Office
 - Oct 12-16
- Rich Schramm
 - Out of Office
 - Sep-28 - Oct-2 Vacation
- Alana Sherman
 - 800139 - EyeRIS
 - Reviewed slides for review.
 - 901618 - Pelagic-Benthic Coupling
 - Set up software for larval pump before Mondays deployment
 - Talked to the SES from shore and ran missions to test the instrument after we cleared the clogged funnel.
 - Tested our newest version of Snappy, our camera controller, and found some software issues.
 - 901904.99 - Coral Camera System
 - Had great success and great trouble testing the sony a7r4 with Snappy. Turns out their "smart batteries" are too smart for our design. Trying to figure out my options for working around a error message that comes up with our "fake" battery. All the other functionality (shutter control, strobe sync, remote computer control, power) worked fine.
 - Overhead
 - Attended meeting on the design of the new bldg G.