

Engineering Weekly Report 1/23 - 1/29

Executive Council Notes

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Individual Activities

- Francois Cazenave
 - 901405 - PowerBuoy Development
 - Testing laser range finder
 - Assembling PTO
 - 901807 - Next Gen Acoustic Dorado
 - Added zinc anodes to the endcaps of the housing
 - Cleaned the glass dome
 - Designed a shield for the transducers
 - 902000 - Multi-Spectral StealthCam
 - Working on LED housing
- Mark Chaffey
- Danelle Cline
 - 901502 - Passive Acoustic Sensing
 - Teleconference with AWS about open data sharing program
 - Shared notebook examples and helped setup notebook in GCP for Cal Poly student Daniel DeLeon to train models.
 - Cleaned up wandb model reports organizing by project number instead of name
 - 901809 - Deep Sea Bioinspiration
 - Cleaned up wandb model reports organizing by project number instead of name
 - 902005 - VARS Annotation Assistance
 - Lead project “kick-off”. Great progress already on both Sagemaker and ML aware video player development!!
 - Feb 12 meeting planned to brainstorm with video lab about workflow.
 - Working on bug in tensorflow detection model inference served in MLFlow
 - Cleaned up wandb model reports organizing by project number instead of name
 - Overhead
 - Performance review
- Duane Edgington
 - 901603 - Video TAG: Vis Ocean Chng
 - Team to address project library space utilization.
 - 901915 - Improving MBARI Data Impa
 - Project meeting scheduled for Thursday Jan 30.
 - 902005 - VARS Annotation Assistance
 - Project “kick-off” meeting held Tues Jan 28.
 - Duane presented status of SageMaker exploration
 - Weekly VAA working session Monday Jan 27
 - Demonstrated integration of MLflow with Sagemaker
 - SageMaker Docker image model creation in MLflow

- Model upload from MLflow to AWS Elastic Container Registry (ECR)
 - Create SageMaker Model Inference Endpoint
- Jon Erickson
 - 701145 - Penguin Hotspots
 - Did a Preliminary Design Review, and now prints, prints and more prints.
 - 800139 - EyeRIS
 - I'm doing FEA work for Paul on the new pressure case.
 - 901405 - PowerBuoy Development
 - Waiting on The generator parts at the anodizers
 - Will try to assemble the load dump case this week?
- Kevin Gomes
 - 901205 - ESP SURF Center
 - Working on new log parsing to include parsing or real.out file to support GOM deployment coming up
 - 901915 - Improving MBARI Data Impa
 - Preparing for kickoff meeting on Thursday
 - Overhead
 - Performance Reviews
 - Working on External Review Presentation incorporating comments from walkthrough last week
 - Working on new script for consolidating weekly reports for engineering
 - Out of Office
 - May 6-7: Vacation
- Andy Hamilton
- Kent Headley
 - 600034 - Control Tech - Rock
 - Code and testing for cruise next week (06feb20). We are using a pub/sub mechanism for Terrain Relative Nav (TRN) updates to the main vehicle computer as part of a solution to address some data artifacts in the November dives. We will be doing some obstacle avoidance tests and refining code we plan to run on the WHOI Sentry vehicle this summer at Axial seamount.
 - 901704.99 - 8 Camera Obs Lander
 - MLML will be here this week to calibrate the camera and take a look at the virtualized software environment I set up in December
 - Overhead
 - Annual review meetings
 - External review practice session
- Rich Henthorn
 - 600034 - Control Tech - Rock
 - Development, test, and prep for Dorado TRN/Obstacle-Avoidance test Thu Feb 6.
 - Overhead
 - Performance review
 - Out of Office
 - Thu Jan 30 - Wed Feb 5: Vacation, VPN access, PST
 - Mon Feb 24 - Thu Feb 27: Vacation, VPN access, PST
- Brett Hobson
- Scott Jensen
 - 901205 - ESP SURF Center
 - Preparations for Gulf of Mexico deployment
 - 901405 - PowerBuoy Development
 - Diagnosed transistor failure to capacitive inrush

- 901805 - Coastal Biogeochemical Sensing
 - Completed first draft of schematic for nano-pHOx
- Brent Jones
- Chad Keczy
 - 901704.99 - 8 Camera Obs Lander
 - Helped MLML with the BOSS calibration on Wed/Thur. Met with Elena to go over the 3 most current documents she's written.
 - 901713 - Nearshore FOCE
 - I'm setting up the nsFOCE experiment in the Barry lab as a pre-deployment test bed.
 - 902000 - Multi-Spectral StealthCam
 - Working with Jose and Francois on the 2 pcb layouts for the light module
 - Overhead
 - Hosting Bridget Benson
 - Had my annual review. Bad news: everyone is stuck with me for at least one more year :)
- Brian Kieft
 - 300083 - DMO Support - LRAUV
 - Prepared LRAUV daphne for mbts run. Mission debugging and vehicle prep
 - 600034 - Control Tech - Rock
 - Met to discuss plan for 3 vehicle run and go over recent results with Rowe DVL
 - 708158 - DHS Y6
 - Ran tests of new under ice behaviors and missions over the weekend and shipped equipment for testing under ice on the east coast next week.
 - Met with WHOI team to discuss logistics
 - 901513 - Targeted Sampling by AUVs
 - Pulled some data for an upcoming paper
 - Overhead
 - Meet with Mesobot team to discuss plans for this year
 - Hosted seminar speaker
 - Out of Office
 - Feb 1-13 WHOI/Maine under ice, EST
 - Feb 17-21 Ocean Sciences?, PST
 - Mar 2 - 10, Vacation, GMT -7
 - Mar 16-25 Michigan (NMU) under ice, EDT
 - July 18-31 Arctic, ADT
- Denis Klimov
 - 901809 - Deep Sea Bioinspiration
 - Compiling photos and text for a fiber penetrator etching process
 - Working on 2nd safety Indicator Cap for DeepPIV. UHMW template for a glass window is missing; ordered a replacement.
 - Overhead
 - Writing material for a performance review.
 - Revising schematic for a BEDs 'Bridge Board'
- Eric Martin
 - 901101 - Ocean Imaging
 - Working on refining the strobe lighting model, the first pass gave us light spacing locations and the next will hopefully help dictate final pattern.
 - Working with Hans regarding power distribution for the new strobes and conversion to fiber telemetry.
 - 901206 - Coastal Profiling Float
 - Conducting the battery audit and final batter pack assembly.

- 901405 - PowerBuoy Development
 - Checking trefoil battery pack
 - Trying to divine pressure sensitivity in the new laser range finder.
 - Selected new SBC to replace the beleaguered Beaglebone.
 - Bringing up new controller board.
- 901911 - ROVVR
 - Kickoff meeting and report from CES.
 - The camera is hopefully in final testing after chemically strengthening the domes over the holidays. We should hear next week, and hope to have the camera integrated for Jim Barry's next Flyer cruise.
- Thom Maughan
- Mike McCann
 - 901009 - CANON
 - Looking at using a binary search tree to improve the performance of the JavaScript that executes the 3D curtain playback visualization
 - 901910 - Plankton Taxonomic GrpAUV
 - Installed Docker-based stoqs on new Mac Pro with the stoqs_all_dorado database
 - Trying to understand why the new Mac Pro is killing the postgresql process – this is not happening on any other deployment, so I suspect it's something unique to Catalina
 - Overhead
 - Setting up new Mac Pro computer with necessary software
- Rob McEwen
 - 600034 - Control Tech - Rock
 - Preparing for next week's sea trial.
 - Simulated deltaT failures and verified that new code correctly safes the vehicle.
 - Ran deck tests (final flight code on the vehicle, real hardware) where we killed one of the beamformers and verified that the flightcode aborts the mission.
 - Re-simulated all missions that we plan to run next week. We'll be testing the latest obstacle-avoidance algorithms that now include an Avoid Angle, as well as an Avoid Range.
 - Out of Office
 - 13 Feb - 19 Feb.
- Paul McGill
 - 701127 - MARS O&M III
 - Working with Craig D. to estimate resources needed for NSF proposal to resurrect MARS extension cable to MOBB seismometer. Had long conference call with collaborators at UC Berkeley and Stanford.
 - 701145 - Penguin Hotspots
 - Made spectral noise measurements of Simrad sonar power supply and filter. Working with Craig O. to find better filters, and how to measure their effectiveness. Ordered low-frequency ferrites for us to test. Reviewed Jon E.'s housing design for Remus AUV with group.
 - 901618 - Pelagic-Benthic Coupling
 - Worked with Tom M. to reassemble pump for Larval Sampler, and drew schematic for pressure test setup. Tracked down schematics for SES to MARS interface and measured the length of the extension cable.
- Ed Mellinger
- Tom O'Reilly
- Craig Okuda
 - 300079 - DMO Support-RC
 - Troubleshoot network routing problem
 - 901007 - Benthic Biology & Ecology

- Redesign of chamber flush valves
- 901220 - Midwater Ecology
 - ADCP mount design
- Overhead
 - Paragon Cell modem programming
 - Lab clean up
 - Troubleshoot Simrad sonar noise
- Doug Pargett
 - 901205 - ESP SURF Center
 - Made a disassembly tool to take apart the G3 ESP A domes, and it works! Saving that thing.
 - The 20-bar pressure sensor for MV-3 is made and ready to install. MV-2's has been replaced with a 20-bar.
 - Need to find the 35bar pressure sensors for MV-3's leak detection.
 - Plugged the ambient pressure ports on MV-2 and MV-3 parts with Ti Pins and EPDM seals.
 - Organized G3 circuit boards in the lab into bins.
 - Starting cleaning up prior to external review. ✓
 - 901800.98 - Bioacoustic Payload
 - Waiting on parts from shop, target is Feb 10.
 - 5-axis mill is awesome! 🤖 Thanks for getting it.
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- Ben Raanan
- Mike Risi
 - 901101 - Ocean Imaging
 - Finished LCM interface for (<https://www.rosys.com/>) light tilter
 - Added control loop to light tilter interface so lights track sled angle. Tested code on deployment computer
 - Working on survey automation
 - 901809 - Deep Sea Bioinspiration
 - Working with Paul on MiniROV machine vision camera integration for March cruise series

- Started working on queued subscriber class so tracking software can receive updates from external processes
- Out of Office
 - February 19-22: Ocean Imaging Cruise
 - September 18-29: Ocean Imaging Cruise
 - September 30 - October 2: Vacation
- Brent Roman
- Carlos Rueda
 - 708158 - DHS Y6
 - Setting up automated TethysDash docker image build on Docker Hub.
 - Continued setting up the tethysdash2 VM. Besides migrating to CentOS 7, a key goal is to also enable the dockerized version of TethysDash for our production server (as we are doing with external installations!). As part of this, testing relevant configuration settings to use the Atlas share from the docker container.
 - 901009 - CANON
 - [MXM meeting](#) with Kevin and Tom O. about status and next steps.
 - MXM [java client library](#) (for Tom's Neptus adapter): additions and more [documentation](#). The library is automatically [generated and released](#) using Travis-CI. Now, toward moving forward in a more streamlined way, looking again into automating the generation of the client model and query classes based on the GraphQL schema from the MXM endpoint. This proved not very productive in my first exploration a while ago but [one option](#) now looks a bit promising.
 - 901800 - LRAUV Payload & Support
 - TethysDash/Dash3: New buttons to send command/mission to [alternative address destination](#) (other than the usual SBD Iridium address). This required both backend and frontend changes.
 - Overhead
 - Upgraded the vocabulary repository system for the X-DOMES project (hosted at TAMU-CC).
 - Annual Mandatory Hazard Communication Presentation and quiz.
 - Reformatted and added items to [SE IE skill matrix](#).
 - Annual perf evaluation.
 - Out of Office
 - Feb 21, Mar 11-12, Apr 9: vacation
- Karen Salamy
 - 704109 - NavDORISS
 - Working with Eric Martin on how to properly build NavDORISS Target Images
 - Overhead
 - Trying to locate a bug in the Postcruise Web Form code that does not allow the entry of subsequent dives during multiple dive cruises (e.g., Western Flyer cruises). Will work with Lonny to diagnose and fix.
 - Had annual review this week with Kevin. We also discussed my project load for this year and best tactics on how to proceed.
- Brian Schlining
 - 500055 - Video Annotation DM
 - [Work on syncing chief scientist info from EXPD with media information in M3](#).
 - As part of the conversion of all tapes to digital video, the video lab needs to prioritize which tapes are to be transcoded. [Brian analyzed dives and tapes to verify that we had the correct metadata needed for all tape](#). Links: [Dive Analysis](#), [Tape Analysis](#)
 - Investigating why [framecapture from VARS Annotation is crashing when running on Java 11](#)
 - 901221 - Midwater Time Series
 - [Investigation into global change request of annotations for Pilalidium to Earleria](#)

- As part of IS's CentOS retirement, [Brian migrated the midwater-transects analysis apps from the server seaspray to expanse](#)
- 902005 - VARS Annotation Assistance
 - Our external contractor, [Caprica Software](#), has delivered a first iteration of a video player that interacts with [VARS](#) (as an alternative to [Sharktopoda](#)). This version will eventually support interactive feature localization that is required to support machine learning (e.g. draw and display bounding boxes on video.) Brian is testing the software and writing acceptance tests based on the [phase 1 requirements](#).
 - Attended VAA kickoff meeting.
- Overhead
 - Brian submitted a capstone project to CSUMB for students to work on a project at MBARI.
- Out of Office
 - Apr 3 - 13: Vacation
- Rich Schramm
 - 200105 - Core Nav - MDUC
 - Datamanager Navproc upgrade.
 - 300070 - DMO Support- Ventana
 - Debug and fix crashing Ventana Co-pilot GUI
 - Out of Office
 - Mar 20: Vacation
 - Mar 23 - 27: XOJO Developers Conference
- Alana Sherman
 - Overhead
 - working on reviews all week plus prepping for external review.