

Engineering Weekly Report 5/28/2020 - 6/4/2020

Executive Council Notes

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Individual Activities

- Francois Cazenave
 - 901405 - PowerBuoy Development
 - Evaluating status of PTO and buoy assembly
 - 901704.99 - 8 Camera Obs Lander
 - Preparing documentation
- Mark Chaffey
 - 902001.99 - 4K ROV Camera Development
 - Working with DSP&L and the consulting optical engineer on optical path design. Optical design was complete, however the unique glass needed for one of the lenses was unavailable so a minor revision is in the works this week.
 - During this quarantine period I have been working on the camera chassis design which has proved to be challenging. In order to receive the full benefit of the 4K camera capabilities, the tolerances for the alignment of the camera lens to the optical adapter and the optical adapter to the dome are very tight. This requires providing precision adjustments for lens and optical block position. The design is about 90% complete.
 - Multiple optical domes are on order and when received will undergo qualification pressure testing with the housing dome support.
 - Next on the schedule is the electronics and telemetry detailed design.
- Danelle Cline
 - 901502 - Passive Acoustic Sensing
 - Code optimization of [blue whale code](#)
 - Found issue with missing data in decimation files. Resubmitting backlog jobs to recompute those.
 - McGill and Zhang are working on further optimizations to the decimation filters. This should be useful for various workflows that need different levels of decimated data.
 - 901603 - Video TAG: Vis Ocean Chng
 - Project abstract review
 - 901809 - Deep Sea Bioinspiration
 - Need to inquire again about model training needs. All went pretty quiet with this project over the Covid period.
 - 902005 - VARS Annotation Assistance
 - Finished week-long GraphQL/Prisma online training - all 110+ videos and exercises. Whew.
 - Overhead
 - Updated [miniomlflow](#) stack. Pretty useful for those interested in experimenting with buckets and using MLFlow for managing machine learning models.
 - Out of Office
 - May 27-29 for much needed break. With the exception of a day, Danelle has been working during the entire quarantine period.
- Duane Edgington

- 901603 - Video TAG: Vis Ocean Chng
 - Worked on 2021 project abstract
 - Reading through 130 pages of 2021 abstracts in prep for abstract presentations and feedback next week.
 - Continued work exploring one-shot/few-shot ML techniques, implementations, and papers
 - NOAA AIASI monthly conference call Monday, June 8, 2020 12:30 PM - 1:30 PM.
- 902004 - Planktivore
 - Contributed to 2021 project abstract
- 902005 - VARS Annotation Assistance
 - Explored Google Cloud Platform buckets and integration with CoLab environments. Works!
 - Intern Peyton Lee starts ~June 8
- Overhead
 - RedHat Developer DevNation presentations on [Kubernetes](#) Mon / Weds AM.
 - TechStrong Con Virtual Summit Thursday June 4. 6AM PDT.
- Out of Office
 - Vacation Friday.
 - June 14-19. CVPR. Virtual conference. Workshops, tutorials and presentations.
 - Working through AWS Security training course.
 - NOAA AIASI monthly conference call Monday, June 8, 2020 12:30 PM - 1:30 PM.
- Jon Erickson
- Kevin Gomes
 - 901205 - ESP SURF Center
 - Overhauled build process to move ESP web portal to Docker image
 - Configuring ESP services to run on esp-portal.mbari.org as replacement for services.mbari.org
 - Starting data migration for ESP missions from services to esp-portal
 - 901602 - Data TAG: Addrss Eng Chng
 - Abstract submission
 - 901915 - Improving MBARI Data Impa
 - Abstract submission
 - Overhead
 - Abstract review
 - Working on quick slides to present to SOI as an overview of MBARI data management practices to begin a conversation.
 - Out of Office
 - June 2: Leave
- Andy Hamilton
- Kent Headley
 - 901803 - Carbon Wave Glider Development
 - Working on bootloader firmware
 - Slow trickle of data workflow discussions
 - Abstract text
 - Overhead
 - Reopening planning
 - 2021 Planning
- Rich Henthorn
 - 600034 - Control Tech - Rock
 - LRAUV TRN with McEwen
 - 901405 - PowerBuoy Development
 - ROS tutorials
 - 901618 - Pelagic-Benthic Coupling

- Acoustic comms tools
 - Abstract and proposal stuff
- 901800 - LRAUV Payload & Support
 - LRAUV TRN with McEwen
- Overhead
 - Training
- Brett Hobson
- Scott Jensen
 - 901205 - ESP SURF Center
 - Beginning preparations for GoMex recovery.
 - Set date for Scott Creek Power station retrieval
 - 901405 - PowerBuoy Development
 - Battery Contactor Controller prototype has gone through the first round of testing successfully.
 - 901805 - Coastal Biogeochemical Sensing
 - Tested 5 reworked MFETs, all failed. Jose was able to salvage one. Others will need the same work.
 - Overhead
 - Looking into solidworks training in July during my post-travel quarantine.
 - Out of Office
 - Current schedule is Sunday-Tuesday
- Brent Jones
 - 901112 - Change in MB & CA Current
 - Recover two spray gliders on paragon
 - 901502 - Passive Acoustic Sensing
 - Cleaning up documentation in prep for intern
 - Overhead
 - Wire walker proposal, meetings, continuing ed, prepping for intern
- Chad Kecy
- Brian Kieft
 - 708158 - DHS Y6
 - Tested bug fixes in WHOI lab for DDM component
 - Prepared for Polaris deployment. Vehicle was launched yesterday in Buzzard's Bay
 - 901800 - LRAUV Payload & Support
 - Prepped ESP/Brizo for launch
 - Tested new ESP scripts for OTH ESP configuration
 - Configuring DATs for installation
- Denis Klimov
 - 901800 - LRAUV Payload & Support
 - Inventoring PAR sensor board and parts for PAR sensor assembly
 - 901809 - Deep Sea Bioinspiration
 - Revising DeepPIV laser safety document for ship use.
 - Overhead
 - BEDs Bridge Board is ordered; ordering parts for board assembly
- Eric Martin
 - 901101 - Ocean Imaging
 - Phone call tuesday
 - Coordinating Strobe upgrades
 - 901206 - Coastal Profiling Float
 - Brought system back online, still in excellent condition, and the shutdown presented an excellent test of the battery pack discharge while disabled.

- Preparing for the final prefill tests on Friday.
- 901405 - PowerBuoy Development
 - Picking up the trefoil rewiring, met with Jose to see where it got left.
 - Got tophat endcap and parts together for rewiring.
- 901911 - ROVVR
 - UCSC Check in today.
- Overhead
 - Western Flyer telepresence tests were extremely successful. Wrote a report and submitted to MT for review. Also wrote an abstract to continue this work in 2021.
- Out of Office
 - I am not at MBARI Mon, Tues, and Friday
 - Half day this upcoming Friday for a doctor's appointment.
- Thom Maughan
 - 901009 - CANON
 - Reading papers
 - NVidia GTC presentations
 - MiniMap2
 - Meetings with intern Raksha
 - 901805 - Coastal Biogeochemical Sensing
 - DAg / pre-nanoFET dev. Ordered connectors
 - Discussion with Yui, proposals
 - 902000 - Multi-Spectral StealthCam
 - Received boards from Jose. Ordered connectors. Next step is bootloader and board bringup.
 - 902004 - Planktivore
 - Bridget has BSP installed and Blackfly camera is running on ConnectTech board
 - Preparing waveglider towbody for test. Work to do on wiring harness, TX2 is prepd.
 - Working plan for CENCOOS 2020 project modification. Working on finding contract resources for housing / mechanical
 - 901713 - Nearshore FOCE
 - Retrieved MFET boards from Scott/Jose. Grabbed Dales board as well.
 - Overhead
 - Bridget Benson has been working at the Bunkhouse office. She is wrapping next week. Great having her at MBARI, thanks Chad! Will collaborate starting next January on student projects at the Cal Poly pier.
 - Proposals: Planktivore, Underwater Solar, Disruptive tech
 - Prep and planning for intern TechFest. George approved hardware budget. Contacted Gabe Santos (intern from last year) and have enlisted him to help, would like to pay him.
 - Out of Office
 - Tentative two week road trip planned. Starting mid-June after school gets out, abstract presentation from the road possibly. Depending on pandemic rules.
- Mike McCann
- Rob McEwen
 - 600034 - Control Tech - Rock
 - Working with Steve Rock to correlate Trn estimates of LR yaw bias with his fminsearch method. We're not there yet.
 - 901800 - LRAUV Payload & Support
 - Doing a quick drag estimate for lateral motion with proposed thrusters.
- Paul McGill
 - 300070 - DMO Support- Ventana

- Helping DJ to better protect the Vicor control inputs on Ventana power supplies. Also researching changes to the ground-fault system so it produces better data.
- 901618 - Pelagic-Benthic Coupling
 - Working with John F. to refurbish SES. Tracking down equipment and docs to test MARS connection for SES. Also tracking down equipment to test larval pump motor driver with new pressure-tolerant oscillator. Hard to find stuff when people aren't at MBARI!
- 901904.99 - Coral Camera System
 - Inspected and tested lithium battery shipment
- Overhead
 - Helping Yanwu to make improvements to DSP code for decimation of hydrophone data.
 - Dealt with dead AC power circuit that shut down computer Deepdark.
- Ed Mellinger
- Tom O'Reilly
 - 901101 - Ocean Imaging
 - Preparing for software design review, which will present options for MB-System GUI upgrades
 - 901800 - LRAUV Payload & Support
 - Reviewed latest "back seat driver" middleware API with team, provided suggestions. Ran preliminary test of API on LRAUV cpu to estimate cpu load.
 - 901902 - Aerial Drones for Sci&MO
 - Preparing for data processing software review, which will describe requirements that flow from science goals, discuss various approaches, and early test results
- Craig Okuda
 - 901803 - Carbon Wave Glider Development
 - Payload box integration
 - Out of Office
 - Special leave
- Doug Pargett
 - 901205 - ESP SURF Center
 - Working on the Function Cartridge reviews
 - Starting to design the modifications necessary to the Bench instruments and the 60 cartridge instruments.
 - Worked on some cartridge test and instrument development plans for the coming year.
 - DQ1904 - NOPP Saildrone
 - Adjusting the design of the 3d printed "FlowerPot" dome to need less machining work after printing.
- Ben Raanan
- Mike Risi
 - 300080 - DMO Support-Mini ROV
 - Adding lever arms to DVL position integrator
 - 600034 - Control Tech - Rock
 - Working on generic roV-control application for ROVs
 - 901809 - Deep Sea Bioinspiration
 - Started test of midwater tracking control system
 - Overhead
 - Installed Ubuntu 20.04 on development computer
 - Out of Office
 - February 19-22: Ocean Imaging Cruise
 - March 9-12: Vacation
 - May 26-29: Vacation

- June 29 - July 1: Vacation
 - September 18-29: Ocean Imaging Cruise
 - September 30 - October 2: Vacation
- Brent Roman
- Carlos Rueda
 - 300083 - DMO Support - LRAUV
 - Enhancements to deployments overview page, including a permalink feature ([example](#)).
 - 901009 - CANON
 - Preparing again for updates and work on MXM.
 - Overhead
 - Got invitation from <https://www.mdpi.com/journal/remotesensing> to be Guest Editor of a special issue on Big Data Analytics and Visualization for Oceanography.
 - ESIP: Some ORR software enhancements and some coordination with NERC (UK) and SensorML folks regarding issue of broken definition links. Also, toward motivating potential contributors (and thus continue transferring this development to ESIP), put together a quick prototype based on Vue/Quasar as a possible new basis for an overhauled semantic portal. This has been very well received as expressed in slack channel and during last COR telecon.
 - Out of Office
 - Jun 8-10: vacation
- Karen Salamy
 - 704109 - NavDORISS
 - Coordinating the best day to work 'ad hoc' on-campus over the next few months with fellow co-workers in the Bld. B cubes and with the project team. Currently, the two options are Tuesdays or Thursdays.
 - Overhead
 - Encountered a Docker upgrade issue (continually kept crashing on my Mac pro). Thankfully, Docker deployed a newer upgrade and that version worked. Spent far too much time trying to determine the issue before that though.
 - Out of Office
 - Took a day of vacation this week to help with child care while Doug prepared for Board meeting.
 - Will tentatively need to continue working from home through the first month or so back to work depending on when after school resumes or if we are able to get daily child care/teacher....
- Brian Schlining
 - 500055 - Video Annotation DM
 - Completed first test run of ingesting videos ripped from MBARI tapes by Iron Mountain. <https://mbari1.atlassian.net/browse/M3-120> . Working on improving accuracy of start times for iron mountain videos.
 - Working on improvements and feature requests for VARS
 - <https://mbari1.atlassian.net/browse/M3-123>
 - <https://mbari1.atlassian.net/browse/M3-122>
 - <https://mbari1.atlassian.net/browse/M3-124>
 - <https://mbari1.atlassian.net/browse/M3-118>
 - <https://mbari1.atlassian.net/browse/M3-117>
 - 902002 - Fathomnet Detect and Classify
 - Reviewing teams's submission to NeurIPS 2020
- Rich Schramm
 - Out of Office
 - Jul 30 - 3-Aug Vacation
 - Monitor Space-X first commercial human launch attempt.
 - Aug-10 -21 Vacation

- Alana Sherman
 - 800139 - EyeRIS
 - Weekly meeting
 - 901618 - Pelagic-Benthic Coupling
 - Weekly meeting
 - 901809 - Deep Sea Bioinspiration
 - Fixed bug with manual focus setting in GUI
 - Integrated dye injector but need motor to test
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 - 901904.99 - Coral Camera System
 - Looking into available options