

Engineering Weekly Report 3/19 - 3/25

Executive Council Notes

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Individual Activities

- Francois Cazenave
 - Out of Office
 - I took one day of vacation (Friday)
 - I took one sick day (Tuesday)
- Mark Chaffey
- Danelle Cline
 - 901502 - Passive Acoustic Sensing
 - Restarted rsync and Shoutcast audio stream after reboot following IS patch failures. Added reboot check to crontab.
 - 901809 - Deep Sea Bioinspiration
 - Generated improved [video](#) of bathos detection for external website
 - 902005 - VARS Annotation Assistance
 - About half way through sprint to load localized data into VARS database [VAA-32](#).
 - Example notebooks for benthic video detection, classification and tracking coming along.
 - Working on system requirements. [VAA-23](#).
 - Overhead
 - Danelle was asked to participate in an Expert Committee on Oceanography for the [Canada Foundation for Innovation's](#) 2020 Innovation Fund competition. This meeting, originally scheduled for Toronto in June, has been moved to a virtual meeting in light of COVID-19. Three grants with various ocean science themes with data management, compute, machine learning and outreach components will be reviewed.
 - Out of Office
 - Vacation day Monday 3/2.
- Duane Edgington
 - 901009 - CANON
 - Project meeting March 12.
 - 901603 - Video TAG: Vis Ocean Chng
 - Participating in GTC conference on line March 24-27. So far the sessions I have attended are very interesting, useful, and well done. Slides and recorded sessions are available right after the session, and plan to be posted, along with other video presentations, for attendees and others in a few days. I will post links on Slack machine-learning channel once the open links are available.
 - 901618 - Pelagic-Benthic Coupling
 - Mathworks Matlab Computer Vision System toolbox trial extended one month, to mid April
 - Waiting for input from Paul McGill regarding purchase. This may need to wait until we are back at Moss Landing.
 - 902005 - VARS Annotation Assistance
 - Participating in Sprint with Danelle on taking video file, image, and annotation datasets that have been generated over the last few years and preparing them to register with M3.

- Coordinate work over Slack, BitBucket, and M3 stack running on Digits-dev-box-fish (server running at MBARI Moss Landing). Jupyter notebooks, Python.
 - Brian, Danelle great to work with over slack (text and audio chats)!
- Overhead
 - Slack / Zoom group, engineering meetings.
 - Paper that I reviewed for MCPI *Sensors* was recently published [Jellytoring: Real-Time Jellyfish Monitoring Based on Deep Learning Object Detection](#)
- Out of Office
 - Yep. Sheltering in place.
 - [Nightly Met Opera Streams](#) free series of encore Live in HD presentations streamed on the Metropolitan Opera of New York website and apps (ROKU etc) during the coronavirus closure
 - This week is all Wagner, one per evening. Whew.
- Jon Erickson
- Kevin Gomes
 - 300057 - Mooring Maint
 - A little troubleshooting when mooring stopped reporting, seemed to fix itself (probably a reboot of a component)
 - 901009 - CANON
 - Data catalog stack of software
 - 901205 - ESP SURF Center
 - Some small support of ESP portal
 - 901915 - Improving MBARI Data Impa
 - Working on architecture concepts for layered approach to data infrastructure
 - Overhead
 - Watched a couple GTC conference presentations
 - Taking GTC course on accelerated data science using RAPIDS framework on GPUs
 - Out of Office
 - May 6-7: Vacation
- Andy Hamilton
- Kent Headley
 - 901101 - Ocean Imaging
 - Working w/ Dave on Terrain-relative nav (TRN) merge
 - 901803 - Carbon Wave Glider Development
 - Finished port of file utils to cross platform wrapper API
 - Starting studying Matlab log reader
 - Overhead
 - Engr/Group-lead Telecons, misc admin
 - Out of Office
 - errands for at-risk family/neighbors
- Rich Henthorn
 - 800139 - EyeRIS
 - Online meeting covering the upcoming strobe concept review
 - 901405 - PowerBuoy Development
 - Slack telecon on Tues
 - Progress on the AHRS server
 - Root code 'nav440' - reusable vanilla C interface to the Crossbow Nav440 AHRS
 - Server nav440_server uses the nav440 interface to read packets
 - Server then uses LCM to broadcast ahrs_data structures to interested listener
 - Code tested on target and now resides in bitbucket (MainBuoyController)
 - Working on integrating nav440_server into existing logging application

- Working on the MBC systemd services
- Brett Hobson
- Scott Jensen
- Brent Jones
 - 901502 - Passive Acoustic Sensing
 - Processing hydrophone data from Oct 2016 where we have known Sperm whale clicks. Hoping to detect clicks with ML algorithms
 - 901805 - Coastal Biogeochemical Sensing
 - Recovered deployed Spray glider. Downloaded and processed onboard data
 - Overhead
 - Taking a coursera class on Intro to Machine Learning. Hoping to apply it to hydrophone processing data
- Chad Keczy
- Brian Kieft
 - 708158 - DHS Y6
 - Reverse thruster testing
 - Data review
 - 901800 - LRAUV Payload & Support
 - Test architecture updates
 - Overhead
 - Eng meeting
 - Out of Office
 - Mar 2 - 10, Vacation, GMT -7
 - July 18-31 Arctic, ADT
- Denis Klimov
 - 800139 - EyeRIS
 - Reviewing slides for upcoming project review.
 - Overhead
 - BEDS/ Bridge Board: final review of schematic and parts placement so Jose Rosal could proceed with board layout. The goal is to have a board package ready so we could place the order when it is clear when MBARI restarts and the order could be received in shipping.
- Eric Martin
 - 901206 - Coastal Profiling Float
 - Developing Float Server Service Daemon
 - 901405 - PowerBuoy Development
 - Software meeting on Monday
 - Seems like testing can continue with the radar for now.
 - 901911 - ROVR
 - Helping Kakani with a proposal for the Dassault Foundation
 - Wrapped up trip to Oregon
 - Overhead
 - Attending Online IEEE-VR conference
 - Training on Tuesday with GTC on CUDA C/C++
 - Out of Office
 - Due to childcare needs I'm half time until schools reopen. I tentatively plan on being online from 12:30-5:30.
- Thom Maughan
 - 300083 - DMO Support - LRAUV

- This has been my primary focus. Design and layout are nearing completion (added some additional features to make the design useful for MFET testing). Last task is the hibernate / power control circuit.
- 901009 - CANON
 - Met with Nate on Slack video to go over his new workflow that he got from collaborating with Stefan Prost - can't wait to get started.
 - Added Fred Bahr as user on DeepDark, some big crunching planned for CENCOOS. Coordinating access with Paul McGill who is actively using the GPU server.
- 901805 - Coastal Biogeochemical Sensing
 - Working on automated test hardware design. Have added a few features to the LRAUV data aggregator (DAg) to make it useful for MFET automated testing.
- 902000 - Multi-Spectral StealthCam
 - Bridget has made some progress on serial command interpreter for setting PWM values for board bringup.
- Overhead
 - Engineering zoom meeting.
- Out of Office
 - Working at home and planning to drive to MBARI (no building access) to feed Rascal the cat twice a week.
- Mike McCann
 - 500055 - Video Annotation DM
 - Changed vfcbydive to copy original .png rather than symlink as it updates EXIF metadata
 - 901009 - CANON
 - Provided feedback to instructor of Capstone students – they're doing a good job
 - 901111 - AUV Infrastructure Supprt
 - Participated in i2map sensor data processing meeting held by Rob S on Zoom
 - 901800 - LRAUV Payload & Support
 - Databases on tethysviz now contain all logs belonging to a .dlist across month boundaries
 - 901915 - Improving MBARI Data Impa
 - Shared slide set created for i2map meeting on #se-ie Slack channel
- Rob McEwen
 - Out of Office
 - 27 Feb.
- Paul McGill
 - 901700 - 2017 Acoustical Ocean Eco
 - Continuing to work on processing sonar data with neural nets. Currently struggling to get data imported in a form usable by MXNet. Many functions done automatically by Mathematica must be performed explicitly by Gluon. With power comes responsibility.
 - 901904.99 - Coral Camera System
 - Helped Alana with some macro camera calculations to gather requirements from Jim B.
 - Overhead
 - Attended Engineering Zoom meeting.
- Ed Mellinger
- Tom O'Reilly
 - 901101 - Ocean Imaging
 - Refining "Son of MB-System" map viewer application
 - 901800 - LRAUV Payload & Support
 - Working with team on further testing and refinement of onboard LCM-Slate "middleware"
 - 901902 - Aerial Drones for Sci&MO

- Refining image and data processing chain, from onboard flight logs and raw images through geolocated and corrected imagery. Using data/photos collected during test flight at Hollister field two weeks ago - very useful and instructive.
 - Out of Office
 - I've taken some vacation this week to participate in a volunteer emergency response group in San Jose. Our non-profit will deliver food supplies to home-bound seniors and other vulnerable people. I'm helping (remotely!) with planning and logistics, setting up web forms where recipients can request food, etc.
- Craig Okuda
 - 300057 - Mooring Maint
 - Troubleshoot M1 downloads
 - 901007 - Benthic Biology & Ecology
 - BRS chamber redesign
 - Overhead
 - Misc computer maint
- Doug Pargett
 - 901205 - ESP SURF Center
 - Attended online meeting with Function on the cartridge redesign.
 - Designed the modifications needed to make our bench machines compatible with the new cartridge for testing. One part needs to be 3d printed, two others need light machining.
 - DQ1904 - NOPP Saildrone
 - Started design of housing for the Saildrone 3G ESP.
 - Overhead
 - Ran a few FEA models for Gene.
- Ben Raanan
 - 901101 - Ocean Imaging
 - Completed opencv upgrade to the mosystem photomosaic app. Started work on stereocalibration scripts.
 - 901800 - LRAUV Payload & Support
 - Additional work on LCM back-seat interface
 - Completed migrating new LRAUV docking capability to independent module and devised configuration management strategy.
 - Deprecating unused parts of LRAUV application source.
 - 901809 - Deep Sea Bioinspiration
 - Jetson TX2 setup.
 - 902008 - Multi Vehicle Sim
 - Starting ROS training course
- Mike Risi
 - 600034 - Control Tech - Rock
 - Working on LCM frame work for precision control projects
 - 901809 - Deep Sea Bioinspiration
 - Updating midwater tracking control system based on results from last cruise
 - Misc. meetings with ML-tracking team
 - Out of Office
 - February 19-22: Ocean Imaging Cruise
 - March 9-12: Vacation
 - September 18-29: Ocean Imaging Cruise
 - September 30 - October 2: Vacation
- Brent Roman
 - 901205 - ESP SURF Center

- Smuggled an ESP 3G out of MBARI. Set it up in my home office/lab.
 - Developed a procedure to “tare” the heaters in absence of store configuration data
 - Gets us within 1C of target temps, which is within the +/-2C error allowed.
 - Supporting Chris in her efforts to figure out why GLERL’s ESP’s are all failing assays
 - Supporting Technical University of Denmark in the effort to get a modem working with their ESP (again, sigh).
- DQ1865 - Bryde Whale
 - Still no news. MetOcean cannot tell whether or not the satphone is registered on the Iridium.
- Out of Office
 - 2nd week of April (college prospecting) (6th - 10th)
- Carlos Rueda
 - 708158 - DHS Y6
 - Occasional interaction with WHOI over Slack. Provided info about Postgres database size.
 - 901800 - LRAUV Payload & Support
 - Completing a major upgrade of the underlying web framework in Dash3. This involves [non-trivial changes](#) due to several incompatibilities. This task was planned for much later in the year. However, given the current circumstances, I decided it was a good task to address now. Pre-releases available for testing at <https://oceanids.mbari.org/dash3yz/>. More details [here](#).
 - Downgraded Pusher plan to the free “Sandbox” given current circumstances.
 - Overhead
 - Migrating the MMI ORR services to a different VM at TAMU-CC as part of a general migration from CentOS 6 also taking place there. The MMI ORR will be upgraded to the latest version of the software as well as run in a containerized way like all other ORR instances out there.
 - SE IE slack and Engineering zoom meetings.
- Karen Salamy
 - Out of Office
 - March 30 - Apr 2: Vacation
- Brian Schlining
 - Out of Office
 - Apr 3 - 13: Vacation
- Rich Schramm
 - Out of Office
 - Mar 20: Vacation CANCELLED
 - Mar 23 - 27: XOJO Developers Conference CANCELLED
 - Jul 30 - 3-Aug Vacation
 - Aug-10 -21 Vacation
- Alana Sherman
 - 901809 - Deep Sea Bioinspiration
 - Got iris working on my GUI for the sony block camera
 - Starting to work on logging data from the camera
 - 901904.99 - Coral Camera System
 - Started to put together a doc to capture requirements of a macro scale coral cam, this initial document is more a list of questions that need to be answered to guide the requirements.
 - Overhead
 - Zoom meetings all Thurs morning and one on Tuesday.
 - Post doc applications