

Engineering Weekly Report 4/30 - 5/6

Executive Council Notes

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Individual Activities

- Francois Cazenave
 - Out of Office
 - Special leave
- Mark Chaffey
- Danelle Cline
 - 901502 - Passive Acoustic Sensing
 - AWS data sharing teleconference to discuss rollout of 2020 data with tutorials
 - Computing 2kHz decimated time series with UTC daily files
 - Working on HTCondor pool CentOS8 upgrade
 - 902005 - VARS Annotation Assistance
 - Finished data transforms for 2 of 4 datasets to handoff to FathomNet team
<https://bitbucket.org/mbari/vaa-localize-clean/>; working on using the dockerized tools developed for assisting annotation to clean the remaining datasets so they can easily be loaded into VARS and also be used for tracking experiments.
 - Team meeting and continued prototyping on Vue/GraphQL app.
 - Working with IS and KGomes on AWS web login. Joe Gomez made big strides in that last Friday spinning up a webapp in AWS redirected to our usual login. Thanks, Joe!
 - Overhead
 - Discussions with Cal Poly collaborators about AI Data Sharing NSF Convergence Accelerator proposal.
- Duane Edgington
 - 901603 - Video TAG: Vis Ocean Chng
 - Monthly teleconference with AIASI NOAA task team. Kitware presented a demo of a web based VIAME near ready for use. The system is built in Docker containers, so can be installed on any server. Maybe time to give VIAME another look.
 - Continuing One-shot learning exploration.
 - 902005 - VARS Annotation Assistance
 - Work continues on registering video files into M3.
 - Weekly team meeting via teleconference.
 - Overhead
 - Group meeting.
 - NVIDIA webcasts.
 - Out of Office
 - Vacation Friday.
 - June 14-19. CVPR.Virtual registration at nominal charge for IEEE Life Members.
- Jon Erickson
- Kevin Gomes
 - 901915 - Improving MBARI Data Impa
 - Looking into AWS Continuous Integration/Deployment for the data catalog work

- Overhead
 - Helping Francisco, Nate and Thom get an AWS server configured for their virtual interns
 - Several online courses for AWS related material
 - Authentication work (with the help of Joe in IS) to test out the differences in Auth0 vs. AWS Cognito for managing web application authentication.
 - Several different video conferences
- Out of Office
 - May 6-7: Vacation
- Andy Hamilton
- Kent Headley
 - 600034 - Control Tech - Rock
 - Working with Rich on concepts for TRN interface architecture
 - 901101 - Ocean Imaging
 - Testing mbtrnpp (MB system TRN app) configuration file implementation, code review
 - Overhead
 - Misc admin, meetings
 - LRAUV backseat driver architecture discussions
- Rich Henthorn
 - 600034 - Control Tech - Rock
 - Team discussions about combing TRN communication designs of MB-System and LRAUV
 - Replay-to-server interface issue
 - 901618 - Pelagic-Benthic Coupling
 - Progress on camera controller - moving functionality from older to new microcontroller
 - Nearly ready for testing with the lights and camera - when we return to campus
 - 901800 - LRAUV Payload & Support
 - Design/implementation review of the IravuLcmType (fka DataMatrices)
 - Part of the overall LRAUV interfacing strategy
 - Good work, looking forward to using it on LRAUV TRN
 - 901904.99 - Coral Camera System
 - Camera controller (see Pelagic-Benthic above)
 - Overhead
 - Training
- Brett Hobson
- Scott Jensen
 - 901805 - Coastal Biogeochemical Sensing
 - Figured out a very low power design for Wake and Hibernate circuits of NanopHOx
 - Overhead
 - Worked on back to work plan
 - Completed PCB training
- Brent Jones
 - 901502 - Passive Acoustic Sensing
 - Investigating ways to properly record inter-click interval into our analysis. Hopefully dont have to redo complete processing
 - Helping forecast size req's as hydrophone data accrues.
 - Overhead
 - Continuing education online. Engineering meetings.
- Chad Kecy
- Brian Kieft
 - 708158 - DHS Y6

- Preparing for deployment in Buzzard's Bay tomorrow!
 - Met with team to discuss plans and year 7 budget/tasks
- 901009 - CANON
 - Reviewed initial experiment plan
- 901800 - LRAUV Payload & Support
 - Added automation of ballast and trim and tested in tank
 - Fixed issue with old SSL version on new okeanids dash front end
- Denis Klimov
 - 118000 - Safety Office - LSO activity
 - Revising/ Restructuring laser safety document for DeepPIV use on ships
 - 901800 - LRAUV Payload & Support
 - Checking Teensy/Arduino environment configuration on Windows 10 machine
 - Overhead
 - BEDS bridge board is ready to be ordered; figuring out where to send and what other parts are needed
- Eric Martin
 - 901206 - Coastal Profiling Float
 - Server features expansion, database components
 - 901405 - PowerBuoy Development
 - Reviewing proposal materials
 - 901911 - ROVVR
 - Update call on wednesday, UCSC collaboration is underway
 - Overhead
 - Orcad training
 - Ricketts Jira Upgrade
 - Telepresence scoping, carrying on a lot of calls with experienced groups
 - Out of Office
 - Due to childcare needs I'm half time until schools reopen. I tentatively plan on being online from 12:30-5
- Thom Maughan
 - 300083 - DMO Support - LRAUV
 - Little progress on DAg due to other projects
 - 901009 - CANON
 - HiPP::eDNA project and early arrival intern.
 - Ran thru tutorials and setup 'free instance' of AWS Amazon. Duplicated the procedure and with some excellent support from Amazon during an 'all nighter' have the GPU server hardware provisioned and ubuntu 18.04 with a deep learning software stack all setup.
 - Usage cost is worse case 24/7 \$1k / mo. We should be able to manage this and hit around half that.
 - Found out the hard way that project schedule pressure is high and apparently there is not time to run thru tutorials and climb the learning curve on Amazon. PM able to raise priority and have Kevin Gomes step in to help out setting up the user accounts. I think a kickoff meeting is needed for the project to improve communications.
 - After the smoke clears, will suggest we setup a cost effective 'play and learn' non-GPU server for the interns in the BOG lab that are also requesting access to the Amazon server.
 - Working with Duke intern Raksha Doddabele, had first zoom with her and Nate.
 - 901805 - Coastal Biogeochemical Sensing
 - Working to add support for processor variant and peripheral mix to the code base.
 - 902000 - Multi-Spectral StealthCam

- Bridget handed off the code she developed for Feather M0. Testing, reviewing.
- 902004 - Planktivore
 - Working with Bridget Benson on replicating software install for TX2
- 901713 - Nearshore FOCE
 - Setup the board and sensor for development, some work to do on connectors.
- Overhead
 - Comcast internet has been down at my house for over a week (failed cable modem). Ordered a replacement - delayed. In hot water with the family
 - Bunkhouse research institute has been setup and comcast is working there. No MBARI hours or money charged for setup of Bunkhouse.
- Out of Office
 - Went to MBARI to pickup a few things I missed the previous time. Retrieved all Bridget and Daniels Cal Poly hardware as well as some missing 'pieces'
 - Planning to take a day or two vacation in the next week or so to help lay off MBA staff get networked into montereybaymakers.org.
 - Went in for second shingles vaccine on Tuesday. Not feeling well on Wed (sick day).
- Mike McCann
 - Overhead
 - Starting to migrate Time Machine backup files to new laptop
 - Out of Office
 - Some vacation days while waiting for new laptop
- Rob McEwen
 - 600034 - Control Tech - Rock
 - Resurrecting the three attitude estimates in Trn. I have run many simulations of different cases to determine if the old code still works. It looks like it does, but I'm still investigating. The eventual objective here is to use this first for LR replay, and then LR real-time. We're hoping mostly to capture the magnetic calibration compass error. But we may be able to estimate biases in the other two attitudes.
- Paul McGill
- Ed Mellinger
- Tom O'Reilly
 - 901101 - Ocean Imaging
 - Refining Qt-based prototypes to view bathymetry grids
 - 901800 - LRAUV Payload & Support
 - Working with team to refine "back seat driver" middleware architecture, helping to prepare documentation for non-MBARI users (JPL, WHOI...)
 - 901902 - Aerial Drones for Sci&MO
 - Met with team to plan software design review
- Craig Okuda
 - 901007 - Benthic Biology & Ecology
 - BRS sensor interface board design
 - Overhead
 - Orcad maintenance
 - Out of Office
 - Special leave
 - Vacation
- Doug Pargett
- Ben Raanan
 - 708158 - DHS Y6

- Data analysis, troubleshooting, and general support for the WHOI team.
 - Preparing for deployment in Buzzards Bay tomorrow.
- 901800 - LRAUV Payload & Support
 - Additional work on LRAUV-BSD interface:
 - Completed updates to lcm types and design of new writer/handler class.
 - Generated documentation materials.
 - Met with the dev team to present progress.
- Mike Risi
 - 300080 - DMO Support-Mini ROV
 - Updating station keeping software to use pcon-lib
 - 600034 - Control Tech - Rock
 - Working on generic ro-v-control application for ROVs
 - 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
 - Reading long (>10Kbyte) data streams from microcontrollers was causing time-out errors
 - Finally tracked this to throttling by the Linux host system.
 - Ruby on the slow ARM processes at a rate of <7kBytes/s!
 - Lowered baud rate and increased timeout delays to allow for this
 - Investigated rewriting the byte-level processing in 'C' to remove this bottleneck
 - Ongoing support of DTU Denmark and Function mechanical engineering consulting
 - 901913 - Wet Wifi
 - OceanComm says they will have a product ready in June.
 - Exploring other, more established options with Brett Hobson
 - DQ1870 - NOAA Merhab
 - Shipping NOAA/APL spares they loaned us for Gulf of Mexico deployment
- Carlos Rueda
 - 901009 - CANON
 - Resuming work on MXM
 - 901800 - LRAUV Payload & Support
 - Dash3: General dependency upgrade (this time triggered by a broken dependency). Enabled CI builds at bitbucket. Initial integration of Erik's cell phone coverage map and planning on allowing leaflet layers from configuration in general.
 - LRAUV Sim: As possible workaround to [Docker Hub issue](#), adjusted rule for the automated build triggered by tag push but to no avail yet (pushes to master are handled just fine). Also had to re-assign ssh keys to all repos under lrauv-application as the previous one stopped working unexpectedly at Docker Hub for some reason.
 - Overhead
 - CentOS6 EOL:
 - okeanids6: New okeanids tested with and fixed for SSL connection from vehicle. (Thanks Joe for the SSL fix). Old okeanids/6 ready to be shut down. Email sent to people having accounts there, with May 29 as shutdown date.
 - tethyssim: Moving all TethysDash related stuff in tethyssim to tethystest (formerly named tethysdocker). Heads-up email sent to all people with an account on tethyssim.
 - tethysdash: doing one more revision toward plan for coordination and cutover actions.
 - IE mtg

- tscfg: Responded to [issue](#) report and discovered and reported an [issue](#) in Lightbend Config.
 - (plus personal interest) More general exploration/learning on compute performance techniques and tools; learning about [Apache Arrow](#) and [Rust's ndarray](#) package (among other things).
- Out of Office
 - A few hours spent on kids school related activities.
 - May 15: vacation
- Karen Salamy
 - Out of Office
 - 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..... Strange days to be sure.
- Brian Schlining
 - 902002 - Fathomnet Detect and Classify
 - Working on an API for bounding box ingest and archiving <https://bitbucket.org/mbari/fathomnet>
 - 902005 - VARS Annotation Assistance
 - Added documentation for registering video/image/annotation fro non-mbari videos at https://mbari-media-management.github.io/docs/mbari/registration_ex1.html
 - Working on Software Requirments Doc.
 - Overhead
 - Continuing discussion with CSIRO on adapting localization tools for their M3/VARS system
 - Continuing providing technical guidance to HURL on replacing VARS server.
 - I grabbed my monitor and office chair from MBARI and am set up for `the duration` to work at home.
 - CSUMB Capstone students are winding down their project. They gave their last demo last week. They are now working on their presentations.
- Rich Schramm
 - Overhead
 - Got set up on linked-in training site an
 - started initial AWS training videos
 - Working w/IS to transition of end-of-life Coredata machine CentOS v6 to CentOS v8. LOTS of issues, existing code (circa) for node.js was cbeta vsn 0.xx, current is vsn 10.x so a lot has changed
 - Trying to 'document as I go' setup on coredata centos-8 with Joe Gomez and Pat Allen
 - Out of Office
 - Jul 30 - 3-Aug Vacation
 - Aug-10 -21 Vacation
- Alana Sherman
 - 901618 - Pelagic-Benthic Coupling
 - Zoom meeting to review projects
 - 901809 - Deep Sea Bioinspiration
 - Zoom meeting update, demo'd new GUI
 - Working on gui:
 - Logging almost all complete
 - Working on changing focus control
 - Still debugging a read error
 - 901904.99 - Coral Camera System
 - Group discussion of macro camera needs over email
 - Overhead
 - Discussed reopening plans with all group members either over email or video conference

- Supervisor meetings