

Engineering Weekly Report 1/28/2021 - 2/4/2021

Executive Council Notes

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Individual Activities

- Francois Cazenave
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Helping with PTO testing
 - 902106 - Niobicon-Based AUV Docking Development
 - Finished design of load dump
 - Reviewed mooring design
 - Out of Office
 - I have been working part time from home
- Mark Chaffey
- Danelle Cline
 - 901502 - Passive Acoustic Sensing
 - Verified Matlab overlap-add decimation algorithm correctness and converted to python production code. Added metadata for AWS open data sharing.
 - Downloaded Blue whale D call results and aggregating
 - Team meeting
 - 902005 - VARS Annotation Assistance
 - Project planning
 - Onboarding discussion with Carlos Rueda
 - Overhead
 - Meeting planned with MBAQ MBA to discuss contributing to the “Into the Deep” virtual exhibit
- Duane Edgington
 - 901602 - Data TAG
 - Discussion with Kevin Gomes, Danelle Cline, on Data Tag task
 - 901618 - Pelagic-Benthic Coupling
 - Updates to Laser Measure, Laser Calibration from Dan Davis
 - Push updates to BitBucket
 - Working with Dan, communicating with Paul, on attempts to calibrate in-water images collected from last Station M dive. Trying to determine if we have the data we need to do a calibration, and if not, how to design a process for future dives with the 3 lasers.
 - Overhead
 - Group meeting, Engineering Dept Zoom meeting
 - Continuing AWS course on Containers on AWS
 - Out of Office
 - Medical Appt Monday Feb 8
- Jon Erickson
 - 800139 - EyeRIS
 - The sop has started on the camera case parts.

- 901217 - Chemical Sensor Program
 - Still Rev'ing the ISUS probe parts(Luke's next batch is 75 !!)
- 902010 - Mesopelagic LRAUV
 - Migrating VB system to MesoP, with a size change to the reservoir frm 1 liter to 2 liter. New Bellofram diaphragm & dimension changes to half the parts. Taking longer than I expected.
- Kevin Gomes
 - 901009 - CANON
 - Looking over Vue 3 docs to decide if ODSS should be moved to Vue 2 or 3.
 - Restarting work on moving odss-test to ubuntu as a trial for migrating the rest of ODSS server to ubuntu instead of CentOS
 - 901602 - Data TAG
 - Meeting with Chris S and group leads to discuss connections with John Zicker and Dona Crawford to rekindle external collaboration and information sharing as well as looking for input on external ML/AI expertise
 - Meeting with Danelle and Duane to discuss next steps.
 - 902100 - Telepresence on MBARI Research Vessels
 - Read over all materials to get caught up since I've been working on other stuff.
 - Overhead
 - Worked with Rich on transitioning more knowledge about the datamanager/logger systems on the boats (new version) as well as XOJO apps related to that effort.
 - Finished up performance reviews
 - Succession planning
 - Hiring committee
 - AWS assistance
 - Out of Office
 - May 12-24: Vacation
 - June 21-25: Vacation
- Andy Hamilton
- Kent Headley
 - 901803 - Carbon Wave Glider Development
 - Getting back into client protocol
 - Figuring out testing of bitbanged I2C primary interface w/o any I2C sensors using what I have on hand; maybe can use arduino
 - Overhead
 - Review wrap-up/meeting
 - Strategic Roadmap kickoff
 - Engineering meeting
 - On-site schedules
 - OGC meeting (steve liang) interoperability and mission planning standards ..Kongsberg SUIT/JAUS/4586/MAVLINK/DDS, O'Reily on MBARI managing autonomous fleet/MXM(mission exec mediation)
 - Out of Office
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- Rich Henthorn
 - 800139 - EyeRIS
 - Weekly meeting
 - Review reusable Moteino modules
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Completed 1st iteration of the Current Command application
 - Making modifications as required

- Testing 2nd iteration of Current Command
 - ROS 2 research
- 901618 - Pelagic-Benthic Coupling
 - Weekly meeting
- 902101 - LRAUV Technology Development and Fleet Operations
 - Tested the OA application on Pontus
 - Demonstrated that OA receives the data to perform calculations from correct LCM channels
- Overhead
 - Prep for Sea Lion Bowl
 - Engineering meeting
- Out of Office
 - Vacation days Jan Wed 27, Fri 29.
 - Upcoming vacation days Feb Mon 22, Wed 24, Fri 26
- Brett Hobson
- Scott Jensen
 - 901205 - ESP SURF Center
 - Various meetings
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Design of prototype PCB for Battery Management System
 - Looked into ADC error by soliciting support from the manufacturer. Upon request from the manufacturer an older version PCB was modified to allow a precision source to feed the ADC. Code was developed to automate this setup and collect the requested information. Preliminary data seems to suggest the ADC is not as fast as the manufacturer specifies. Waiting for response.
 - 901805 - Coastal Biogeochemical Sensing
 - Checked out first two articles from fabricator of the next order of MFET's
 - 902106 - Niobicon-Based AUV Docking Development
 - Reviewed physical design of the power load on the LRAUV side.
 - Overhead
 - PCB Editor on the job training.
- Brent Jones
 - 901009 - CANON
 - Received Wire Walker. Going through unpacking checklist
 - 901502 - Passive Acoustic Sensing
 - Trying to speed up click conversion to images
 - 901800.98 - Bioacoustic Payload
 - Designed bracket for LRAUV BioAcoustics CPU. Did Solidworks thermal analysis
 - 901805 - Coastal Biogeochemical Sensing
 - Continued to rebuild and prep sprays 29 & 34 for upcoming deployments
- Chad Kecy
- Brian Kieft
 - 901009 - CANON
 - Debugging issues with Biolum data unserialize
 - Met to discuss EcoHAB and CANON for this year
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Met to discuss changes to mission authoring platform
 - Debugging Tethys pitch control issues
 - 902102 - Multi-LRAUV Simulation Environment
 - Weekly team meeting. Reviewed initial design.
 - Overhead

- Eng meeting
 - Review meeting
- Denis Klimov
 - 300083 - DMO Support LRAUV
 - Modifying another PAR sensor for an amplified version.
 - 800139 - EyeRIS
 - Working on drawings for laser power meter attachment for IRIS strobe
 - 901903 - Bio Raman
 - Modified a Panel Lock for use O-ring as a buffer, and submitted to the machine shop
- Eric Martin
 - 708167 - WEC Dynamics and Control
 - Building out TS7970 with ubuntu for ROS install
 - 901101 - Seafloor Mapping
 - Falkor integration of the LASS underway
 - Met with Giancarlo regarding next steps in stereo camera improvements.
 - 901206 - Coastal Profiling Float
 - Checkout of CPF003
 - Tank Testing
 - Battery pack software requirements review.
 - 901700 - Acoustical Ocean Ecology
 - Processing EK60 DEIMOS data, initial results are checking well against Echoview.
 - 901911 - ROVVR
 - Kickoff meeting for SCOPE students
 - Evaluating the Teensy board for a simple ethernet controller with audio output, PTH, and timesyncing.
 - 902100 - Telepresence on MBARI Research Vessels
 - Getting Karen setup on the project.
 - Supporting Leila Takayama as the Telepresence User Study gets underway.
 - Tested gear on the RC after the pilots moved it in the racks.
 - 500055 - Video Annotation DM
 - Adding multi-card divenummer write support to the config.
 - Out of Office
 - Tuesdays until school is back in session.
- Thom Maughan
 - 300070 - DMO Support Ventana
 - Installed Xojo, rebuilt VentanaGF app, ran it on Wago stack. Studied the code, met with Rich, etc.
 - Meeting with DJ to go over the app and see how the GF app runs on his laptop. I can now see the issue, gpio lights not matching mux config and relay clicks not regular as would be expected. I'm on it.
 - 901009 - CANON
 - The eDNA sequencer shipbox
 - 901805 - Coastal Biogeochemical Sensing
 - nanoFET board bringup.
 - Working on new features
 - MpHOx board checkout (4 fails).
 - 902000 - Multi-Spectral StealthCam
 - Discussion on status with Chad, aiming for mid-Feb, after working thru other commits.
 - 901713 - Nearshore FOCE

- Debugging serial comms with Aanderaa, turns out it was a setting in Teraterm. Sent info on symptoms and fix to Aanderaa, good timing as a new manual is in the works.
 - nsFOCE team has 14 MpHOx boards, 13 have been thru basic board test, the other is in a housing for fit.
 - Working to support both Conductivity and Optode on the same MpHOx
- 902004 - Planktivore
 - DeepRip mobo was swapped, did not fix the 'shutdown after 60 minutes' problem. We are now suspecting it's the power supply and thermal protection software. It may not be running yet, but the build quality is fantastic, well done Jose.
- Overhead
 - Tatjana Ellis, former intern, is conducting podcast style interviews for engineers and scientists.
- Out of Office
 - Vacation plans TBD, after getting projects underway.
- Mike McCann
 - 901009 - CANON
 - Updated packages for STOQS removing security vulnerability & redeployed in production
 - 901910 - Plankton Taxonomic Groups from AUVs
 - Exploring producing Apache Parquet files directly from STOQS SQL queries
 - Overhead
 - Installed symantec updates on MacOS systems
 - Re-creating MacOS ssh keys to regain Vagrant login and remote repo push capabilities
 - Out of Office
 - Vacation day: 1 Feb 2021 for CSUMB teaching
- Rob McEwen
 - Out of Office
 - Probably Friday 29 Jan, and the following Monday through Wednesday.
- Paul McGill
 - 901618 - Pelagic-Benthic Coupling
 - Lots of back and forth with Dan Davis to work out issues with Laser Measure. Trying to find images that will let us calculate laser direction vectors.
 - 901700 - Acoustical Ocean Ecology
 - Worked with Chad W. in lab to test new DC-DC converter to power Enet switch in sonar payload. It doesn't cause interference so I'll integrate it into switch.
 - Made initial model of sonar Faraday shield. Need to make more measurements to get hole placement correct.
 - 901803 - Carbon Wave Glider Development
 - Inspected last of parts received from end-of-year orders
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Ordered connectors for Coral Macro Cam wireless comms.
 - Reviewed Coral Macro Cam schematic with Alana.
- Ed Mellinger
 - 901206 - Coastal Profiling Float
 - Researched possible 21700 cells for new HD battery pack
 - Studied string-monitor chip options
 - Iterated requirements doc with other team members
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Reviewed Erik's design for new battery charger and new battery backplane
 - 800139 - EyeRIS
 - Reviewed Paul's control board design, some back-and-forth regarding fusing and flash capacitor safety

- Overhead
 - Dug out some old Tiburon documentation regarding the GF system for DJ Osborne, as input to a study he and Paul McGill are doing for Ventana.
- Tom O'Reilly
- Craig Okuda
 - 901007 - Benthic Biology and Ecology
 - Update chamber valve actuator design
 - Out of Office
 - Out sick one day
- Doug Pargett
 - 901205 - ESP SURF Center
 - Completed redesign of bottle holder. Submitted fab request to shop.
 - Overhead
 - Annual Review
 - Engr meeting
- Ben Raanan
 - 708168 - DHS Y7
 - Analysis of Proportional Navigation guidance for line capture homing
 - Revising edge case handling in the line capture behavior
 - 901009 - CANON
 - CANON/EcoHab planning
 - 901502 - Passive Acoustic Sensing
 - Analyzed SoundTrap data acquired on LRAUV
 - 902009 - AUV UI
 - Met with UCSC UX team to discuss LRAUV state visualization (widget)
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Resolved vehicle-server data syncing issue on TethysDash
 - Met with the team to discuss TethysL next steps
 - Resolved issue SSL compatibility issue in the LRAUV app
 - More work on LCM universal pub
 - 902102 - Multi-LRAUV Simulation Environment
 - Planning, assembling design documents, and developing integration concepts with the team at Open Robotics
- Mike Risi
 - 200105 - Core Nav - MDUC
 - Working on automating headless startup of corenav processes
 - Updating all processes to use new method of setting LCM URL
 - Some misc. repo reorganization.
 - 901809 - Deep Sea Bioinspiration
 - Testing search mode extensions to mwt-control system in test tank
 - Out of Office
 - April 26-30: Ocean Imaging Cruise
 - September 3-14: Ocean Imaging Cruise
 - Vacation on alternate Fridays
- Brent Roman
 - 708165 - NOAA-MERHAB
 - Conference with APL determined that they would not use Iridium comms for ESPs off La Push
 - 901205 - ESP SURF Center
 - Worked with Preston to improve ESP 3G lysate recovery
 - Now can detect when syringe plunger sticks in the barrel

- Continued support of WHOI
 - Updating ESProman
- Carlos Rueda
 - Out of Office
 - 2021-01-26: Drs. appointments.
- Karen Salamy
- Brian Schlining
 - 902002 - Fathomnet Detect and Classify
 - Integrated data from marineregions.org's [REST API](#) into [FathomNet](#). This allows users to refine search results by geographic region names. [FAN-124](#)
 - Added support for labeling organism parts (e.g. nectosome, head, etc) in FathomNet. [FAN-121](#)
 - Organizing ramp-down to FathomNet's release. It's tentatively scheduled for March 1st but may be pushed out to time it's release with a FathomNet paper publication. [FAN-122](#)
 - 902005 - VARS Annotation Assistance
 - Beginning work with CSUMB capstone students to improve the video player [Cthulhu](#), used to [visualize machine learning output](#).
 - 902100 - Telepresence on MBARI Research Vessels
 - Thinking through ways to handle multi-user remote annotations. (See strawman [1](#) and [2](#))
 - Overhead
 - University of Hawaii has been using VARS for quite some time. They are in the process of migrating their VARS system to a new server. Brian is assisting with the migration.
- Rich Schramm
- Alana Sherman
 - 800139 - EyeRIS
 - Attended weekly meeting
 - 901618 - Pelagic-Benthic Coupling
 - Gathered components and realized we need some new cables and connectors to interface to a different strobe than originally planned. Put in an order for what is needed. Pulling together other components to build up the chassis.
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Working on camera schematics
 - Working through component selection with James for the Cap Charger/USB disconnect board
 - Out of Office
 - Sick leave Tuesday afternoon for dentist appt.