

Engineering Weekly Report 11/11/2021 - 11/18/2021

Executive Council Notes

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Individual Activities

- Kevin Barnard
 - 800139 - EyeRIS
 - Wrote documentation of 3D surface reconstruction workflow from point cloud exports
 - 902002 - Fathomnet Detect and Classify
 - Developed COCO dataset generation script using fathomnet-py API
 - Reviewed FathomNet Nature paper
 - 902005 - VARS Annotation Assistance
 - Concluded 2-day sprint to test documented train/infer/load workflow
 - Debugged code to train YOLOv5x model on AWS Sagemaker; now testing
 - Developed timeline UI components for BoxJelly to visualize multiple object tracks in video
- Francois Cazenave
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - I supervised and participated in the recovery of the wave energy buoy.
 - 902106 - Niobicon-Based AUV Docking Development
 - I am assembling the buoy.
- Mark Chaffey
- Danelle Cline
 - Out of Office
 - Vacation 11/23-11/26
- Duane Edgington
 - Out of Office
 - Nov. 3 - Dec 6. Vacation (foreign travel)
- Jon Erickson
- Ben Erwin
- Kevin Gomes
 - 300057 - Mooring Maintenance
 - Changed SSDS entries to reflect newly deployed GPS, updated time frames and metadata to reflect things correctly and migrated data from the old GPS to the new in the database so it is correctly aligned with deployment dates. Changes have migrated through to here: http://dods.mbari.org/data/ssdsdata/deployments/m1/current_gcPlots.html
 - 300058 - DMO Support Western Flyer
 - Working on some changes at the request of the Ricketts pilots for changes to Dataprobe and will deploy changes this week
 - 300070 - DMO Support Ventana
 - Dataprobe support for new version
 - 902100 - Telepresence on MBARI Research Vessels
 - Small bug fixes for RabbitMQ data publishing from both ships
 - Ramping up on VueJS 3 for telepresence work.
 - Overhead

- Labor spreadsheet to level things for planning for this year and next
 - Getting new laptop set up and migrating from old
 - Weekly meeting with Todd
 - IS Hiring committee review
 - Meeting with Visceral (external web refresh vendor)
- Out of Office
 - 11/22-26 Vacation
 - 12/9 Vacation - Volunteer at Tech Fest day at Bay View Academy
- Andy Hamilton
- Kent Headley
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Working on TRN MB1 ingest; initial implementation complete
 - Working w. Team on general bathymetry/navigation ingest format for MB-System beam filtering
 - 901101 - Seafloor Mapping
 - Meeting w Tom, Dave re status and upcoming licensing issues and development related to use of non-open source CHRT library developed by U of New Hampshire. It may require use of a different more permissive license for MB-System
 - Investigating
 - 902005 - VARS Annotation Assistance
 - Started fast-turn on VARS frame capture application needed early in 2022
 - Initial cut is functionally complete
 - Pressure is off, thought momentum is up; continuing to test and add features
 - Overhead
 - Helping with EE candidate lunch meetings
 - SRSC outline development
 - Misc admin; there is interest in DMO and engineering to explore continuation of a dorado linux port with an eye towards a 2023 proposal (if not before). Tom and Rich would like to use some available time to look at this.
 - Computer needs major service, working w/ Doug C to coordinate transfer so I can continue working while it is gone for a week.
- Rich Henthorn
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Developing Terrain-Relative Co-Navigation
 - Cooperating vehicle message player completed (for bench-testing)
 - Bench-test applications ready for use
 - TRN Meeting
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Buoy recovered, working on To-Do lists
 - 901618 - Pelagic-Benthic Coupling
 - Testing starboard chamber rack motor trying to repeat deployment errors
 - Weekly meeting
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Developing Terrain-Relative Co-Navigation test apps
 - Message paths validated
 - Creating lcm-logs from an LRAUV deployment using new utility developed by Ben Raanan
 - Overhead
 - Director's dialog
 - Out of Office
 - Dec 17 - 30, Holidays and vacation
- Brett Hobson

- Scott Jensen
 - 901805 - Coastal Biogeochemical Sensing
 - nanoFET layout
 - 902106 - Niobicon-Based AUV Docking Development
 - Helping assembly of dock electronics
 - Overhead
 - EE Hiring committee
 - Time with Solidworks
 - Out of Office
 - Vacation
- Brent Jones
 - 901009 - CANON
 - Recovered Wire Walker. Cleaning system and processing data
 - Searched for and recovered CPF. Processing data
 - 901800.98 - Bioacoustic Payload
 - Deployed Triton. Processing data
 - 901805 - Coastal Biogeochemical Sensing
 - Doing inventory in anticipation of upcoming deployments
 - Overhead
 - EE candidate dinners
- Chad Kecz
- Brian Kieft
 - 800139 - EyeRIS
 - Working with Tom/Ivan on image transfer from LRAUV to hotspot
 - 901023 - Continental Margins
 - Worked with Elecia/Denis for final qual test of BED 2.0
 - 901800.98 - Bioacoustic Payload
 - Recovered vehicle
 - 902009 - AUV UI
 - Met with team to kickoff new project
 - 902106 - Niobicon AUV dock dev
 - Lots of docking work. Tethys is out now running engineering tests
 - Fixed modem on dock after battery died.
 - Bad pressure sensor on Tethys has been fixed
 - Overhead
 - Data talk abstract
 - Out of Office
 - 11/22-25 (MST)
- Denis Klimov
- Diana LaScala-Gruenewald
 - 901915 - Improving MBARI Data Impact
 - Have been getting familiar with STOQS, its architecture, loaders, running it locally, running through some of Mike's notebooks, extracting data
 - Met with Mike to review questions
 - At his suggestion, comparing the experience of pulling big chunks of rov ctd data off of stoqs in parquet format with pulling the same data off of erddap in csv
 - As part of this, learning to use the holoviews Python package for interactive data visualization
 - Also spent some time looking into [CKAN](#) - a data management software system that includes cataloging and search
 1. Useful [intro video](#), see 7:00-29:11

- Overhead
 - Weekly meeting(s)
- Out of Office
 - Out sick last Friday (11/12)
- Eric Martin
- Thom Maughan
 - 901009 - CANON
 - Met with Nate to discuss software for close loop control of minion eDNA sequencer, Squiggle. Read paper, looked at github repo.
 - DeepRip user's notified of rebuild. Purpose of rebuild is move from Ubuntu 21 to 20.04 LTS and tuning the RAID for storage media.
 - 901805 - Coastal Biogeochemical Sensing
 - A round of bug fixes while in Texas and support for Irene
 - 902004 - Planktivore
 - Housing design is moving forward nicely. Working thru the details.
 - Battery housing requirements updated
 - Parts ordering and receiving
 - Rock lab cleaning. Many thanks to Denis for spearheading.
 - Working on strobe and strobe control
 - Out of Office
 - Working from home once a month on Wednesday (child/school) (Nov 3, Dec 1)
 - Nov. 10,11,12 Vacation in Dallas, TX
- Mike McCann
 - 200109 - Core Mooring Data
 - Fred finished the quality control from the last set of recovered data
 - Aggregated hourly and daily averaged data available at:
 1. <http://dods.mbari.org/data/oasis/netcdf/doc/hourlyM1.html>
 2. <http://dods.mbari.org/data/oasis/netcdf/doc/dailyAveragedM1.html>
 - 901101 - Seafloor Mapping
 - Reloaded [smdb](#) with latest exclude.list that Jenny contributed through a pull request
 - 901221 - Midwater Time Series
 - Futzing with plotting data to verify QC, interpolation, and resampling in auv-python project
 - 901910 - Plankton Taxonomic Groups from AUVs
 - Using cartopy (with geos & proj binary dependencies) for map plotting in auv-python
 - Overhead
 - Attended MLonMB workshop at UCSC and the Web 3D Conference on Zoom from Pisa
- Rob McEwen
 - Out of Office
 - Nov22-24
 - Dec 22-31
- Paul McGill
 - 701145 - Penguin Hotspots
 - Slogging ahead with schematics. System diagram done, working on can wiring.
 - 901618 - Pelagic-Benthic Coupling
 - Responding to multiple interview and article requests for Rover
 - Working on getting instruments ready for hopefully a Jan 2022 deployment
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Working to get Coral Macro Cam reassembled
 - Tested Deep Sea Connect can on Ricketts ROV
 - Overhead

- Multiple interviews for EE hire
 - Out of Office
 - Took Fri off as shore leave
- Ed Mellinger
- Tom O'Reilly
 - 901101 - Seafloor Mapping
 - Gave status update to Dave Caress and Jenny Paduan.
 - 901513 - Targeted Sampling by AUVs
 - Worked with Chris Wahl and Liquid Robotics to prepare new Wave Glider Sensor Management Computer (SMC) for MBARI applications.
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Reviewed results of latest test flights, planning for 2022 activities and schedule.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Testing Wave Glider 'hotspot' acoustic relay to software to transfer data between shore and submerged LRAUVs
 - Overhead
 - Gave invited lecture at Rotary Club of Santa Cruz: "[Argo: Window into Earth's Ocean and Climate](#)". Many thanks to Ken Johnson, Heidi Cullen, Peter Walz, Chris Scholin and George Matsumoto for their help.
- Craig Okuda
 - 901007 - Benthic Biology and Ecology
 - Prep for Dec deployment
 - Out of Office
 - Vacation days
 - Overhead
 - Mt Toro clean up
 - Cupola clean up
- Doug Pargett
 - Out of Office
 - Sick Leave
- Ben Raanan
 - Out of Office
 - June 8-22
- Mike Risi
 - 300062 - DMO Support Doc Ricketts
 - Working on AccuPositioner pan and tilt integration
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Updating and documenting framework
 - Getting blob tracking working for Molly Z. at ARL
 - Out of Office
 - April 26-30: Ocean Imaging Cruise
 - May 3-7: Vacation
 - June 4-11: Vacation
 - June 28-July 2: Vacation
 - August 30-September 14: Ocean Imaging Cruise
 - September 14-17: Vacation
 - November 22-24: Vacation
 - Vacation on alternate Fridays
- Paul Roberts
- Brent Roman

- 901205 - ESP SURF Center
 - Tested ESPbetty: verified it could shuffle and heat short pucks.
- 901913 - Demonstrating high-speed communication with a submerged AUV
 - Tested modems in bucket and MBARI test tank.
 1. Unfortunately, they will not work in either scenario due to reverberations
 2. Working with Brett and Chris Wahl to sink a modem in the tank to test vertical channel
- Carlos Rueda
 - 300083 - DMO Support LRAUV
 - WIP: New handling of Argos battery low flag indication on the Dash (with adjustments in both backend and frontend).
 - 901502 - Passive Acoustic Sensing
 - Group meeting.
 - 902005 - VARS Annotation Assistance
 - Adjustment in SageMaker-based metrics UI to replace “checkpoints” column with “S3ModelArtifacts” (whose values are taken from a separate “describe training job” query. Cleaned up and added comments to the code along the way.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Dash system is now [4.8.2](#) with several adjustments, fixes, and improvements, some of which as part of our ongoing plan to [decommission the legacy TethysDash UI](#).
 - Overhead
 - Director’s dialog; IE Meeting.
 - Out of Office
 - Nov 11, 12, 22–24; Dec 9, 10, 21–23: vacation
- Karen Salamy
 - Out of Office
 - Vacation: November 12-19, 2021.
- Brian Schlining
 - 500055 - Video Annotation DM
 - Adding integration between [VARS Annotation](#) and [Kent’s Blackmagic device framecapture app](#). This work should solve the following:
 1. Remove native libraries from VARS which do not play well with Apple GateKeeper security.
 2. Remove the need for CamTwist and Black Syphon apps to enable framecapture on the ships
 3. Provide a path to allow for remote users to framecapture and create annotations for the telepresence project.
 - Imported the latest 3 LTO tapes of video from Iron Mountain.
 - 902002 - Fathomnet Detect and Classify
 - Reviewed FathomNet Nature paper.
 - Discussions with NOAA about having NOAA archive 3rd party images for a long time (75 years).
 - 902005 - VARS Annotation Assistance
 - 2-day sprint to test workflow starting from a species list and ending with annotated video. Follow up tasks are [here](#).
 - Overhead
 - Set up a new M1 MacBook. [Worked through docker/python issues on arm](#).
 - Work on job posting for new IS position
 - Out of Office
 - Nov 10 - Attended Machine Learning on Monterey Bay (UCSC)
- Rich Schramm
- Alana Sherman

- Out of Office
 - Out early Monday for a dr appt