

Engineering Weekly Report 3/25/2021 - 4/1/2021

Executive Council Notes

- 902101 LRAUV
 - The lab is busy preparing the fleet of vehicles for upcoming deployments over the next few weeks:
 - CANON with Brizo+ESP, EcoHAB with Makai+ESP+SPR and Pontus+Biolum and Daphne, Rock's Multi-vehicle (3) position sharing with Tethys, Pontus and Brizo, Low-altitude obstacle avoidance with Pontus and Bio-acoustics testing with Triton and finally AUV docking tank tests with Tethys.

Individual Activities

- Francois Cazenave
 - 902106 - Niobicon-Based AUV Docking Development
 - I have been testing the niobium dock prototype
 - I assembled the new load dump
- Mark Chaffey
 - 902001.99 - 4K ROV Camera Development
 - Built up test bed with camera and topside PCB's for software development. Currently getting the switches and controls wired in.
 - In coordination with the ROV pilots we finalized the lapbox design and I've sent the top panel out for fabrication and lettering.
 - Finalizing the last two drawings of the control room rack box and ordering control room cables.
 - Modified one camera chassis part that was too fragile in printed polymer and sent it out for CNC fabrication.
 - Machine shop is cranking away on many parts and I hope to have a full set in a few weeks.
 - DSP&L has completed pressure testing of our housing and dome, however when measuring the dome centration they put a few small scratches in the dome so they are going to replace it and repeat the pressure test. We should have the housing by the end of April.
 - The optical adapter is still being optically checked and painted with anti-reflection blacking on a key surface. We should have this part in hand by the end of April also.
- Danelle Cline
 - Out of Office
 - March 29-April 2nd. I will be off-the-grid for a good part of this.
- Duane Edgington
 - 901603 - Video TAG: Visualizing Ocean Change
 - Studying paper and code on self-supervised learning method [Barlow Twins](#)
 - 901618 - Pelagic-Benthic Coupling
 - Waiting for images from Paul McGill
 - 902004 - Planktivore
 - Following up on information provided by Mike McCann regarding framegrab processing
 - 902005 - VARS Annotation Assistance
 - Working on Sprint 2 task
 - Out of Office
 - Medical Appt Friday March 26
- Jon Erickson

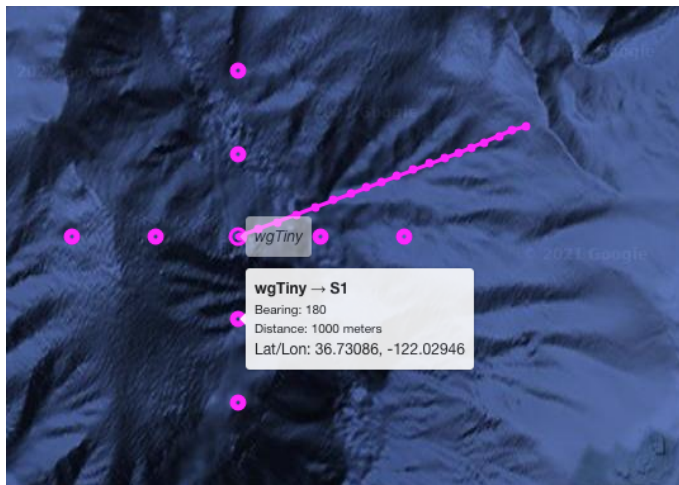
- 300070 - DMO Support Ventana
 - DJ's webex meeting with South Bay.
- 800139 - EyeRIS
 - Assembling the LRAUV pressure case.
- 901809 - Deep Sea Bioinspiration
 - Waiting on parts for the Particle Injector
- Overhead
 - Working on JIm Jenkins notes for anode calculations using DNV Standard.
 - Checking Thermal design for MARS MVC (Craig Dawe).
- Kevin Gomes
 - 901009 - CANON
 - Investigating creation of a GeoServer layer for John's sampling around the WaveGlider
 - Looking into script that can put wirewalker positions in the ODSS
 - 902100 - Telepresence on MBARI Research Vessels
 - Light prototyping for telepresence data to shore methods
 - Overhead
 - Working with Mike Risi and Rich to get ready for new navproc, datamanager, logging, dataprobe cut over scheduled for tomorrow 4/1 on the Carson.
 - Group meetings
 - Engineering meeting
 - More quarterly group meetings
 - Starting job description for new hire
 - Working on PCO request to re-scope projects
 - Out of Office
 - April 7: Out of Office
 - May 12-24: Vacation
 - June 21-25: Vacation
- Andy Hamilton
- Kent Headley
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Developing some notes/ideas for discussion on TRN and simulation
 - 901803 - Carbon Wave Glider Development
 - Team meeting
 - Firmware updates for lab systems
 - Overhead
 - SR meetings
 - PE interview prep
 - Dorado codebase build support
 - Engr hiring plan section draft
 - Resource requests (loop and cross search development for mcgill/K Smith, IFC M1 integration support for F Chavez)
 - Out of Office
 - Tue 5/25 - medical (late a. m.)
- Rich Henthorn
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - TRN and OA apps for LRAUV
 - 901618 - Pelagic-Benthic Coupling
 - Benthic Rover paper
 - Geolocating and communicating with Benthic Rover
 - Weekly meeting

- Out of Office
 - Vacation days Mar 22 - Apr 2 (this week!)
 - Email and phone connectivity
 - Mountain Daylight Time
- Brett Hobson
- Scott Jensen
- Brent Jones
 - 901009 - CANON
 - Building Wire Walker mooring. Sourced ground tackle and am getting rope shots spliced
 - Ballasted Wire Walker in test tank
 - Testing RBR instrumentation on Wire Walker
 - 901800.98 - Bioacoustic Payload
 - Tested payload in test tank. Noise seems acceptable
 - 901805 - Coastal Biogeochemical Sensing
 - Prepped and deployed Spray 34
 - Flying sprays 29 and 34
- Chad Keczy
- Brian Kieft
 - 300082 - DMO Support - Wave Glider
 - Piloting this weekend
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Flipped DAT rotations to be correct following Steve's data analysis
 - 708168 - DHS Y7
 - Supporting LTER science deployment and mission planning
 - 901009 - CANON
 - Prepping for canon!
 - 901513 - Targeted Sampling by AUVs
 - Continued debugging
 - 901618 - Pelagic-Benthic Coupling
 - Geolocated Benthic Rover at Station M
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Prepping vehicles for EcoHAB/CANON
 - Recovered Tethys yesterday following engineering deployment
 - 902102 - Multi-LRAUV Simulation Environment
 - Met with team
 - Out of Office
 - Apr 2-9 (vacation)
 - Jul 1-9 (vacation)
 - Aug 5-6 (vacation)
- Denis Klimov
 - 800139 - EyeRIS
 - We started testing optical performance of LED strobes. So far so good, but the non-linearity of the Thorlabs detector was found, so test setup needs some corrections.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Selected and ordered 1" magnets for LED source housing; received parts for light box modification
- Diana LaScala-Gruenewald
 - 200103 - Core CTD Data - MDUC
 - Getting familiar with EXPDB
 - Learning protocols for setting O2 flags from Rich

- 500055 - Video Annotation DM
 - Meeting with Brian re: concept spatial distribution visualizations for DSG
- Overhead
 - Getting familiar with docs and new software
- Eric Martin
 - 708167 - WEC Dynamics and Control
 - Diagrammed WBS for software efforts needed prior to deployment.
 - 901101 - Seafloor Mapping
 - Training on AUV3 Multibeam System with Hans
 - Rotator cable submitted to shop
 - Prepping for tank tests
 - Reviewing final TCU design
 - 901206 - Coastal Profiling Float
 - Implementing factory and usb modes in core code.
 - 901911 - ROVVR
 - SCOPE meeting
 - Getting lab set up again
 - Revisiting VR paper for submission to Oceans
 - 902100 - Telepresence on MBARI Research Vessels
 - Meeting last week
 - Starting front end design
 - Reaching out to the Video Lab for annotation needs.
 - 368000 - DMO AUV
 - Interview on Tuesday, one candidate identified
 - Overhead
 - PE Candidate interview prep
 - Out of Office
 - Tuesdays until school is back in session.
- Thom Maughan
 - 901805 - Coastal Biogeochemical Sensing
 - Working on nanoFET board checkout. Met with Scott on differences between MCAP and nanoFET analog interface, implemented the nanoFET specific changes.
 - 32KHz clock is now working which enabled the rtc and hibernate module, working to figure out sleep issues and rtc problem
 - Implementing new features and enhancements on MpHOx and MFET.
 - 902000 - Multi-Spectral StealthCam
 - Sent details for cable adapter for atmel ice to tagconnect on pwm board.
 - 901713 - Nearshore FOCE
 - Finished refactoring the uart code for support of conductivity and optode on same device while maintaining existing support for ctd, etc.
 - 902004 - Planktivore
 - Gathering status where possible. Not able to get status on housing development.
 - Putting together an update for stakeholders.
 - Met with Jose on DeepRip status. He has done a wonderful job on a challenging AMD based build.
 - Out of Office
 - Approval granted for access as needed weekly on Tues, Wed, Thurs. Glad to be back.
- Mike McCann
 - Out of Office
 - Vacation days: 29 March - 2 April

- Rob McEwen
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Verified libtrnav for Dvl and Reson in the simulator for the Boulder Crossing mission at Portuguese Ledge.
 - Still need to check Imagenex.
 - 708167 - WEC Dynamics and Control
 - Cleaning up Matlab script in preparation for conversion to C/C++ code.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - LCM replay now working with OA. Now able to plot and fix the code.
 - Working with RH to get Trn Replay working with LR data.
- Paul McGill
 - 300070 - DMO Support Ventana
 - Met with DJ about shielding in Ventana's tether
 - 901618 - Pelagic-Benthic Coupling
 - Worked with Wave Glider team trying to locate Rover at Station M. Cleaned up code for calculating position from acoustic ranges to improve accuracy.
 - Met with Kent H. to discuss how to get Loop and Cross code deployed on Wave Glider.
 - Created schematic and specifications for sediment trap agitator pump battery.
 - Did battery inventory to prepare for next Li battery order.
 - 901700 - Acoustical Ocean Ecology
 - Mostly completed assembly of sonar Faraday shield. Got Johnny to fab some last copper parts that I'll attach this week for testing next week.
 - 901803 - Carbon Wave Glider Development
 - Had meeting with Andrea and team to decide how to move forward this year and next.
- Ed Mellinger
- Tom O'Reilly
 - 902018 - Mixing Rates from Autonomous Profiling Floats in the Coastal Oceans
 - Overhead
- Craig Okuda
 - 901007 - Benthic Biology and Ecology
 - Test valve actuator prototype
 - 901803 - Carbon Wave Glider Development
 - Assemble test stand
 - Out of Office
 - Vacation day
 - Overhead
 - Troubleshoot failed microwave link
- Doug Pargett
 - 708146 - NOPP Saildrone
 - Waiting on Saildrone...
 - Parts sent to shop for print
 - 881135 - 3G ESP Cartridge Redesign
 - Redesigning new toroid valves to have retaining-hardstop clips removable when the instrument is fully assembled. This allows for a valve to be removed and have the seals replaced while the mechanism /instrument is fully assembled. In the last couple of weeks, we needed this benefit of the old system.
 - 901205 - ESP SURF Center
 - Lots of zoom meetings
 - Parts sent to shop for print.
 - Overhead

- Engineering meeting
 - Seminar
- Ben Raanan
- Mike Risi
 - Out of Office
 - April 26-30: Ocean Imaging Cruise
 - May 3-7: Vacation
 - September 3-14: Ocean Imaging Cruise
 - Vacation on alternate Fridays
- Brent Roman
 - Out of Office
 - March 29-April 2 + 2wks away from the office due to quarantine
 - Traveling up to Oregon & Washington to visit colleges.
- Carlos Rueda
 - 708168 - DHS Y7
 - Some exchanges; latest Dash 4.3.6 already deployed at WHOI.
 - 901101 - Seafloor Mapping
 - Some quick review of the dockerized set-up on mbscentos7, and graphical access via VNC.
 - 902005 - VARS Annotation Assistance
 - One more Cthulhu [request](#) is now pretty advanced ([PR](#)).
 - 902102 - Multi-LRAUV Simulation Environment
 - New Dash [4.3.6](#), with some internal adjustments and initial support for displaying a [point cloud](#) around the latest position of assets managed in MBARI's Tracking Database. Thanks John R. for the discussion and suggestion.



- TethysL: Doing general revision of the engine with a focus on usability via command-line for purposes of compiling .tethysl files, translating to .xml, reformatting, translation from xml, etc. As preparation for possible editors on linux, IS has installed VS Code and Emacs on tethystest.
 - Thanks Ben for fixing the generation of the Units.xsd file, which TethysL also relies on.
- Overhead
 - IE meeting
 - Met with Leila Takayama to discuss possible future collaborations.
- Karen Salamy
 - Overhead
 - Continued work on Rich S responsibilities succession plan. Began configuring files on coredata server for next M1 June 14 (202106) Oasis 3 Mooring deployment.
 - Working with Pat and Neil on SVN repo connection issues with SmartSVN client
 - Looking into a text editor app for Precruise form.

- Brian Schlining
 - 500055 - Video Annotation DM
 - [Cleaned out](#) smb://atlas.shore.mbari.org/M3_Staging
 - [Imported Mini ROV dives 166-168](#) from vars-minirov computer/database
 - Working on a new DSG/VARS Query. Development snapshots are posted to <http://m3.shore.mbari.org/deepseaguide>
 - Met w/ Diana to discuss work on creating DSG data products. Put together a python project for querying VARS data for the DSG analysis at <https://github.com/mbari-org/dsgpy> (It's private, contact Brian if you want access)
 - 902002 - Fathomnet Detect and Classify
 - Testing latest version of [gridview](#)
 - 902005 - VARS Annotation Assistance
 - [Reviewed PRs](#) from Carlos for Cthulhu
 - Overhead
 - Met with developers at [Innotescus](#). They're working on an on-line image and video annotation platform. Brian has been providing feedback to help them better target their platform for the science community. Brian has a free team account, if you're interested in trying out their platform contact him.
 - Met w/ Leila Takayama to discuss potential collaborations on annotation tools.
- Rich Schramm
 - Out of Office
 - 5/12 thru 5/14
- Alana Sherman