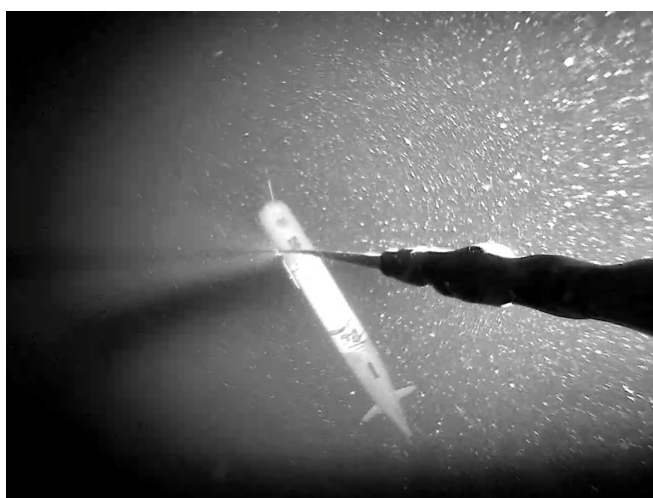


Engineering Weekly Report 3/24/2022 - 3/31/2022

Executive Council Notes

- 902106 - Niobicon-Based AUV Docking Development
 - The new AUV docking station was deployed about 4.5 miles WSW of MBARI last Thursday. The pictures below show the surface buoy with solar panels that collect the energy to recharge MBARI's LRAUV on a docking station 66 meters below. The picture on the right is an upward-looking view from a camera on the docking station that shows LRAUV Tethys parked on the dock.



Individual Activities

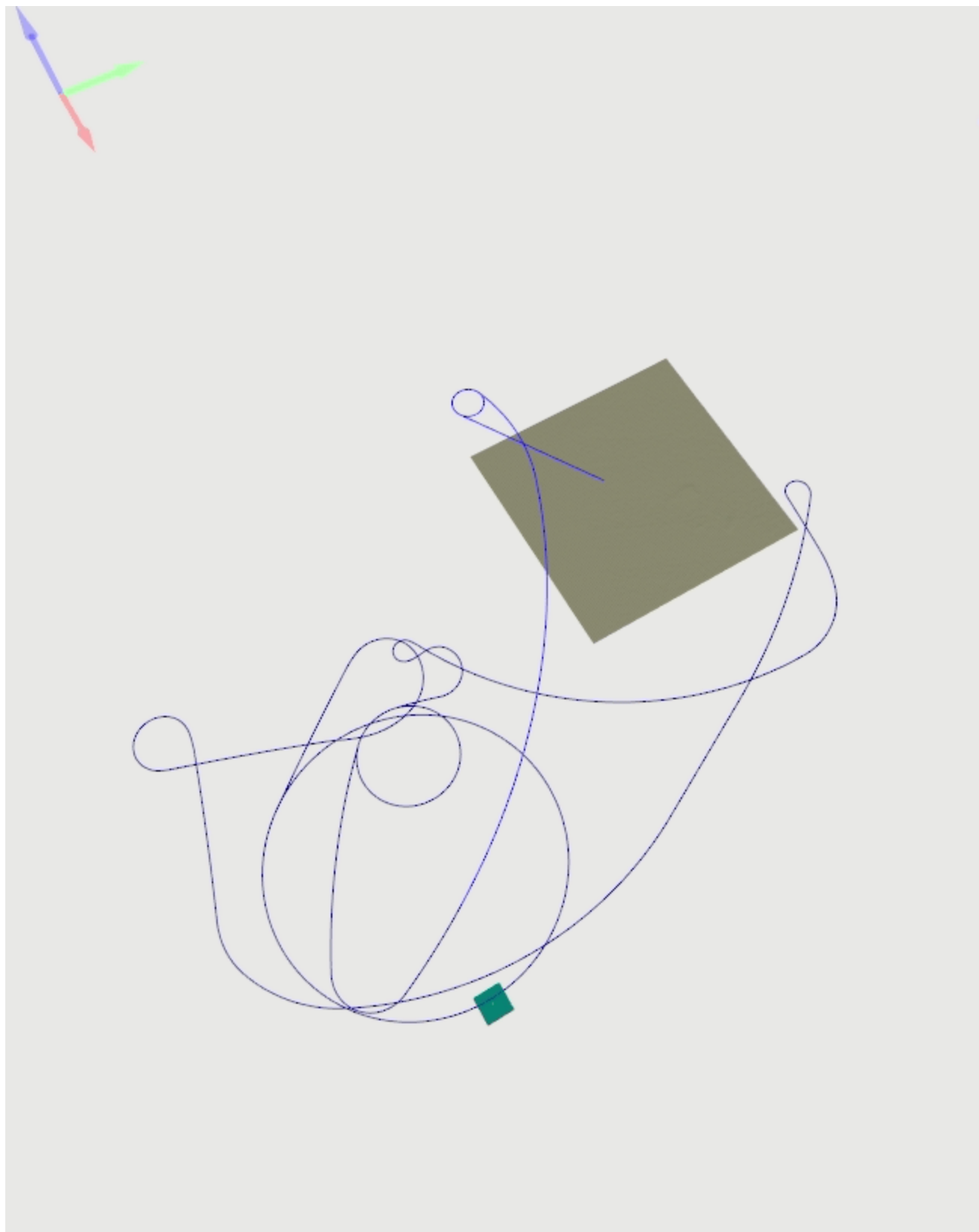
- Kevin Barnard
 - 902002 - FathomNet
 - Finished preparation of material for FathomNet workshop
 - Implemented sorting by timestamp in vars-localize for midwater localization effort
- Francois Cazenave
 - Out of Office
 - One day off to take care of sick child
- Danelle Cline
- Duane Edgington
 - 901603 - Video TAG
 - Plan to participate in FathomNet workshop March 31-April 1.
 - 901618 - Pelagic-Benthic Coupling
 - Meetings with Dan Davis and with Paul McGill. We plan to analyze dive data using the calibration that Dan and Paul have developed. Working on plan to document system and prepare for publication and release.
 - 902004 - Planktivore
 - Team meeting March 28. Waiting for images to test Shore-side data system. Should be pretty soon now!
 - 902005 - VARS Annotation Assistance

- Testing deepsort-yolov5-tracker continues. Ran Benchmark video from our summer intern 2020 Peyton Lee. Next step is to compare tracker performance with his hand-annotation results, and to prepare sweeps with different parameter settings.
 - Overhead
 - DEI workshop.
- Jon Erickson
 - 701145 - Penguin Hotspots
 - Working on outside vendors for fiber parts(G-10)
 - 800139 - EyeRIS (Remote Imaging System)
 - Starting to produce parts for 1500m EyeRis housing. Pressure case and chassis.
 - 901809 - Deep Sea Bioinspiration
 - I still need to re-assemble the Falcore interface can.
Still working with and advising Quest Institute. Mostly about their MARS experiment.
- Ben Erwin
 - Out of Office
 - Vacation 2/12-2/20
- Kevin Gomes
 - Out of Office
 - Mar 21-25: Vacation
- Andy Hamilton
- Kent Headley
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Met with Rob to talk about integrating TRN with Dorado simulation. Sent some sample code for the MB1 record server API.
 - 901101 - Seafloor Mapping
 - Making progress on LCM stream processing for using TRN with ROVs
 - Overhead
 - Misc admin
 - Out of Office
 - Mar 1-3 : ocean imaging TRN test cruise
- Rich Henthorn
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Dorado TRN driver rework
 - 901101 - Seafloor Mapping
 - Dorado QNX-to-Linux
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Buoy controller hardware watchdog install and test
 - Duplicating buoy controller system onto larger drive
 - Meeting discussed upcoming deployment
 - 901618 - Pelagic-Benthic Coupling and the Carbon Cycle
 - Weekly meeting
 - 902106 - Niobicon-Based AUV Docking Development
 - Dock buoy controller design
 - Out of Office
 - April 25 - out of the area, WFH
 - July 4 - 18, vacation & WFH, email & phone OK
 - Sep 21 - 30, Sta.M Cruise (final scheduled cruise of the Western Flyer)
- Brett Hobson
- Scott Jensen
 - 901205 - SURF Center

- Received parts for sampler. Working on fine tuning and automating
 - Collecting quotes and placing orders
- 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Some support getting it ready to deploy.
- 901805 - Coastal Biogeochemical Sensing Program
 - User found a anomalous feature. Found and fixed.
- 902106 - Niobicon-Based AUV Docking Development
 - A little bit of support to add a feature
- DQ2113 - Tidal Turbine
 - Emails about upcoming work
- Brent Jones
 - Out of Office
 - Last week sick leave
- Chad Keczy
- Brian Kieft
 - 300082 - DMO Support - Wave Glider
 - Piloted Tiny over the weekend to support Yui's PCO2 tracking runs
 - Piloted Hansen over the weekend to support Astrid's bioacoustic runs
 - 708168 - DHS/LRAUV Under-Ice
 - Met with team today to go over final details before the end of the month.
 - Preparing conops for arctic deployment
 - Added capability for ZDA messages to be turned on/off for LRAUV Stella (multibeam mapping vehicle)
 - Adding PD6 ingest capability to the ADCP to support mapping vehicle.
 - 901009 - CANON
 - Planning has begun for EcoHAB SB deployment.
 - 901513 - Targeted Sampling by Autonomous Underwater Vehicles
 - Working with Yanwu to test new mapPatch mission.
 - Publication review and chl offset characterization
 - 902009 - AUV User Experience Design
 - Meeting with team to discuss plans. Onboarding Karen Salamy to the team to support front end development
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Tethys deployed last Thursday for docking and patch tracking tests
 - Integrated joystick control over cellular for vehicle Pontus. Testing underway and plans to use this feature for EcoHAB in Santa Barbara (May/Jun)
 - 902106 - Niobicon-Based AUV Docking Development
 - Supporting docking deployment (see images at top)
 - Added remote discrete set/clear capabilities through the acoustic interface to automatically power lights/camera on dock when approaching
 - Overhead
 - Supporting Yui's Spray/tracking deployment
 - Gender IDEA workshop
 - Out of Office
 - 04/15 (PDT)
 - 05/15 - 06/04 (EcoHAB PDT)
 - 07/02 - 07/09 (HST - vacation)
 - 07/13 - 07/22 (AKDT)
 - 08/01 - 09/03 (EDT)
 - 09/13 - 09/30 (GMT+2 - vacation)

- Denis Klimov
- Diana LaScala-Gruenewald
- Eric Martin
 - 708167 - WEC Dynamics and Control
 - Radar driver testing on raspberry pi.
 - Working with Rob to verify hdf5 files.
 - 901101 - Seafloor Mapping
 - Sled was used last week in a presentation to visiting military group.
 - Getting ready for tank tests next week.
 - 901206 - Coastal Profiling Float Transition to Science Applications
 - Next set of bug fixes were tested and rolled in, leading to a deployment yesterday.
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Rework of the controller box drawn into techs, already complete, tested and reinstalled.
 - 901911 - ROVVR
 - See telepresence note on presentation
 - 902012 - Telepresence on MBARI Research Vessels
 - Screenshot upload to DMZ running on VM.
 - Interview with Leila last week.
 - Presented a new talk focused on the common threads of telepresence and VR to prospective group of Western Flyer buyers:  Beyond Bunkspace
 - Overhead
 - DEI training
 - Out of Office
 - STCW training April 11-15
- Thom Maughan
 - 901009 - CANON
 - Working with Kobun and Paul C on eDNA tacklebox requirements.
 - Talked with Kobun about project priorities as both Paul and I are timeslicing to support other projects - doing what we can without adding stress.
 - Battery testing and chem chiller testing.
 - Setup of Xavier NX for dev, not sure I'll get to the new basestack install.
 - 901805 - Coastal Biogeochemical Sensing Program
 - Support for Wirewalker/RBR - added posix timestamp, 2 second sampling, implemented init fix per Scott Jensen that solved a spurious character problem at wakeup.
 - Chasing ymodem bug which turned out to be specific to a version of teraterm and not a pHFET-SOS bug.
 - Finishing revised CTD driver.
 - Testing Spray version of the MFET code with OCR-504 and pH support.
 - 902004 - Planktivore
 - Weekly meeting
 - Assembly and test of 0.5x and 4x microscope 'pipes' with Aquavore. Working with Paul R and Denis on tuning lighting and alignment.
 - Overlapping Denis schedule has worked well, he has completed test setup and strobe assembly to perfection. EE-Techs have built deployment set of strobe boards for the titanium housing.
 - Imaging of plankton on 30 Mar in Aquavore milestone.
 - Larry has completed Spray mount, syntactic foam, housing on 30 Mar, another milestone. Arranged Todd Walsh photoshoot.
 - Working with Larry to transition remaining tasks on Fluum to Aaron / Roman. Arranged with Norm to have Larry onsite next week to walk us through dis-assembly and assembly of the housing.

- Received Spray batteries!
- Overhead
 - DEI training
- Out of Office
 - TBD trip to Montana.
 - May 27 - 31 Camping
 - Jul 6 - 13 Camping
- Mike McCann
 - Out of Office
 - 28 March - 1 April: Vacation
- Rob McEwen
- Paul McGill
 - 701145 - Penguin Hotspots
 - Tested power supply for second REMUS sonar. Assembling chassis with Chad W.
 - 901618 - Pelagic-Benthic Coupling and the Carbon Cycle
 - Met with Duane E. to strategize about Laser Measure work this year.
 - Working on how to analyze calibration measurements from last year.
 - 901700 - Acoustical Ocean Ecology
 - Finally got accelerometer talking to PIC micro for sonar xducer orientation sensor. Continuing to work on code to add features.
- Tom O'Reilly
- Craig Okuda
- Doug Pargett
 - 901205 - SURF Center
 - Function cartridge status meetings discussing leaking and operation issues with the latest demo versions.
 - Meetings with NOAA and Seatrak to discuss issues and possible locations to mount the ESP.
 - Ordering long lead parts for the 2022 G3 ESP build-o-rama!
 - Investigating external valves for the G3 ESP and how to get that installed on the existing system quickly for the Saildrone deployment.
 - Overhead
 - DEI training
 - Out of Office
 - Working from home for a while longer.
- Ben Raanan
 - 708168 - DHS/LRAUV Under-Ice
 - Docking development and analysis
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Tethys deployed for docking tests
 - Processing ROMs data from Santa Barbara for EcoHAB pre-deployment testing
 - 902102 - Multi-LRAUV Simulation Environment
 - Added tiled DEM to the simulation environment



-
- Acoustic tracking now working in the simulator
- Working to resolve issues with the science data interpolation
- Out of Office
 - 02/23-24
 - 04/4-7
 - 04/13-23
- Mike Risi
 - 200105 - Core Navigation Data - MDUC
 - Working with Doug on TCP serial interface to Digi ConnectPort terminal servers

- 901101 - Seafloor Mapping
 - Working on interface to Ventana GSS control system for ROV TRN
- 902208 - MiniROV Operations
 - Testing and tuning station keeping software in tank
- Paul Roberts
 - Out of Office
 - 4/2 - 4/9 (spring break san diego)
- Brent Roman
 - 706005 - eDNA Grass Carp Sandusky
 - Switched over from separate router to plugging cellular modem directly into ESPs ARM processor
 - 708165 - NOAA-MERHAB
 - Shipped Step a dongle so NOAA Fisheries can update their 2G ESP's gateway firmware
 - Before upcoming May deployment.
 - 901205 - SURF Center
 - Working toward enabling in-situ updates of ESP 3G's STM32 gateway microcontroller
 - Goal is to allow complete remote firmware updates of ESP
 - ESP 2G training course to start in mid-May
 - Rescued another old MacBook Pro from the dumpster
- Carlos Rueda
 - 901502 - Soundscape Research and Education
 - Various meetings, good paper prospects, etc.
 - 901513 - Targeted Sampling by Autonomous Underwater Vehicles
 - Based on commands provided by Tom, incorporating functions for commanding wave glider and sending out alerts.
 - 902009 - AUV User Experience Design
 - Meeting
 - 902101 - LRAUV Technology Development and Fleet Operations
 - TethysL: First end-to-end mission execution exercise, all the way from the DashUI to Galene! Lrauv-application makefile updated with enhanced and more efficient dispatch of TethysL missions. The TethysL system is now enabled globally on tethyshub for all users.
 - Overhead
 - IE meeting
 - Out of Office
 - May 16-18: vacation
- Karen Salamy
 - 300057 - Mooring Maintenance
 - Weekly maintenance and data download verification checks.
 - 901101 - Seafloor Mapping
 - Spent a lot of time updating and adding functionality to the SMDB Dash UI this past week. I was able to add leaflet measure, scale, mouse position, zoom, layer toggling of various maps including Google and ESRI options. Currently working to show tooltips (layer properties) in a more human readable format for users (putting on my regex hat after not using it for a while!).
 - Overhead
 - DEI ZOOM meeting last Thursday.
 - Continue to look into the various missions on the EXPD that Rich flagged as those that will not load and blocked.
 - Looking into React JS for upcoming new Tethys Dash UI support as well as Vue and Quasar for other future UI architecture.

- Met with Jim Jeffers and the new Tethys Dash team on Zoom meeting today. Jim and I will connect after the week of April 4-8.
- Out of Office
 - April 4-8, Vacation
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - The [new framecapture system](#) worked well on last weeks WF cruise. Testing new framecapture system on the Rachel Carson
 - Met with Sony rep to discuss alternatives to Softron for 4k/BT.2020/HLG video encoding.
 - Updating [m3-quickstart](#) project to use [Postgresql](#) instead of [Derby](#).
 - 902002 - FathomNet
 - Preparing for upcoming FathomNet workshop on Thu and Fri
 - Merged and deployed [PR](#) to include Google Analytics in FathomNet
 - Integrated our new [WoRMS name server](#) into FathomNet's [REST API](#). That automatically makes it available on the website.
 - Met with the team to discuss deploying the ocean AI classification game on MBARI hardware.
 - Overhead
 - Upgrades to titan cluster computers changed enough things that the LTO Manager web app and the automated video disk space app stopped working. Those are fixed now.
- Alana Sherman