

Engineering Weekly Report 6/16/2022 - 6/23/2022

Executive Council Notes

-

Individual Activities

- Michael Anderson
- Kevin Barnard
 - 500055 - VARS, M3/RS, DSG
 - Wrote BoxJelly docs: docs.mbari.org/boxjelly
 - Several improvements
 - Ported to PyQt6 (6.3 non-LTS)
 - Better error handling
 - More settings
 - Began integration with Deep Sea AI database; currently working as read-only view
 - 701139 - ML Tracking
 - Wrapped up May 24-25 analysis work to hand off
- Francois Cazenave
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Monitored buoy
 - Prepared recovery
 - Recovered buoy
 - 902106 - Niobicon-Based AUV Docking Development
 - Worked on proposal for 2023
 - Meet with WHOI group and made plans for new mooring
 - Overhead
 - Working on Sinkers proposal
- Danelle Cline
 - Out of Office
 - Marine Imaging workshop 3 - 7 Oct 2022 CEST Brest, France (GMT+2)
- Duane Edgington
 - 901502 - Soundscape Research and Education
 - Spinning up on Alexa Skill task
 - 901603 - Video TAG
 - Attended two 1 day workshops at CVPR (virtual) June19, 20.
 - Searching for relevant papers at CVPR, to read and watch presentations.
 - 902005 - VARS Annotation Assistance
 - Continued testing Batch processing pipeline with Danelle.
 - Proposal discussions.
 - Overhead
 - Proposal discussions.
 - Engr monthly meeting
 - Reviewed paper for *Frontiers in Marine Science*
 - Out of Office
 - CVPR June 19 - June 24 2022 (virtual) CDT (GMT-5)

- Registered for Monterey Data Conference, Aug 29 - Sep 1 2022
 - Marine Imaging workshop 3 - 7 Oct 2022 CEST Brest, France (GMT+2)
 - Vacation October 21-23 (Southern California)
- Jon Erickson
- Kevin Gomes
 - 200105 - Core Navigation Data - MDUC
 - Proposal discussions
 - Meeting with Tika+ vendors for new ship
 - 300057 - Mooring Maintenance
 - Changes to SSDS metadata for M1 test deployment and stitching together deployment to test all parts of the pipeline
 - 300062 - DMO Support - Doc Ricketts
 - Scoping work for DiveLog app upgrade
 - 300070 - DMO Support - Ventana
 - Scoping work for DiveLog app upgrade
 - 300079 - DMO Support - Rachel Carson
 - Documentation updates for the start/stop GSS logger
 - 901009 - CANON
 - Expanding ODSS satellite layer coverage to help with Yui's current WF cruise
 - Changed WaveGlider acoustic tracking to point to the spray glider instead of LRAUV (had to move some data since it was incorrect in the tracking DB).
 - More work on the [Windy layers](#) and trying to see if we can integrate them into the ODSS.
 - 901915 - Improving the Impact of MBARI's Data
 - Working on web templates for various 'data' pages for the new web site.
 - 902012 - Telepresence on MBARI Research Vessels
 - Trying to get some bug fixes and features implemented before next WF cruise where it will be tested for the first time (maybe).
 - Preparing some slide for project update on Monday
 - 902202 - MBARI Cloud Integration Exploration
 - More control tower work on the AWS side (takes VPC configuration)
 - Overhead
 - Hours planning for various projects
 - Project proposal discussions.
 - Out of Office
 - 8/1-8/5: Vacation
 - 10/3-10/6: Vacation
- Andy Hamilton
- Kent Headley
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Roughed in LCM input modules for messages used by the ROV simulation and Ocean Imaging tool sled. Next step is to refine the processing and get TRN running with the ROV simulator; Rob M is organizing a meeting this week.
 - Added Octree utility and other updates and bugfixes to libtrnav
 - Working on updates to help with packaging/installing TRN
 - 901101 - Seafloor Mapping
 - Worked with Sentry team to resolve build/integration issues related to TRN
 - The first Sentry Dive at Axial ran Monday with mbtrnpp collecting TRN data, initial results are encouraging. In addition to nice maps, returned with TRN converging consistently for much of the 19h mission.

- Second Sentry Dive started early Wed a.m.; Sentry will be accepting and logging TRN position offset estimates, but not yet using it for navigation.
 - Various updates and code reviews for MB-system TRN
- Overhead
 - Attended LRAUV Simulation team meeting
 - Hiring, budget, proposals
 - SRSC meeting
- Out of Office
 - July 14-29 (tentative, vacation)
- Rich Henthorn
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - CoNav dev
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Buoy system monitoring
 - Recovery this week
 - 901618 - Pelagic-Benthic Coupling and the Carbon Cycle
 - Weekly meeting
 - Proposal inputs
 - Overhead
 - Engineering meeting
 - Out of Office
 - July 4 - 18, WFH and vacation, email, phone, zoom OK
 - Aug 30 - Sep 16, vacation in Germany, email only
 - Sep 22 - 29, Sta.M Cruise (final scheduled cruise of the Western Flyer)
- Brett Hobson
- Scott Jensen
 - Out of Office
 - June 9-10 for UofW/APL visit
 - June 20-22 Ohio recovery
 - June 27-July 8 vacation
- Brent Jones
- Chad Kegy
- Brian Kieft
 - 300082 - DMO Support - Wave Glider
 - Supporting Yui's PIE deployment with Tiny/Hotspot tracking for coincident PCO2 sampling
 - 708168 - DHS/LRAUV Under-Ice
 - Met with team to discuss operations in arctic. Ice is not looking great right now but proceeding with flights.
 - Assisted with ATT sim card acquisition
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Deployed Tethys yesterday and recovered today following docking tests.
 - 902102 - Multi-LRAUV Simulation Environment
 - Built ignition/application and ran my first sim. Very cool!
 - Met with team today to discuss transition plan and progress.
 - 902106 - Niobicon-Based AUV Docking Development
 - Fixed compass serial port issue on dock
 - Out of Office
 - 07/02 - 07/12 (HST - vacation)
 - 07/15 - 07/26 (AKDT)
 - 08/01 - 09/03 (EDT)

- 09/12 - 09/28 (GMT+2 - vacation)
- Denis Klimov
 - 902004 - Planktivore
 - Organizing parts and fastener, and updating assembly jig with 100% fill bases
 - Overhead
 - Power Buoy was recovered for maintenance, this means we have the opportunity to inspect IFCB condition mid-deployment. IFCB was removed, disassembled, and powered up on a test stand. We are evaluating the condition of remote intake assembly and looking if biofouling protection is adequate or could use an improvement.
- Diana LaScala-Gruenewald
- Eric Martin
- Thom Maughan
 - 901009 - CANON
 - Debugging startup switch issue when started on battery without wall supply
 - Nomachine setup for Xavier NX.
 - 902004 - Planktivore
 - Draft of phase 1 proposal
 - Researching lower power hardware options capable of openCV + nvme + global shutter imager.
 - Out of Office
 - Jun 12 - 22? Arrived Colorado 6/15. Remote work from Colorado for elder care.
 - Jul 6 - 19 Camping, Bear Lake Monster Swim
- Mike McCann
 - 901009 - CANON
 - Made video of LRAUV sampling and posted to sb_ecohab_2022 Slack channel
 - 901101 - Seafloor Mapping
 - Gave Jenny feedback via GitHub Issues for use in the 2023 proposal
 - [Implementing Selenium testing](#) – having frustrations making it work in Github Actions
 - 901221 - Midwater Time Series
 - Met with Rob to discuss this year's progress and next year's proposal needs
 - 901910 - Plankton Taxonomic Groups from AUVs
 - Identified problem with Gulper metadata in STOQS – it needs better than minute temporal precision that is provided from the ODV formatted files
 - 901915 - Improving the Impact of MBARI's Data
 - Provided some paragraphs for Kevin to use
 - Overhead
 - Github Copilot stopped working and paid the \$100 annual fee – it's quite the crutch now!
 - Out of Office
 - 27 June - 18 July: Vacation
 - 19-22 July: ESIP Summer Meeting, Pittsburg, PA
 - 25-29 July: Vacation
- Rob McEwen
- Paul McGill
 - 701145 - Penguin Hotspots
 - Tested AOS sensors after potting and all are okay.
 - 901618 - Pelagic-Benthic Coupling and the Carbon Cycle
 - Helping to prep Macro Camera for next week's deployment.
 - Got Laser Measure code running on my computer, learning how it works.
 - 901700 - Acoustical Ocean Ecology
 - Got AOS sensor software to output transducer angles instead of accelerometer counts.
 - Overhead

- Still dealing with FCC licensing issues for microwave system.
- Out of Office
 - Out last Thu for medical appointments.
- Tom O'Reilly
- Doug Pargett
 - Out of Office
 - Back from off-grid vacation
 - Spending a week helping my parents (Sick leave)
- Ben Raanan
- Mike Risi
 - Out of Office
 - May 5 - vacation
 - May 9-10 - vacation
 - June 2-8 - OI cruise
 - June 10-14 - vacation
 - June 20-22 - vacation
 - August 8-9 - out of office
- Paul Roberts
- Brent Roman
 - 708146 - Saildrone
 - Surveyor still in port at Alameda
 - 708165 - NOAA-MERHAB
 - They have one more sample and not much battery energy left
 - 901205 - SURF Center
 - Finally Switched from 32-bit to 64-bit Linux
 - Choose embedded Open Source OS "RIOT" for new ESP Sampler development
 - Playing with STM32 Nucleo dev board
 - Convinced Function to remove the divot from the cartridge backing plate
 - 901913 - WetWiFi
 - Postponed next test until November/December
 - Out of Office
 - July 21 through roughly August 21
- Carlos Rueda
 - 901009 - CANON
 - Various MXM related tasks in the core code itself as well as in the associated provider implementations for TethysDash and the (shore-side) wave glider front tracking software.
 - 901101 - Seafloor Mapping
 - Per exchange with Dave, will be testing the dockerized MB-System on a Windows loaner and report back (a German user has reported issues on that target).
 - 901502 - Soundscape Research and Education
 - Group meeting
 - 902005 - VARS Annotation Assistance
 - Group meeting
 - Brian has merged [PR](#) that addresses [this issue](#) in Cthulhu. Thanks Brian.
 - 902009 - AUV User Experience Design
 - Further (slack) exchanges with Jim J. (Sumo Creations) and also met with Karen to address some questions from Jim. Hopefully these are also being addressed in my revisions and additions to the TethysDash API documentation. I also started including an [AsyncAPI definition](#) (still preliminary) to cover the asynchronous messaging aspects supported by TethysDash.
 - 902101 - LRAUV Technology Development and Fleet Operations

- Dash system is now 4.11.1, with fixes related to the display of waypoints for TethysL missions.
 - LRAUV: investigation of issue with failed submission of TethysL missions (noted by WHOI a few days ago and again by us during Tethys deployment. This looked like a tricky regression but then we diagnosed the problem (a “little” aspect I overlooked) and I just submitted a PR with a fix. (Thanks Brian!)
 - Toward future modernization of the TethysDash backend, continued with code cleanup (still lots more that can be done). See also the Quarkus bullet below.
 - Some hassle trying to use a newer GraalVM version for new TethysL binary releases. Linux and macOS are now in [good shape](#) again, but the Windows one is again turning problematic.
- Overhead
 - Technology exploration continues, and I’m now focusing on [Quarkus](#) as a very promising option, in particular in the context of my modernization goals for TethysDash (which is java based).
 - Project update attendance; Engineering mtg.
 - DEI: review of various materials.
- Out of Office
 - July 5–8: vacation
- Karen Salamy
 - Out of Office
 - Planning vacation: June 16, June 20-24.
- Brian Schlining
 - 902005 - VARS Annotation Assistance
 - Continuing to work on new vcr/localization remote protocol and reference implementation.
 - Attempted to run a merge/sync operation between many localizations staged in a temporary database into the main VARS database. The attempt failed due to a database deadlock from a large SQL query (executed by a researcher). Follow up is waiting on the testing database on Fog to be synchronized with the production database. (It appears that the sync operation hasn’t been working for a few months, IS has been notified)
 - Out of Office
 - Brian is (still) working at home taking care of a daughter with COVID.
 - Jul 7-8 Vacation
 - Jul 25-28 Vacation
- Alana Sherman
 - 901618 - Pelagic-Benthic Coupling and the Carbon Cycle
 - Doing final prep of camera tripod for next weeks deployment. Collecting gear to bring on ship.
 - 902208 - MiniROV Operations
 - Working on budgets for 2023
 - Overhead
 - Strategic roadmap meeting to go over next steps