

Engineering Weekly Report 2/23/2023 - 3/2/2023

Executive Council Notes

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Individual Activities

- Michael Anderson
- Kevin Barnard
 - Out of Office
 - 2/27-3/10 CSIRO visit
- Francois Cazenave
 - 901405 - PowerBuoy Development
 - Worked with Conway on taking buoy apart and welding new lifting eye and making repair
 - Assembled new tether with PE jacket and shipped to TMT
 - Design saddle for buoy on dock
 - 902106 - Niobicon-Based AUV Docking Development
 - Supervising fabrication of buoy components
 - Assembled buoy cable and tested electronics
 - 902204 - Scalable Robotics
 - Obtained 3D model of ROV
 - 902306 - SINKER
 - Attended meeting and helped with housing design
- Danelle Cline
 - Out of Office
 - Few sick days
 - Tentative out of office vacation Jan 25, 26, 27
- Duane Edgington
- Jon Erickson
 - 901405 - PowerBuoy Development
 - UW turbine MBARI mods (solids and prints)
 - 901805 - Coastal Biogeochemical Sensing Program
 - Another design change to accomodate Pave Tech seals.
 - 902004 - Planktivore
 - Fitting the circuit boards in an already existing housing.
- Kevin Gomes
 - 200105 - Core Navigation Data - MDUC
 - More reverse archeological digging.
 - Lot's more reverse archeology and documenting in detail [here](#)
 - 300079 - DMO Divisional Support - Rachel Carson
 - Carson due back Wednesday (currently scheduled) so will work on bringing systems back up after that.
 - 706008 - READI-net
 - Two-day workshop to kickoff project and gather requirements for sampler hardware and UI software.
 - 901009 - CANON

- Meeting
 - Docker container fails after build with Dockerfile so I am thinking I will move the ODSS application itself to git checkout install directly to manage updates easier and to match boat installations.
 - Looks like Carson will be returning Wednesday so I might work on upgrading the ODSS out there starting later this week.
- Overhead
 - Moving offices Friday (2/24)
 - Attended Steve's Memorial
 - Helping import external LRAUV related Slack channels into our workspace.
- Out of Office
 - Mar 30, 31: Vacation
 - Aug 28-Sep 12: Vacation
- Andy Hamilton
- Kent Headley
 - 300078 - DMO Divisional Support - AUV
 - Updated several modules, including latest TRN simulator code
 - Met w/ Rich and Rob to discuss workflow and potential activities
 - 902204 - Scalable Robotics
 - Working on LCM message type definitions w/ team
 - Testing Gemini sonar driver
 - Overhead
 - RRE interview
 - SE-DA screening session, application review
 - Travel requests
 - Misc admin
 - Out of Office
 - medical (3/10 a.m.)
- Rich Henthorn
 - 300078 - DMO Divisional Support - AUV
 - Kickoff meeting of sorts with topics including merging and standardizing modules, simulation testing, repo branching model
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Rock visit with discussion of TRN progress on LRAUV, CoNav options
 - 901405 - PowerBuoy Development
 - sim_pblog - logger in buoy simulation
 - 902305 - Event Detection using the Sedimentation Event Sensor
 - Spare stack dev
 - Out of Office
 - Mar 13 - 16: Vacation (MWF), WFH (TuTh), PDT
 - June 29 - July 10: Vacation
- Brett Hobson
- Scott Jensen
 - 706008 - READI-net
 - Lots of work and attention to getting the prototype demonstration device working. It worked!
 - Big national meeting yesterday was very insightful into project goals.
 - 901405 - PowerBuoy Development
 - Current measurement error was located and fixed.
 - Battery ESR and Cell voltage can now be read.
 - Much struggles with trying to read back configuraqtion data from the BMS parts.

- Brent Jones
 - 901805 - Coastal Biogeochemical Sensing Program
 - Flying spray 34
 - Prepping spray 29
 - Testing code on WG tiny for upcoming tracking mission
 - 902004 - Planktivore
 - meeting
- Chad Key
 - 901101 - Seafloor Mapping
 - Finished plot checking of Trigger Test Board
 - Followed up on and outstanding order from Focal
 - 901206 - Coastal Profiling Float
 - Finally found the i2c issue on the new LHE board, testing continuing
 - 901704.99 - Benthic Observing System Maintenance
 - Submitted the PDU to the techs to replace the step-up transformer
 - 901700 - Acoustic Ecology
 - Paragon Battery Upgrades
 - Working with Battery Safety Committee for design (safety) approval of
 - Putting together a detailed item price list for future order
 - Hydrophone Pole
 - Waiting for mechanical fitting of new shielded cable
 - Overhead
 - Updating my collaborator's agreement with Cal Poly
- Brian Kieft
 - 300082 - DMO Divisional Support - Wave Glider
 - Loaded hotspot 3 and troubleshoot issues with tracking code.
 - Prepping for PIE work next week
 - 901009 - CANON
 - Fixed missing data issue for water samplers
 - Working on architecture for intraLRAUV acomm's ingest into dash from hotspot.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Debugging tethys oil leak, water ingress, and LCB reset
 - 902102 - Multi-LRAUV Simulation Environment
 - Got simulator computer talking with backseat computer and LCM running demonstrated by joystick control in the sim with real hardware in the loop.
 - Got TRN ingest going on the backseat computer from the sim. Next step is ingesting the estimated positions from the backseat to the application and using them to navigate.
 - Out of Office
 - 3/6 - 3/8
 - 3/29 - 3/31
- Denis Klimov
 - 300083 - DMO Divisional Support - LRAUV
 - LRAUV battery pack testing setup was overhauled back into operation. We are to test 2 battery packs after mechanics are rebuilt due to cracking frames resulting from age and field deployments. Also, training Quinn Shemet on using the test setup.
 - 902004 - Planktivore
 - We are making good progress reinforcing and straightening out the Fluume mechanical and piping structures, both as it turned out, sagged under the load in initial tests (with Aaron). Once reinforcement/ straightening are successful, we are to proceed with a final assembly of lifters, table, optical breadboards, and the aquarium

- Eric Martin
 - 901101 - Seafloor Mapping
 - Gutting old Reson systems
 - 901206 - Coastal Profiling Float
 - Tankside tests wrapping up.
 - At sea next week
 - 901405 - PowerBuoy Development
 - Evaluating UPS board, may need a reset button.
 - 901911 - ROVVR
 - Selecting interns
 - 902204 - Scalable Robotics
 - MiniROV
 - OakD Software
 - GiM Project management
 - RRE hiring, last interview was today.
 - Overhead
 - MiniROV Job listing review
 - SSE zoom interviews.
- Thom Maughan
 - 300083 - DMO Divisional Support - LRAUV
 - Met with Erik to discuss battery control / monitor board, get schematics. Git access to the Dorado code.
 - Picked up LRAUV backplane from Indtec. Charger is due first week in March
 - 901009 - CANON
 - Meeting with Kobun to plan out eDNA work
 - 901805 - Coastal Biogeochemical Sensing Program
 - Bug fix affecting nanoFET sampling has passed a multi-day lab test.
 - 902004 - Planktivore
 - All pcb's in fab / assembly for strobe and camera control.
 - Bringup on Camera control started
 - Overhead
 - Xojo app for Ventana FO controller. DJ is moving forward with can closure sooner than expected. Next window for test is in August. I will test on the loaner board in prep.
 - Out of Office
 - Take son to school day (3/8, 4/5), work at home am, on campus 1-4
 - week vacation possibly in March.
- Mike McCann
 - 200105 - Core Navigation Data - MDUC
 - "By dive" edited ROV navigation data now being loaded into EXPD CleanRovnavData tables
 - The tracking table (CleanRovNavLoad) can be queried by consumers to know when to update
 - Linda is making great progress on editing, <https://emdb.shore.mbari.org/> looks much better!
 - 300083 - DMO Divisional Support - LRAUV
 - Following BK's recovery of January daphne files reloaded sippers for [stoqs_lrauv_jan2023](#)
 - 901009 - CANON
 - Attending CANON meetings remotely
 - Increasing memory of stoqs.mbari.org to support external Parquet data export users
 - Overhead
 - Updated internal web calendar to synchronize future R/V *David Packard* Zimbra events
 - Meetings with capstone students on mbgrd2gltf project for MB-System
 - Out of Office

- March 2-3, 7, 9 Vacation days
- Rob McEwen
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Meeting later today (Tues) on porting the flight code and simulation to Linux
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Worked through proportional navigation algorithm
 - Reviewing docking runs from December.
 - Looking for clues on how to reduce homing error.
 - Discovered that vehicle does an unplanned short-range dock attempt after every undock.
 - 901405 - Wave Energy Buoy
 - May need to translate inertias or added inertias to the center of mass. Meeting later today.
- Paul McGill
 - 901618 - Pelagic-Benthic Coupling
 - Disassembled Camera Tripods for storage, removed used lithium batts.
 - Submitted abstract for ASLO Mallorca.
 - Continuing to process Rover fluorescence data.
 - Tracked down missing syntactic float packs which are probably in Castroville.
 - 901904 - Deep-Sea Coral Community Observatory
 - Attended kickoff meeting for the year where we rearranged some deployment dates.
 - 902304 - Piscivore Cam
 - Wrote code for TinyZero microcontroller to control Piscavore camera.
 - Bench-tested controller and camera with George and adjusted time constants to make things work.
- Tom O'Reilly
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Refining post-flight processing procedures for rgb images acquired during flights on 2/16. Scheduled meeting with regional collaborators from NOAA, UCSC. Planning more over-ocean flights in next two weeks, weather permitting.
 - Overhead
 - Abstract accepted for Oceans 2023: 'Ocean-based carbon dioxide removal: Role of standards and best practices'. Working with Yui Takeshita and other collaborators on paper text.
- Mike Risi
 - 200105 - Core Navigation Data - MDUC
 - Working on framework modifications to accommodate the single LCM type.
 - Modifying framework to eliminate direct LCM dependencies and make it more middle-ware agnostic.
 - Continuing to develop the Doc Ricketts navproc interface processes for SMD visit in March.
 - 300062 - DMO Divisional Support - Doc Ricketts
 - Started looking into AccuPositioner pan and tilt protocol.
 - 300070 - DMO Divisional Support - Ventana
 - Working with DJ on Octans upgrade for Ventana, will start driver development when the protocol selection has been finalized.
 - 901101 - Seafloor Mapping
 - Worked with Chad to diagnose and hopefully fixed the lockup problem with the trigger board microcontroller.
 - Working with Chad and James on trigger board 2.0 prototype.
 - 902204 - Scalable Robotics
 - Working with Kent, Giancarlo, Sebastian and Bastian to standardize CoMPAS LCM types and make them more compatible with ROS2.

- Refactored lcm-mola, flir-mola and frame-grabber to accommodate LCM type changes as necessary.
 - Meetings and interviews for CoMPAS RRE position.
 - Out of Office
 - Out of office on Fridays
- Paul Roberts
 - 701164 - SnoCam+ Research
 - Advising on sensor and lens selection for prototype system
 - 901809 - Deep Sea Bioinspiration
 - Moore Foundation (EyeRIS) project wrapup, data wrangling, RIMS software testing
 - Coordination on MiniROV deployments
 - 902001 - Ventata 4k camera
 - Meetings and timelines for new corrector optic delivery
 - 902004 - Planktivore
 - Planning meetings for april deployments
 - 902204 - Scalable Robotics
 - Sprint 3 : flat port housing fabrication and testing
 - Coordination on MiniROV deployments
 - 902306 - SINKER
 - Wiper concept and camera / lens testing
 - Out of Office
 - Working remote 2/27 and 2/28
- Brent Roman
 - Out of Office
 - March 8-15 visiting my dad in Sarasota, FL
- Carlos Rueda
 - 901502 - Passive Acoustic Sensing
 - Working on pypam-based data processing. Segment concatenation for timekeeping.
 - Providing some input re summer intern applications.
 - Group mtg.
 - 901513 - Targeted Sampling by AUVs
 - Team exchanges re preparations for having SMC-2 ready for deployment. No dates yet.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - TethysL [work](#).
 - Some more discussion and progress with Tom, re Brian's request to somehow reflect acoustic communications on the dash, but still some pending unclear aspects.
 - 902204 - Scalable Robotics
 - Meetings.
- Karen Salamy
 - 200103 - Core CTD Data - MDUC
 - Began working on updating the rovctd data sets for the last few ROV dives of 2022 into the EXPD for Ed. P.
 - Yesterday, I encountered a recurring issue of crontab not locating the forever @reboot script to restart the rovctdqplot servlets. I enabled a crontab email and text system to alert me every time coredat8 is rebooted so that I can check the plot page for Ed. I plan to speak with Peter about figuring out how to fix these reboot issues in the near future.
 - 300057 - Mooring Maintenance
 - Checked data downloads and integrity.
 - 901101 - Seafloor Mapping

- Spoke briefly with Jenny P. about her ideas on improving the SMDB dash when she returns in 2 months from her mapping cruise on the Falcor.
- 902101 - LRAUV Technology Development and Fleet Operations
 - Spinning up on taking over Dash UI responsibilities from SUMO creations.
 - Held a ZOOM meeting with Jim J. on initial steps to do
 - Steps include building the UI from scratch from the Github site, hash out any install issues and fix them, and integrate the dash on a local server (okeanids?) for hosting and set up a JIRA bug tracking site for the project team.
 - I have also spent time getting acquainted with the current dash to best understand users' needs with the UI. In addition, I set up transects for the upcoming EcoHAB missions for the team, updated the team using the Slack channel and pinned it for future referral.
- Overhead
 - Mike M. has asked me to begin updating the precruise to include the R/V David Packard (dpkd).
 - I have sent an email to both Mike K. and Matt to ask about policy changes between the wfly and the dpkd for the precruise.
 - I plan to have it up-to-date by summer. The first dpkd cruise is scheduled for July
- Out of Office
 - Now in the office 3 days/week M, T, Th..
- Brian Schlining
 - Out of Office
 - Feb 27 - Mar 3 - Vacation (Backpacking Haleakala so no internet)
 - Jul 28 - Aug 6 - Vacation
- Alana Sherman
 - 901618 - Pelagic-Benthic Coupling
 - Labeled and prepped the Smith Camera Tripods for storage
 - 901904 - Deep-Sea Coral Community Observatory
 - Met and set up schedule for recovery and macro camera turnaround
 - 902204 - Scalable Robotics
 - Interview
 - 902208 - MiniROV Support
 - Found a couple of the ground faults that were detected during last tank tests
 - Cleaning up all the cabling in the top side rack
 - Still trying to figure out Overlay issues
 - Overhead
 - Working on revised job description for Mini position
- George Stern