

Engineering Weekly Report 1/5/2023 - 1/12/2023

Executive Council Notes

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Individual Activities

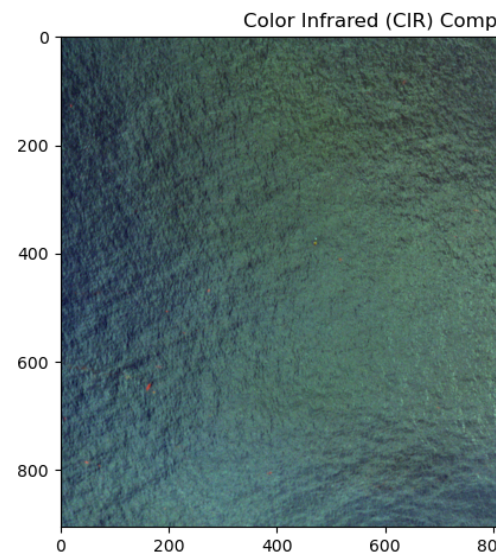
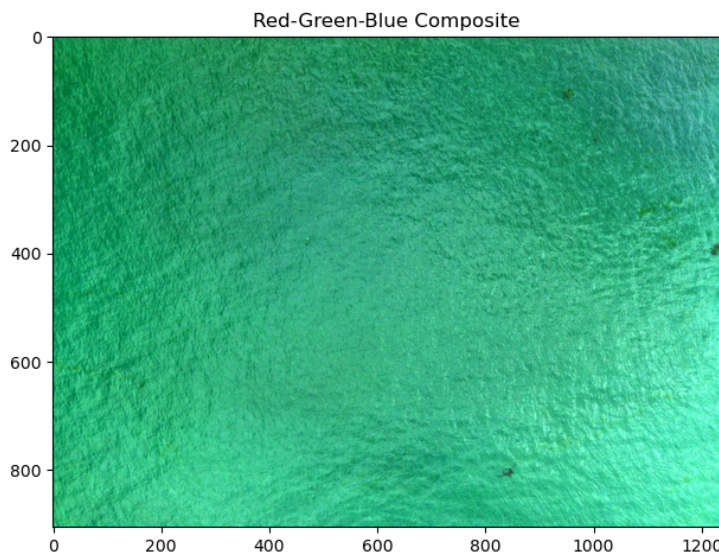
- Michael Anderson
- Kevin Barnard
 - 500055 - VARS, M3/RS, DSG
 - Backup for Brian on vacation
 - 902002 - FathomNet
 - Investigated PM tools: GitHub projects, Notion, misc. gantt integrations
 - 902204 - Scalable Robotics
 - Kickoff meeting; established sub-projects, milestones, project organization
 - Wrote lcmlog-py library for reading/writing LCM logs
 - Spliced images into LCM logs for GIM
 - Out of Office
 - COVID: 1/3-1/12
- Francois Cazenave
- Danelle Cline
- Duane Edgington
 - 500055 - VARS, M3/RS, DSG
 - AWS work on AWS secrets manager, cost explorer
 - Meeting scheduled for Thursday Jan 12 with Ted Zamborsky and an AWS EFS specialist regarding our EFS daily charges and use with SageMaker Studio and other AWS services.
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - Project planning work with Danelle and Kevin B.
 - Overhead
 - Finished first module of Coursera AWS certification. Started on #2 (Security)
- Jon Erickson
 - 901805 - Coastal Biogeochemical Sensing Program
 - Finished design and drawings. Yet to be reviewed/approved.
 - 902004 - Planktivore
 - Chassis assembly. Optics assembly.
 - Overhead
 - Helping Paul M. recover the Squirty sediment trap design.
- Kevin Gomes
 - 200105 - Core Navigation Data - MDUC
 - Reworked diagram and documentation on data pathways for planning for David Packard. Meeting tomorrow to discuss.
 - Trying to procure some hardware to build a simulation environment. Turns out to be NOT cheap.
 - 300070 - DMO Divisional Support - Ventana
 - Some small support before the ship left for the yard
 - Overhead
 - Performance reviews

- Cleaning out some old stuff to plan for 2023 projects.
- Andy Hamilton
- Kent Headley
 - 902204 - Scalable Robotics
 - attended kickoff meeting
 - Overhead
 - Hiring meetings
 - Annual Review Prep
 - Open Robotics catchup : acquired by Intrinsic (Alphabet/Google)
 - Out of Office
 - Weather related issues 1/8 ~ 1/16 (late/WFH/out)
 - medical (1/25 afternoon)
- Rich Henthorn
 - Out of Office
 - Jan 23 - 27: WFH, vacation, all-access, PDT
 - Feb 13 - 17: WFH, vacation, all-access, PDT
- Brett Hobson
- Scott Jensen
 - 708178 - Marine E Development NAV
 - Motor spinning using encoder but encoder alignment is unresolved
 - DQ2210 - READI-net
 - Continued work detailing rotating arm for puck manipulation
 - Out of Office
 - 6 - 10 January, 2023 (got to get used to writing that)
- Brent Jones
 - 901112 - Monterey Bay Time Series
 - Improving WaveGlider tracking algorithm by instituting a running mean filter
 - 901805 - Coastal Biogeochemical Sensing Program
 - Working on getting another Wire Walker pH setup to Humboldt State
 - Continued work on integrating Pico pH into Spray
- Chad Kacy
- Brian Kieft
 - 708143 - CA Current HABS
 - Met with team to plan for spring EcoHAB
 - 901513 - Targeted Sampling by AUVs
 - Assisting Yanwu with simulation environment
 - Reviewed patch mapping paper
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Waterlink DVL initial bringup and wiring
 - Discretionary funds request for subcontractor working on Benthos MMP integration
 - Delivering new MF modem to Elecia for testing. Old one has a broken RX card. Will see if it can be repaired.
 - 902102 - Multi-LRAUV Simulation Environment
 - Simulation fix on local omen machine
 - Further missions commands have been rolled out to test. Made doc to capture end user input.
 - Overhead
 - Investigating DAT sim repo for tech transfer to Benthos.
 - Debugged what appears to be a failed NAND chip on proxima's SOM at WHOI
 - Out of Office
 - 01/17-01/20 (MST/CST)

■ 01/31-02/03 (MST)

- Denis Klimov
- Eric Martin
 - 901101 - Seafloor Mapping
 - Lab cleanup
 - Met with Chad regarding 2023 PCB work.
 - 901206 - Coastal Profiling Float
 - Polishing files generated by new sleep on anchor.
 - 902204 - Scalable Robotics
 - RRE Hiring reviews of submitted materials
 - Setup PM boards, managing tasks across projects
 - Overhead
 - Telepresence paper final draft for submission to ACM's CSCW is almost done.
 - Out of Office
 - Tuesday
- Thom Maughan
 - Out of Office
 - Jan 4 - 8 CES
- Mike McCann
 - 200105 - Core Navigation Data - MDUC
 - Created complete set of edited.txt ROV nav files organized by dive
 - Met with Lonny & Linda to discuss next steps in the nav editing project
 - 500055 - VARS, M3/RS, DSG
 - Provided input the data workflow documentation that Megan is writing
 - 901009 - CANON
 - Switched to more reliable server for the ESRI Ocean Basemap in STOQS
 - 901910 - Plankton Taxonomic Groups from AUVs
 - Implemented flash counts in the Python translation of Monique's proxy code in auv-python
 - Out of Office
 - Jan 18-20 Vacation
- Rob McEwen
- Paul McGill
 - 300070 - DMO Divisional Support - Ventana
 - Worked with Jose on Ground Fault Channel Isolator board, found a bug, wrote a software patch, have yet to test.
 - 901618 - Pelagic-Benthic Coupling
 - Tested damaged laser on Smith Macro Camera and ordered parts to repair.
 - 902305 - Event Detection using the Sedimentation Event Sensor
 - Worked with Rich H. to find reason for fail on previous deployment, found a bad Hall sensor cable and noted other anomalies that I'm investigating further.
 - Overhead
 - Replaced batteries in UPS for (non-IS supported) DeepDark computer, tested okay.
- Tom O'Reilly
 - 300082 - DMO Divisional Support - Wave Glider
 - Working with Chris Wahl to prepare our new SMC-2 "hotspot" payload for deployment. The SMC-2 interfaces to the Wave Glider and WGMS are different from the older SMC-1 payloads, and are not well-documented or supported yet by Liquid Robotics. We've had to "reverse engineer" functions to control the SMC-2 payload from shore.
 - 901101 - Seafloor Mapping

- Modified existing MB-System 'C' functions to be more robust against memory segmentation-fault errors.
- 901513 - Targeted Sampling by AUVs
 - Worked with Rueda to test Wave Glider front-tracking application on the SMC-2 hotspot payload. Waiting for completion of hotspot Iridium antenna before first sea-trials of application.
- 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - I'm evaluating multispectral camera data from Trinity VTOL drone over-ocean surveys conducted just offshore of MBARI. The [Micasense RedEdge Dual-MX](#) camera simultaneously acquires data in 10 bands in the visible and near-infrared that closely match VIIRS, Landsat, and MODIS bands. These bands are very useful for detecting chlorophyll and other plant pigments. We believe the multispectral data can complement higher spatial resolution images from the Sony RX1R2 RGB camera in our biosurvey science application. I.e. we may be able to correlate the presence of jellies and other organisms seen in high-resolution RGB images with the presence of chlorophyll detected in lower-resolution multispectral images of the same area.
 - For example the data below were acquired by the multispectral camera a few hundred meters offshore of MBARI at 60 meters altitude, have a ground-sampled distance (GSD) of 4 cm per pixel, and image width of 52 meters (1280 pixels). The image on the left is a composite of red, green and blue visible band reflectance, similar to what is seen with the naked eye; the right-hand image is a false-color infrared composite (CIR) image of red, green, and near-infrared bands. Several low-reflectance dark patches ~1 meter across are visible in the left image; the same patches are visible in the color infrared composite, showing high infrared reflectance (bright red). These patches are most likely floating kelp, with high near IR reflectance due to chlorophyll and other pigments.



- We will take delivery of a Trinity VTOL in the next few days, and will conduct more RedEdge multispectral surveys in the near future, along with higher spatial resolution RGB surveys of the same area with the Sony RX1R2 RGB payload.

- Mike Risi
- Paul Roberts
 - 901809 - Deep Sea Bioinspiration
 - Lightfield camera validation for upcoming paper
 - Testing new multicamera interface electronics on MiniROV
 - Testing new lightfield compute hardware
 - 901904.99 - Corral Camera System
 - Completion of multispectral LED array schematics and board fab
 - 902001 - Ventata 4k camera
 - Finalizing laser connectors
 - Starting fabrication of revised chassis parts for new corrector optics
 - 902204 - Scalable Robotics

- Kickoff meeting and planning for 2023
- 902306 - SINKER
 - Kickoff meeting and planning for 2023
- Out of Office
 - Jan 4 - 8 CES
- Brent Roman
 - 901205 - ESP SURF Center
 - Coded improvement to 3G Lysate Recovery procedure suggested by Preston
 - Helping Nadia characterize higher torque stepper motors
 - Found and fixed some file permissions issues in our ESP Linux “distro”
 - 901913 - Wet Wifi
 - Received OceanComms H150 modems back after faulty SDcard replaced
 - DQ2210 - READI-net
 - Continuing discussion of various comms and processing options including Certus 100
 - Out of Office
 - March 8-15 visiting my dad in Sarasota, FL
- Carlos Rueda
 - Overhead
 - Providing performance review input
 - Out of Office
 - January 2–12: vacation.
- Karen Salamy
 - 200103 - Core CTD Data - MDUC
 - Meeting with Kevin B. tomorrow (via ZOOM) to discuss ROV O2 knowledge transfer.
 - 300057 - Mooring Maintenance
 - Checking in on the Mooring - lost the ADCP data downloads last week. Staying tuned to being of help in any way possible to get the ADCP back online and data downloads working again.
 - 901101 - Seafloor Mapping
 - Made a few edits to the Dash.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Building up Dash with the newest code to test.
 - Overhead
 - Worked with Lonny L. to upload the Aug-Sep 2022 MiniROV Arctic Cruise Data into the EXPD.
 - Out of Office
 - Will be returning into the office 3 days/week starting next week (storms and floods allowing).
 - Feb 9-17: vacation/father's estate finalizations.
- Brian Schlining
 - Out of Office
 - Jan 3 - 11 - Vacation
 - Feb 27 - Mar 3 - Vacation (Backpacking Haleakala so not internet)
- Alana Sherman
 - 902208 - MiniROV Support
 - Putting together top-side control center for MiniROV Fulmar days with Dale. We are rewiring the system after its return from the Arctic.
 - Overhead
 - Working on office space plans for new hires
 - Starting performance review preparations
 - Out of Office
 - On vacation Jan 1-9

