

Engineering Weekly Report 3/21/2024 - 3/28/2024

<https://docs.mbari.org/internal/projects/Engineering/Weeklies/2024/>

Executive Council Notes

-

Individual Activities

- Michael Anderson
 - 705102 - Open Wave-Energy Control System Development
 - Reviewed Sandia paper before publication
 - Resurrected script to parse wave spotter buoy logs
 - 901910 - Plankton Taxonomic Groups from AUVs
 - Updated plankton biolum proxies Irauv backseat
 - Fixed issue with some proxies being 0 when others are NaN
 - Finished packaging for offline install for other vehicles
 - Enabled replay of past data (lead to bugfix for Blob type data in LRAUV codebase: see Irauv section below)
 - Updated plankton ML proxies Irauv backseat
 - Finished packaging for offline install for other vehicles
 - Updated to use new particulate backscatter variables (see Irauv section below)
 - Enabled replay of past data
 - Updated plankton ML proxies STOQS processing
 - Trained new models using new threshold on biolum proxies
 - Using transfer function to convert Irauv sensor data to look like Dorado sensor data to use Dorado ML model on Irauv data
 - Reprocessing all past Irauv logs to include particulate backscatter variables
 - 902101 - LRAUV Technology Development
 - Fixed long-standing issue with unserializing Blob type variables in netCDF4 format (typos in bitsizes for converting data) which resulted in alternating zeros and real data in output (but missing half the data)
 - Reprocessed all netCDF4 Irauv logs
 - Added particulate-only backscattering variables for realtime and logged data. The only scattering variables in Irauv logs and slate to date were volume and combined particulate+water backscatter
 - Resurrected multi-vehicle simulation in gazebo sim
 - Added intervehicle acommms data in gazebo sim
 - Added / tuned mass-only control for Slow-Yo missions
 - Mass-only control was able to salvage a recent mission (transects at depth) unrelated to slowyo when elevator broke
 - 902405 - Precision Control Technologies
 - Enabled multi-vehicle sim to recreate Portuguese Ledge circling
 - 3 vehicles circling at 120 degrees apart
 - Two vehicles pinging third with DAT and sending that ping data + TRN data to the third vehicle via acommms

- Kevin Barnard
 - 500055 - VARS, M3/RS, DSG
 - Investigated interruption in VARS services on Mar 21, 2024
 - Suggested potential approaches to rapid non-framegrabbed frame-level annotation → bounding box annotation workflow
 - 701165 - OVAI Phase II
 - Conducted 5 screening interviews for OVAI MLOps Research Engineer position
 - Helped implement authentication & authorization in CMS API
 - Implemented ROI cropping functions & endpoints in CMS API
 - 901809 - Deep Sea Bioinspiration
 - DeepSTARia paper accepted to Frontiers in Marine Science
 - Gave feedback for DeepSTARia paper proofs
 - 902204 - Scalable Robotics
 - Validated GIM point cloud accumulator and point cloud manager
- Francois Cazenave
- Danelle Cline
 - Out of Office
 - Medical leave March 18-April 22
- Duane Edgington
 - 500055 - VARS, M3/RS, DSG
 - Processed inference on four dives for Lonny and Kris, deepsea-ai ecsprocess. Fixed permissions bug on Doris. Need to debug a video submission which was processed multiple times.
 - Walked Lonny and Kris through “do it yourself” session on submitting inference jobs from Doris.
 - Generated CheatSheet for Lonny and Kris to augment the documentation and README.
 - 901103 - Biodiversity & Biooptics
 - Checked in with Rob S. on accessing clustered midwater detections.
 - 901502 - Ocean Soundscape
 - Participated in intern selection process
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Generated extraction of Kelp images, localizations and metadata for Steve H. / NOAA visitors
 - 902004 - Planktivore
 - Plan to check in with Thom regarding data management.
 - 902111 - Carbon Flux Ecology
 - Continued testing/fixes for [aidata](#)
 - Overhead
 - Invited to be peer reviewer for 2024 Computer Vision for Analysis of Underwater Imagery (CVAUI) workshop to be held at [ICPR](#) Dec 1 - 5 2024.
 - Out of Office
 - March 28 - April 12, 2024. Vacation UTC+3
 - April 12 - 21, 2024. EGU UTC+2
 - June 10 - 21, 2024. Vacation UTC-8
 - Oct 21 - Nov 8, 2024. Vacation UTC+1
- Jon Erickson
- Kevin Gomes
 - Out of Office
 - March 18-21: Vacation
 - March 25-29: Data Council Conference: Austin, TX
- Andy Hamilton
- Kent Headley

- 3000?? - DMO Support - Ventana
 - Worked with Thom and DJ and measured Wago stack delay
- 901101 - Seafloor Mapping
 - issued pull request for M3 sonar serial ingest
 - Meeting w/ Sentry team re Axial ops, posted TRN integration package
- 902204 - Scalable Robotics
 - Sprint 31 meeting
- Overhead
 - hiring: committee meeting, chatted with applicant, reviewed applications
attended interview with OVAI/SE-EAD applicant
 - Meeting with Cawthron, Andy re wire-crawler project using Niobicon
 - attended director's dialog
- Rich Henthorn
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Testing V3 controller comms on the instrument
 - Developing onboard image processing and event detection
 - 902405 - Precision Control Technologies
 - CoNav simulation on LRAUV
 - Out of Office
 - Mar 25: med
 - Mar 27: After 2:30 PM
 - May 28 - 30: Vacation
 - July 3 - 11: Vacation and WFH
 - Aug 26 - Sep 11: Vacation
- Brett Hobson
- Irene Hu
 - 901805 - Coastal Biogeochemical Sensing Program
 - mpHox - MSC2 prototype wiring harness specified; made by EEtechs
 - Troubleshoot mpHox rB setup (watchdog caused problems with JTAG); set up and delivered to Thom
 - Helping Thom investigate methods to program FPGA configurator EEPROM on MMS digital board
 - Set up NC-nanofet and Lioncap, prelim checks and delivered to Johnson lab to test
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Finished updating boards, sent out for layout
 - Ported previous code to bitbucket
 - Starting to write ROV firmware
 - Overhead
 - Host speaker 3/27
 - Out of Office
 - May 3-15: Taiwan
- Scott Jensen
 - Out of Office
 - April 5-9 vacation
 - June 17-21 vacation
 - July 18-23 vacation
 - July 24-29 vacation
- Brent Jones
 - 901112 - Monterey Bay Time Series
 - Submitted new EPOS4 pcb to fab

- Attempted swap of new 5G SIM card in WW modem failed. Diagnosing.
- 901502 - Ocean Soundscape
 - Received NOAA SEC exhibit system. Swapped out old RP3 for a new RP4. Documented Dave's wiring. Removed/upgraded other features
 - Went to SC NOAA SEC and installed/tested exhibit
- 902004 - Planktivore
 - Meetings. Hot wash of last week's I2MAP mission
- 902311 - Power Generation Onboard Wire Walker
 - Documenting calculations for ReGen, ball screw, and pressure case
 - Preparing for design review
- Chad Key
 - Out of Office
 - Jan. 22- Potential Jury Duty
 - Out of office on Fridays
- Brian Kieft
 - Out of Office
 - 03/12-14 (MST)
 - 04/04-04/10 (CST)
 - 04/15-04/19 (GMT+8)
 - 06/03-06/18 (GMT+1)
- Denis Klimov
- Eric Martin
 - Out of Office
 - Vacation last week (3/11-3/15)
 - Vacation 4/4-4/9
- Thom Maughan
 - Out of Office
 - Apr 4 - 10 Eclipse Mexico, Cuatro Cienegas and stromatalites
- Mike McCann
 - 500055 - VARS, M3/RS, DSG
 - Wrote add_nav4dlogr_records.py script to add missing ROV nav data to the logr files
 - Replaced 202406[4-5]rovctdlogr.dat.gz and 202406[4-5]shipnavlogr.dat.gz files
 - 901101 - Seafloor Mapping
 - Spent too much time on "Too many open files" problem in reading from SeafloorMapping share
 - Preparing to execute production load with more relaxed search for Figure*.cmd files
 - 901910 - Plankton Taxonomic Groups from AUVs
 - Reprocessing LRAUV data for STOQS following Michael's fixes of ecopuck data in the .nc4 files
 - Out of Office
 - 29 March - Vacation
- Rob McEwen
- Paul McGill
 - 701147.99 - MARS IV Node Upgrade
 - Had meeting with UW and we decided to respin the power supply boards due to multiple issues
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Participated in UAV flight at MBARI to show NOAA visitors our operation
 - 902401 - Geo-Sense
 - Ordered all of the SubConn connectors and cable assemblies
 - Emailed Sintela about heat management of new DAS and they will simulate different orientations
 - Inspected glass and Ti spheres with Aaron M and Aaron S to make sure that they'll work for us

- Overhead
 - Participated in SeismoSands cruise on Tue to help Charlie Paull test deployment of seismometers
 - Attended Director's Dialog
- Out of Office
 - On vacation March 27, returning to MBARI April 15
- Enoch Nicholson
 - 706008 - READI-Net
 - Started mocking up frame 80-20 frame design
 - 901007 - Benthic Biology & Ecology
 - Group check in and planning for July deployment
 - Tested flush and stir pumps for leaks. None found on first pass
 - 902306 - SINKER
 - Tank testing & deployment preparation
 - Battery PCB layout support
 - Out of Office
 - April 5-10 Vacation (Available via Slack & Email)
 - April 14-18 IEEE Oceans (Available via Slack & Email)
 - April 19-23 Vacation (Unavailable)
 - September 19-24 Vacation (Available via Slack & Email)
- Tom O'Reilly
- Mike Risi
 - Out of Office
 - Offsite on Tuesday and Friday
 - January 16 - January 19, 2024
 - February 22, 2024
 - March 4 - March 8, 2024
 - May 20 - May 24, 2024
- Paul Roberts
 - 901809 - Deep Sea Bioinspiration
 - Ordering parts for SCUBA-EyeRIS
 - Testing DeepSTARia for April dive series
 - 902001 - Ventana 4k Camera
 - Assembly and testing of MxD
 - 902004 - Planktivore
 - Data ingest into RIMS
 - 902306 - SINKER
 - Testing revised wiper mechanism
 - Test deployment on Ventana
 - Out of Office
 - March 30-April 7
 - April 14 April 20
- Brent Roman
- Carlos Rueda
 - 901502 - Ocean Soundscape
 - Reviewed ~40 summer intern applications. Then discussion/selection with John R & Duane E.
 - 902101 - LRAUV Technology Development
 - As usual, various exchanges during vehicle deployments.
 - TethysL [3.9.82](#).
 - TethysDash backend now [4.62.4](#), including fix to a regression that affected dash5.

- Continue TethysDash backend modernization. Focusing on replacing the servlet-based API endpoints with Jakarta restful web services.
 - Started adding copyright headers to dash-related repos I manage.
- Out of Office
 - Mar 25 - out sick
- Karen Salamy
 - 200103 - Core CTD Data - MDUC
 - Still awaiting updates from Ed P. There have been over 50 dives since his last update (over a 6 month period). I know he is busy on other projects but will try to connect with him again next week.
 - 300057 - Mooring Maintenance
 - Weekly data download and server / script check.
 - 902101 - LRAUV Technology Development
 - Began working again with SUMO creations coder Jim Jeffers, he in more of a support role.
 - Have attempted to speak with Brian the last week but he is very busy preparing for the next deployments at sea.
 - 902403 - Expedition DB Modern
 - Chatted with Mike M. about various tests and test UIs for the team to date.
 - Overhead
 - Spent a lot of time working on various aspects of React 18 and how to better work within the Dash5 code as I learn the language.
 - Out of Office
 - **April 4th - Trip with daughter while on Spring Break**
 - On-campus 3 days/week (**T, W, TH**).
- Brian Schlining
- Alana Sherman
 - Out of Office
 - Out Mon-Weds with sick kids
- George Stern
- Johann Voigtlander
 - 902208 - Mini ROV Operations
 - Resolved ground fault issue with the port forward thruster - did maintenance on that thruster while it was open
 - Installed VR can on the vehicle and ballasted
 - Conducted tests in the tank for the new buttons on the main console
 - Sent over the new focal box to be built