

Engineering Weekly Report 8/3/2023 - 8/10/2023

<https://docs.mbari.org/internal/projects/Engineering/Weeklies/2023/>

Executive Council Notes

- The Soundscape project reached an important milestone, processing over 144 TB of raw data covering 6 years of almost continuous recording data in just under 9 hours in AWS. Daily quantitative metrics for global comparisons across soundscape were generated at a 1-minute resolution. This data is now shared freely with the community in self-describing netCDF files.

The cost to do this work in AWS was \$108.

Much gratitude to the Soundscape team, especially John Ryan, Carlos Rueda, Danelle Cline, and Duane Edgington, for the teamwork that made this possible. Interested in learning more? Please ask John or any member of the team about how we created an optimized workflow using the AWS Batch Fargate service.

- Danelle Cline gave an invited talk to an enthusiastic summer camp of STEM achievers at a program hosted by [Mercy College](#). This group of early explorers had some interesting questions, including can we hear the Hawaii volcano eruptions from our hydrophone (we haven't yet), and invited Danelle to join their expedition the next day to deploy a drone and small ROV. It was a ton of fun and a great opportunity to talk to a mostly underrepresented group about the cool things we do here with AI.

Individual Activities

- Michael Anderson
- Kevin Barnard
 - Out of Office
 - Vacation August 7-11
- Francois Cazenave
 - 901221 - Midwater Time Series
 - Went out to observe AUV towing
 - Brainstorming on towing options for I2map AUV
 - 901405 - PowerBuoy Development
 - Monitoring buoy
 - 902106 - Niobicon-Based AUV Docking Development
 - Preparations for buoy deployment
 - 902204 - Scalable Robotics
 - Designing mini ROV sled
 - Reviewed PAul's design
- Danelle Cline
 - 500055 - VARS, M3/RS, DSG.
 - Working on a rapid prototype of a video ML endpoint; hoping to finish by early next week
 - Working on cluster similarity sort in vars-gridview to accelerate ML proposal corrections
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - Deployed database to VM mantis and moved image data to nginx server
 - 901502 - Passive Acoustic Sensing

- Final millidecade netCDFs jobs for 2017-2023 in AWS. Further reduction in cost to 5 cents per day by running larger batch jobs. Wow!
 - Blue whale D check-in with Kanoe
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Deployed database to VM mantis and moved image data to nginx server
 - Need to do a doodle poll to schedule discussion on labeling with the team
 - 902204 - Scalable Robotics
 - Discussions with Giancarlo and Eric about scoping tasks for next sprint starting August 17th.
 - Overhead
 - Summer intern mentoring
 - Out of Office
 - SoundCoop Workshop, Boulder, CO October 24-25 2023
- Duane Edgington
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - Wrapping up summer internship Tarun Sharma
 - Out of Office
 - Oct 16-18 2023. Pytorch conference. SFO (in person). PDT (UTC-7)
- Jon Erickson
- Kevin Gomes
 - 901009 - CANON
 - Trying to expand the data extraction for the WaveGlider to other reports, but the API from Liquid does not return any data from the reports we care about. Have a ticket into Liquid support.
 - 901915 - Improving MBARI Data Impact
 - Working on demo/prototype of NodeJS application that can serve GraphQL and REST APIs that can be protected by OAuth/OpenIDC security that can plug into our Azure AD system.
 - Overhead
 - Proposal review
 - MiniROV/EE hiring activity
 - Out of Office
 - Aug 28-Sep 12: Vacation
- Andy Hamilton
- Kent Headley
 - 500055 - VARS, M3/RS, DSG
 - Libbmagic linux build ready to test, pending access
 - 901101 - Seafloor Mapping
 - Prepping TRN on mapping vehicle sonars
 - Overhead
 - AOSE hire: screening (Peter Marsh), interview (Ethan Park)
 - SE-EAD hire: planning
 - Misc admin
- Rich Henthorn
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - LRAUV sim with TRN
 - Backseat computer needs backseat helper
 - 902305 - Event Detection using the Sedimentation Event Sensor
 - Acoustic modem quotes
 - Sediment trap triggering
 - SES data reviews
 - Overhead
 - Rec-Com

- Out of Office
 - Sept 5 - 7: Remote work, PDT
- Brett Hobson
- Irene Hu
- Scott Jensen
 - 706008 - READI-net
 - Supporting development of firmware and testing
 - Meetings around website design
 - 708178 - Marine E Development NAV
 - Preparing requirements document for battery system
 - 901205 - ESP SURF Center
 - Support of filtering tests
 - 902106 - Niobicon-Based AUV Docking Development
 - Conducted an experiment to determine just how capacitive the docking rod is. It does present a challenge to high speed communications.
 - Overhead
 - EE-tech hiring committee, process and review applicants
 - Out of Office
 - Vacation Aug 28- sept 1
- Brent Jones
- Chad Keczy
 - Out of Office
 - Out of office on Fridays
- Brian Kieft
 - 706007 Great Lakes
 - Packed and launched Makai/Triton from Charleroi Michigan last Friday. Was on call to Monday. Back on Thursday.
 - Out of Office
 - 08/02 - 08/06 (EDT)
 - 08/06 - 08/09 (PDT)
 - 08/14 - 08/18 (PDT)
 - 08/16 - 08/19 (EDT) alternate
 - 09/26 - 10/04 (EDT)
- Denis Klimov
 - 901112 - Monterey Bay Time Series
 - Repaired pumps are received from McLane but the rest of the order for rotary valve, needle, and filter cartridges is still back-ordered.
 - 902004 - Planktivore
 - We are moving Fluume assembly and associated parts to ESB.
 - Overhead
 - The overhaul of the lab B232 is well underway. This week, facilities are starting removal of the countertops from the right side of the lab which is to be reused in the left side in the laser curtain area. The 30" countertops on the right are going to be replaced with a deeper 36" countertop allowing placement of larger equipment such as LPKF router and pick-and-place machine.
- Eric Martin
 - 901101 - Seafloor Mapping
 - Call to finalize quote for phase 3 and prelim phase 4 with 3DatDepth. We are moving forward with a final proposal so that we can continue progress with the vendor.
 - Reviewing new board stack for the Interface Can.
 - 901206 - Coastal Profiling Float

- Feature additions for power numbers
- 901911 - ROVVR
 - Intern advisement, he has made great progress in integrating depth maps into the VR experience.
- 902204 - Scalable Robotics
 - MiniROV Sled wiring
- Out of Office
 - Missed Monday due to flight delays on my return from vacation.
- Thom Maughan
 - 300083 - DMO Divisional Support - LRAUV
 - Updated the backplane processor to add 8KB additional flash - nice to have some code space again.
 - Draft serial protocol reviewed with Quinn and implemented. Will broaden the review and iterate.
 - Backplane hardware bringup and drivers are work in progress. Basic functions are working.
 - Runtime battery status messages implemented
 - In progress on charger daughter board. Working with Erik to understand features. Starting charge test on 28 batteries.
 - 901009 - CANON
 - Prep for oceanomics server setup discussion with bio-informatics workers. Meeting delayed a week.
 - 901713 - Nearshore FOCE
 - Support for potential use of MpHOX in cold room aquaria.
 - 901805 - Coastal Biogeochemical Sensing Program
 - Irene's updated NanoFET is built and we are getting ready for software handoff to Scripps for Spray2 development.
 - 902004 - Planktivore
 - Pressure test of Planktivore V1 and V2 on 9 Aug.
 - Working thru supplier issues with payload clam shell nose cone. Stan is sending pictures and has handed it off to the painter.
 - Aiming for a mid-September planktivore deployment
 - Overhead
 - Intern presentation feedback
 - Xojo for DJ's mux board
 - Out of Office
 - Vacation Sep 27 - Oct 2 Ohio
 - Vacation Oct 12 - 18 Nevada Eclipse
- Mike McCann
 - Out of Office
 - 31 July: Sick day
 - 7-11 August: SIGGRAPH in LA
 - 12-20 September: Vacation
 - 9-11 October: Web3D 2023 Conference
- Rob McEwen
 - Out of Office
 - First two weeks of August.
- Paul McGill
 - 300070 - DMO Divisional Support - Ventana
 - Finally finished calculations to account for weird behavior of Ventana's new ground-fault scanner. Hopefully we can get it working during the upcoming shore period.
 - 701147 - MARS O&M IV

- Worked on budget with Knute to get more money to UW subaward.
- 901700 - Acoustical Ocean Ecology
 - Helping Brett with Faraday shield for latest Simrad sonar payload build.
- 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Prepared for two deployments at Terrace Point but got fogged out both times.
- 902304 - Piscivore Cam
 - Found and fixed more bugs in v1.2.0 of camera controller code, ran a multi-day test, and loaded code onto both cameras for this week's two-camera deployment on Pontus.
- 902305 - Event Detection using the Sedimentation Event Sensor
 - Reviewed documentation for newest McLane sediment trap controller to see how we might control it with our own remote trigger.
- Overhead
 - Working on reviving Snappy upgrade to get Irene up to speed on project. I'm currently fighting with the Microchip XC8 compiler, which is throwing errors on code generated by MPLAB.
- Enoch Nicholson
 - 706008 - READI-net
 - Purchased system components
 - Submitted drawings to the shop
 - 902306 - SINKER
 - Met with wiper vendor
 - Hydro wiper prototyping
 - Out of Office
 - AAUS Class
- Tom O'Reilly
- Mike Risi
 - 200105 - Core Navigation Data - MDUC
 - Finished conversion of Doc Ricketts interface code to Navproc Framework.
 - Starting NMEA GPS and digiquartz drivers to Navproc Framework.
 - 300062 - DMO Divisional Support - Doc Ricketts
 - Working on interface for new Accupositioner pan and tilt units.
 - Starting to test the interface for IMENCO down looking pan and tilt camera.
 - 901101 - Seafloor Mapping
 - Worked on LASS Trigger Board 2.0 bring up with Chad.
 - Finished I/O and trigger changes LASS Trigger Board 2.0 for October cruise.
 - WiSSL 2.0 design review
 - Out of Office
 - Out of office on Fridays
 - May 30 - June 6
- Paul Roberts
- Brent Roman
 - Out of Office
 - May 26 - June 6
- Carlos Rueda
 - Out of Office
 - July 21: sick
 - August 8–28: vacation (out of the country)
- Karen Salamy
 - Out of Office
 - On-campus 3 days/week (**M, T, Th**).
- Brian Schlining

- 500055 - VARS, M3/RS, DSG
 - Iron Mountain Video Imports
 - Meeting with Visceral to discuss deep-sea guide redesign
 - Investigating time [misalignments](#) between ffmpeg and sharktopoda.
 - Prototyping ideas for new VARS query web application
- DQ2209 - Ocean AI 2
 - Meeting to review [QSCP](#) “user journey”
- Out of Office
 - Jul 28 - Aug 6 - Vacation



- Aug 14 - 17 - Vacation
 - Aug 21 - 22 - Vacation
- Alana Sherman
 - 902208 - MiniROV Support
 - Put together preliminary ship schedule for the Mini in 2024
 - Overhead
 - Proposal review all last week
 - Tracked down questions and details for labor and ship time conflicts
 - Hiring:
 - Review DMO director candidates and had kickoff meeting
 - Zoom interview and in person for ASOE position
 - Scheduling for MiniROV reference and zoom screening
- George Stern