

Engineering Weekly Report 7/28/2022 - 8/4/2022

Executive Council Notes

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Individual Activities

- Michael Anderson
- Kevin Barnard
 - 200103 - Core CTD Data - MDUC
 - Generated CTD plots for Doc Ricketts 1444-1447
 - 902204 - Scalable Marine Robotics Foundations
 - Finished initial stereo motion estimation framework
 - Rewrote chessboard corner correspondence clustering code
 - Started evaluating Kimera-VIO as alternative framework for visual-inertial SLAM
 - Out of Office
 - Marine Imaging workshop Oct 3 - 7 2022 CEST Brest, France (GMT+2)
- Francois Cazenave
- Danelle Cline
 - 901502 - Soundscape Research and Education
 - Setup shoutcast Windows streaming service for restart on reboot on shoutcast.mbari.org
 - Team meeting
 - AthenaDB monthly query running as expected, but daily bump in S3 cost remains a mystery
 - 901603 - Video TAG
 - Reviewing 2023 proposals
 - 902005 - VARS Annotation Assistance
 - Finished PR5 <https://bitbucket.org/mbari/vaa-track-pipeline/pull-requests/5> a minor performance improvement to batch process faster.
 - Merged PR13 <https://bitbucket.org/mbari/deepsea-ai-backend/pull-requests/13> a series of performance improvements to the CDK stack to speed-up tear up/down. Cloud processing time now at 15-40 minutes per 15 minute video with minimal overhead for spin up/down of EC2 GPU instances.
 - No team meeting this week :(
 - Overhead
 - Coordination on logistics with ITD for upcoming code.org interview and location shoot.
 - Coordination with RoboFlow on community demonstration.
 - Out of Office
 - Marine Imaging workshop 3 - 7 Oct 2022 CEST Brest, France (GMT+2)
- Duane Edgington
 - 901502 - Soundscape Research and Education
 - Completed test and release to production (public) [Amazon Alexa Skill MBARI Ocean Soundscape](#) update with [current live stream link](#) and updated DynamoDB user log.
 - New Alexa skill developer console development environment implemented including Alexa-hosted code and test.
 - Tested against Alexa Echo Dot device; production test and monitoring via second Alexa Echo Dot device.

- John Ryan tested the production release via Alexa Echo Show device.
 - 901603 - Video TAG
 - Reading proposals
 - 901618 - Pelagic-Benthic Coupling
 - Project update meeting with Paul McGill
 - 902005 - VARS Annotation Assistance
 - Conference call and working session with Ted Zamborsky, AWS, on EFS charges and SageMaker Studio
 - Continued work with intern Manuel Gozzi, who presents Weds August 10.
 - Continued testing updates to the batch processing pipeline.
 - Out of Office
 - Registered for Monterey Data Conference, Aug 29 - Sep 1 2022 PDT.
 - Vacation (international) Sept 12 - Oct 1 2022
 - Marine Imaging workshop Oct 3 - 7 2022 CEST Brest, France (GMT+2)
 - Vacation (international) Oct 9 - 19 2022
 - Vacation October 21-23 2022 (Southern California)
- Jon Erickson
 - 701145 - Penguin Hotspots
 - All the parts for the EK-80/gimbal/REMUS have been delivered and installed.
 - 800139 - EyeRIS (Remote Imaging System)
 - Received the last of the 1500m camera case parts. Need to be Q.C.'d.
 - 901805 - Coastal Biogeochemical Sensing Program
 - Finished the top level design for the pico-pH-sub sensor tests.
 - 901809 - Deep Sea Bioinspiration
 - Started the MultiCam interface can design.
- Kevin Gomes
 - Out of Office
 - Several sick days (Th,F,M)
 - 8/1-8/5: Vacation
 - 10/3-10/6: Vacation
- Andy Hamilton
- Kent Headley
 - 300057 - Mooring Maintenance
 - Helping to troubleshoot GPS issues
 - 902204 - Scalable Marine Robotics Foundations
 - Resolved some build issues with SDK examples (thanks to Bastian M for the assist!)
 - Overhead
 - Proposal review
 - Hiring
 - Misc admin
- Rich Henthorn
 - Out of Office
 - July 4 - 18, WFH and vacation, email/phone/zoom, mostly available so contact encouraged
 - 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
 - 901205 - SURF Center
 - Brass board development
 - 901805 - Coastal Biogeochemical Sensing Program

- nanoFET check out
 - 902106 - Niobicon-Based AUV Docking Development
 - Meeting about next steps
 - DQ2113 - Tidal Turbine
 - Work toward report completion
 - Out of Office
 - July 25- 29 Vacation
- Brent Jones
 - 901009 - CANON
 - Continued processing WW data and diagnosing failures
 - 901805 - Coastal Biogeochemical Sensing Program
 - Recovered Spray 34. Teaching Yui lab people how to offload and process data
 - Overhead
 - Designing Inspired Energy battery pack for M1 cell telemetry package
 - Out of Office
 - Sick Leave due to Covid exposure
- Chad Keczy
- Brian Kieft
 - 708168 - DHS/LRAUV Under-Ice



- - Out of Office
 - 07/31 - 08/11 (EDT) USGS
 - 08/28 - 08/31 (EDT) USGS
 - 09/12 - 09/28 (GMT+2 - vacation)
- Denis Klimov
- Eric Martin
 - Out of Office
 - July 1-31
- Thom Maughan
 - 901009 - CANON
 - Xavier NX and basestack
 - Backup battery design
 - 901805 - Coastal Biogeochemical Sensing Program
 - Suggested using glass electrode (half cell) with solid state Ag'AgCL electrode. Not likely due to previous ISFET investment. Carbon labs are looking at another ISFET vendor.
 - Nanofet software
 - 902004 - Planktivore
 - Wakestr, smart power supply for power reduction.
 - Overhead

- Responded to request to clear out Planktivore project from Rock Lab. Requested lab space. Moved some of the supplies to Castroville, the rest crowded into new office.
- Out of Office
 - 2week Vacation postponed until sometime in August.
- Mike McCann
 - 901009 - CANON
 - Fixed STOQS functional tests and brought all STOQS modules up to date
 - Overhead
 - Plowed through a month's worth of email that accumulated during vacation
 - Scoping meeting for Core ROV Nav project and use of <https://emdb.mbari.org>
- Rob McEwen
- Paul McGill
 - 701145 - Penguin Hotspots
 - Still dealing with sonar noise issues on REMUS vehicle. Adding a cap between computer ground and chassis has helped a lot but there are other problems.
 - 901618 - Pelagic-Benthic Coupling and the Carbon Cycle
 - Having problems with matrix algebra for Laser Measure calibration. Laser dots transformed into camera coordinate system don't make sense, but I'll find the error.
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Helped with Trinity flight over Moss Landing on Tue morning—all went well.
 - Working with Tom O. on analysis of flight images.
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Processing data from recent recovery of Coral Camera Tripod.
 - Preparing for turnaround and redeployment of both coral cameras.
 - Overhead
 - Reviewing Thom M's docs for Wakestr power controller.
- Tom O'Reilly
- Doug Pargett
- 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
 - July 19-20 - vacation
 - August 8-9 - out of office
- Paul Roberts
 - 800139 - EyeRIS (Remote Imaging System)
 - Completed revision of controller and battery pack for AyeRIS
 - Completed ingest of ROIs into RIMS on DeepRip, speed is ~ 5000 rois/s
 - 901809 - Deep Sea Bioinspiration
 - Solid model for multicamera interface can ready for review
 - Chassis wiring schematic for multicamera interface can is ready for review
 - Testing applications of DeepLabCut to midwater animal videos
 - 902001 - Ventana 4k camera
 - Optical design for improved corrector lens is completed
 - Submitted PO for second MxD camera housing to DSPL
 - Revised chassis parts to accommodate new corrector optics
- Brent Roman

- Out of Office
 - July 26 through roughly August 26
- Carlos Rueda
 - 901009 - CANON
 - Updates/adjustments in various MXM related components.
 - Started an internal MXM doc site: <https://docs.mbari.org/internal/mxm/>
 - 901502 - Soundscape Research and Education
 - Reviewing some pointers re ML models for orcas and software for click detection.
 - Group meeting.
 - 901513 - Targeted Sampling by Autonomous Underwater Vehicles
 - More preparations to run tracking software on the SMC-2. Added unit tests for data fetching (actual data retrieval) and basic tracking, which are passing OK on the SMC-2. Awaiting access to the ServerExec executable to be able to run commands.
 - 902009 - AUV User Experience Design
 - As part of future modernization of the TethysDash backend, capturing some considerations for an improved API, including possible exposure of a GraphQL endpoint.
 - 902102 - Multi-LRAUV Simulation Environment
 - The [mbari/lrauv-ignition-sim](#) DockerHub repo is now public again. Thanks again Tim P.
 - Overhead
 - Engineering meeting
 - Summer Internship presentation (Tim Player)
 - More technology exploration in the context of OpenAPI and GraphQL.
 - Minor maintenance task related to ESIP COR.
- Karen Salamy
 - Out of Office
 - Vacation: August 4-5; family visiting from out of town.
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - Finishing up a test implementation of the [new remote control protocol in vcr4j](#) in [jsharktopoda](#)
 - The usual Iron mountain ingest
 - 902005 - VARS Annotation Assistance
 - Created a new microservice, [beholder](#), for capture/caching images from videos. For ML workflows, this allows viewing localizations without having to store/manage thousands of images per video. API docs are at <http://singularity.shore.mbari.org:8088/docs/>
 - Integrated beholder with [raziel](#). Switched Raziell from using [Scalatra](#) to [Tapir](#) so that API docs can be automatically generated. API docs are at <http://nexus.shore.mbari.org:8400/docs/>
 - Overhead
 - Meeting with Core Nav team
 - Out of Office
 - 7/25 - 7/28 - Vacation
- Alana Sherman
 - Out of Office
 - On vacation 7/21-30