

Engineering Weekly Report 3/7/2024 - 3/14/2024

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

Executive Council Notes

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Individual Activities

- Michael Anderson
- Kevin Barnard
 - 902002 - FathomNet
 - Organized and prepared material for FathomNet workshop
 - 902204 - Scalable Robotics
 - Supported GIM WP2 validation efforts
 - Supported SLAM and camera calibration for Falkor too cruise
- Francois Cazenave
 - Out of Office
 - Out sick on Monday
- Danelle Cline
 - Out of Office
 - Medical leave March 18-April 22
- Duane Edgington
 - 500055 - VARS, M3/RS, DSG
 - Review metadata from training mbari401k (confusion matrix, localization distribution, class mAP50s, etc)
 - 901502 - Ocean Soundscape
 - Team meeting
 - Exploring PamGuard, [Arbimon](#) passive acoustic monitoring software packages with Orca detectors.
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
 - Working on Poster for EGU 2024 meeting with Melissa
 - Team meeting
 - Overhead
 - Review intern applicants by March 25.
 - 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
 - helping DJ with valve pack bench testing
 - Thanks to Thom for bridging while I was out
 - 902204 - Scalable Robotics
 - worked on serial IO support for M3 sonar
 - Overhead
 - catching up on application review
 - Out of Office
 - Mo 3/11 (out sick)
 - Th 3/21 (med)
- Rich Henthorn
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - V3 controller board installed in SES camera frame
 - Testing V3 controller with SES functions
 - 902401 - Geo-Sense
 - Weekly meeting
 - 902405 - Precision Control Technologies
 - Testing CoNav with local vehicle TRN onboard
 - Overhead
 - Engineering meeting
 - Out of Office
 - Mar 13: After 3 PM
 - Mar 18 - 21: Vacation and WFH
 - May 28 - 30: Vacation
 - July 3 - 11: Vacation and WFH
 - Aug 26 - Sep 11: Vacation
- Brett Hobson
- Irene Hu
 - 901805 - Coastal Biogeochemical Sensing Program
 - Various meetings
 - Help Thom with FPGA programming - cable mapping
 - mpHox - MSC cable mapping
 - List of parts to stock up on and their costs
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Continue fixing up schematic
 - 902305 - Event Detection Using the Sedimentation Event Sensor
 - Weekly meeting
 - Out of Office
 - March 13-22: regularly out of office in mornings
 - May 3-15: Taiwan
- Scott Jensen
 - 706008 - READI-Net
 - Implemented the software for the AC-coupled interrupters
 - 901205 - ESP SURF Center
 - Locating and gather items for upcoming deployments
 - Testing batteries
 - 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
 - EPOS pcb completed and sent for manufacture
 - Flying LRAUV Daphne
 - 902004 - Planktivore
 - meetings
 - 902311 - Power Generation Onboard Wire Walker
 - Initial ball screw design for piston was too small. Redoing with larger piston
- Chad Keczy
 - Out of Office
 - Jan. 22- Potential Jury Duty
 - Out of office on Fridays
- Brian Kieft
 - 300082 - DMO Support - Wave Glider
 - Piloted bioacc vehicle this past weekend
 - 300083 - DMO Support - LRAUV
 - Launched LRAUV daphne Monday for MBTS.
 - 901513 - Targeted Sampling by AUVs
 - Worked with Yanwu to tune buoyancy a bit for the next test at sea.
 - 902101 - LRAUV Technology Development
 - Did some more sim work for TRN data plumbing. Some issues came up and I'm working through it.
 - 902405 - Precision Control Technologies
 - Met with Steve/Rich/Michael to work on multi-vehicle (conav) simulation.
 - DQ2322 - Denmark Windfarm
 - Still awaiting spend approval. Things are starting to get pricey. Schedule risk is increasing.
 - Overhead
 - Wrapped pressure testing with Nature Conservancy. Launched WG with telemetry tow package testing for them on Monday.
 - Still working on getting Ivan's student access to MBARI network. Almost there...
 - 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
- Thom Maughan
 - 300070 - DMO Support - Ventana
 - Electrical testing of valvepack controller to investigate lag problem. Kent has the valve pack controller up and running, DJ has it setup with a valve on his bench and gave an overview of operations. There is a lag noticed between modbus tester app and wago stack, but this is likely not the problem as there is GreenSeas software controlling the valvepack on the vehicle.
 - 300083 - DMO Support - LRAUV
 - Working on task list to help coordinate work with Cole and Varsha.
 - Getting parts to build up another battery pack
 - 901805 - Coastal Biogeochemical Sensing Program

- GoBGC / SOCCOM ramp up to replace Luke. Meetings.
 - Working on duplicating Persistor programming environment (CodeWarrior etc.), Atmel Flex FPGA compile and programming, PIC18F programming.
 - Looking at implementation of FPGA and compatibility with MMS Analog board ADC. FPGA targets a different ADC than is used, but after datasheet compare, they are SPI sequence compatible.
 - Diff'ing sources and binaries to try and locate 'production' CF2 code
 - Meeting with Dana Swift and Aadu from UW. Very helpful in clarifying the functionality requested. UW will be providing an interface spec in the next couple weeks. Some changes in protocol and sequencing are ok (whew) as there are improvements we'd like to make.
- 902004 - Planktivore
 - Weekly meeting to cover Ahi+Planktivore v2 shadowing I2MAP on Mar 20.
 - LRAUV overview of watch standing for Jason and Sebastian. Many thanks to Quinn for the assist.
- Out of Office
 - Apr 4 - 10 Eclipse Mexico, Cuatro Cienegas and stromatalites
- Mike McCann
 - 901101 - Seafloor Mapping
 - Updated Docker builds for development work on M1/M2 Arm platforms
 - 901910 - Plankton Taxonomic Groups from AUVs
 - Working with Monique & Michael to figure out comparable backscatter and chl variables
 - 902403 - Expedition DB Modern
 - Got Selenium pytest testing to work for the home page in [expd-django](#)
 - Overhead
 - Processed survey Dorado389_2024_072_01_072_01
- Rob McEwen
- Paul McGill
- Enoch Nicholson
 - 706008 - READI-Net
 - Ordered some sample parts from send cut send
 - Ordered US Solid valves for evaluation.
 - 902306 - SINKER
 - Sinking Column hand calcs and CFD
 - New wiper mount design
 - 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
 - 200105 - Core Navigation - MDUC
 - Working on getting Procman Sheriff running on Ubuntu 22
 - Working with Kevin on navproc-dpkd deployment configuration
 - 300062 - DMO Support - Doc Ricketts
 - Working with Karen on pan and tilt configuration and setup on Ricketts
 - 300070 - DMO Support - Ventana
 - Worked with Andy to update lapbox firmware and get camera data reporting on Dataprobe
 - 901101 - Seafloor Mapping
 - Working on trigger board revC firmware changes when time permits

- 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
 - SCUBA-EyeRIS hardware development
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Fiber camera testing
 - Closeup lens testing
 - 902001 - Ventana 4k Camera
 - Final assembly and electronics testing
 - 902004 - Planktivore
 - Prep for March 18 deployment
 - 902204 - Scalable Robotics
 - Materials testing for aluminum tubes from Xometry
 - 902306 - SINKER
 - Revisions to sinking column brainstorming
 - Data management
 - Out of Office
 - March 30-April 7
 - April 14 April 20
- Brent Roman
- Carlos Rueda
 - 901009 - CANON
 - Updated dependencies for MXM services. In particular, they are now using the latest Quarkus (3.8.2).
 - 902101 - LRAUV Technology Development
 - Gave a brief [presentation about TethysL](#) in the engineering meeting.
 - With Quinn, some sleuthing regarding the effective execution of LRAUV simulators interacting with the dash backend. Some long pending LRAUV related aspects may finally be addressed.
 - TethysDash backend is now [4.62.2](#).
 - XML-to-TethysL [migrations](#) continue.
 - Overhead
 - Reviewed [CMS API spec](#) for Joost.
 - IE mtg
 - Out of Office
 - Mar 18 – Jury duty
- Karen Salamy
 - 200103 - Core CTD Data - MDUC
 - Still awaiting updates from ETP3.
 - 300057 - Mooring Maintenance
 - Weekly maintenance and monitoring of data downloads
 - 902403 - Expedition DB Modern
 - Looking at upgrade testing scenarios and stories.
 - Overhead
 - Returned from vacation and currently going through emails. I ended up not having Wifi access where I was staying.

- Worked with Kevin and Mike to determine why ROV CTD dive data was not properly transferring from the R/V Carson to shore.
 - Continuing online React 18+ course and applying lessons learned to some dash5 code. I highly recommend this class for anyone learning the latest version of React.
- Out of Office
 - **April 4th - Trip with daughter while on Spring Break**
 - Last minute Drs. appt. this AM in Watsonville.
 - On-campus 3 days/week (**T, W, TH**).
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - Provided builds of VARS Query for Mac CPUs against the new database.
(<http://m3.shore.mbari.org/apps/>)
 - Updated all ML [visualization tools](#) and [loaders](#) to accommodate prores/mov files. (Previously, everything was written just for h264/h265/mp4.)
 - Pushed ML proposals into VARS for [V4422](#), [V4465](#), and [V4394](#). V4394 is our first midwater analysis run!
 - Updating the [VARS KB app](#) build for the new database.
 - Updated the [image classification service](#) to the video lab's latest "mbari-401k" model. Also updated the service to the latest version of pytorch. You can try it out at <http://perceptron.shore.mbari.org:8080/>
 - Finally squashed some performance issues in [VARS Annotation](#) (v2.0.6) after the database migration and service upgrades.
 - Updated <http://m3.shore.mbari.org/> with the swagger-docs for services (if they have them).
 - 701165 - OVAI Phase II
 - Reviewed applicants for the open MLOps engineer position.
 - 902002 - FathomNet
 - Our team met with Angus Forbes for a demo of their "FathomGPT" app. It uses ChatGPT to try to turn English queries like "Find me images of Aurelia aurita" or "Generate a heatmap of all species in Monterey Bay" into dynamic queries of the FathomNet database and services.
 - 902404 - 5th Marine Imaging Workshop
 - Planning meetings.
- Alana Sherman
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Put together list of tasks for redeploying Smith tripods for Jim B. Going to bring the cameras back for a closer look.
 - 902208 - Mini ROV Operations
 - Checked in existing code to the git hub repo (with less problems than usual)
 - Updating LabView and will work on modifying code to change the mod bus calls
 - 902401 - Geo-Sense
 - Collected materials for Sintela in advance on meeting this week in London
 - More work on cables and connectors though no resolution
 - Found two missing Ti spheres..finally!! One will become the electronics housing for the system
 - 901205 - ESP/Readinet
 - Back on the board, went through state of the design with Scott
 - Put project into EDM
 - Working on a bunch of small details after meeting
 - Overhead
 - Helped on the tours for the Packard Foundation Board of Trustees
 - Out of Office
 - Vacation day Friday

- George Stern
 - 902204 - Scalable Robotics
 - Reverse engineering mola ESC interface
 - Identifying alternate SBCs and control architecture to reduce motor cmd latency
 - Mola upgrades/maintenance
 - 902304 - Piscivore Cam
 - Camera build support and testing
 - 902306 - SINKER
 - Working with Jose as battery pack design transitions to layout
- Johann Voigtlander
 - 902208 - Mini ROV Operations
 - Calibrated stereo cameras in the test tank with Paul R
 - Moved MiniROV logs from raid to atlas
 - Working with DJ to integrate 4DNAV into the control van
 - Solved latency issue in clump GUI
 - 902402 - CSEM
 - Organizing dates & flights to Kiel, Germany