

# Engineering Weekly Report 1/13/2022 - 1/20/2022

## Executive Council Notes

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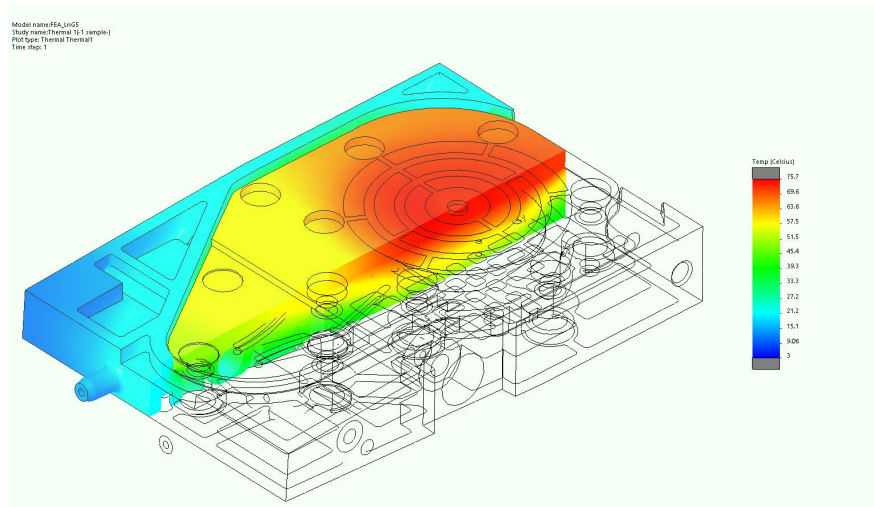
## Individual Activities

- Kevin Barnard
  - 902002 - FathomNet
    - Towards BoxJelly/Cthulhu integration: ported ZeroMQ localization controls to Python sharktopoda client library
    - Planned YOLOv5 inference rerun on existing framegrabs to estimate prediction confidence
    - Integrated vars-localize with Raziel for VARS login; vars-gridview is next
  - 902005 - VARS Annotation Assistance
    - Met with Danelle and Duane to review ML object track proposals in new web dashboard and BoxJelly
  - 902012 - Telepresence on MBARI Research Vessels
    - Met with the team to onboard, will assume some Vue development tasks from Kevin G.
    - Reviewed Google drive materials
- Francois Cazenave
  - 901405 - Wave-Energy Conversion for Oceanographic Applications
    - Sent the load cell for repair
  - 902106 - Niobicon-Based AUV Docking Development
    - Spec'd current meter for site survey
    - Assembled AUV dock and starting testing in the tank
- Danelle Cline
  - 500055 - VARS, M3/RS, DSG
    - Spun-up M3 stack per the quick start instructions  
<https://github.com/mbari-media-management/m3-quickstart>
  - 901502 - Soundscape Research and Education
    - Testing machine learning workflow on a subset from 2017 on 53K images for final approval from team, then final 6 year/2 million blue whale A detection proposals. This workflow uses AWSBatch to generate spectrograms and SageMaker BatchTransform Jobs to quickly run inference.
    - Project pitch to Cal Poly ML class
    - Our livestream audience is growing; the service has almost exceeded its 2500 THL limit in Shoutcast and may bump to the next tier automagically.
  - 902005 - VARS Annotation Assistance
    - Pushing hard to get a webapp up and running on deepsea-ai. This will be our ML dashboard with models, processing jobs, etc. all in one place. Vue3 front-end and postgres db backend design. Hope to get some help from Carlos to take it further.
    - Finished bulk loader to quickly load machine results to summarize and manage the job data and experimental tests.
    - A preview of the machine generating tracks in BoxJelly look promising!
    - Planned discussion with AWS ProServe team next week
  - Overhead

- Performance review summary
- Duane Edgington
  - 902004 - Planktivore
    - Status meeting planned for Jan 24
  - 902005 - VARS Annotation Assistance
    - Spinning up work on testing of Yolov5 detections/tracking with updated processing image and tracking parameters
    - Reading up on Apache airflow...
  - 902202 - MBARI Cloud Integration Exploration
    - Teleconference with AWS folks scheduled for next week Jan 26
- Jon Erickson
  - 701145 - Penguin Hotspots
    - Starting assembly of EK80 gimbal assembly for REMUS
  - 901217 - Chemical Sensor Program
    - Pressure test chambers for ISUS probes.
  - 902004 - Planktivore
    - Remote Batt. pack parts in shop queue.
- Ben Erwin
- Kevin Gomes
  - 300079 - DMO Support - Rachel Carson
    - Spinning up the ArcMapNav work again and trying to get the patched version deployed soon.
    - Looking into touch screen issues on Carson
    - Finalizing NAS config for deployment on Carson (probably during next maintenance period which is OK at the main machine that uses it is back at Stealth for RMA work).
  - 902012 - Telepresence on MBARI Research Vessels
    - Still working on using Slack for authentication. Found a bug in Slack's OAuth workflow and they are 'working on it'. I might have a workaround, but it's a pain.
  - Overhead
    - Lots of overhead for performance reviews
  - Out of Office
    - Mar 21-25: Vacation
- Andy Hamilton
- Kent Headley
  - 500055 - VARS, M3/RS, DSG
    - Testing updates to the black magic frame grab server
    - Resolved an issue with the 8K Pro setup
  - Overhead
    - Review meetings and input
    - SRSC meetings, helping Alana with ideas for presentation material
  - Out of Office
    - Jan 11 (jury duty, tentative)
- Rich Henthorn
  - 600034 - Precision Control Technologies for ROVs and AUVs
    - Finishing touches on data-logging
    - Computation debugging
    - Syslogging
  - 901405 - Wave-Energy Conversion for Oceanographic Applications
    - Michael Anderson onboarding
    - Tidying repo
  - 901618 - Pelagic-Benthic Coupling and the Carbon Cycle

- Rover cables and connectors refurbished/replaced and tested OK
  - Rover operations testing at the tank - vehicle seems ready to go
  - SES prep
- Overhead
  - Annual Review: prep and review
- Out of Office
  - Jan 24 - 28 (next week), vacation & WFH
  - Feb 1 - 5, Sta.M Cruise
  - Feb 14 - 18, vacation & WFH
  - March 14 - 25, vacation & WFH
  - Sep 21 - 30, Sta.M Cruise
- Brett Hobson
- Scott Jensen
- Brent Jones
- Chad Kech
- Brian Kieft
- Denis Klimov
- Diana LaScala-Gruenewald
- Eric Martin
  - 901101 - Seafloor Mapping
    - Technical kickoff on tuesday for 3d@depth subcontract
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  - 901206 - Coastal Profiling Float Transition to Science Applications
    - Working with Paul Coenen, almost time to start production checkouts on CPF001.
  - 901405 - Wave-Energy Conversion for Oceanographic Applications
    - BatteryController into ETs for assembly
    - Radar group meeting last week
    - Helping Rob with Radar tasks
  - 902012 - Telepresence on MBARI Research Vessels
    - Meeting last thursday
    - Finalizing SOW and Collab agreement with Leila Takayama
  - 902204 - Scalable Marine Robotics Foundations
    - Brief chat with GT last week, mostly advising on upcoming cruise work and moving.
  - Overhead
    - Wrote 2021 highlights, review with Alana.
- Thom Maughan
  - Out of Office
    - Vacation delayed but needed.
- Mike McCann
  - 901101 - Seafloor Mapping
    - More work on to lookup timestamps for Compilations by using .grd file creation times
    - Struggling with building MB-System container so I can work on building mbgrd2gltf
  - Overhead
    - Reprocessed some frame grabs that had failed Expd database inserts
    - Created glTF terrain for STOQS to support east coast LRAUV mission data
    - Expedition database data entry discussions
- Rob McEwen
  - 708167 - WEC Dynamics and Control
    - Reworking Matlab code to read Eric's new data format.
    - Starting on Ahrs mounting and magnetic calibration.

- 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
  - Believer 3
- Paul McGill
  - 701145 - Penguin Hotspots
    - Corrected errors on sonar payload system schematics and gave prints to Chad.
    - Built test cables and programmed firmware onto 4 new AOS boards. Reviewing code to see if I can fix some shortcomings.
  - 901618 - Pelagic-Benthic Coupling and the Carbon Cycle
    - Got Rover connectors repaired/cleaned and ran in test tank overnight—it's working.
    - Replaced battery in Dual Camera Tripod.
    - Rewired connector on SES motor, tested, and found problem with home sensor, yet to be solved.
  - 901904 - Deep-Sea Coral-Sponge Community Observatory
    - Worked with Alana to get new Canon camera integrated into Coral Macro Camera system.
- Tom O'Reilly
- Craig Okuda
- Doug Pargett
  - 901205 - SURF Center
    - Coordinating work in machine shop and ordering new parts.
    - Lots of FEA work for the new cartridges.



- Out of Office
  - Holiday
  - Working from home during the outbreak at the schools.
- Ben Raanan
- Mike Risi
  - Out of Office
    - Vacation on alternate Fridays
- Paul Roberts
  - 800139 - EyeRIS (Remote Imaging System)
    - 65 megapixel lightfield camera integration planning
    - strobe potting materials eval
    - documentation
  - 901809 - Deep Sea Bioinspiration
    - open world machine learning discussion and colab
  - 902004 - Planktivore

- Internal chassis solid modeling and fit test
  - strobe optics solid modeling
- Brent Roman
  - 901205 - SURF Center
    - Rewrote ESP 3G “core” Elf microcontroller firmware to allow remote reflashing.
    - Helping with initial cleaning and chemistry tests on ESPbetty.
    - Participating in evaluating thermal design tradeoffs for “Function” 3G cartridges
  - 901913 - WetWiFi
    - Extended equipment loan through end of February
    - Verified BadWolf video encoder can act as FTP server
    - First test deployment with LRAUV and Waveglider scheduled for next week
- Carlos Rueda
  - 901009 - CANON
    - Updated the [odss2dash](#) service implementation.
  - 901101 - Seafloor Mapping
    - Quick [revisit](#) to the MBSysstem dockerization upon a question from Mike.
  - 901502 - Soundscape Research and Education
    - Group meeting. Planning to explore some sperm whale click datasets.
  - 902005 - VARS Annotation Assistance
    - Kick-off meeting.
  - 902101 - LRAUV Technology Development and Fleet Operations
    - Dash is now [4.8.93](#) with various fixes, in particular some related with the logic that gathers the waypoint information that gets exposed upon the “Started mission” event.
    - Various exchanges with the team and WHOI as they exercised the recent Dash additions.
    - Started removal of the legacy TethysDash UI as planned.
  - Overhead
    - Continued with code modernization efforts in a couple of projects.
    - Reviewing [PR](#) for the tscfg tool.
  - Out of Office
    - Jan 20-25: JChampions conference, combined with 1-2 vacation days.
- Karen Salamy
  - 300057 - Mooring Maintenance
    - Weekly checks and server/scripts maintenance.
  - 901101 - Seafloor Mapping
    - The majority of my time this week has been looking into various SMDB (Ocean Imaging) issues listed under the project’s Github page.
  - Overhead
    - Involved in discussions with DMO and VL on the MiniROV data ingest to EXPD. Kevin G. will call a meeting with all when he is available.
  - Out of Office
    - Vacation:
- Brian Schlining
  - 500055 - VARS, M3/RS, DSG
    - Wrote support scripts for [changing passwords](#) and [listing videos in a dive](#).
    - Testing with [libbmagic](#) as THE framecapture tool for VARS on the ships. Big shout out to Kent Headley for getting it working with BlackMagic’s PCI cards on the ships!!
  - 901618 - Pelagic-Benthic Coupling and the Carbon Cycle
    - Building JavaFX UI controls for image annotation to support porting the image annotations features from the older VARS, that Ken’s lab is running, into the new system. These controls will also allow for rapid development of new annotation applications independently of VARS. Rapidly

evolving source code is at <https://github.com/mbari-org/imgfx>, video demo of one of the controls at <https://youtu.be/Er3728Jh0C8> .

- 902002 - FathomNet
  - Discussions on NOAA's statement of work agreement to host external group's image collections for FathomNet.
- Overhead
  - Crash tutorial for Lisa Emanuelson on using bash.
- Out of Office
  - Jan 31 - Feb 11 - Brian will be a visiting scientist at [DARC](#) to upgrade their video annotation system.
  - Due to the frequent COVID cases among MBARI staff, Brian is working remotely for now.
  - Jan 20 - Jan 25 - Intermittently participating in the JChampions conference
  - Jan 20 - Marine Imagery Annotation Standard Workshop
- Alana Sherman