

901101 - Seafloor Mapping

Week 51

1. Eric Martin
 - a. Aiding in purchase/spec of new INSs for Dorados and LASS
2. Karen Salamy
 - a. Spoke with Jenny P regarding SMDB GUI for 2024. We may work with the ROV pilots on improving some of the bathymetry maps (higher resolution) than they currently are using since the project uses pretty high resolution maps for mapping transects.

Week 50

1. Eric Martin
 - a. Rev C stack discussions with Chad, other power can discussions.

Week 45

1. Mike Risi
 - a. Starting to work on a new driver for Octans IX.blue format on Ventana.
 - b. Working with Andrew and Adriana IEEE 1588 access on David Packard.
 - c. Working with Chad on debugging one of the rev. b trigger board stacks.
 - d. Rev. b trigger board firmware changes to accommodate user configurable parameters and MAC address.

Week 43

1. Kent Headley
 - a. Working with Steve and Dave on analyzing and validating terrain relative nav (TRN) results from the Sponge Ridge cruise last week

Week 42

1. Kent Headley
 - a. Carson LASS cruise at Sponge Ridge 10/10-12:
 - b. Collected data set for testing TRN using a combination of Ventana and LASS LCM inputs and 5cm scale map
 - c. The data flow through the pipeline worked, but the geometry corrections were not all in place.
 - d. Have been working post-cruise to refine and test LCM TRN preprocessing. Geometry corrections seem to work, though TRN performance still not great.
 - e. Continuing to investigate with Steve and Dave
2. Eric Martin
 - a. Cruise last week was successful, which enveloped much of the week.
 - b. This was a development effort that saw new features tested successfully like:
 - i. RevB LASS stack (now on the MiniROV as well) by Chad Kecy
 - ii. New Navigation Driver suite by Eric Martin
 - iii. New control software for the LASS stack by Mike Risi
3. Mike Risi
 - a. Misc. trigger board testing and LASS MOB
 - b. Participated in 3 day cruise series to sponge ridge with LASS

Week 40

1. Kent Headley
 - a. testing multibeam pipeline for cruise next week
2. Brent Roman
 - a. Some exchanges re MB-System docker image status

Week 38

1. Kent Headley
 - a. Refactoring stream handlers for ROV TRN utility; tried out an implementation using dynamic shared libraries, but decided to use a simpler approach instead. It made the code more modular without making configuration more complicated, and required less code.
 - b. Figuring out instrument configuration for october dive and working on test plan
2. Eric Martin
 - a. LASS software
 - b. Sled Prep
 - c. Lab cleanup

Week 37

1. Kent Headley
 - a. planning for October cruise (ROV TRN using LASS)
2. Eric Martin
 - a. Parosci Driver
 - b. Kearfott Driver
 - c. Interface can test & close
 - d. Tank testing next week
3. Mike Risi
 - a. Worked with Chad on in-system bring up of Trigger Board 2.0 and test.
 - b. Updated Trigger board GUI to accommodate new relays and trigger pulse output.
 - c. Misc. debugging for LASS Trigger Board 2.0 firmware and update to calibration for environmental sensors.

Week 36

1. Kent Headley
 - a. Troubleshooting run-time errors in MB-System Docker images
2. Eric Martin
 - a. Kearfott, Paro and DVL Drivers
 - b. Helping Chad finish electronics tests
3. Carlos Rueda
 - a. Revisiting MB-system docker (looking into OpenGL related issues on macos)
4. Karen Salamy
 - a. Spoke with Mike M regarding the Capstone student project to aid in the new EXPD development.

Week 35

1. Chad Kecz
 - a. revB stack is now installed in housing; integration testing next
2. Eric Martin
 - a. Kearfott Driver

Week 34

1. Kent Headley
 - a. Standby support for ongoing Pacific NW cruise. They've had rough weather and some HW issues to work through, but they've managed to deploy a couple of times on the Cascadia leg. They've been running another quick survey Wed/Thu, and will pick up Erik Thu for the Axial leg, conditions permitting.
 - b. Submitted an MB-System docker image based on Alpine linux. Danelle Cline recommended Alpine for reducing image size, and it did make a pretty compact version (~30% reduction). Found a build issue that affects a couple of linux variants: CFLAGS -m<bits> is not set correctly on some platforms (Alpine linux, Jetson Nano), breaking the build. It is set using "gmt-config --bits", which returns an empty value in some contexts. The empty value results in an invalid flag (-m) to be passed to the compiler/linker. Also, it is being added to LDFLAGS, when it is a compiler flag (CFLAGS). Resolution TBD.
2. Eric Martin
 - a.
3. Karen Salamy
 - a. Read the most recent proposal feedback by management.

Week 33

1. Kent Headley
 - a. Prepped sonars with TRN software for Pacific NW cruise

Week 32

1. Kent Headley
 - a. Prepping TRN on mapping vehicle sonars
2. Eric Martin
 - a. 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.
 - b. Reviewing new board stack for the Interface Can.
3. Mike Risi
 - a. Worked on LASS Trigger Board 2.0 bring up with Chad.
 - b. Finished I/O and trigger changes LASS Trigger Board 2.0 for October cruise.
 - c. WiSSL 2.0 design review

Week 30

1. Kent Headley
 - a. Helping Rob with dorado sim MB-System setup
 - b. Call w/ Dave C and Christian Ferriera at MARUM
 - c. Prep for Axial
 - d. Wrote up some notes on building MB-System under Cygwin
2. Tom O'Reilly
 - a. Helping prepare next MB-System software release; installation now managed with 'cmake' build scripts which simplifies package configuration and maintenance

Week 29

1. Kent Headley
 - a. Updates to debug output library (development for post-axial cruise); simpler, more intuitive API, thread-safe
2. Eric Martin
 - a. Prepping for next week's 3D at Depth visit

Week 28

1. Mike Risi
 - a. Continuing development of LASS Trigger Board 2.0 firmware when time permits.

Week 26

1. Kent Headley
 - a. Located and fixed issue that generated segfaults at sea last week. A frame limit was using a value that was too small, leading to partial frame reads. Subsequent reads from the frame buffer were incorrectly interpreted, resulting in invalid memory access.
 - b. Prepped for alternate test day this Thu to complete last week's objectives
2. Eric Martin
 - a. Proposal 23 Work
 - b. Coordinating the 3D at depth critical review
3. Karen Salamy
 - a. Read through SMDB proposal for 2024. Will meet with Mike M. on new UI updates for team.

Week 25

1. Kent Headley
 - a. Test cruise on Carson: quite a few software issues: first with environment and scripting on cygwin, then segfaults in mbtrnpp. High winds brought us back early.
 - b. Currently working to trace source of segfaults, made more difficult by the facilities provided by Cygwin, and also that we likely won't be able to reproduce conditions in the test tank (since it's a sonar thing).
 - c. Did reproduce a segfault by replaying yesterday's mission data, but not certain yet it's the root cause
2. Mike McCann
 - a. Fixed GitHub Actions, but marginally successful in getting Selenium testing to work there

Week 24

1. Kent Headley
 - a. preparing for Dorado TRN test day 6/20; this is a test run for Axial in Aug/Sep
2. Mike Risi
 - a. Reviewed final schematics of the LASS trigger board 2.0 before layout.
 - b. Implemented test code for all of the new hardware on the trigger test board.
 - c. Started developing LASS trigger board 2.0 firmware.
 - d. Participated in a successful three day cruise series of the LASS using Ventana.

Week 23

1. Kent Headley
 - a. Preparing for mapping AUV test cruise 6/20
 - b. Syncing codebases
 - c. Troubleshooting Win7 test setup issues
2. Chad Kechy
 - a. Final review of the revB boards for the LASS Power can
 - b. Helped Eric setup LASS sled for DOEST
3. Eric Martin
 - a. 3D at depth project management, Critical review will be in July
4. Mike McCann
 - a. Dave merged the capstone teams mbgrd2gltf contribution to MB-System

Week 21

1. Karen Salamy
 - a. Meeting tomorrow with Jenny, Mike M., and Dave C., about the project for the year ahead.

Week 20

1. Kent Headley
 - a. Participated in last Fri Carson cruise to test TRN on ROV. Encountered several technical issues upstream, so couldn't fully exercise TRN code, but did find some bugs and got a lot of useful context for running TRN w/ LASS and other use cases.
2. Chad Kecz
 - a. Participated in the LASS cruise on the Carson last week (W-F)
 - b. Need to order (or build) an additional Y-Strobe cable.
 - c. Moving forward with revB designs
3. Eric Martin
 - a. Three offshore days on the R/V Rachel Carson last for 901101 and 902204. They were successful, albeit with shortening due to high winds.
 - b. The sled made for Doc Ricketts seems to work fine for station keeping, so we can use the platform more flexibly now.

Week 19

1. Eric Martin
 - a. Offshore this week with the Low Altitude Sled for both David Caress and Giancarlo Troni

Week 18

1. Kent Headley
 - a. helped with various build issues for Rob's mapper oscillation analysis/sim
2. Chad Kecz
 - a. Prepping for Carson cruise next week
 - b. Finalizing the revB board stack (with James McC)
3. Eric Martin
 - a. Preparing for cruise next week.
4. Mike Risi
 - a. Tested the sled with Eric and Chad in preparation for the May 10-12 LASS expedition.
 - b. Attended design review for the LASS trigger board 2.0 design. Working with Chad on some of the changes incorporated from the review.

Week 17

1. Kent Headley
 - a. Prep for TRN May 10-12 Carson days?

Week 15

1. Eric Martin
 - a. Cruise prep, lab cleanup, need to get housing closed

Week 14

1. Eric Martin
 - a. Lab cleanup

- b. Kearfott driver

Week 13

1. Chad Kecz
 - a. RevB boards for LASS are being designed

Week 12

1. Eric Martin
 - a. Chad and James are still working on another boardset rev, but will be closing up the bottle so we can be ready for deployment in May and give me time to start the kearfott driver.
2. Mike Risi
 - a. Started updating code for trigger board 2.0 prototype, looking into trigger pulse generation options for RP2040.
3. Karen Salamy
 - a. Reviewing some of the UI code prior to Jenny P.'s return in a few weeks.

Week 10

1. Chad Kecz
 - a. Sent 3 Focal boards back for repair.
2. Eric Martin
 - a. Tuned into the Falkor cruise a bit. Fielding a couple questions from Erik T

Week 9

1. Chad Kecz
 - a. Finished plot checking of Trigger Test Board
 - b. Followed up on and outstanding order from Focal
2. Eric Martin
 - a. Gutting old Reson systems
3. Mike Risi
 - a. Worked with Chad to diagnose and hopefully fixed the lockup problem with the trigger board microcontroller.
 - b. Working with Chad and James on trigger board 2.0 prototype.
4. Karen Salamy
 - a. Spoke briefly with Jenny P. about her ideas on improving the SMDB dash when she returns in 2 months from her mapping cruise on the Falcor.

Week 8

1. Karen Salamy
 - a. Plan to meet with Jenny and Mike this week via ZOOM if possible. Jenny will be leaving for an upcoming cruise on the Falcor so it would be good to coordinate before she leaves on needed tasks for the SMDB UI.

Week 7

1. Eric Martin
 - a. Troubleshooting microcontroller issues with Chad and Mike

Week 6

1. Eric Martin
 - a. Troubleshooting issues with the RP2040 on the trigger board
2. Mike McCann
 - a. Met with capstone students who are working on the [build for mbdrg2gltf](#) in MB-System

Week 5

1. Mike Risi
 - a. Trigger board 2.0 meeting

Week 4

1. Kent Headley
 - a. chatted with Dave a bit about the year ahead. I need to get the MB-System codebase synched up before the vehicles ship to the Mid Atlantic in late Feb
 - b. Nice article on using TRN with Sentry appeared in the WHOI newsletter:
https://www.whoi.edu/?p=559452&post_type=oceanus_article&preview=1&ppp=ec7bd175aa
Dave and Raul told the story very well.

Week 3

1. Tom O'Reilly
 - a. Working with Caress to automate/simplify MB-System build process (using cmake) on a variety of systems including MacOS, Linux, and others

Week 2

1. Eric Martin
 - a. Lab cleanup
 - b. Met with Chad regarding 2023 PCB work.
2. Tom O'Reilly
 - a. Modified existing MB-System 'C' functions to be more robust against memory segmentation-fault errors.
3. Karen Salamy
 - a. Made a few edits to the Dash.

Week 1

1. Eric Martin
 - a. Converting PC-DAS to a linux CLI