

902306 - SINKER

Week 52

1. George Stern
 - a. Found, programmed and tested 2 additional battery board som shield assemblies; this means 4 of 6 boards are working as designed; since only 4 boards are needed and there are no current plans to use the battery assemblies; it may not be worth troubleshooting the high current draw on the remaining subassemblies.

Week 51

1. George Stern
 - a. Programmed and tested 3 in work battery pack assemblies; identified a bug and a hardware problem, updated the 3 + the previously completed assembly with new code to patch the bug.
 - b. Retested the fully completed assembly by recharging a pack (working); power consumption tests on the remaining 3 in work assemblies indicates 2 are drawing excessive power; awaiting etech support to confirm a suspected manufacturing issue

Week 50

1. Paul Roberts
 - a. Planning for recovery on Dec. 12
 - b. Testing alternative flux camera settings
2. Karen Salamy
 - a. Completed 2025 SINKER Dash updates and revision requests. The app can be found here:
3. George Stern
 - a. Flux strobe lighting power analysis and options

Week 49

1. Paul Roberts
 - a. Data management
 - b. EOY spending
2. Karen Salamy
 - a. Majority of week spent on the SINKER for final updates to requests on the app before the recovery of the system on Dec. 17.

- b. Attended a SINKER meeting yesterday to discuss the need to create a SQL Database for the data we have collected and will collect in the future.

Week 48

- 1. Danelle Cline
 - a. Cleaned up the production deployment code [#1](#)

Week 47

- 1. Paul Roberts
 - a. Scoping software tasks for 2026

Week 44

- 1. George Stern
 - a. Tested the first immaculately wired (etech) closed can charging system, initial testing was positive with the software correctly reviving deeply discharged batteries.

Week 43

- 1. George Stern
 - a. Programmed controller in the first battery housing to facilitate closed can charging

Week 42

- 1. Danelle Cline
 - a. Updated ansible deployment with README.txt and generated build.sh script to support build on target.
 - b. Issues with rsync failing due to the sinker thalassa NFS mount becoming unresponsive - this is the same problem we have seen with PAM_Analysis on gizo.shore and multiple shares on mantis.shore.
- 2. Karen Salamy
 - a. Last week I “froze” the SINKER app UI code for the year. It is up and working at sinker.shore.mbari.org/sinker/. This is only version 1.0 and I have asked the SINKER team to review its functionality and to test various aspects of the web interface. I have also asked them to provide a list of issues that they would like to update, or fix. There is more to do but it is up and working.

Week 41

- 1. Danelle Cline
 - a. Addressed [schema prune issue](#) although not resolved until today, thanks to K.Salamy help.

2. Karen Salamy
 - a. Battling production deployment issues for the SINKER App on the sinker production server. It is running well on the dev server but just not working on the production. I need to discuss this with Danelle and determine next steps.

Week 40

1. Karen Salamy
 - a. Burning the midnight oil on getting sinker-dash to work with Danelle's backend changes last week. I am currently testing against her full backend stack running on sinkerdev. I am having some real issues getting the backend ADCP and some Camera/lights realtime data points to supply data to the sinker-dash. I need to finish this up and get it all working in the production server ASAP as I have to move onto other projects.

Week 39

1. Enoch Nicholson
 - a. Science communication filming

Week 37

1. Danelle Cline
 - a. Fixed [image brightness issue #10](#)
 - b. Trying to track down a strange issue with REDIS time series query not returning full data for multiple days as expected. Thanks to Karen S. for identifying this.
2. Paul Roberts
 - a. ZMQ system monitor
3. Karen Salamy
 - a. Much of my time over the last week was spent testing and preparing some major SINKER-DASH updates for the [SINKER production server](#). These updates were implemented last night.

Week 36

1. Paul Roberts
 - a. Zmq monitor app
 - b. Dev meeting

Week 35

1. Danelle Cline
 - a. Adding REDIS time series support to ADCP data query
 - b. Development server is up and running sinkerdev.shore.mbari.org

Week 33

1. Paul Roberts
 - a. Real-time data and system health status
2. Karen Salamy
 - a. Heavily focused on the SINKER UI updates for the SINKER team. Added data view capabilities in real time under the Data Menu item

The screenshot displays the MBARI SINKER-DASH Mission Control Interface. The top navigation bar includes links for Views, Dash-Health, Charting, and Data. The left sidebar lists various system components under 'SINKER Data Access', including Cameras, Instruments, Lights, Controls, and Power. The main content area shows the 'ADCP - Acoustic Doppler Current Profiler' data table. The table is sorted by Date/Time (desc) and contains 150 rows of data. The data columns include DEVICE, DATE/TIME, ACOUSTIC VELOCITY, DIRECTION (*), CURRENT SPEED (M/S), DEPTH (M), PRESSURE (BAR), TEMPERATURE (*C), SALINITY, POWER DRAW (KHZ), and POWER STATUS.

DEVICE	DATE/TIME	ACOUSTIC VELOCITY	DIRECTION (*)	CURRENT SPEED (M/S)	DEPTH (M)	PRESSURE (BAR)	TEMPERATURE (*C)	SALINITY	POWER DRAW (KHZ)	POWER STATUS
ADCP	8/13/2025, 11:38:09 AM	1482.40	241.10	0.08	886.83	886.83	4.29	0.00	0.93	ON
ADCP	8/13/2025, 11:37:09 AM	1482.40	232.96	0.08	886.80	886.80	4.29	0.00	0.93	ON
ADCP	8/13/2025, 11:36:09 AM	1482.40	239.92	0.07	886.82	886.82	4.29	0.00	0.93	ON
ADCP	8/13/2025, 11:35:09 AM	1482.40	243.10	0.08	886.82	886.82	4.29	0.00	0.93	ON
ADCP	8/13/2025, 11:34:09 AM	1482.40	250.35	0.08	886.79	886.79	4.29	0.00	0.93	ON
ADCP	8/13/2025, 11:33:09 AM	1482.40	240.77	0.08	886.77	886.77	4.29	0.00	0.93	ON
ADCP	8/13/2025, 11:32:09 AM	1482.40	236.61	0.08	886.79	886.79	4.29	0.00	0.93	ON
ADCP	8/13/2025, 11:31:09 AM	1482.40	244.25	0.08	886.77	886.77	4.29	0.00	0.93	ON
ADCP	8/13/2025, 11:30:09 AM	1482.40	239.85	0.07	886.76	886.76	4.29	0.00	0.93	ON
ADCP	8/13/2025, 11:29:09 AM	1482.40	248.47	0.06	886.76	886.76	4.28	0.00	0.93	ON
ADCP	8/13/2025, 11:28:09 AM	1482.40	239.29	0.05	886.80	886.80	4.28	0.00	0.93	ON
ADCP	8/13/2025, 11:27:09 AM	1482.40	247.36	0.06	886.75	886.75	4.28	0.00	0.93	ON
ADCP	8/13/2025, 11:26:09 AM	1482.40	245.22	0.07	886.75	886.75	4.28	0.00	0.93	ON
ADCP	8/13/2025, 11:25:09 AM	1482.40	250.90	0.06	886.77	886.77	4.28	0.00	0.93	ON
ADCP	8/13/2025, 11:24:09 AM	1482.40	264.35	0.06	886.78	886.78	4.28	0.00	0.93	ON
ADCP	8/13/2025, 11:23:09 AM	1482.40	241.89	0.05	886.72	886.72	4.28	0.00	0.93	ON
ADCP	8/13/2025, 11:22:09 AM	1482.40	233.66	0.05	886.75	886.75	4.28	0.00	0.93	ON
ADCP	8/13/2025, 11:21:09 AM	1482.40	261.13	0.04	886.73	886.73	4.28	0.00	0.93	ON

Week 32

1. Danelle Cline
 - a. Integrated ADCP data incoming from MARS to dashboard as SSE
 - b. Setup rsync from MARS to shore, deployed via [Ansible](#)
 - c. Investigating issue with low-frame rate refresh HLS stream on sediment cameras
2. Enoch Nicholson
 - a. Completed project documentation migration to new lab notebook system
3. Paul Roberts
 - a. Data publishing for dashboard

Week 30

1. Enoch Nicholson
 - a. Met to discuss system status since deployment
 - b. Actuator stuck, but we were able to successfully get it moving again by driving it at max speed
2. Paul Roberts
 - a. MARS testing / troubleshooting

- b. Data publishers for dashboard
- 3. Karen Salamy
 - a. The first SINKER dash is up and running on sinker.shore.mbari.org/sinker. The deployment of the system went well on the 15th of July, however, there have been some major power issues for SINKER on MARS. Several cameras have had to be turned off to save power. Images are still being taken and slowly transferred daily but it is not possible to truly show images and videos in RT. Danelle and I are discussing the temporary setup of a docker volume that would contain all of the images taken for this deployment to display for the team on the Dash. More on that soon hopefully.

Week 29

- 1. Enoch Nicholson
 - a. Completed SINKER assembly
 - b. Mobed for deployment
 - c. Successfully deployed and plugged in SINKER

Week 28

- 1. Danelle Cline
 - a. Development of sinker backend video stream and nginx image host.
- 2. George Stern
 - a. Identified potential option to make AGX Orin root read only for MARS deployment

Week 27

- 1. Danelle Cline
 - a. Working on backend design and development - mostly infrastructure
- 2. Karen Salamy
 - a. The main focus of my work this week is building and testing the new SINKER UI.
 - b. Met with Danelle yesterday to discuss the backend development for SINKER and what alerts and alarms may be included in the API. We also discussed the UI grabbing live RT images from the sinker server using nginx.
 - c. The new illustrator for the SINKER team has created a system diagram that will be included with an overlay for alerts and visual updates in the UI. Working on that today.

Week 26

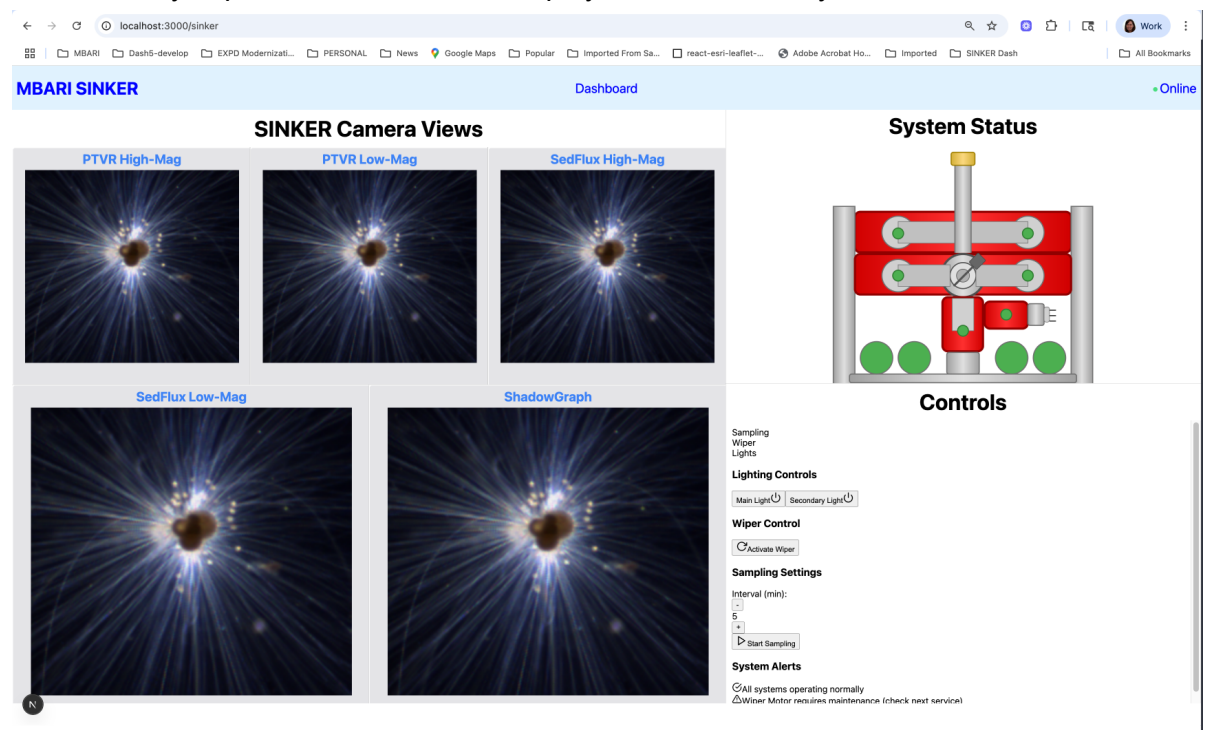
- 1. Danelle Cline
 - a. Researching ideas for backend design.
- 2. George Stern
 - a. Dry testing on the MARS simulator node did not go as planned, an odd link layer issue was found where auto negotiation failed to establish a link; hopefully

Adriana will have time to work through some additional troubleshooting when she returns from the conference next week.

Week 25

1. Karen Salamy

- a. Designed/Developed proto-type GUI for July MARS deployment. The SINKER team liked the design so I will move forward with the build and connection to Danelle's API code when ready. The main push for this deployment will be the ability to view images in RT for the team. I built a temporary schematic drawing for the instrument to try and plug in Alerts and some activation controls. An illustrator will join the team in early JULY and if there is time before the deployment I will try to integrate that schematic into the GUI as well. Controls will be most likely implemented in the next deployment later in the year.



b.

2. George Stern

- a. Cable design and build for MARS

Week 24

1. Karen Salamy

- a. Building up the new SINKER DASH for the team preparing for their mid-July deployment.
- b. Discussed my time for 2026 proposals.

2. George Stern

- a. MARS meetings and mars cable design - for some reason it does not match the ROVs; thank you to Alana for saving the project by having a Ti MINK10 connector available.

Week 23

- 1. Paul Roberts
 - a. Dev Meeting
 - b. Planning for July 15 deployment

Week 21

- 1. Enoch Nicholson
 - a. Supporting build of SINKER Frame

Week 20

- 1. Enoch Nicholson
 - a. Supporting build of deployment frame
- 2. Karen Salamy
 - a. Participated in a meeting regarding the UI for Sinkers and the teams expectations.
 - b. Working with Danelle Cline to start to build up of the front end in React on the VM sinker.shore.mbari.org

Week 19

- 1. Danelle Cline
 - a. Productive meeting to discuss dashboard with the team. Delivery of initial prototype due in July.
 - b. Submitted IS request for VM to host dashboard and backend prototype. Discussion with Peter in IS about VM user configuration.

Week 17

- 1. Enoch Nicholson
 - a. Finalizing SINKER Lander design & drawings

Week 16

- 1. Rich Henthorn
 - a. Refactoring code for next test deployment
- 2. George Stern
 - a. Tested closed can SAMD charging firmware and programmed one board; hopefully the RPi software is as easy...

Week 15

1. George Stern
 - a. Initial build of a battery can firmware build to support closed can charging

Week 14

1. Rich Henthorn
 - a. Some minor refactoring of SINKER motor controllers
2. George Stern
 - a. Continued working on closed can charging script
 - b. Finished harnessing and system diagram for the closed can architecture
 - c. Ordered parts

Week 13

1. Enoch Nicholson
 - a. Writing conference paper.
2. Paul Roberts
 - a. station light assembly and testing
 - b. Ordering WiSub hardware
3. George Stern
 - a. Updating electrical architecture so the battery cans don't have to be opened for charging
 - b. Began writing software to support new con ops
 - c. Began ordering hardware

Week 12

1. Paul Roberts
 - a. Autonomous deployment and data management
2. George Stern
 - a. Post cruise meeting to discuss that project has gone so amazing well it doesn't need to be renewed
 - b. Identified a way to improve battery can charging so cans wouldn't need to be opened to charge potentially allowing more projects to borrow them and easily maintain them
 - c. Began rewriting software to support new charging

Week 11

1. Rich Henthorn
 - a. Autonomous SINKER deployment
2. Enoch Nicholson
 - a. Deployed SINKER on the elevator
 - b. Starting to redesign the frame for July

3. Paul Roberts
 - a. Deployed for 1 week of autonomous recording on March 10
4. George Stern
 - a. Final battery charging and prep for the cruise last monday

Week 10

1. Rich Henthorn
 - a. Viewport cleaning functional
 - b. Testing for deployment next Monday
2. Enoch Nicholson
 - a. Printed actuator mount & installed.
 - b. Alignment of frame on the elevator.
3. Paul Roberts
 - a. Preparation for March 10 autonomous deployment
4. George Stern
 - a. Battery charging and support for deployment next week

Week 9

1. Rich Henthorn
 - a. SINKER deployment scheduled for March 10
 - b. Preparing for SINKER integration testing scheduled for next week
 - c. Writing ucon motor actuation app for cleaning
2. Enoch Nicholson
 - a. Assembled battery packs with etechs
 - b. Mobilized hardware onto the elevator
 - c. Estimated payload weight
 - d. Measured elevator buoyancy in the harbor
3. Paul Roberts
 - a. autonomy firmware
 - b. system integration
 - c. camera acquisition software
 - d. Dev meeting

Week 8

1. Rich Henthorn
 - a. Maxon motor control interface for microcontroller
 - b. Eavesdropping on EPOS interface to decipher protocol
2. Paul Roberts
 - a. Autonomy firmware
 - b. Wiper motor assembly and testing
 - c. Nortek ADCP integration
3. George Stern

- a. Battery harnessing

Week 7

1. Danelle Cline
 - a. Backend prototyping to understand better how to create and populate the SVG.
Many thanks to Steve Haddock for sharing his code
2. Enoch Nicholson
 - a. Created PCB cover plate for SINKER battery.
3. Paul Roberts
 - a. System controller updates with RTC and event scheduler
 - b. Sediment camera bulkhead upgrades to Ti
 - c. Orin Pylon camera acquisition software
4. George Stern
 - a. Tested and charged all remaining battery packs; boards\design are working as intended.
 - b. Finished harnessing design for pack bulkheads and connecting cable/harnessing for the controller

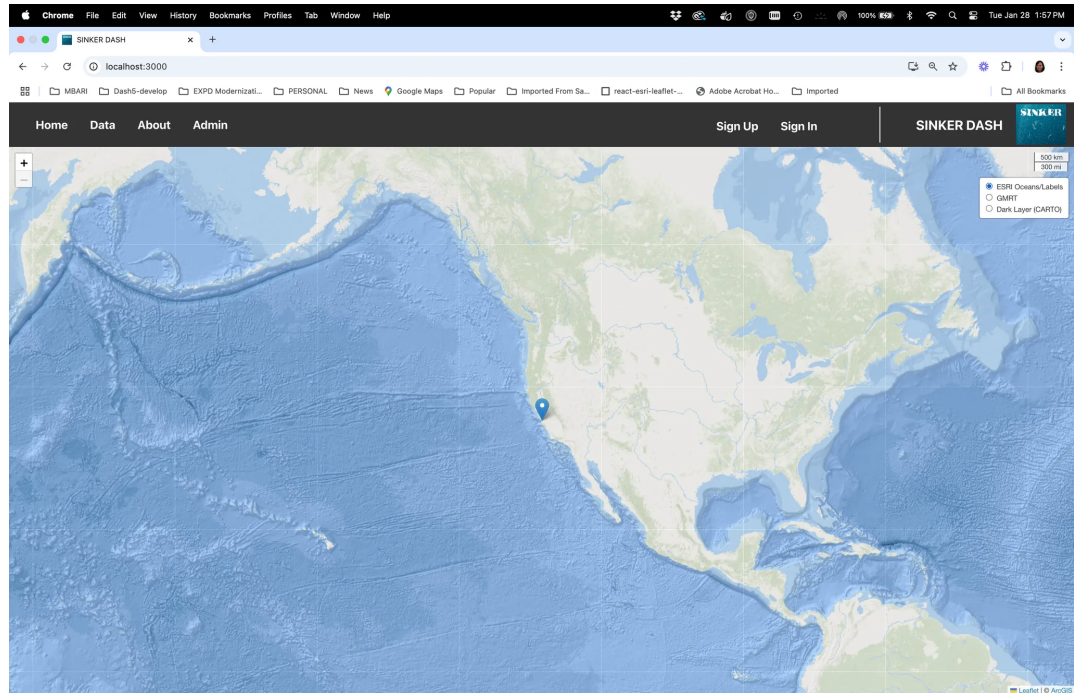
Week 6

1. Danelle Cline
 - a. Team kick-off meeting
 - b. Discussion with Karen and Carlos Rueda about preliminary prototype ideas
2. Enoch Nicholson
 - a. Beginning instrument frame modification for march dive.
 - b. Elevator preparations beginning.
3. Paul Roberts
 - a. System-controller firmware dev: periodic imaging events and state diagrams
 - b. Orin AXG pylon image recorder dev
4. Karen Salamy
 - a. Had a meeting with Danelle earlier this week to discuss setting up some scaffolding for the SINKER Dash
5. George Stern
 - a. Finished battery charging script
 - b. Created a charging station in the lab, integrated with the real batteries and simultaneous stack charging; 2 sets of batteries have been charged.
 - c. Began checking out battery interface boards

Week 5

1. Danelle Cline
 - a. Kick-off meeting
2. Rich Henthorn
 - a. Kickoff meeting and discuss tasks for March deployment

3. Paul Roberts
 - a. 2025 Kickoff Meeting
4. Karen Salamy
 - a. Spent some time yesterday setting up a basic SINKER Dash UI framework to show at the kickoff meeting yesterday @4PM. The final SINKER dash will look different but it allowed the team to start thinking of what they would like to see.



- b.
- c. I also spent a little time working on a SINKER logo for the site as well.



- d.

Week 4

1. Danelle Cline

- a. Discussion with Karen S. about project goals and brainstorming about tools and architecture. Team meeting next week will provide needed requirements
- 2. George Stern
 - a. Continued working on battery charger script and finished checking out the battery interface card. Charged a set of LRAUV batteries! But still implementing the hardware fault flag threading

Week 3

- 1. Danelle Cline
 - a. First meeting scheduled for Tuesday next week.
- 2. Enoch Nicholson
 - a. Successfully completed pressure testing of battery housings
- 3. Karen Salamy
 - a. First meeting scheduled for Tuesday next week.
- 4. George Stern
 - a. Continued writing a script to control battery charging from the the Pi
 - b. charger harnessing schematic

Week 2

- 1. George Stern
 - a. Began writing software to control the power supplies for battery charging
 - b. Preparation for battery housing electronics assembly