

# 300083 - DMO Support - LRAUV

## Week 50

1. Thom Maughan
  - a. Battery packs are assembled and waiting for degaussing by Denis
  - b. Ran simulation on switching converter, lowered the frequency to improve thermal, reviewed with Erik and then modified the packs
  - c. Reviewed Evan's heat sink design

## Week 49

1. Thom Maughan
  - a. Batman firmware release and test
  - b. First two packs are in assembly and then will be de-guassed and installed in Galene
  - c. Working on procedure for identifying weak battery sticks from the old packs

## Week 47

1. Brian Kieft
  - a. De-fouled waveglider Tiny and relaunched Pontus following an entanglement issue.

## Week 46

1. Thom Maughan
  - a. Formalizing the test plan and providing explanation on functionality. Found and fixed a couple bugs. Charging at upper voltage limit is causing thermal issues, investigating.
  - b. Looking into heat spreader plate.

## Week 45

1. Thom Maughan
  - a. BatMan adc driver update, working on testing the charging state machine transitions.
  - b. BatMan meeting. Galene has been identified as the test vehicle. C

## Week 44

1. Thom Maughan
  - a. Batman testing, tracking down adc issue

## Week 42

1. Thom Maughan
  - a. Debugging ADC issue. Rewriting ADC driver. Have cycled the discharge / charge cycle twice and the state machine only has a flaw with ADC during trickle to softstart.

## Week 40

1. Thom Maughan
  - a. Built up a third BPC2 battery pack for debugging ADC issue in trickle to soft start transition.
  - b. Varsha and Chris are getting ready to install Batman BPC2 battery packs in Galene. Quinn has finished the driver interface so first integration test coming soon.

## Week 39

1. Thom Maughan
  - a. Building another dev pack, chasing adc issue in trickle to soft start transition during chargin

## Week 38

1. Thom Maughan
  - a. Batman testing. Shore power ADC not reading correctly with low voltage constant current charging and batteries in Trickle to Softstart transition.
  - b. Supporting LRAUV software integration
  - c. Status meeting, feedback on protocol
  - d. Misc cable harnesses, drawings

## Week 37

1. Thom Maughan
  - a. Delivered two BPC2 battery packs for software testing on the LRAUV. Chris B made 3 cables that addressed noise issues. Reconfiguring for use without multi-drop rs232 for the first phase.
  - b. Testing constant current charging and limit / fault testing. Found an issue with shore power adc values in certain test configurations, debugging it.
  - c.

## Week 36

1. Thom Maughan
  - a. Batman BPC2 battery packs comms connected to LRAUV. Debugged noise issue on rs232 multidrop. Quinn is moving forward with battery driver.

- b. Testing fault scenarios, writing handlers.
- c. Testing constant current charging. Found an issue with shore power adc, working it.

## Week 34

- 1. Thom Maughan
  - a. Batman firmware new features
  - b. Working on integration and test with LRAUV. Troubleshooting noise problem on rs232 multidrop.
  - c. Full power charging and discharging. Cables and supplies that can handle 20amps.

## Week 33

- 1. Thom Maughan
  - a. Enhanced the battery charge handler in BatMan, testing and bug fixing.
  - b. Added fields and new serial commands to support charging.
  - c. Testing on LRAUV
  - d. Updated protocol spec.

## Week 32

- 1. Thom Maughan
  - a. Updated Batman firmware to address protocol feedback
  - b. Troubleshooting serial garbage chars, fixed with a 10k terminator

## Week 31

- 1. Thom Maughan
  - a. Finish build and test of two battery LRAUV battery packs with BPC2 backplane.
  - b. Merged Coles 'charge management app' code into BatMan. Delivered a version of BatMan firmware to the LRAUV lab for Quinn to write LRAUV battery component.
  - c. Troubleshooting noise char on long test cable with LRAUV setup. Experimenting with different resistance on RS232 multidrop.

## Week 30

- 1. Brian Kieft
  - a. Supporting deployments for Daphne, Ahi, Brizo (CANON, MBTS, Synchro)
- 2. Thom Maughan
  - a. Built two battery packs for vehicle integration test and deployment
  - b. Updated serial protocol spec (again)
  - c. BatMan firmware updates to enhancements to the protocol

## Week 29

1. Brian Kieft
  - a. All vehicles recovered last Thursday. Weekend is off!
2. Thom Maughan
  - a. BatMan serial protocol spec updated, reviewed, feedback addresses
  - b. Building two additional battery packs
  - c. Firmware updates to align with protocol spec

## Week 28

1. Thom Maughan
  - a. Setting up for Batman development

## Week 27

1. Brian Kieft
  - a. Piloted Galene for tollgate survey at 250 m to observe possible Siphonophore diel vertical migration (DVM).
  - b. Supporting ongoing Pontus deployment with docking.

## Week 24

1. Brian Kieft
  - a. Makai, Pontus, Ahi, Daphne all deployed this week! Lots of on call support.

## Week 22

1. Brian Kieft
  - a. Ahi is out for another plaktivore i2map run
  - b. Ahi, Daphne, and Triton were out last week. Acoustic tracking and traditional tracking DB tracking were used due to a configuration error on Triton. Successful data collection around the drifter. Daphne failed sample collection due to a clog.
  - c. Recovered Tiny and Triton.
2. Thom Maughan
  - a. Working with Cole and Varsha on LRAUV battery.
  - b. BPC2 out for assembly.
  - c. Moving forward with software dev on the handbuilt backplanes

## Week 21

1. Brian Kieft
  - a. Lot's of deployments this past week! Opah, Ahi, Triton, Daphne, Galene

## Week 19

1. Brian Kieft

- a. Supported multiple deployments including Galene/chiton
- b. Localization and recovery support for Galene

## Week 16

- 1. Brian Kieft
  - a. Supporting Ahi Synchro and Makai deployments this week.
- 2. Thom Maughan
  - a. Cole is working board bringup on the new backplane. Varsha is on the ready line to send parts and PO to Indtec. Everyone is busy, so soonest will be next week.

## Week 15

- 1. Denis Klimov
  - a. We have a batch of antennas that have various problems and needed careful inspection and testing, some turned out flooded, and some of new build have faulty cables; revising testing procedure (with Varsha Senthil)
- 2. Thom Maughan
  - a. Weekly meeting.
  - b. Met with Cole and we'll coordinate and share board bringup. ASO group is quite busy and my time is heavily burdened by another project.

## Week 14

- 1. Thom Maughan
  - a. Backplane pcbs have been hand assembled and are ready for test. Varsha and Cole doing a great job keeping forward momentum.

## Week 12

- 1. Brian Kieft
  - a. Daphne rescue into Santa Cruz following GPS failure and a bottoming near pleasure point. MBTS deployment was cancelled and we'll try again next month.
- 2. Thom Maughan
  - a. Attended status meeting.

## Week 11

- 1. Thom Maughan
  - a. Meeting for status and plans
  - b. Protocol doc update

## Week 9

- 1. Thom Maughan

- a. Brief meetings to catch up. Batman will be timeslicing with MSC3 effort in March.
- b. Hardware is in fab, Erik handled issues with NexPCB and MBARI pcb spec.

## Week 7

- 1. Brian Kieft
  - a. Wrapped up mbts deployments last week with Daphne/Ahi

## Week 6

- 1. Brian Kieft
  - a. Supporting Daphne and Ahi MBTS deployments this week. Issues with Ahi ground fault on the puck but otherwise good planktivore data.

## Week 5

- 1. Brian Kieft
  - a. Supporting Ahi planktivore deployment this week
- 2. Thom Maughan
  - a. Wheeled portable Batman dev cart to Cole, meeting to discuss next steps

## Week 4

- 1. Thom Maughan
  - a. BPC2 RevC was handed off by Duane and we were adjusting some connector locations thanks to feedback by Evan M and a layout problem was found in the power discharge path. After discussing and looking at 10 layer board as an option, the decision was to relayout the pcb.
  - b. Setup Cole with the portable Batman development environment.

## Week 2

- 1. Brian Kieft
  - a. Supporting Daphne MBTS mission this week
- 2. Thom Maughan
  - a. Working with Varsha on battery backplane BPC2 RevB board bringup. Found and fixed a few things, enough to spin a RevC.
  - b. Sent PO to Indtec and then put a hold on the assembly. We'll be making a RevC to address the issues.

## Week 1

- 1. Thom Maughan
  - a. BPC2 battery packs assembled and tested and installed into Galene after Degausing by Denis.

- b. Charged using tether and LRAUV lab power supplies
- c. Demo'd the firmware interface to Varsha and Brian