

300078 - DMO Support - AUV

Week 52

1. George Stern
 - a. Rough housing sketch and ordered housing/parts for the small pressure chamber upgrade to make eventual testing easier

Week 51

1. George Stern
 - a. Finally identified and ordered a replacement for the stripchart recorder and pressure controller

Week 50

1. Thom Maughan
 - a. Hyperion power supply design / layout
 - b. Review power entry board, send for fab
2. George Stern
 - a. Began looking into PID controllers and reverse engineering the small pressure chamber design to make the testing easier

Week 49

1. Thom Maughan
 - a. Hyperion power supply design and layout
 - b. Review and discussion on next steps for MVC2 / SOM carrier, LCB, backplane
 - c. Hyperion Meeting

Week 47

1. Kent Headley
 - a. Tad and Jordan tried out the transit macro, and reported that it went off course. Haven't had a chance to look at the logs yet.

Week 46

1. Kent Headley
 - a. updated part of GUI layout to group controls in a more sensible way
 - b. working on integrating MVC power supply serial output into GUI
2. Thom Maughan

- a. Working with Erik on Hyperion MVC2 (som carrier) board bringup. Phytex / NXP docs are nice. Linux is up and running and were debugging uSD and ethernet switch. Console, USB OTG, bootcfg are working.

Week 45

1. Kent Headley
 - a. DMO is planning a Paragon trip Friday to continue testing of the layered control updates adding real time mission start/end times, and macro behaviors: repeatable, recallable behavior sets with special end conditions (location, cycles, etc.)
2. Thom Maughan
 - a. Hyperion MVC2 (aka som carrier) testing
 - b. Hyperion MVC2 power supply board design, started layout. Erik is optimizing pin assignments on the bus connector and those changes will be folded in.

Week 44

1. Thom Maughan
 - a. Hyperion MVC2 mobo, aka som carrier is back from fab. EE-Tech stuffing the remaining parts. Assembly was not as complete as planned due to partial stock at assembly house.
 - b. Jose prefers to stuff the entire board rather than partial, so may order blank pcbs for the build of 3.
 - c. Board bringup hopefully starts this week.
 - d. Working on Hyperion power supply. Using GaNfets for 24v supply. Simulation shows over 98% efficiency at 125W - hoping that is real.

Week 43

1. Kent Headley
 - a. The test day last week ran into some snags, but one of the test missions for layered control mods was successfully completed (test real-time clock start/end times for behavior). Remaining tests are for a new macro feature (repeatable behavior sequences).

Week 42

1. Kent Headley
 - a. Prepared a set of (4) mission scripts to test new features in Dorado layered control that will enable i2map tow out missions. The features include the ability to start/end behaviors using the system clock (specified date/time) rather than the (relative) mission clock. A second feature enables the definition of macros, a set of behaviors that can be repeated and reused, e.g. to transit to a location, surfacing periodically for a GPS update, or low-power station keeping. The plan is to test these Thursday on a test cruise to C1.

2. Thom Maughan
 - a. PCB fab for the Hyperion mvc2 baseboard, aka, som carrier is in progress. There were a couple parts that went out of stock between ordering and assembly that caused a small delay, but expect boards to be received next week. Parts have been ordered for those that were not in stock at rapid proto assembly house.
 - b. Working on Hyperion mvc2 power supply. Finished the design of the 24v converter and am working on layout of that subsection. 12v, 5v and 3.3v are based on the same converter ic and that design is partially complete, needing simulation.

Week 40

1. Thom Maughan
 - a. finished Hyperion MVC2 baseboard, aka, som carrier review and layout. Sent out for pcb fab and assembly
 - b. Working on Power Supply board
2. Justin Tucker
 - a. Recovery test tube design support

Week 39

1. Thom Maughan
 - a. Wrapping up Hyperion MVC2 baseboard, aka, som carrier detailed review and layout.

Week 38

1. Thom Maughan
 - a. Hyperion detailed design review, update and pcb layout in kicad

Week 37

1. Thom Maughan
 - a. Hyperion mvc baseboard detailed design review and pcb layout, about 80% complete.

Week 27

1. Kent Headley
 - a. testing macro-enabled i2map towout mission in simulation. These are long missions, so take hours to run in full; when issues occur late in the process, there is an exercise to isolate the issue in a reasonable amount of time before testing the full sim again. Even short runs have quite a bit of overhead, since the compile time is fairly long.

Week 26

1. Kent Headley
 - a. started reviewing I2MAP mission to streamline using macros

Week 25

1. Justin Tucker
 - a. Updates to INS assembly drawings
 - b. Recovery hook analysis and design

Week 24

1. Justin Tucker
 - a. INS housing assembly drawing update
 - b. INS housing post test analysis

Week 23

1. Kent Headley
 - a. refactored behavior macro code based on demo feedback from Erik. In new version, the macro semantics in the mission file separate the macro and mission definitions, and make them more intuitive. Internally, the code uses 'macro' rather 'substack' naming conventions.

Week 22

1. Kent Headley
 - a. Met w/ Erik re macro behaviors for informal review/feedback
 - b. Looking into suggested semantics changes
2. George Stern
 - a. Found money and ordered new gauge for small pressure test chamber so in ~6wks we can start 7km tests

Week 21

1. George Stern
 - a. Found money to fix the small pressure chamber

Week 20

1. Kent Headley
 - a. Added feature to the substack proof-of-concept that enables a substack to be re-run, i.e. it can be used like a macro
 - b. Next steps are to review with Erik and Rich, and experiment with more use cases
2. George Stern

- a. Quotes and final proposal for new gauge/safety interlock for the small pressure chamber to enable testing reviewed with Aaron and sent to Paul

Week 19

- 1. Kent Headley
 - a. working on experimental substack scheme to implement repeated layered control behaviors.

Week 16

- 1. Kent Headley
 - a. worked on behaviors: transit and low-power station keeping
 - b. sketching out related concept for Layered Control substacks, a looping mechanism
- 2. George Stern
 - a. Worked with Aaron to rediscover how to program the small pressure chamber to run many cycles to begin testing if chips stay on the board; unfortunately, during the effort we learned the chamber's calibration appears to be off and should probably be corrected before testing.

Week 14

- 1. Kent Headley
 - a. Addressed comments for code review of pull request for change set with Dorado sim w/ TRN in the loop
 - b. Attended Hyperion meeting
- 2. George Stern
 - a. Looked at process controllers to add cycle programming to smaller pressure chamber

Week 13

- 1. George Stern
 - a. Casually looking into automating small pressure chamber to accommodate many cycle testing, current large chamber does not reach 6km pressure.

Week 12

- 1. George Stern
 - a. Met with Aaron to brainstorm options for very long pressure test
 - b. Brought up the pressure test board sufficiently to enable a minimal powered test at pressure

Week 11

1. George Stern
 - a. First pressure test to 6km completed, one cap visually changed but still works, all other parts look good
 - b. Attempting to bring up the board for a powered pressure test

Week 8

1. Kent Headley
 - a. working on new Dorado behaviors to enable I2Map missions: long transit, low power loiter, start time based on absolute clock (date/time)
2. George Stern
 - a. Pressure test board bring up

Week 7

1. Justin Tucker
 - a. Work on INS vibration isolation design

Week 6

1. Kent Headley
 - a. Attended meeting re using LRAUV hardware for Dorado

Week 4

1. George Stern
 - a. Reviewed layout of the pressure test sample and cut some corners to get it on order in time; unfortunately build questions pushed the completion date into the PCBway lunar new year holiday so now I lose at least 2wks.

Week 3

1. George Stern
 - a. Prop drive board - Completed peer review updates and adding hooks for the actuator board to hopefully eliminate the need to layout and build a very similar 2nd card
 - b. Created a greatly reduced layout effort and build time board for preliminary pressure tests. The board will mostly answer the question if solder joints on QFNs and other parts survive the stress of repeated cycles to 6km while enabling some live checkout at pressure

Week 2

1. George Stern
 - a. Continued schematic entry/detailed design for the Dorado Prop/Actuator board

- b. Peer review for the board

Week 1

- 1. Thom Maughan
 - a. Reviewed Hyperion power supply design with Erik. Addressed the feedback and the layout and BOM for parts ordering is nearly finished.