

Rob McEwen

Week 51

- 300078 - DMO Divisional Support - AUV
- 600034 - Precision Control Technologies for ROVs and AUVs
- 901513 - Targeted Sampling by AUVs
- 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
- 902101 - LRAUV Technology Development and Fleet Operations
- 901405 - Wave Energy Buoy
- Overhead
- Out of Office

Week 50

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Week 49

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Week 48

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Week 47

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Week 46

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Week 45

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Week 44

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Week 43

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Week 42

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Week 41

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Week 40

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Week 39

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Week 38

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 - Ran B&T step tests in the tank to test the damping of the moving mass control

- It was overdamped. Thus the underdamped response previously seen requires the vehicle to be in flight.
- The simulator presented a similar underdamped response.
- I was able to obtain a well-damped response in the simulator by adjusting the deadband and gains.
- I'm hoping to try this at sea soon.
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Week 37

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Week 36

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Week 35

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 - Completed simulation of Caress's Axial mission. This includes both the flight code and mbtrnpp.
 - The simulation was successful. Recent word was that Trn worked up there a few days ago, as predicted by the simulation.
 - Working on eliminating duplicate multibeam code from the simulation.
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Week 34

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- Out of Office
 - First two weeks of August.

Week 33

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Week 32

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 - First two weeks of August.

Week 31

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Week 30

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Week 29

- 300078 - DMO Divisional Support - AUV
- 600034 - Precision Control Technologies for ROVs and AUVs
 - Completed first pass at adding mbtrnpp to the simulator. It's working.
 - Second pass will eliminate duplicated code and unnecessary computations.
 - Found long-standing bug in Attributes class.
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 - First two weeks of August.

Week 28

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Week 27

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Week 26

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- 600034 - Precision Control Technologies for ROVs and AUVs
 - Resuming work on integrating mbtrnpp into the simulator. Much debugging.
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Week 25

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Week 24

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Week 23

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- 902101 - LRAUV Technology Development and Fleet Operations
 - Able now to specify ocean currents directly in Simulation.cfg.
 - Simulating docking events with ocean current.
 - Working on adding an auxiliary waypoint to lineCaptureHoming.xml for missed-dock events.
- 901405 - Wave Energy Buoy
- Overhead
- Out of Office

Week 22

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Week 21

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- 600034 - Precision Control Technologies for ROVs and AUVs
 - Working through FLS moving-map code.
- 901513 - Targeted Sampling by AUVs
- 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
- 902101 - LRAUV Technology Development and Fleet Operations
 - Debugging water current simulation in the LR simulator.
- 901405 - Wave Energy Buoy

- Overhead
- Out of Office

Week 20

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Week 19

- 300078 - DMO Divisional Support - AUV
 - Worked with Kent to roll GMT back to version 5 to get around the grdcut -N bug introduced in V6. This required doing a CMAKE build from source.
 - Developed tileMaker.m that incorporates createbo script and has configurable tile sizes.
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- 902101 - LRAUV Technology Development and Fleet Operations
 - Working with QS on lineCaptureHoming.xml to remove premature dock attempts.
 - Working on docking test plan. Getting a better idea of which knobs to turn.
- 901405 - Wave Energy Buoy
- Overhead
- Out of Office

Week 18

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Week 17

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Week 16

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Week 15

- 300078 - DMO Divisional Support - AUV
 - Debugging large pitch oscillation that occurred on a steep hill on Dave's EMARK_vents mission.
 - Received the map from Dave, cut it up into .grd tiles, and created octree tiles.
 - The simulator then reproduced the oscillation quite accurately.
 - Devised and coded a fix. Added a new method for computing altitude from the Dvl beams. The algorithm fits a plane to the four beams with least squares, then takes the normal to the plane for altitude.
 - The simulator then verified that this eliminates the oscillation on that mission.
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Week 14

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- Overhead
- Out of Office

Week 13

- 300078 - DMO Divisional Support - AUV
 - Simulated one of Dave C.'s mid-Atlantic mapping missions
 - Still working on grt to octree conversion for the corresponding map
 - Debugging a pitch oscillation that occurs during steep climbs and dives.
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- 901513 - Targeted Sampling by AUVs
- 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
- 902101 - LRAUV Technology Development and Fleet Operations
 - Verified rangeClosing fix in simulation.
- 901405 - Wave Energy Buoy
- Overhead

- Out of Office

Week 12

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- 902101 - LRAUV Technology Development and Fleet Operations
 - Added a fix for the rangeClosing() problem where it doesn't detect a miss.
 - Pushed it onto a new branch feature/rangeClosing-fix-rob
 - Will now test it in simulation.
- 901405 - Wave Energy Buoy
- Overhead
- Out of Office

Week 11

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Week 10

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 - Recommended fixing the unplanned dock by just drifting for 15 minutes immediately after undocking. It's an easy fix.
 - Discovered why sometimes the vehicle doesn't know it missed the dock. It's because the DAT validity checks ignore hits that don't have all good data, principally bearing. Then, the rangeClosing function ceases to get sufficient data to determine the range is increasing because the DAT doesn't get good bearings when the transponder has passed behind the vehicle. However, it is still getting good ranges. So we need to adjust the code so that rangeClosing() just looks at ranges irrespective of whether the bearing is valid.
- 901405 - Wave Energy Buoy
 - Recomputed the added mass moments of inertia for the three components to be about the center of mass. It turns out that this is what Gazebo needs.
 - Updated the document, theory.md, and the Matlab code.
 - Pushed these into my branch and issued a pull request.
- Overhead
- Out of Office

Week 9

- 300078 - DMO Divisional Support - AUV

- 600034 - Precision Control Technologies for ROVs and AUVs
 - Meeting later today (Tues) on porting the flight code and simulation to Linux
- 901513 - Targeted Sampling by AUVs
- 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
- 902101 - LRAUV Technology Development and Fleet Operations
 - Worked through proportional navigation algorithm
 - Reviewing docking runs from December.
 - Looking for clues on how to reduce homing error.
 - Discovered that vehicle does an unplanned short-range dock attempt after every undock.
- 901405 - Wave Energy Buoy
 - May need to translate inertias or added inertias to the center of mass. Meeting later today.
- Overhead
- Out of Office

Week 8

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Week 7

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- 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
- 902101 - LRAUV Technology Development and Fleet Operations
 - Reviewing Docking runs from last December.
 - Making block diagram of the homing and control loops.
- 901405 - Wave Energy Buoy
- Overhead
- Out of Office

Week 6

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- 901405 - Wave Energy Buoy
 - Recomputed added masses and stability derivatives to refer to their attachment points, as required by the buoy simulation. These computations are preserved in Matlab code.
 - Updated the mkdoc/Latex document accordingly.
 - Pushed it and the Matlab code into the Git repository.
- Overhead
- Out of Office

Week 5

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- 901405 - Wave Energy Buoy
 - Working on Matlab code that estimates drag and added masses for the buoy, PTO, and Heave Cone.
 - This code outputs the parameters in ASCII with embedded Latex symbols, ready for input to the .md file on Github.
- Overhead
- Out of Office

Week 4

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Week 3

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Week 2

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Week 1

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