Project 21
Autonomous RoboSub

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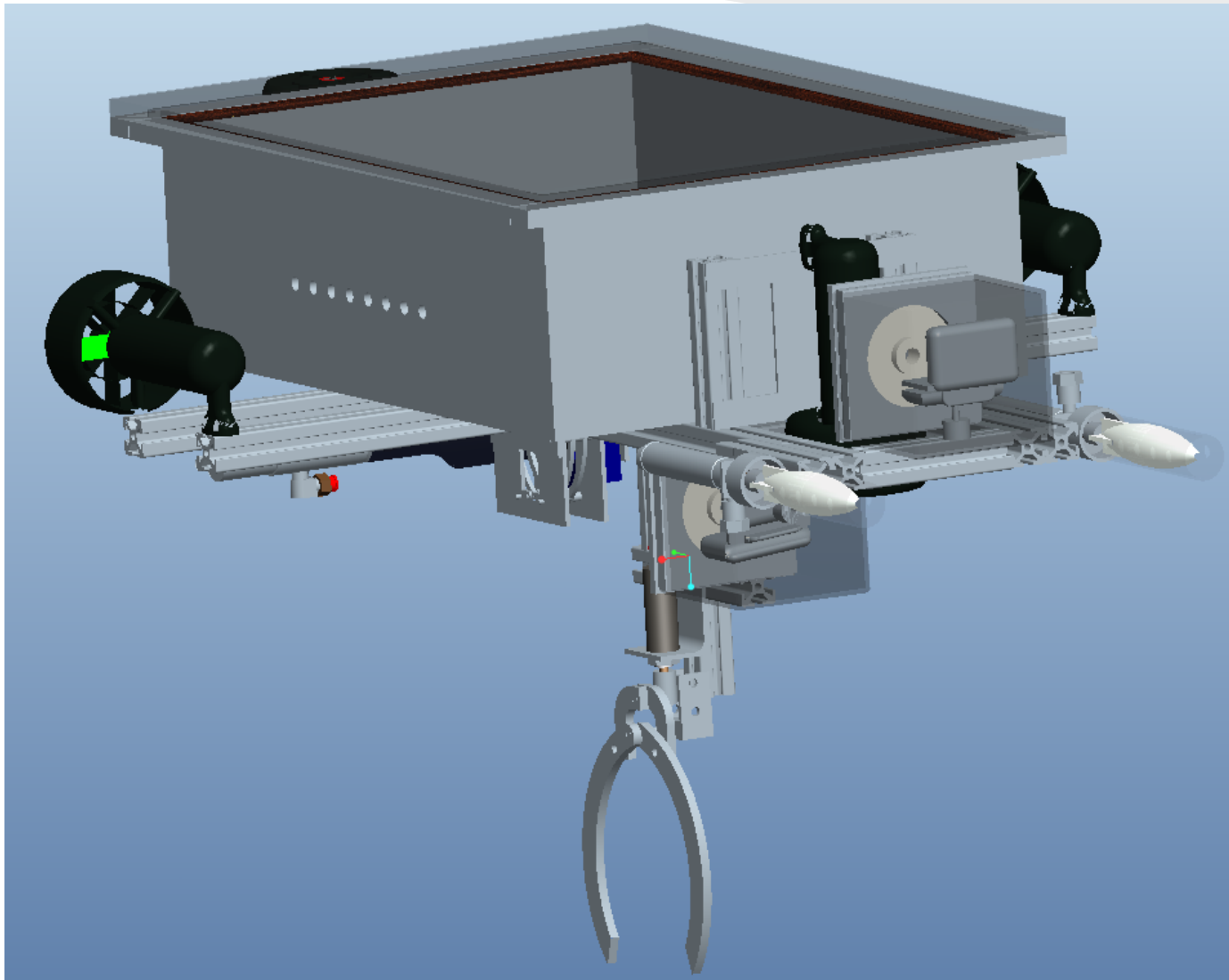
Brief Recap

- 16th Annual AUVSI RoboSub Competition

- Held in San Diego July 22-28, 2013

- Multiple tasks making use of camera, depth sensor torpedoes, claw, marker dropper, and hydrophones

Previous Progress

- Design finalized

- Components chosen and ordered

- Physical design built at machine shop
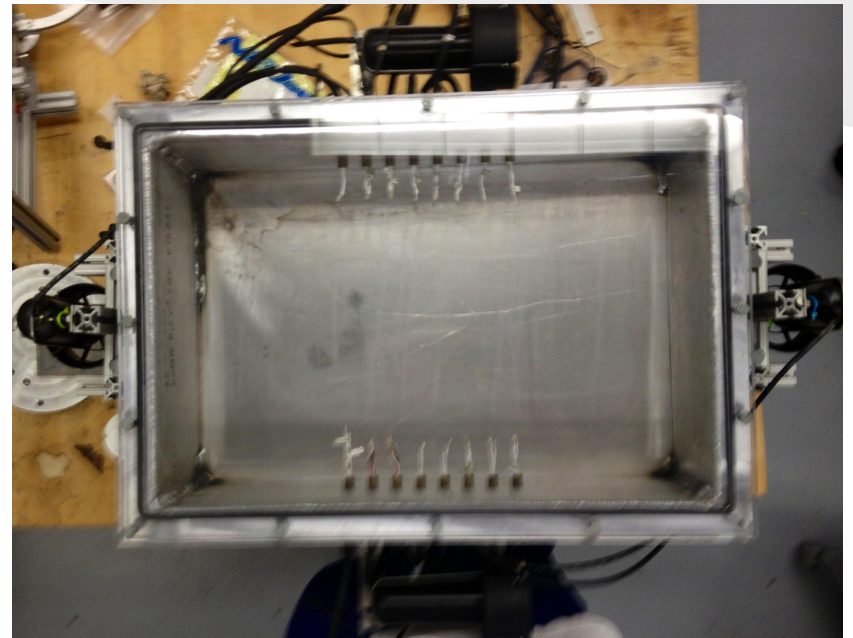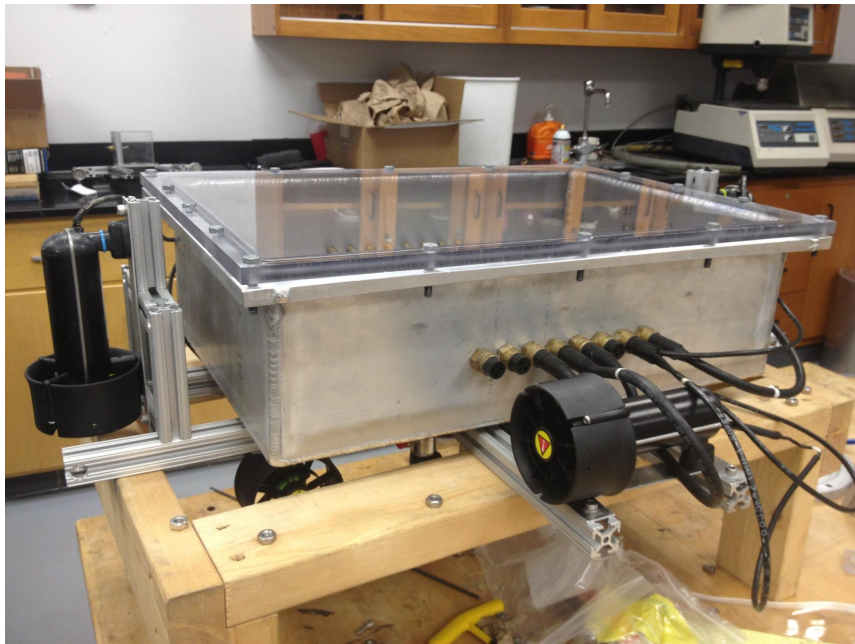
- Testing performed on a few systems

Final Design

Changes Made

- New tasks mentioned in released rules

- Added 2 additional thrusters for better maneuverability and extra weight

- Several more bolts added to lid to ensure watertight seal

Final Design

Recent Progress

- Air regulator repaired and operational

- Frame with attachments assembled

- Hull containing electrical hardware is watertight

- More steps towards better visual recognition

Potential challenges

- Buoyancy at the moment
  - adding the necessary components later will compensate

- Overcoming difficulty of OpenCV
  - working with UAV team

- Current budget balance
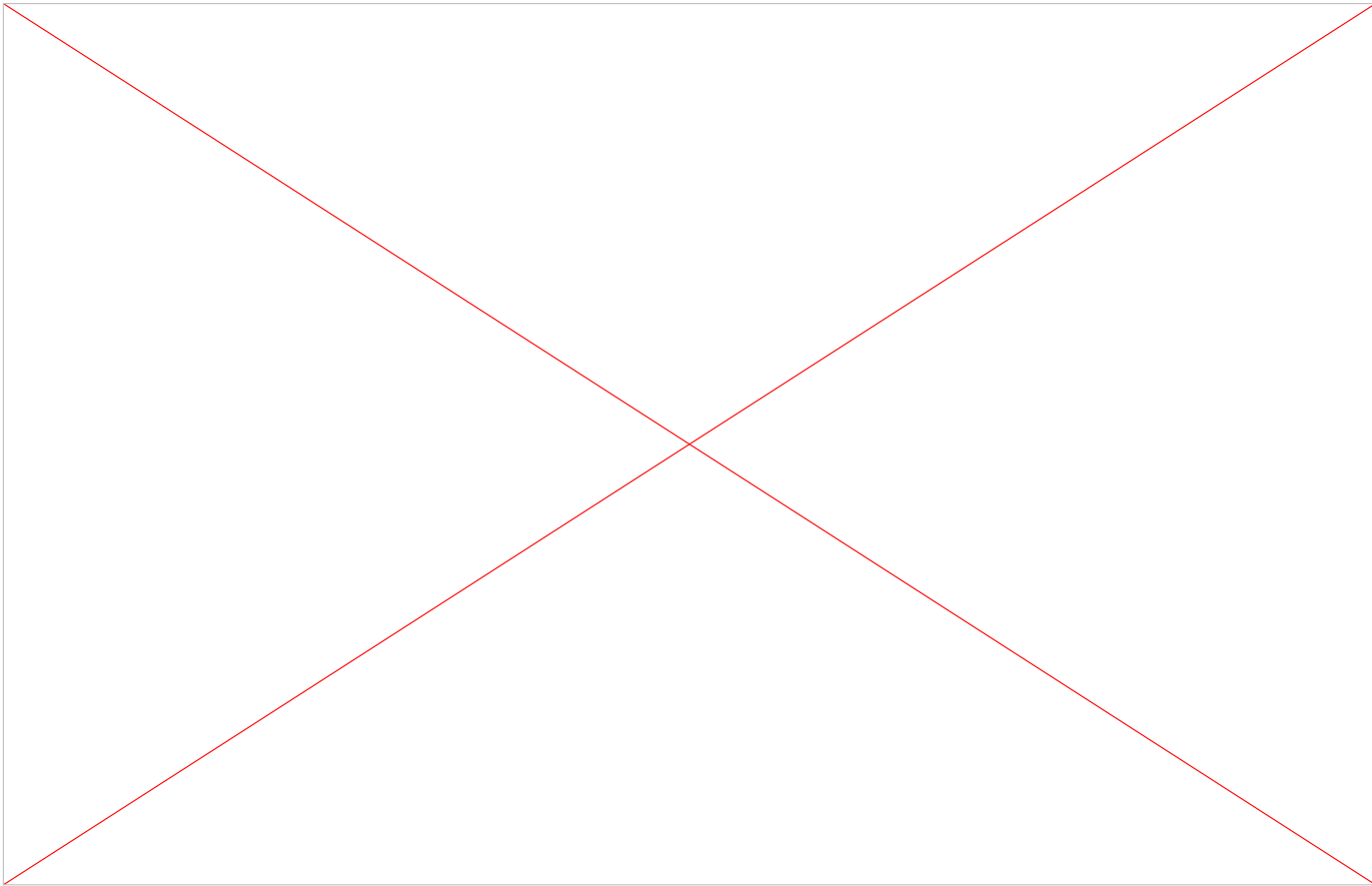 - May not have enough for replacements

Recent Progress

- Identification of shapes in OpenCV example

Insert video

Recent Progress

- Identification of shapes in "Toll Booth" task image

Testing

- Trip to Morcom Aquatics to test the hull and torpedos

Testing

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Current Budget

Starting Funds	**2200.00**
Z-Box	332.00
Arduinos/Arduino Mega	109.00
Batteries	186.00
RAM	36.00
IMU	125.00
Prototype Materials	126.00
Hull Materials	417.00
Bolts	20.00
Air Tank Repair	40.00
Competition Registration	500.00
Remaining Funds	**309.00**

Gantt Schedule
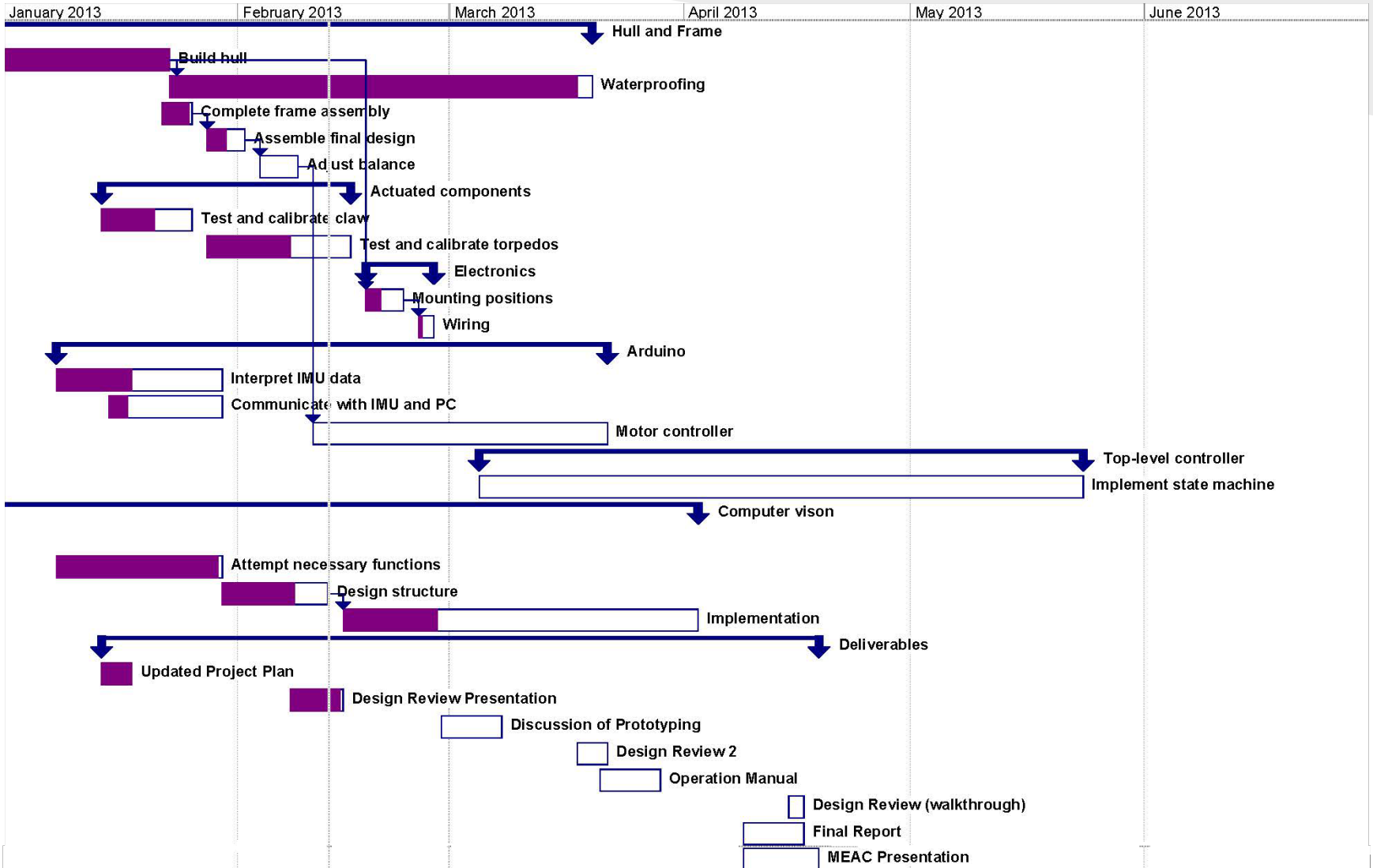
Conclusions

- Making good progress

- Need to perform more tests in the water for debugging system

- Further work on vision algorithm for shape detection

- Need to complete Arduino-to-computer communication while using the IMU

- Integrate system components and ensure watertightness

Questions

Ask away!