Computer Controlled Aiming and Tagging System

Spring Progress Report

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Project Review

- Real time analysis to test the ability and accuracy of C-CATS program
- Old Way:
  - Run dynamic cable testing with cameras and data sensors
  - Hours of post processing to evaluate data
  - Must start all over if the data is bad

Revised Specifications

Specification	Value
Budget	$2000
Maximum Range	25 m
Azimuth Range	~~360 deg~~ 251 deg
Elevation Range	90 deg
Angular Velocity	≥ 360 deg/s
Resolution	≤ 1 deg/s
Maximum Weight	50 lb.
Power Source	~~Honda EU1000i Generator~~ Wall Plug
Motors	Servos
Tagging System	Paintballs

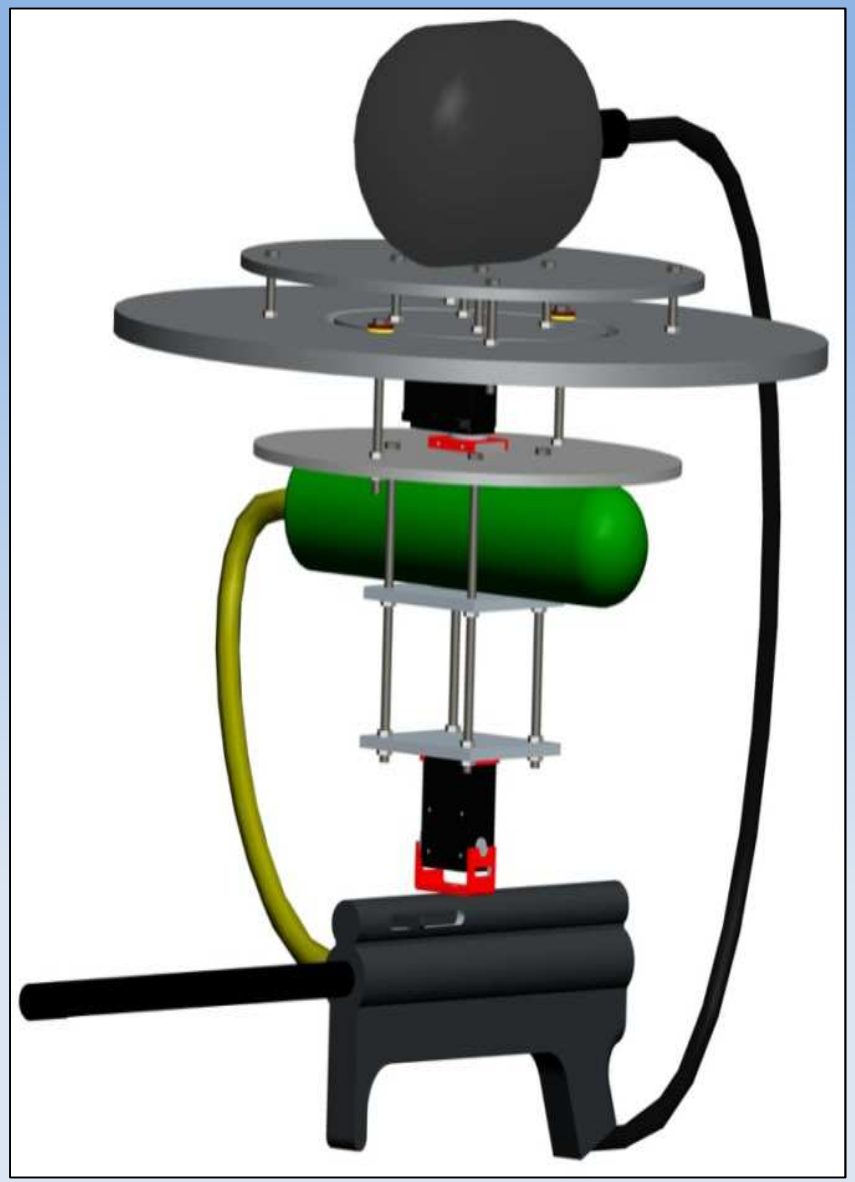
Revised Problem Statement

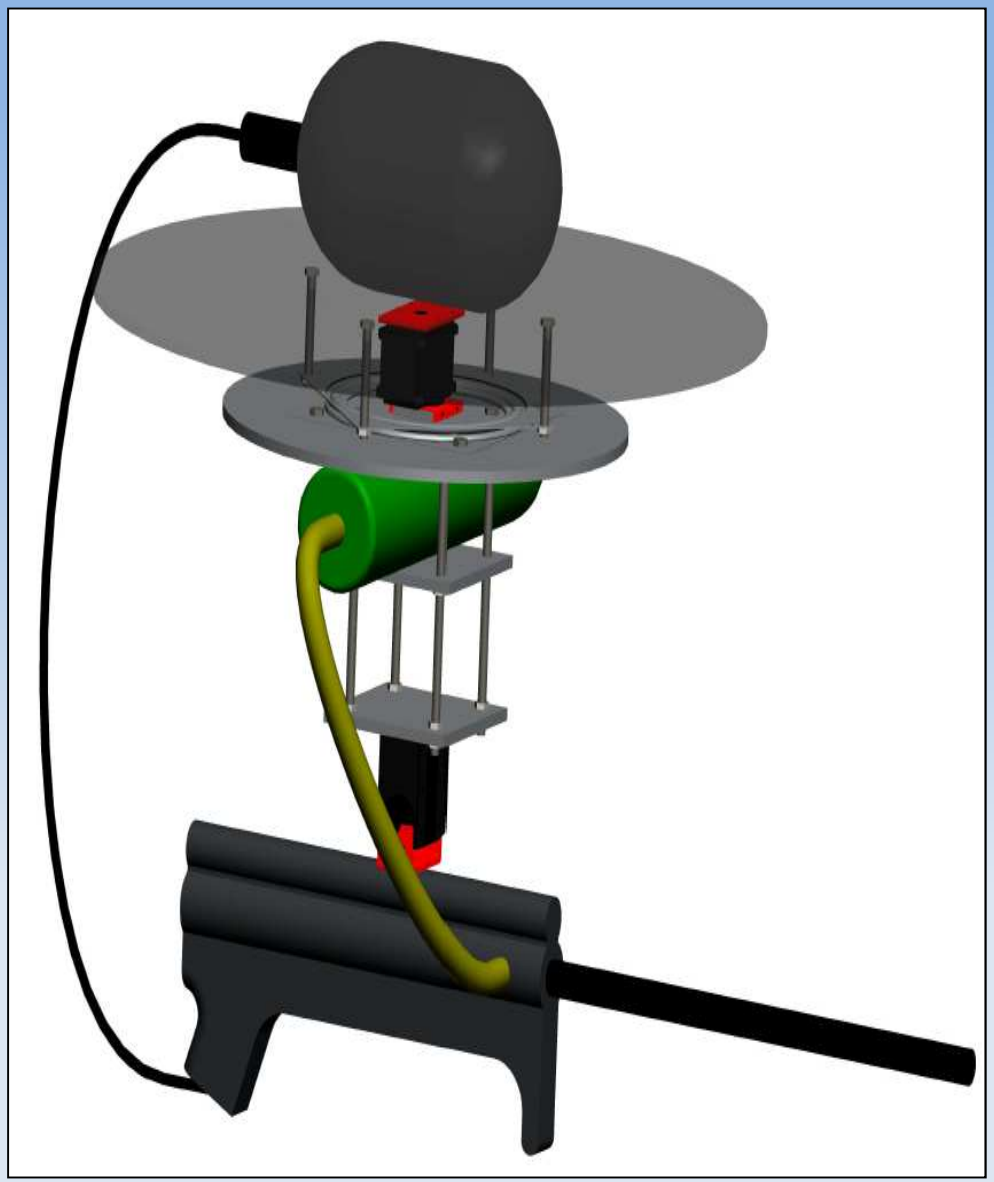
- Solution:
  - System with ability to see the accuracy immediately
  - Real time mark on target to collect data
  - Immediate feedback for good run/bad run
  - **Power Source wall plug**
- Project Goal:
  - Tagging system that can be statically tested for accuracy, repeatability, fire latency and safety

Concept Changes

- Use turntable instead of thrust bearings
- Less moving parts
- Smoother motion
- Lighter weight
  - Eliminates aluminum bridge from base plate

Final Concept with Changes





Issues Encountered

- Motor/Controller Issues:
  - Company that sold kit did not make all parts in house
  - One controller bridge was MIA from the kit
  - Possible back up plan:
    - Let vendor know we needed ASAP or we cancel order
    - Go to backup controller and motors from previous decision matrix
    - Need much more coding to communicate between motor/controller
  - Solution: Vendor has missing piece and is expediting all shipping

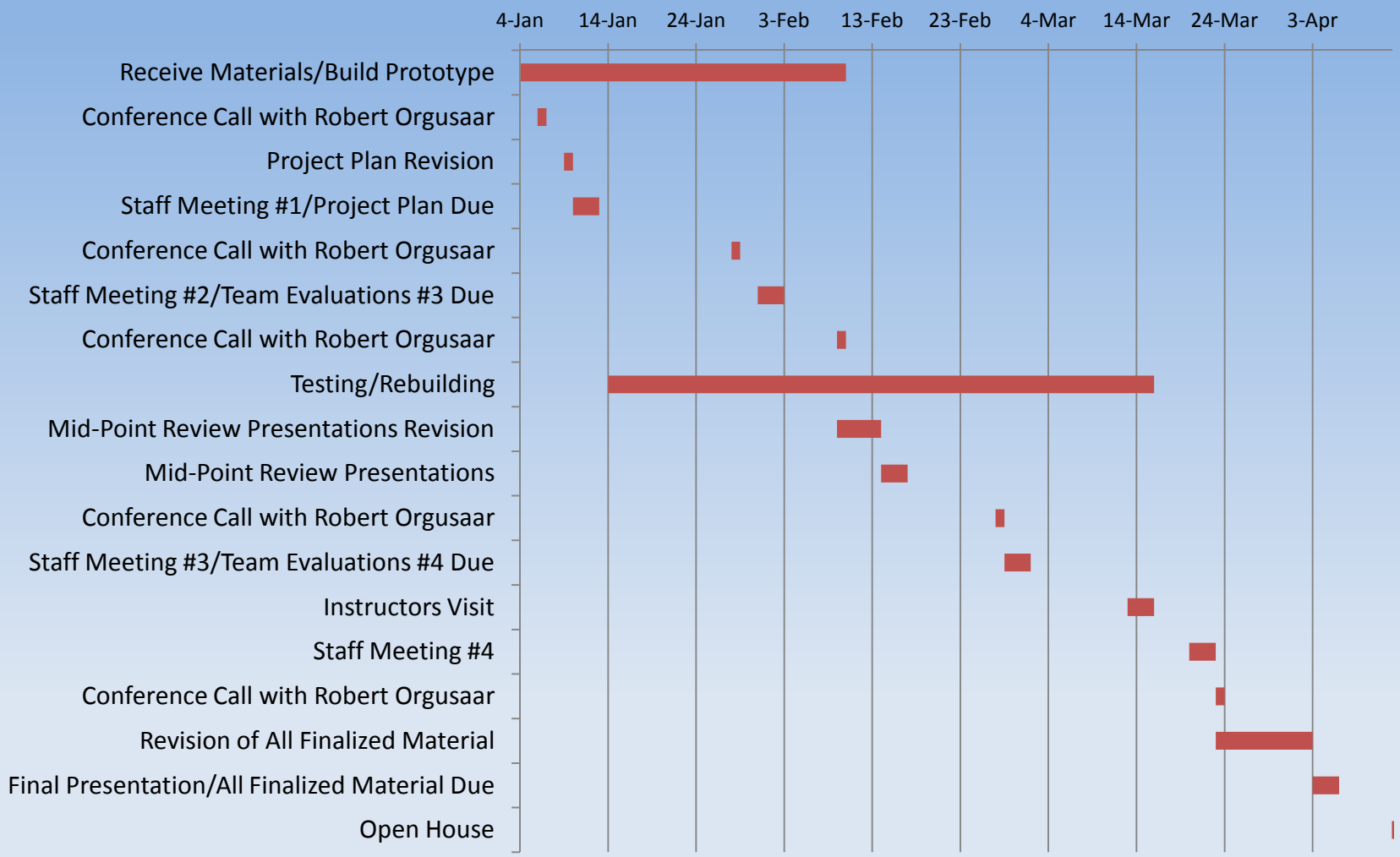
Issues Encountered

- Gun and modified hopper issues:
  - Vendor was tough to get in contact with
  - Finally reached but had not shipped anything
  - Possible back up plan:
    - Cancel order and buy both parts from other vendors
    - Would have to assemble ourselves

Project Status

- Due to issues encountered waiting for main components
- Finalizing CAD designs for machine shop

Spring Schedule



Budget

Budget:	**$**	**2,000.00**

Received Items:	
Hammerhead Barrel	$ 59.00
Air Supply	$ 129.95
Coiled Hose	$ 30.00
Assembly Materials	$ 254.93

Sum	**$ 473.88**

Items waiting on:	
GOLF Paintballs	$ 24.95
Regular Paintballs	$ 71.95
Marker & Upgrade	$ 368.45
Motor & Brackets	$ 743.00
Wireless Receiver	$ 24.95
Wireless Remote	$ 21.95
Controller & Bridge	$ 156.95

Sum	**$ 1,412.20**

Remaining Budget	**$ 113.92**

Project Conclusion

- Most time spent calibrating and programming
- Tweaking gun output velocities and motor speeds and directions
- Get testing site location permission

Questions?