

Progress Report

S.U.A.S.

Student Unmanned Aerial System

Senior Design Team# 14



Team Members

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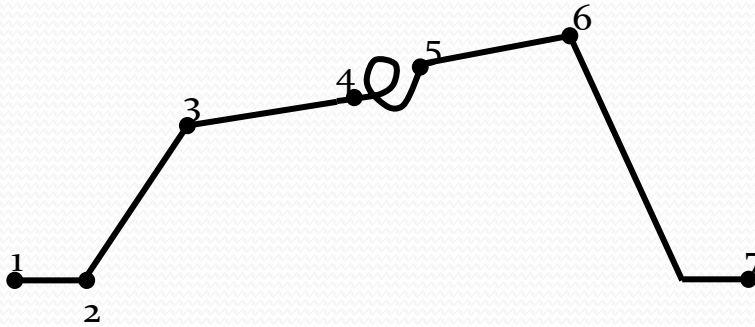


Project Scope

Primary Objectives:

- Systems Engineering approach for the design and manufacture of an Unmanned Aerial System (UAS)
- UAS able to complete specified mission.
- UAS design compliant with the 2012 AUVSI Student UAS Competition requirements.

Mission Profile



1. Warm-up & Take-off
2. Climb
3. Waypoint Navigation
4. Autonomous Area Search
5. Waypoint Navigation
6. Descent
7. Landing

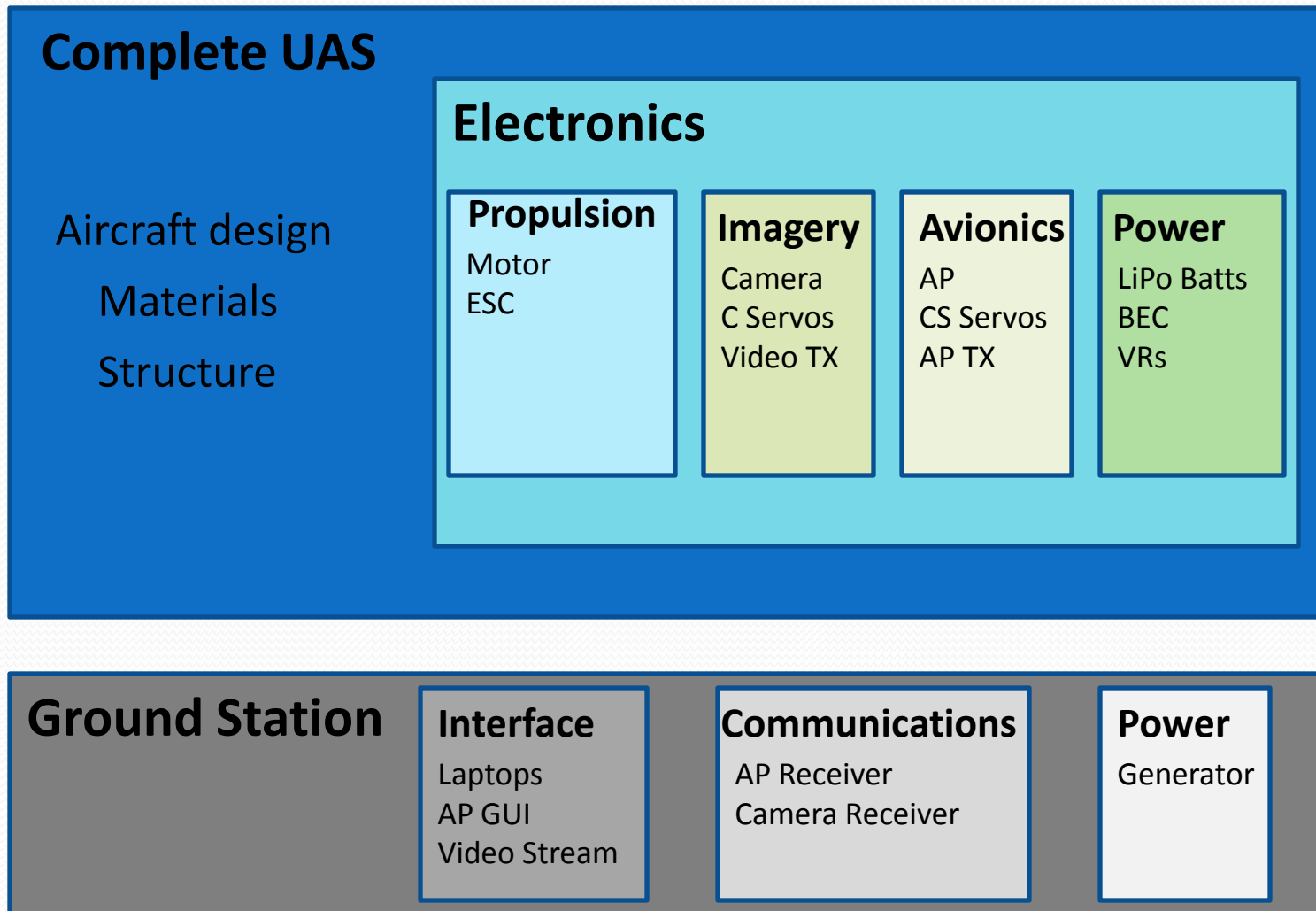
(Constant Target Recognition)



Design Approach

- To accomplish our primary objectives, our UAS must be comprised of several subsystems:
 - Aircraft Subsystem
 - Avionics Subsystem
 - Imagery Subsystem
 - Ground Station Control (GSC) Subsystem

Design Approach



Design Approach

- Budget = 3000\$

Component Price List:

Component	Vendor	units	Price (\$)	Total Price (\$)
Video Transmitter	ReadyMadeRC	1	89.9	89.9
Video Reciever	ReadyMadeRC	1	99.49	99.49
CCD Test Camera	ReadyMadeRC	1	69.99	69.99
Block Camera	GoElectric	1	566.95	566.95
Block Camera Interface board	GoElectric	1	89.95	89.95
3oz 4hs Fiberglass Cloth (yd)	US Composites	10	6.5	65
5.7oz Plain Weave Carbon Fiber	US Composites	7	33.5	234.5
Epoxy Resin and Hardener kit	US Composites	1	72	72
32oz Plastic Mixing Cup	US Composites	10	0.65	6.5
Competition entry fee	AUVSI	1	500	500
Autopilot Telemetry	3D Robotics	1	150	150
Autopilot Board	3D Robotics	1	300	300
1300mAh 11.1V 3 Cell Lipo Battery	Thunderpower	1	39.99	39.99
3850mAh 29.6V 8 Cell LiPo Battery	Thunderpower	2	216.95	433.9
60A Brushless ESC	Thunderpower	1	149.95	149.95
Li Poly Charger & Power Supply	Thunderpower	1	79.95	79.95
			Total =	2948.07

Project Status

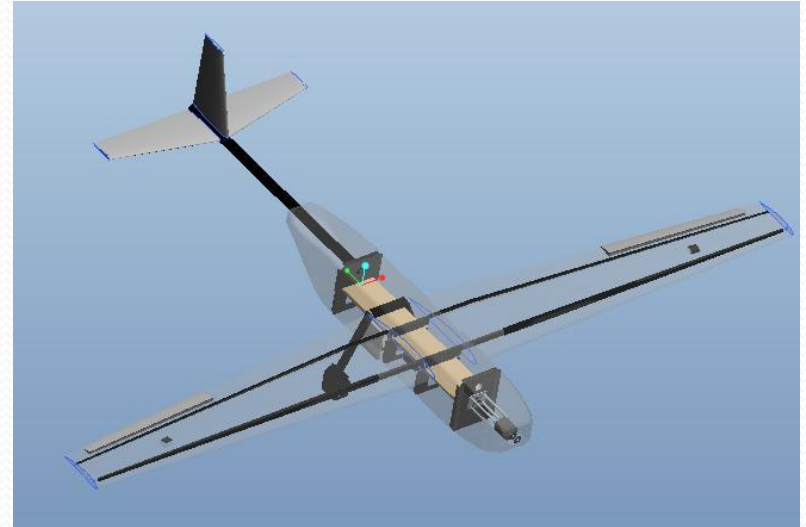
- Test Aircraft
 - Telemaster Senior

- Testing soon:
 - Autopilot
 - Camera
 - Transmitters
 - Receivers
 - Motor
 - ESC
 - Batteries

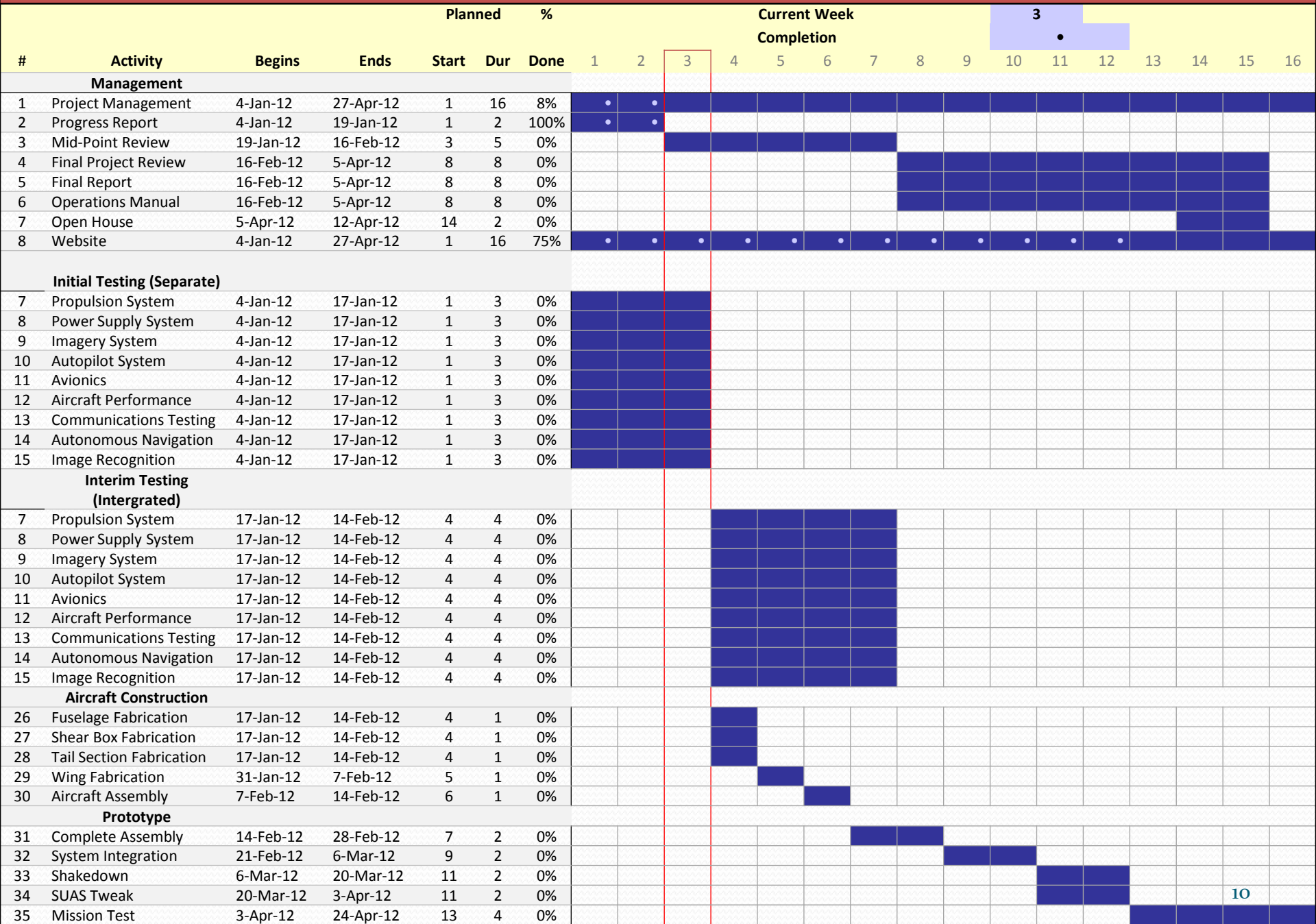


Project Status

- Aircraft Construction
 - Carbon fiber, Fiberglass, and resin system have arrived.
 - Parts Fabrication to begin at HPMI after mandatory safety training course.
- The group will be guided by Jerry Horne of HPMI during the construction process.



Team 14 Spring 2012 Gantt Chart



Summary

- Parts arriving soon
- Telemaster Senior Test Aircraft
- Aircraft Construction Begins
- Component Testing
- Communications Testing

End of Presentation