



# DORIS 66% Hardware Status Update

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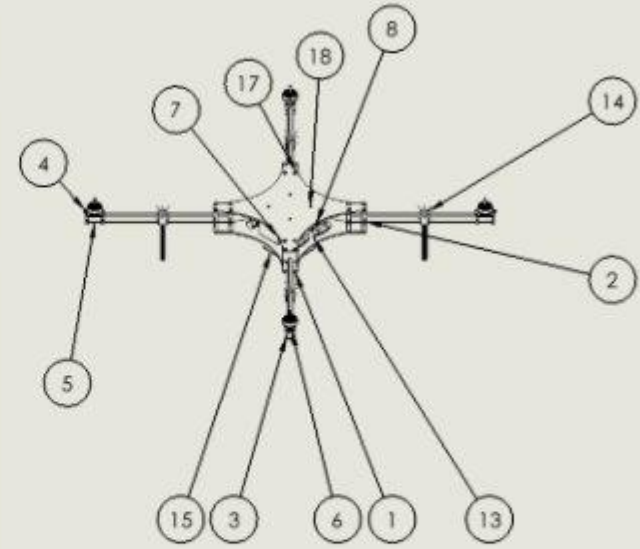
# Project Overview

- Client: The Boeing Company, Defense Division, Mesa, AZ
- Project: To develop and test a high-capacity payload drone using commercially attainable flight components.
- Requirements: Must lift 30% of drone weight and complete the Boeing Reconnaissance Mission test; including a camera payload and cruise missile payload.

# Design Efforts

- CAD Drawing Update With Legs
- Updated Design With 2 Batteries
- Updated Power Distribution System
- Added Legs to Physical Drone
- Fiber Glass reinforced Wood Frame
- Electrical Protection added
- Started Payload System

2		1	
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Drone_Base_V3		2
2	ArmMount_Design2		16
3	motormount_v3_bottom		16
4	MOtormount_plate		4
5	Drone_Arms		4
6	XING 4214 2-8S X CLASS FPV Motor.stp		4
7	6S 9000mAh - 25C - Battery^TATTU 22000 mAh TAA22K6S30ASX		1
8	JST - XH MALE 6SATATTU 22000 mAh TAA22K6S30ASX		1
9	Balancing Cable^TATTU 22000 mAh TAA22K6S30ASX		1
10	XT60 Buchse^TATTU 22000 mAh TAA22K6S30ASX		1
11	EC5 connector - Socket^TATTU 22000 mAh TAA22K6S30ASX		1
12	Power Cable for EC5^TATTU 22000 mAh TAA22K6S30ASX		1
13	ESC 120A		4
14	Arm_legs_V2		4
15	Drone_Payload_Base		1
16	MagSwitch	MAGSWITCH MAGJIG 60-8100818	2
17	HBOLT 0.2500-20x3.75x0.75-N		16
18	7in_allthread		4



NAME	DATE	
DRAWN		
CHECKED		
ENG APPR		
MFG APPR		
G.A.		
COMMENTS		

SIZE	DWG. NO.	REV
Drone_Assembly_V3		
SCALE: 1:20/WEIGHT:	SHEET 1 OF 1	

# Purchasing Plan

- Percent Purchased: 100%
- Waiting on delivery of 2 items ordered through SCE

Total Budget:	\$ 3,717.70	Total Donations:	\$ 717.70
Total Expense:	\$ 2,967.65	Left in SCE:	\$ 640.81
Total Remaining:	\$ 750.05	Left in donations:	\$ 109.24

Purchased Item	Primary Vendor	Manufacturer	Lead Time (incl. shipping)	Qty	Cost Per Unit	Total Cost	Part Status
<b>DRONE ONLY</b>					<b>Total Cost: \$2,107.50</b>		
22Ah 6S LiPo Battery	Aliexpress	Tattu	2 weeks	2	\$ 240.00	\$ 480.00	Partial Install
Flight Controller (Pixhawk 6C)	HolyBro	HolyBro	7-10 business days	1	\$ 231.46	\$ 231.46	Installed
GPS/Compass (M10, included w/ FC)	HolyBro	HolyBro	7-10 business days	1	\$ -	\$ -	Installed
Pixhawk Wiring Kit	HolyBro	HolyBro	7-10 business days	1	\$ 35.00	\$ 35.00	Installed
6-pin Molex PicoBlade to 6-pin JST-GH wire	3DR	3DR	7-10 business days	1	\$ 8.76	\$ 8.76	Installed
XING 4214 660KV Motor	iFlight	iFlight	2 weeks	4	\$ 62.75	\$ 251.00	Installed
6-channel RC receiver	Any	Any	7-10 business days	1	\$ 35.00	\$ 35.00	Installed
Power Distribution Module (Sky-Drones SmartAP PDB)	Sky-Drones	Sky-Drones	7-10 business days	1	\$ 90.00	\$ 90.00	Installed
Electronic Speed Controller (150A)	Amazon	Flycolor	7-10 business days	4	\$ 119.00	\$ 476.00	Ordered
RC Controller	Any	Any	7-10 business days	1	\$ 50.00	\$ 50.00	Installed
Wiring kit (12AWG, 60ft)	Amazon	NAOEVO	3 business days	1	\$ 25.00	\$ 25.00	In use
LiPo Battery Charging Kit	Amazon	SmartCharger	3 business days	1	\$ 52.00	\$ 52.00	In use
Octagonal Carbon Fiber Tubing (500mm, 4pk)	Amazon	ZSJ	2 weeks	2	\$ 25.00	\$ 50.00	Installed
3D Printing Filament (ABS)	Amazon	Any	3 business days	2	\$ 20.00	\$ 40.00	In use
3D Printing Filament (PLA)	Amazon	Any	3 business days	1	\$ 24.00	\$ 24.00	In use
3D Printing Filament (TPU 95A)	Amazon	Any	3 business days	1	\$ 26.19	\$ 26.19	In use
XT90 Connectors (10pk)	Amazon	Amass	3 business days	1	\$ 14.17	\$ 14.17	Installed
Propellers (16", tri-blade)	HQProp	HQProp	7-10 business days	4	\$ 35.68	\$ 142.72	Installed
Extreme Fasteners	Home Depot	Scotch	0 days	2	\$ 13.03	\$ 26.06	Installed
M6 100mm lag bolts	Home Depot	Any	0 days	8	\$ 2.63	\$ 21.04	Installed
M6 locking nut	Home Depot	Any	0 days	8	\$ 0.68	\$ 5.44	Installed
4mm x 15mm socket cap bolt	HomeCo	Any	0 days	4	\$ 1.21	\$ 4.84	Installed
4mm nut	HomeCo	Any	0 days	4	\$ 0.68	\$ 2.72	Installed
MDF Board (1/4" x 2' x 4')	Home Depot	Any	0 days	2	\$ 8.05	\$ 16.10	Installed
<b>MISSILE PAYLOAD</b>					<b>Total Cost: \$ 276.62</b>		
Cruise Missile Design Files	AeroJTP	AeroJTP	0 days	1	\$ 42.52	\$ 42.52	In use
3D Printing Filament (LWPLA)	Amazon	PolyMaker	3 business days	2	\$ 35.00	\$ 70.00	In use
3D Printing Filament (PLA) (same as for Drone)	Amazon	Any	3 business days	1	\$ -	\$ -	In use
50pcs M3 12mm hex heads	Aliexpress	Manufacturer U/K	3 weeks	1	\$ 5.00	\$ 5.00	Delivered
10pcs 150mm extension wires	Aliexpress	Manufacturer U/K	3 weeks	3	\$ 5.29	\$ 15.87	Installed
1350pcs Set C Black screws	Aliexpress	Manufacturer U/K	3 weeks	1	\$ 10.00	\$ 10.00	Delivered
3-axis Gyro	Aliexpress	Manufacturer U/K	3 weeks	1	\$ 14.26	\$ 14.26	Installed
7000KV 30mm motor	Aliexpress	QX-motor	3 weeks	1	\$ 23.64	\$ 23.64	Installed
2g motor servo	Aliexpress	DSpower	3 weeks	3	\$ 6.85	\$ 20.54	Installed
2-4S 20A Brushless ESC	Aliexpress	Surpass Hobby	3 weeks	1	\$ 25.10	\$ 25.10	Installed
1050mAh LiPo Battery	Amazon	Tattu	3 business days	1	\$ 29.25	\$ 29.25	Installed
Controller/Receiver	Aliexpress	HotRC	3 weeks	1	\$ 20.44	\$ 20.44	Installed
<b>REGULAR PAYLOADS</b>					<b>Total Cost: \$ 316.99</b>		
GoPro/similar camera	GoPro	GoPro	7-10 business days	1	\$ 220.00	\$ 220.00	Delivered
MG995 Servo Motor 4pk	Amazon	Any	7-10 business days	1	\$ 16.99	\$ 16.99	Ordered
Magswitch MagJig Magnet	Amazon	Magswitch	3 business days	2	\$ 30.00	\$ 60.00	Delivered
3D Printing Filament (ABS)	Amazon	Any	3 business days	1	\$ 20.00	\$ 20.00	In use
<b>TOTAL OVERALL COST:</b>					<b>\$2,701.11</b>		

# Manufacturing Plan 71.43 %

- What has been manufactured
  - Motor and frame supports - 1 hr
  - Prototype frames - 1 hr
  - Cruise Missile - 7 hr
  - Structure of the drone - 8 hr
  - Legs – 2 hr
- What is currently being manufactured (hours left)
  - New frames out of stronger material – 1 hr
  - Reconstruction of cruise missile - 2 hr
  - Payload delivery system - 4 hr
  - Redesign and print new legs – 2 hr
- What is yet to be manufactured
  - Camera payload system - 4 hr



# Demonstration



# Gantt Chart

- On Schedule!

Boeing Drone V2 Gantt Chart (Semester 2)												
(TEAM ASSIGNMENTS)												
(INDIVIDUAL ASSIGNMENTS)												
(UGRADS)												
(Subtasks)												
Tasks	DUE DATE	Tasks Assigned To	Status	Week 6 (Feb 17 - Feb 23)	Week 7 (Feb 24 - Mar 2)	Week 8 (Mar 3 - Mar 9)	Spring Break (Mar 10 - Mar 16)	Week 9 (Mar 17 - Mar 23)	Week 10 (Mar 24 - Mar 30)	Week 11 (Mar 31 - Apr 6)	Week 12 (Apr 7 - Apr 13)	
Website Check 1	2/21/2025	Andre	Complete									
Wk 6 Timecard	2/24/2025	Team	Complete									
Hardware Status Update 67+% build	2/25/2025	Team	Complete									
HSU - Design Efforts	See above	Andre	Complete									
HSU - Purchasing Plan	See above	Micheal	Complete									
HSU - Manufacturing Plan	See above	Jeremy and Dylan	Complete									
HSU - Demonstration	See above	Team	Complete									
HSU - Gantt Chart Update	See above	Connor	Complete									
Peer Eval 2	2/27/2025	Team	In progress									
Wk 7 Timecard	3/3/2025	Team	Not Started									
Wk 8 Staff Meeting	3/4/2025	Team	Not Started									
UGRADS Registration	3/6/2025	Connor	In progress									
Wk 8 Timecard	3/17/2025	Team	Not Started									
Wk 9 Staff Meeting	3/18/2025	Team	Not Started									
Finalized Testing Plan	3/21/2025	Team	Not Started									
FTP - Design Requirements Summary	See above	Andre	Not Started									
FTP - Top Level Testing Summary	See above	Connor	Not Started									
FTP - Detailed Testing Plans	See above	Jeremy	Not Started									
FTP - Specification Sheet Preparation	See above	Micheal	Not Started									
FTP - QfD	See above	Dylan	Not Started									
Wk 9 Timecard	3/24/2025	Team	Not Started									
Hardware Status Update 100% build	3/25/2025	Team	Not Started									
HSU - Design Efforts	See above	Andre	Not Started									
HSU - Purchasing Plan	See above	Micheal	Not Started									
HSU - Manufacturing Plan	See above	Jeremy and Dylan	Not Started									
HSU - Demonstration	See above	Team	Not Started									
HSU - Gantt Chart Update	See above	Connor	Not Started									
Draft of Poster	3/28/2025	Team	Not Started									
Peer Eval 3	3/29/2025	Team	Not Started									
Wk 10 Timecard	3/31/2025	Team	Not Started									
Wk 11 Staff Meeting	4/1/2025	Team	Not Started									
Wk 11 Timecard	4/7/2025	Team	Not Started									
Initial Testing Results	4/8/2025		Not Started									
ITR - Design Requirements Summary	See above	Andre	Not Started									
ITR - Top Level Testing Summary	See above	Connor	Not Started									
ITR - Detailed Testing Plans	See above	Jeremy	Not Started									
ITR - Specification Sheet Preparation	See above	Micheal	Not Started									
ITR - QfD	See above	Dylan	Not Started									



Questions?