



Steve Sanghi
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DORIS 100% Hardware Status Update

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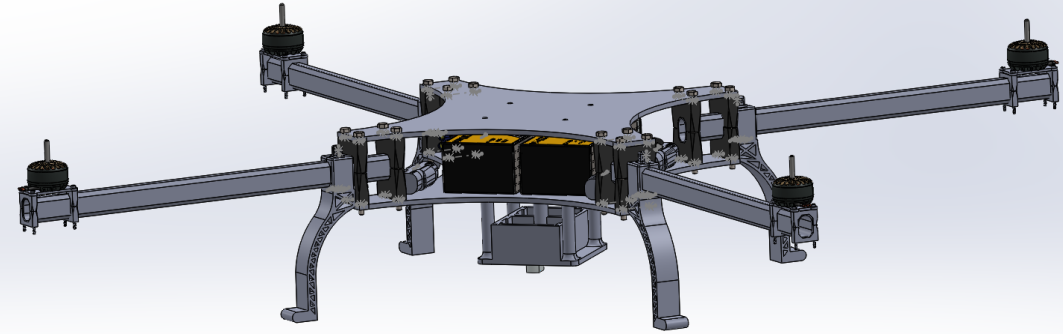


Project Overview

- 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 weighted load
- Update: cruise missile payload requirement has been removed, appeal approved by Boeing Client/Sponsors

Design Efforts

- CAD Drawing Update With Legs
- Updated Design With 2 Batteries
- Updated Power Distribution System
- Added improved Legs to Physical Drone
- Fiber Glass reinforced Wood Frame developed
- Electrical Protection added
- New ESCs installed
- Finished Payload System



2

1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Drone_Base_V3	Drone Base (top of bottom)	2
2	ArmMount_Design2	Arm mounts/standoffs	16
3	motormount_v3_bottom	Motor Mounts	16
4	MOtormount_plate	Motor Mount Plate	4
5	Drone_Arms	Drone Arm	4
6	XING 4214 2-BS X CLASS FPV Motor.stp	Motor	4
7	6S 9000mAh - 25C - Battery^TATTU 22000 mAh TAA22K6S30ASX	Battery	2
8	JST - XH MALE 6S^TATTU 22000 mAh TAA22K6S30ASX		2
9	Balancing Cable^TATTU 22000 mAh TAA22K6S30ASX		2
10	XT60 Buchse^TATTU 22000 mAh TAA22K6S30ASX		2
11	EC5 connector - Socket^TATTU 22000 mAh TAA22K6S30ASX		2
12	Power Cable for EC5^TATTU 22000 mAh TAA22K6S30ASX		2
13	ESC_120A	ESCs	4
14	MagSwitch	MAGSWITCH MAGJIG 60 - 8100818	2
15	hex bolt_ai		16
16	M3 x 0.5mm Thread 50mm LONG SOCKET HEAD CAP SCREW	Motor Mount Screws	16
17	Arm_legs_V3	Legs	4
18	Drone_Payload_bracket_part1_JAB_3_22_25		1

DRAWN	NAME	DATE	
CHECKED	CAD	3/25/25	
ENG APPR.			
MFG APPR.			
Q.A.			
COMMENTS			

TITLE:		
SIZE	DWG. NO.	REV
A	Drone_Assembly	
SCALE: 1:12/WEIGHT:		SHEET 1 OF 1

2

1

Purchasing Plan

- Percent Purchased: 100%
- Waiting on replacement filament ordered through SCE
- Purchased misc. hardware

Total Budget:	\$ 3,717.70	Total Donations:	\$ 717.70
Total Expense:	\$ 3,434.61	Left in SCE:	\$ 190.21
Total Remaining:	\$ 283.09	Left in donations:	\$ 92.88

Purchased Item	Primary Vendor	Manufacturer	Lead Time (incl. shipping)	Qty	Cost Per Unit	Total Cost	Part Status
DRONE ONLY						Total Cost: \$2,107.50	
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	HomCo	Any	0 days	4	\$ 1.21	\$ 4.84	Installed
4mm nut	HomCo	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
MISSILE PAYLOAD						Total Cost: \$ 276.62	
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
REGULAR PAYLOADS						Total Cost: \$ 316.99	
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
TOTAL OVERALL COST:						\$2,701.11	

Manufacturing Plan 100 %

- What has been manufactured
 - Motor and frame supports - 6 hr
 - Fiberglass frames - 12 hr
 - Structure of the drone - 8 hr
 - Redesign and print new legs – 4 hr
 - Payload system (weight & camera included) - 30 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 9 (Mar 17 - Mar 23)	Week 10 (Mar 24 - Mar 30)	Week 11 (Mar 31 - Apr 6)	Week 12 (Apr 7 - Apr 13)	Week 13 (Apr 14 - Apr 20)	Week 14 (Apr 21 - Apr 27)	Week 15 (Apr 28 - May 4)	Week 16 (May 5 - May 11)			
Hardware Status Update 100% build	3/25/2025	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											
Draft of Poster	3/28/2025	Team	In Progress											
Peer Eval 3	3/29/2025	Team	Not Started											
Wk 10 Timecard	3/31/2025	Team	In Progress											
Wk 11 Staff Meeting	4/1/2025	Team	Not Started											
Boeing Visit in Mesa	4/4/2025	Team	In Progress											
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											
Final Poster & PPT	4/11/2025	Team	Not Started											
FP&PPT - Background	See above	Andre and Dylan	Not Started											
FP&PPT - Requirements	See above	Jeremy and Micheal	Not Started											
FP&PPT - Design Space Research	See above	Team	Not Started											
FP&PPT - Concept Generation and Selection	See above	Jeremy and Connor	Not Started											
FP&PPT - Project Management	See above	Connor and Micheal	Not Started											
FP&PPT - Design Validation and Prototyping	See above	Andre and Dylan	Not Started											
FP&PPT - Final Hardware	See above	Jeremy and Dylan	Not Started											
FP&PPT - Final Testing	See above	Connor and Andre	Not Started											
FP&PPT - Future Work	See above	Micheal	Not Started											
Final CAD Packet	4/13/2025	Connor and Jeremy	Not Started											
Wk 12 Timecard	4/14/2025	Team	Not Started											
Product Demo & Final Testing Results	4/15/2025	Team	Not Started											
PD&FTR - Design Requirements Summary	See above	Andre	Not Started											
PD&FTR - Top Level Testing Summary	See above	Connor	Not Started											
PD&FTR - Detailed Testing Plans	See above	Jeremy	Not Started											
PD&FTR - Specification Sheet Preparation	See above	Micheal	Not Started											
PD&FTR - QFD	See above	Dylan	Not Started											
Final Report	4/18/2025	Team	Not Started											
FR - Background	See above	Andre	Not Started											
FR - Requirements	See above	Dylan	Not Started											
FR - Design Space Research	See above	Team	Not Started											
FR - Concept Generation & Design Selected	See above	Andre and Micheal	Not Started											
FR - Project Management	See above	Connor	Not Started											
FR - Final Hardware	See above	Connor and Jeremy	Not Started											
FR - Testing	See above	Team	Not Started											
FR - Risk Analysis and Mitigation	See above	Jeremy	Not Started											



Questions?