

Brigham Young University AUVSI Capstone Team (Team 45)

Airframe Subsystem Requirements Matrix

ID	Rev.	Date	Description	Author	Checked By
AF-001	0.1	10-23-18	Initial Draft	Tyler Critchfield	Derek Knowles
				& Ryan Anderson	
AF-001	0.2	11-06-18	Revisions for	Tyler Critchfield	Andrew Torgesen
			Final Submis-		
			sion		



1-10 Scale	Focns group coolness rating	18								•	9	10	10
1-10 Scale	Focus group ease of repair	17							•		g	01	10
sətuniM	Time to assemble from scratch	16							•		0	0	09
Cubic centimeters	Storage volume	15						•			0008	10000	12000
Unitless	Lift coefficient	4						•			4.0	g.0	l
Unitless	Number of AMA safety code violations	13					•				0	0	0
Unitless	Number of damaged components on landing	12				•					0	0	0
Unitless	Number of components lost										0	0	0
Unitless	(lior) stad, lO	10			•						31.0-	١.0-	0
Unitless	Cn,beta (yaw)	6			•						90.0	1.0	31.0
Unitless	Static margin	8			•						0	1.0	2.0
Unitless	Spiral stability eigenvalue	7			•						١.٥-	g0 [.] 0-	10.0-
Meters/second	Stall speed	9			•			•			A\N	10	50
Meters/second	Average flight speed	2		•				•			01	٩١	30
Kilograms	httsme weight	4						•			0	ħ	09
Unitless	Total motor/prop efficiency	က	•	•				•			2.0	ı	l
Unitless	Oits: Os:0-1-11-1	2	•	•				•			9	50	A\N
Minutes	Battery life	_	•	•							04	S۷	120
sjinU	Performance Measures	Importance	6	6	6	6	6	3	3	1	Lower Acceptable	ldeal	Upper Acceptable
	Product: UAS Subsystem: Airframe	Market Requirements	1 Capable of flight for extended period of time	Capable of traveling an extended distance	3 Minimize flight path deviation	4 Components are protected	5 Complies with AMA safety code	Capable of carrying UGV and water bottle	Fast and cheap assembly/rebuild	Looks decent			

Figure 1: Airframe subsystem requirements matrix.