

Brigham Young University AUVSI Capstone Team (Team 45)

Airframe Subsystem Requirements Matrix

ID	Rev.	Date	Description	Author	Checked By
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£^m	Storage Volume								•			6.0	6.0	ı
#	Number of AMA Safety Code Violations	20						•				0	0	0
1-10 Scale	Focus Group Ease of repair	19								•		9	01	10
sətunim	Time to assemble from scratch	19								•		0	0	09
#	Number of Damaged Components on landing	19								•		0	0	0
#	Number of Damaged Components on crash landing	18										0	0	l
#	Number of components lost	17										0	0	0
1-10 Scale	Focus Group Coolness Rating	16										9	10	10
Unitless	9msıhiA mori gniburtor9 bsolys9 to %	15							•			0	0	100
Meters	Maximum Flight-Path Deviation	14			•							A\N	l	9
Unitless	Cl,beta (Roll)	13			•							31.0-	١.0-	0
Unitless	Cn,beta (Yaw)	12			•							90.0	1.0	91.0
Unitless	Static Margin	11			•							1.0	1.0	2.0
Unitless	Spiral Stability Eigenvalue	10			•							١.٥-	90.0-	10.0-
kilograms	Airliame Weight	6	•	•					•			0	Þ	90
Reters	Tuming Radius	80			•							0	9	15
Unitless	Total Motor/Prop Efficiency	7	•	•					•			2.0	l	l
meters/second	Average Flight Speed	9		•					•			10	٩l	30
meters/second	Stall Speed	2			•				•			A\N	10	50
Unitless	Lift Coefficient	4							•			4.0	3 .0	l
Unitless	Lift-to-Drag Ratio	က	•	•					•			9	50	A\N
Minutes	Battery Life	2	•	•								среск	97	02
Minutes	Flight Time	-	•	•								10	30	09
stinU	Performance Measures	Importance	6	6	6	6	6	6	3	3	1	Гомет Ассерtable	ldeal	Upper Acceptable
	Product: UAS Subsystem: Airframe	Market Requirements	Capable of flight for extended period of time	Sapable of traveling an extended distance	Minimize flight path deviation	Components are protected	Capable of surviving a crash	Complies with AMA safety code	Sapable of carrying UGV and water bottle	ast and cheap assembly/rebuild	ooks decent			

Figure 1: Airframe subsystem requirements matrix.