

				Product: UAS Subsystem: Airframe		Performance Measures		Units	
Market Requirements				Importance					
1	Capable of flight for extended period of time	9	●	●	●	●	Battery life	Minutes	
2	Capable of traveling an extended distance	9	●	●	●	●	Lift-to-drag ratio	Unitless	
3	Minimize flight path deviation	9					Motor/prop efficiency	Unitless	
4	Components are protected	9					Airframe weight	Kilograms	
5	Complies with AMA safety code	9					Average flight speed	Meters/second	
6	Capable of carrying UGV and water bottle	3	●	●	●	●	Stall speed	Meters/second	
7	Fast and cheap rebuild	3					Spiral stability eigenvalue	Unitless	
8	Looks decent	1					Static margin (with payload)	Unitless	
							Cn,beta (yaw)	Unitless	
							Cl,beta (roll)	Unitless	
							Number of components that fall off the plane	Unitless	
							Number of damaged components on landing	Unitless	
							Number of AMA safety code violations	Unitless	
							Lift coefficient	Unitless	
							Storage volume	Cubic centimeters	
							Time to rebuild	Hours	
							Focus group ease of repair	1-10 scale	
							Focus group coolness rating	1-10 scale	
Measured	Predicted	Target	Upper Acceptable	Ideal	Lower Acceptable				
50	60	60	N/A	75	40				
5	7.5	7.5	N/A	20	5				
N/A	0.405	0.35	N/A	1	0.2				
4.5	4.5	4.5	10	2	0				
14.5	14	14	30	13	10				
11	11	10	20	10	N/A				
N/A	0.3187	0	0.4	-0.05	-0.1				
0.057	0.06	0.1	0.15	0.1	0				
N/A	0.10452	0.1	0.15	0.1	0.05				
N/A	0.06032	0	0.1	-0.1	-0.15				
0	0	0	0	0	0				
0	0	0	0	0	0				
0	0	0	0	0	0				
0.7	0.7	0.7	1	0.5	0.35				
10766	7974	8000	12000	10000	6000				
8	10	10	24	0	N/A				
6	8	8	10	10	5				
	8	8	10	10	5				