



BRIGHAM YOUNG UNIVERSITY  
AUVSI CAPSTONE TEAM (TEAM 45)

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## Airframe Subsystem Requirements Matrix

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ID	Rev.	Date	Description	Author	Checked By
AF-001	0.1	10-23-18	Initial Draft	Tyler Critchfield & Ryan Anderson	Derek Knowles
AF-001	0.2	11-06-18	Concept Development	Tyler Critchfield	Ryan Anderson & Kameron Eves
AF-001	1.1	2-12-19	Subsystem Engineering	Tyler Critchfield	Ryan Anderson

## 1 Introduction

Figure 1 (see next page) shows our updated Requirements Matrix for the Airframe subsystem. Section E has been updated with target, predicted, and measured values for our performance metrics. Some metrics were determined using models (see artifact AF-011), but could not be easily measured empirically. These metrics were placed in the predicted row and the measured value was assigned "N/A".

## Airframe Subsystem Requirements Matrix

Product: UAS Subsystem: Airframe		Performance Measures		Units	
Market Requirements		Importance			
1	Capable of flight for extended period of time	9	●	●	●
2	Capable of traveling an extended distance	9	●	●	●
3	Minimize flight path deviation	9			●
4	Components are protected	9			●
5	Complies with AMA safety code	9			●
6	Capable of carrying UGV and water bottle	3	●	●	●
7	Fast and cheap rebuild	3		●	●
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

Figure 1: The updated requirements matrix for the airframe subsystem, with section E included (target, predicted and measured values for performance measures.)