BRIGHAM YOUNG UNIVERSITY
AUVSI CAPSTONE TEAM (TEAM 45)

UAS Requirements Matrix

ID	Rev.	Date	Description	Author	Checked By
RM-001	0.1	09-07-2018	Fall camp draft	Brady Moon	Jacob Willis
RM-001	0.2	09-14-2018	Revisions after design review	Derek Knowles	Kameron Eves
RM-001	1.0	10-08-2018	Expansion for stage approval	Kameron Eves	Brandon McBride
RM-001	1.1	10-08-2018	Reordered requirements to match priority	Jacob Willis	Brady Moon
RM-001	1.2	10-17-2018	Fixed inconsistency in autonomous flight requirement	Andrew Torgesen	Kameron Eves

Product: UAS
Subsystem: N/A

Notes:
UAS = Unmanned Aerial System
UGV = Unmanned Ground Vehicle

#	Performance Measures	Units	Importance	Market Responce
1	Flight Time	Minutes	6%	
2	Post Processing Time	Minutes	2%	
3	Autonomus Flight Time	Minutes	8%	
4	Percent of Waypoints Hit	Percent	2%	
5	Average Minimum Distance to Waypoint	Feet	10%	
6	Percent of Obstacles Hit	Percent	20%	
7	Percent of Correct Characteristics Identified	Percent	4%	
8	Percent of Images Correctly Geolocated	Percent	6%	
9	Percent of Objects Submitted in Flight	Percent	6%	
10	Percent of Objects Autonomously Submitted	Percent	4%	
11	Payload Drop Distance to Target Location	Feet	10%	
12	UGV Stop Distance to Target Location	Feet	10%	
13	Complies with AMA Safety Code	Yes/No	10%	
14	Penalties	Count	2%	

#	Upper Acceptable	Ideal	Lower Acceptable
1	40	20	3
2	10	0	0
3	40	20	3
4	100	100	0
5	100	0	0
6	100	0	0
7	100	100	0
8	100	100	0
9	100	100	0
10	100	100	0
11	75	5	0
12	10	0	0
13	Y	Y	Y
14	15	0	0

Market Requirements

#	Market Requirements	Importance	Market Responce
1	The UAS shall be capable of autonomous flight.	20%	Very Good
2	The UAS shall be capable of avoiding static obstacles.	20%	Very Good
3	The UAS shall be capable of visual object classification.	20%	Very Good
4	The UAS shall be capable of delivering a payload.	20%	Very Good
5	The UAS shall be capable of safe operation.	10%	Good
6	The UAS shall be capable of a timely completion of the mission.	10%	Good

Figure 1: Top-level requirements matrix for the unmanned aerial system.