



BRIGHAM YOUNG UNIVERSITY
AUVSI CAPSTONE TEAM (TEAM 45)

Unmanned Ground Vehicle Requirements Matrix

ID	Rev.	Date	Description	Author	Checked By
RM-001	0.1	10-23-2018	Initial requirements	Jacob Willis	Brady Moon
RM-001	1.1	10-26-2018	Better performance measures	Jacob Willis	Kameron Eves
RM-001	1.2	10-26-2018	Edits after design review	Brady Moon & John Akagi	Kameron Eves
RM-001	2.0	02-20-2019	Added measured values	Derek Knowles	Brandon McBride

Unmanned Ground Vehicle Requirements Matrix

Product: UAV Subsystem: PAYLOAD/Unmanned Ground Vehicle (UGV)		Subsystem Performance Measures		Units						
		Drop mechanism mass		kg						
		Weight mechanism can support		N						
		Aircraft internal volume consumed*		cubic meters						
		Slowed drop mechanism drag		N						
		Maximum landing velocity		m/s						
		UGV landing distance from target		m						
		Rule violations		cnt						
Target Design Requirements		Importance	1	2	3	4	5	6	7	Market Response
1	Complies with competition rules	5	●						●	Good
2	Capable of lowering the payload to the ground	5	●	●						Very Good
3	Lands UGV within landing zone	3								Neutral
5	Delivers UGV without damage	3		●				●	●	Good
6	Deployable from airframe	4			●	●				Very Good
7	Does not interfere with takeoff/landing	3	●			●				Very Good
8	Causes minimal aerodynamic interference	3				●				Good
9	Drop mechanism does not interfere with UGV movement	2					●	●		Very Good
		Measured	Predicted	Upper Acceptable	Ideal	Lower Acceptable				
		0.016	0.018	0.6	0.1	0				
		3.43	3.36	-	1.3	0.6				
		0.003	0.003	50	0	-				
		N/A*	0.1	1.5	0.3	0				
		10	15	5	1	0				
		N/A*	10	22	0	-				
		0	0	1	0	-				

*To be measured during system refinement stage

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Figure 1: Requirements matrix for the subsystem which will deliver the UGV to the ground.