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
RM-001	2.0	03-01-2019	Corrected measured values	Jacob Willis	Brandon McBride

Product: UAV
Subsystem: PAYLOAD/Unmanned Ground Vehicle (UGV)

	Subsystem Performance Measures	Units								
			kg	N	cubic centimeters	N	m/s	m	cnt	
			Drop mechanism mass	Weight mechanism can support	Aircraft internal volume consumed*	Stowed drop mechanism drag	Maximum landing velocity	UGV landing distance from target	Rule violations	
	Target Design Requirements	**Importance**	1	2	3	4	5	6	7	Market Responce
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
	Lower Acceptable		0	0.6	-	0	0	-	-	
	Ideal		0.1	1.3	0	0.3	1	0	0	
	Upper Acceptable		0.6	-	5000	1.5	5	22	1	
	Predicted		0.018	3.36	4500	0.1	4	10	0	
	Measured		0.016	3.43	4140	N/A*	3	N/A*	0	

*To be measured during system refinement stage

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