Brigham Young University

AUVSI Capstone Team (Team 45)

Imaging Requirements Matrix

ID	Rev.	Date	Description	Author	Checked By
IM-007	1.0	02-20-19	Measured and predicted values	Tyler Miller & Jake Johnson	Connor Olsen

1 Introduction

Figure 1 shows our updated requirements matrix for the imaging subsystem. Predicted and measured values, as well as market response were added where applicable. Some values can not be fully measured until multiple flight tests are performed with imaging fully integrated into the plane.

		Units	Images/second	Meters/second	Pixels/in	Percent	Count	Count	Percentage	Hertz	Count	
	Product: UAV Subsystem: IMAGING/INTEROPERABILITY **REVISION HISTORY** 1.0: Inital Release	**Subsystem Performance Measures**	Rate of images received on ground	Plane speed	Image resolution	Amount of frame with image	Distinguished colors	Distinguished shapes	Image overlap	Rate of telemetry recieved from plane	Distinguished alphanumeric	
	Target Design Requirements	**Importance**	1	2	3	4	5	6	7	8	9	**Market Response**
1	Detect minimum object size manually	9	■	■	■	■			■			Good
2	Determine object geolocation within 30 m manually	9	■		■					■		Good
3	Detect minimum object size autonomously	9	■	■	■	■			■			Neutral
4	Determine object geolocation within 30 m autonomously	9	■		■					■		Good
5	Rate of ground station contact is 10 hz (Interop)	6	■							■		Very Good
6	Differentiate between five distinct shapes	6			■			■				Very Good
7	Differentiate between five distinct colors	6			■		■					Very Good
8	Determine alphanumeric characters manually	6			■			■			■	Very Good
9	Determine alphanumeric characters autonomously	6			■			■			■	Neutral
		Importance	9	3	9	3	3	3	3	6	3	
		Lower Acceptable	0.5	7	0.7	2	3	3	5	10	2	
		Ideal	1	12	1.1	30	5	5	20	20	5	
		Upper Acceptable	N/A	15	N/A	90	10	13	N/A	N/A	26	
		Predicted				5	10	13	5		20	
		Measured	0.5	13	1.67	TBD	TBD	TBD	TBD	20	TBD	