Senior Design 2018/2019
Maroon Five

Arik Espineli
Miranda Sweigert
Jasmine Gill

Specification Status Table
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Color Key
Green - complete pass
Yellow - partial pass
Red - failed to meet

Spec ID	Requirement	Threshold (Shall)	Objective (Should)	Validation
S001	Interfering Object Detection	0.5 Foot	1 Foot	Tape Measure
S002	Stop Speed	0.2 Second	0.1 Second	Stopwatch
S003	Structure	30 Kilograms	40 Kilograms	Weights and FEA
S004	Range Limitation	6 Inches	4 Inches	Repeated Movement Tests
S005	Emergency Stop	Complete Stop	N/A	Repeated Tests
S006	Bluetooth Compliance	IEEE 802.15.1	N/A	Tests
S007	Electronics Fire Resistance	ULC-S139	N/A	Tests
S008	Power	<13 amps	N/A	Multimeter
D001	System Lifetime	2 Years	5 Years	Repeated Tests
D002	Sensor Box Durability	6-foot drop	10-foot drop	Tape Measure and Data Analysis
D003	Sensor Box Operating Temp.	440 F	980 F	Temperature Gun
D004	Sensor Box IP Liquid Rating	3 IP	4 IP	Splash Tests
D005	Sensor Box IP Solid Rating	5 IP	6 IP	Tests
D006	Gantry System Operating Temp.	300 Kelvin	350 Kelvin	Thermometer
D007	Electronics Housing IP Liquid Rating	1 IP	2 IP	Drip Tests

D008	Electronics Housing IP solid Rating	5 IP	6 IP	Tests
DE001	Bluetooth Data Rate	1 Mbps	2 Mbps	Data analysis
DE002	Timing of Detection	2 Seconds	1 Second	Stopwatch and data analysis
DE003	Field of View	9.8ft diameter		
DE004	Accuracy of Detection	99% Detection	99.99% Detection	Repeated Testing
DE005	False Alarm	1/100	1/500	Repeated testing
M001	X Movement Range	3 feet	N/A	Tape Measure
M002	Y Movement Range	5 feet	N/A	Tape Measure
M003	Movement Speed	4 feet/sec	8 feet/sec.	Stopwatch and Tape Measure
M004	Movement Accuracy	3 Inch Radius	1 Inch Radius	Tape Measure
M005	Gantry System Scalability	Yes	N/A	
E001	Fire Type	Type A, B, C	Type A, B, C, D	Extinguisher rating
E002	Fire Size	0.44 ft^2	16 ft^2	Tape Measure
E003	Actuation Reliability	99%	99.99%	Repeated tests
E004	Actuation Time	3 Seconds	2 Seconds	Stopwatch
E005	Extinguisher Access	Accessible	N/A	Stopwatch
E006	Time to Extinguish	20 Seconds	10 Seconds	Stopwatch
C001	Total Cost	$1,500	$1,000	Compare Final Selling Cost