QFD Matrix

PHASE I QFD *METEOR Instrumentation Platform*

Correlation Codes	
+ +	Very Positive
+	Positive
-	Negative
- -	Very Negative

	Equipment Temperature Range	Equipment Pressure Range	Proper Operation of Watchdog Timers with Pr	GPS Location System	GPS Transmit Frequency	GPS Transmit Protocol	2m Transmitter Output Power	Transmitiable Pressure Range	Transmitiable Temperature Range	Transmitiable Range	Number of Internal Temperature Sensors	Number of External Temperature Sensors	Number of Pressure Sensors	Environment Information Resolution	Video Transmittion System	Video Transmit Frequency	Video Transmit Protocol	Video Transmitter Output Power	Number of Cameras	Sufficient Non-Volitile Memory for Data Rete	Budget	Weight	Physical Dimensions	Meet All FAA and FCC Standards	Comply with RIT Policies and Proceedures	Ground Tested Unit	Launch with Burst Balloon	Altitude	Low Power Beacon Lifetime	Platform Power Lifetime	Ground Impact Testing	---	---
Equipment Temperature Range																																	
Equipment Pressure Range																																	
Proper Operation of Watchdog Timers with Program Reset																																	
GPS Location System			+																														
GPS Transmit Frequency																																	
GPS Transmit Protocol																																	
Transmitable Pressure Range		+																															
Transmitable Temperature Range	+																																
Transmitable Range				+																													
Number of Internal Temperature Sensors																																	
Number of External Temperature Sensors																																	
Number of Pressure Sensors																																	
Environment Information Resolution																																	
Video Transmittion System			+							+																							
Video Transmit Frequency																																	
Video Transmit Protocol																																	
Number of Cameras																																	
Sufficient Non-Volitile Memory for Data Retention																																	
Budget	-	-									-	-	-						-	-													
Weight											-	-	-						-														
Physical Dimensions																																	
Meet All FAA and FCC Standards					+											+																	
Comply with RIT Policies and Proceedures																																	
Ground Tested Unit			+	+																													
Launch with Burst Balloon			+	+																						+							
Altitude																						-											
Low Power Beacon Lifetime																						-											
Platform Power Lifetime														-	-																		
Ground Impact Testing																						-											

Preferred	up	up	nom	nom	nom	nom	up	up	up	up	nom	nom	nom	up	nom	nom	nom	up	nom	up	nom	dwn	nom	nom	nom	nom	nom	up	up	up	nom		

NO INPUT IN THIS AREA

Engineering Metrics

Customer Requirements	**Customer Weights**	Equipment Temperature Range	Equipment Pressure Range	Proper Operation of Watchdog Timers with Pr	GPS Location System	GPS Transmit Frequency	GPS Transmit Protocol	2m Transmitter Output Power	Transmitiable Pressure Range	Transmitiable Temperature Range	Transmitiable Range	Number of Internal Temperature Sensors	Number of External Temperature Sensors	Number of Pressure Sensors	Environment Information Resolution	Video Transmittion System	Video Transmit Frequency	Video Transmit Protocol	Video Transmitter Output Power	Number of Cameras	Sufficient Non-Volitile Memory for Data Rete	Budget	Weight	Physical Dimensions	Meet All FAA and FCC Standards	Comply with RIT Policies and Proceedures	Ground Tested Unit	Launch with Burst Balloon	Altitude	Low Power Beacon Lifetime	Platform Power Lifetime	Ground Impact Testing	---	---
Survive High Altitude Environment	10	9	5	7																														
Communicate with Ground Control via. Radio	10				8	10	10	8																										
Transmit Environment Information	6								6	6	6	10	10	10	6																			
Transmit Video	7															8	10	10	8	5														
Store Environmental and Video Data	3																				6													
Remain Within Budget	5																					8												
Remain Within Size and Weight Constraints	8																						8	5										
Meet All FAA and FCC Standards	10																								10									
Comply with RIT Policies and Proceedures	10																									10								
Fully Ground Tested Unit	10																										10							
Successful Launch with Burst Balloon	10																											9	10					
Low Power Location Beacon for Recovery	6																													6				
Maintains Power for Duration of Launch and Recovery	10																														8			
Survive Impact with the Ground	8																															6		
Technical Targets		-20°C to 40°C	0.01A to 1A	yes	yes	144.39 MHz	APRS	>1 W	0.01A to 1A	-20°C to 40°C	Min. 500 km. | Max. 700 km	4	4	2	Max. 1 min.	yes	439.25 MHz	NTSC	>1 W	Min. 4 to Max. 8	Data: 64kb | Video: 1Gb	$5,000	<8 lbs.	8.5 in. x 10.25 in. x 3.25 in.	yes	yes	100% Functionality	Min. Success: Recovery of	> 60,000 Feet	>24 hrs.	>4 hrs.	yes		
Technical Benchmarking	*Better* 5																																	
	4																																	
	3																																	
	2																																	
	Worse 1																																	
Raw score		90	50	70	80	100	100	80	36	36	36	60	60	60	36	56	70	70	56	35	18	40	64	40	100	100	100	90	100	36	80	48	0	0
Relative Weight		5%	3%	4%	4%	5%	5%	4%	2%	2%	2%	3%	3%	3%	2%	3%	4%	4%	3%	2%	1%	2%	3%	2%	5%	5%	5%	5%	5%	2%	4%	2%	0%	0%

Customer Perception

1	*Worse*
2	
3	
4	
5	*Better*