Level 2 System Requirements				
				
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Version:	1.0			
Release Date:	9/10/18			
	Signatures			
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	Revision History			
	Version 1	09/10/2018	Preliminary Release	

Level 2 System Requirements

Requirement ID		References L1 REQs
L2_SYSM_REQ_1	The flight system shall have a minimum dry (no motor) mass of 0.454 kg	L1_SYSM_REQ_1, L1_SYSM_REQ_2
L2_SYSM_REQ_2	The flight vehicle shall be dynamically stable regardless of the mass of the motor	L1_MSSN_REQ_1
L2_STRC_REQ_1	The fuselage shall have a diameter greater than 24 mm	L1_SYSM_REQ_2
L2_STRC_REQ_2	The payload shall be shielded from the ejection charge of an Estes E engine	L1_MSSN_REQ_2, L1_SYSM_REQ_2
L2_STRC_REQ_3	The fuselage shall have an exterior launch lug to fit a standard Estes launch platform	L1_SYSM_REQ_3
L2_STRC_REQ_4	The payload section shall accommodate payload integration within 10 minutes of launch	L1_MSSN_REQ_2
L2_STRC_REQ_5	The recovery coupling shall require a consistent amount of force for separation	L1_MSSN_REQ_4
L2_STRC_REQ_6	No hardware (including fin mounts, excepting the fins) shall protrude beyond the exterior diameter of the body tube	L1_MSSN_REQ_1
L2_RCVY_REQ_1	The recovery team shall develop a method for recovering the flight computer from a tree	L1_MSSN_REQ_2
L2_RCVY_REQ_2	The vehicle shall descend at a rate of 5±1m/s	L1_MSSN_REQ_2
L2_RCVY_REQ_3	The parachute shall deploy with a 100% success rate over 4 consecutive worst-case tests	L1_MSSN_REQ_4
L2_AVON_REQ_1	The avionics payload shall constantly transmit an RF signal capable of use as a beacon	L1_SYSM_REQ_2
L2_AVON_REQ_2	The RF beacon transmitter shall be isolated from faults in the rest of the avionics payload	L1_MSSN_REQ_2, L1_SYSM_REQ_2
L2_AVON_REQ_3	The avionics payload shall be capable of withstanding a momentary shock of 25N	L1_SYSM_REQ_2
L2_AVON_REQ_4	The avionics payload shall record, at a minimum, accelerometer and gyroscopic data from launch through touchdown	L1_SYSM_REQ_2
L2_AVON_REQ_5	The avionics payload shall have a battery lifetime of at least 30 minutes	L1_MSSN_REQ_2
L2_GNDS_REQ_1	The ground station shall be capable of determining the direction of the flight vehicle in at least one dimension	L1_MSSN_REQ_2
L2_GNDS_REQ_2	The receiver shall be capable of detecting the beacon signal despite the presence of obstacles	L1_MSSN_REQ_2
L2_GNDS_REQ_3	The receiver shall have a battery life of at least 30 minutes	L1_MSSN_REQ_2

Level 1 Mission Requirements

Requirement ID	Requirement Description
L1_MSSN_REQ_1	Shall demonstrate stable vertical flight
L1_MSSN_REQ_2	Shall return data that accurately characterizes forces experienced during flight
L1_MSSN_REQ_3	Shall demonstrate RF beacon recovery capability
L1_MSSN_REQ_4	Shall demonstrate reliable parachute deployment system
L1_SYSM_REQ_1	The flight vehicle shall not exceed a max height of 660 ft (201 m)
L1_SYSM_REQ_2	The flight vehicle shall use a standard Estes E motor
L1_SYSM_REQ_3	The flight vehicle shall be launched from the Olin soccer fields on a standard Estes launch platform
Author	Kyle Emmi
Release Version	*Unreleased*
Release Date	*Unreleased*
Reference Document	*Not Available*