

Needs	Specs	Metrics
Testing		
The plane flies reliably	The plane shall fly 30 flights without maintenance.	# of flights w/o problems preventing next flight
The plane supports a payload.	The plane shall support a 15 lbf payload	Supported payload weight
The plane is robust.	The plane shall fly 30 flights without major failures.	# of flights w/o problems preventing next flight
The plane can fly long flights.	The plane shall fly 30 minutes.	Endurance of flight
The total plane weight is within legal restrictions.	The plane's gross weight shall be less than 55lbf.	Gross weight
Mathematical Model		
Model can be used to implement control system.	The model shall provide useful simulation of aircraft performance.	Programmable (Y/N)
Model can be used for aircraft simulation.	The model and aircraft shall have the same inputs and outputs.	Inputs/Outputs
Model can be compared to flight data.	The model shall predict the same quantities measured by the flight controller.	Model uses measurable parameters
Install Controller/Telemetry		
Controller connects to all sensors.	The controller shall be compatible with instrumentation for airspeed, position and IMU sensors.	# sensors connected to controller
Controller is firmly seated.	The controller shall not come loose in flight.	Controller stays in place (binary)
Controller can withstand a crash.	The controller shall not be damaged during flight failure.	Controller withstands flight failures (binary)
Controller fits in airframe.	The controller shall occupy less than one fourth of the cargo area.	% of volume free in cargo bay after installation
Sensor and Logging Capabilities		
Measurement Unit is able to log entire flight sessions.	The Measurement Unit shall be able to record an entire flight's worth of data from all connected sensors onto a valid medium.	# of valid data sources recorded per flight
Individual Sensors can transmit valid data	Each individual sensor connected to the measurement unit shall continue to transmit valid information during the duration of flight.	Sensors are in working order (binary)
Controller is able to accept sensor data	Either the measurement unit or individual sensors shall transmit data to the Controller in realtime.	# of valid data sources received during flight
Controller is able to transmit sensor data by telemetry.	The Controller shall be able to transmit some sensor data via telemetry, assuming other components are in working order.	# of valid data sources transmitted to ground.