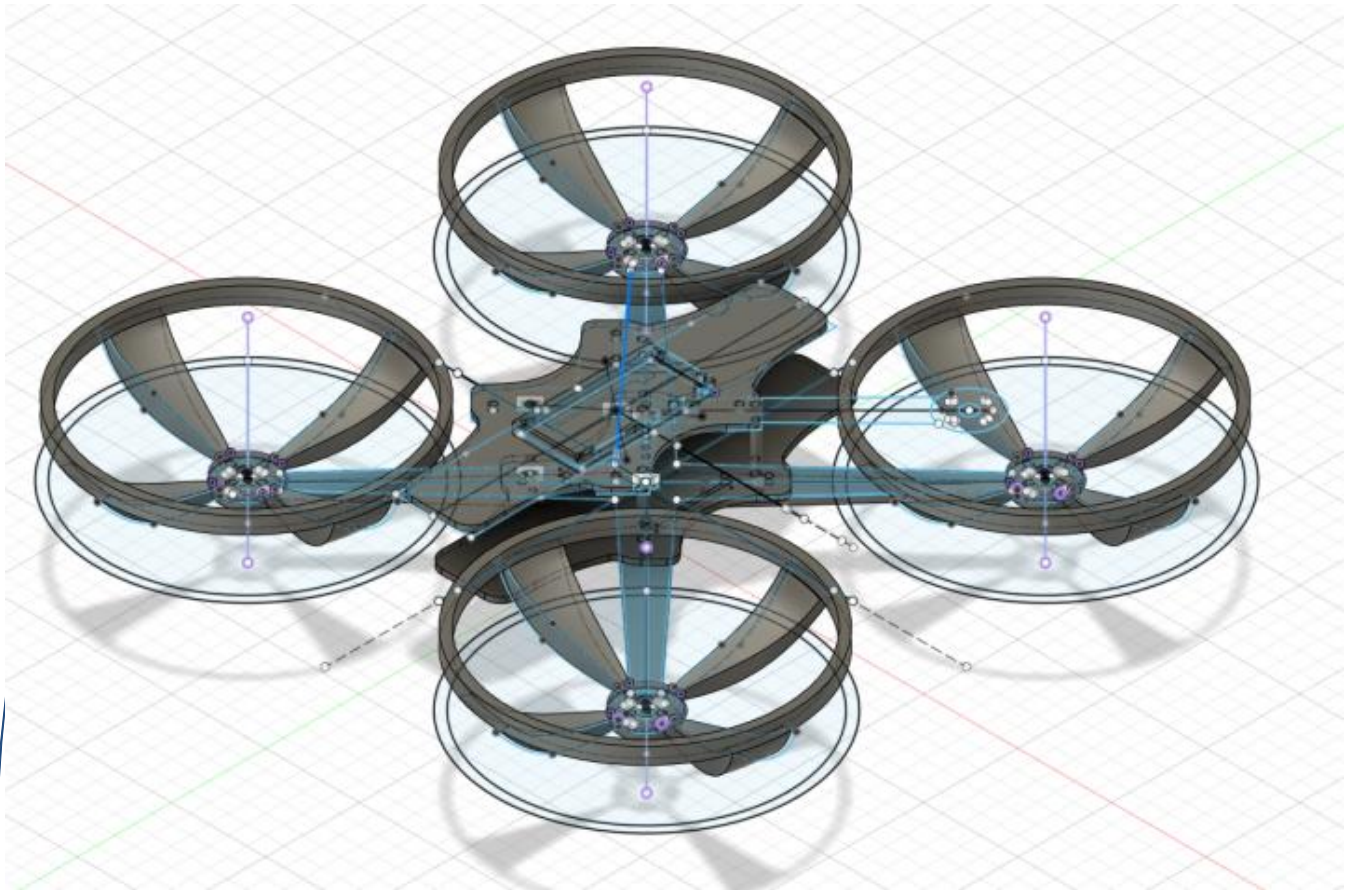# Surveilia Requirements

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Reference #	Requirement	Test	Pass/Fail Criteria	Criteria Met
001	*Motors must interface with controller*	*Run power to motors through ESC*	*Pass if all motors turn on*	Pass / Fail
002	*Motors must receive controlled pulse modulation*	*Control motor speed with ESC*	*Pass if motors can be controlled with pulses*	Pass / Fail
003	*Motors must be able to operate at different speeds*	*Control each motors speed differently with ESC*	*Pass if every motor is at a different speed*	Pass / Fail
004	*PID controller must maintain motor stability*	*Balance 2 motors on a test bench running PID algorithm*	*Pass if motors self-correct*	Pass / Fail
005	*Drone has stable flight*	*PID testing station, on a teetering wedge*	*Pass if motors align parallel with workbench*	Pass / Fail
006	*Drone can be controlled manually*	*Drone receives input from controller*	*Pass if drone responds to user input*	Pass / Fail
007	*Must fly in a 3D space autonomously*	*Create a boundary in the system, drone must fly randomly with control*	*Pass if drone moves in boundary with no conditioning*	Pass / Fail
008	*Must send flight data to remote console*	*Drone sends test data to GUI.*	*Pass if GUI receives 90% of data at 30 meters from router*	Pass / Fail
009	*Must recognize a human*	*Camera is pointed at random objects*	*Pass if alert is created from viewing humans with 90% accuracy*	Pass / Fail

		and humans		
010	*Must have configurable instructions through a remote console*	*GUI must send test data to drone*	*Pass if drone receives 90% of data at 30 meters from router*	Pass / Fail
011	*Must have a plottable flight path*	*Create flight path with ArduPilot and waypoints*	*Pass if drone collects 100% of waypoints*	Pass / Fail
012	*Must go idle if outside of control range*	*Send drone outside of boundary*	*Pass if drone pauses all processes and hovers indefinitely*	Pass / Fail
013	*Must have automatic initialization*	*Initialize functions on startup*	*Pass if startup procedure is followed*	Pass / Fail
014	*Must have manual interrupt of tasks*	*Interrupt automated flight path with command*	*Pass if tasks are paused after interrupt*	Pass / Fail
015	*Must have battery efficiency*	*Drone is in a hover with all peripherals active*	*Pass if hovers for 59 minutes without recharging*	Pass / Fail
016	*Must have auto-home*	*Drone hovers off of pad and is ordered to home*	*Pass if drone lands back at designated home when commanded*	Pass / Fail