Launch Phase

Glider Launch Ready

Launch Enabled ← Iniitiate Launch

Setup tension limit based on aircraft info (limit is something like 80% weak link or aircraft weight, which ever is least)

Calculate goal airspeed (min rotation speed +10% compensated for aircraft launch weight, wind, and densithy alt)

Calculate initial inverter power setting based on calibrated torque data and tension limit

Tight feedback loop ~4-10hz monitoring line tension, speed and angle

Increase torque to achieve tension limit.

When speed within 15% of goal, ramp down torque to maintain speed at goal

(expecting to increase demand at rotation) When rotation sensed, increase tension to limit and maintain constant tension until rope angle reaches 45

as rope angle increases above 45, ramp down line tension

as rope angle increases above 70 drop line tension to 40% and wait for release.

Coolant Temp | Battery Voltage | Motor data

Smart inverter/controler | Torque Demand control signal

3 phase power

Motor

Winch rope

Output Sheave

Load Cell

Hall effect sensor

Line tension

Rope angle

Line Speed