

Concept

The concept is to be able to deliver parcels in hazardous places where the drone cannot land. For that, we are utilizing a rope and winch mechanism to lower the parcel from a height.

Operate

To lower the parcel in the shortest amount of time without breaking it, we developed a minimal jerk trajectory equation. This equation takes in maximum allowable acceleration and deceleration in order to develop the distance lowered at any time. For the academy demonstration, we will be using a DC motor and developing a variable braking mechanism to control the rate of descend of the parcel.

Manufacture

We will be using a rope, and a geared DC motor. The mechanism will be 3D printed. And there will be a detachment system at the end of the rope.

Notes

We are not sure how the detachment system will work out. And the winch mechanism is not a perfect representation of the idea.