System: Package Delivery Drone

System Goals: The package delivery drone is meant to provide quick autonomous delivery of packages from the package storage facility to a customer.

Scenario 1: Package Delivery Scenario

The Drone is powered on by facility personnel. The Drone provides a connection request to facility server. The Drone receives an established connection to the facility server. The Drone provides notice to facility server that it is ready to accept a package. The Drone receives identification for new package to be delivered from facility server. The Drone receives customer identification from facility server. The Drone receives package for shipment from facility personnel. The Drone receives confirmation that Package has been loaded by facility personnel. The Drone provides package loaded confirmation to facility server. The Drone receives a delivery flightpath from the facility server. The Drone provides confirmation that it is out for delivery to the facility server. The Drone closes connection with the facility server. The Drone interfaces with heat, humidity, wind, and obstacles from the natural environment. The Drone requests delivery flightpath positional data from satellites. The Drone receives location data from satellites to maintain delivery flightpath. The Drone provides a connection request to package drop server. The Drone receives an established connection from package drop server. The Drone sends an arrival notification to package drop server. The Drone provides package identification to the package drop server. The Drone receives identification from customer. The Drone receives confirmation of package delivered from customer. The Drone delivers confirmation of package receipt to package drop server. The Drone receives mission return flightpath from package drop server. The Drone provides confirmation that it is returning to package facility to the package drop server. The Drone closes established connection with package drop server. The Drone requests return flightpath positional data from satellites. The Drone receives return flightpath positional data from satellites. The Drone interfaces with heat, humidity, wind, and obstacle from the natural environment. The Drone provides connection request to the facility server. The Drone receives an established connection to the facility server. The Drone provides message to facility server that is has successfully landed. The Drone provides flight log data to facility server. The Drone provides notice to facility server that it is ready to accept another package.

Scenario 2: Scheduled Maintenance Scenario

The Drone receives message from package facility server that it is scheduled for maintenance. The Drone provides alert to facility personnel that it needs maintenance. The Drone is powered off by facility personnel. The Drone is handled by Facility Personnel. The Drone provides parts to facility personnel. The Drone receives parts from facility personnel. The Drone is powered on by facility personnel. The Drone is tested to confirm successful maintenance by facility

personnel. The Drone receives confirmation of maintenance performed from facility personnel. The Drone requests established connection with facility server. The Drone receives established connection from facility server. The Drone sends confirmation of maintenance to facility server.

Scenario 3: Low Battery Scenario

The Drone provides low battery alert to facility server. The Drone closes its established connection with the server. The Drone notifies facility personnel that it requires charging. The Drone is handled by facility personnel to establish charging connection. The Drone receives energy from charging station. The Drone provides notification to facility personnel when it thinks it has finished charging. The Drone receives confirmation from facility personnel that it is charged. The Drone requests established connection from facility server. The Drone receives an established connection from facility server. The Drone provides confirmation to facility server that it has charged. The Drone tells the facility server that it is ready for a package.

Context Diagram: