Pigeon:
P2P Drone Delivery Service

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What are We?

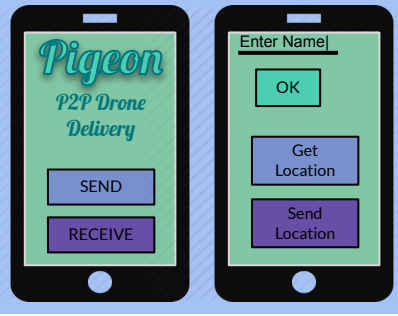
Pigeon is a quadcopter drone that uses our smartphone app to deliver person to person. The app is similar to rideshare apps, where pickup and dropoff locations are specified. The drone is self-flying and carries a payload box that can only be opened by the user. Pigeon is controlled using a Pixhawk flight controller and is programmed to fly and find its way to users, landing on a target the end user specifies.

Motivation

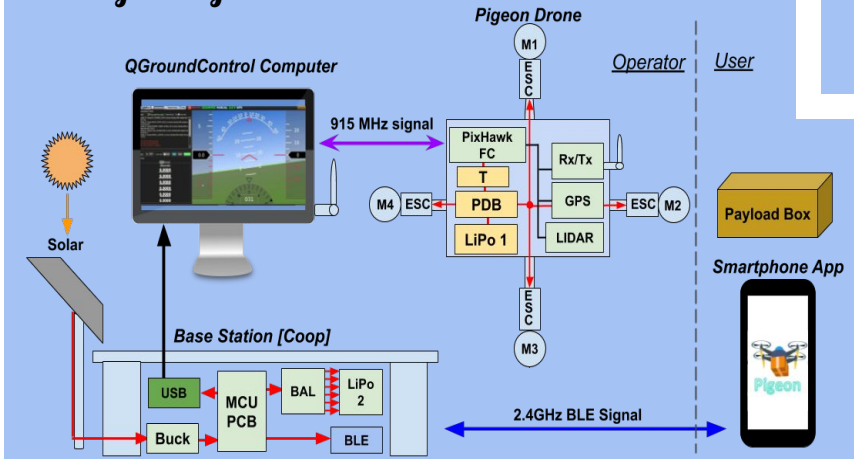
- Drone delivery is a developing area of interest as people want fast and convenient ways to send and receive packages.
- Pigeon wants to be able to support the community and small businesses by automating and expediting delivery while at the same time, reducing the carbon footprint and traffic produced by vehicles on the road.

Using the App

Using a custom Android app, users can send and receive packages. Features Bluetooth, BLE, and GPS location based services.

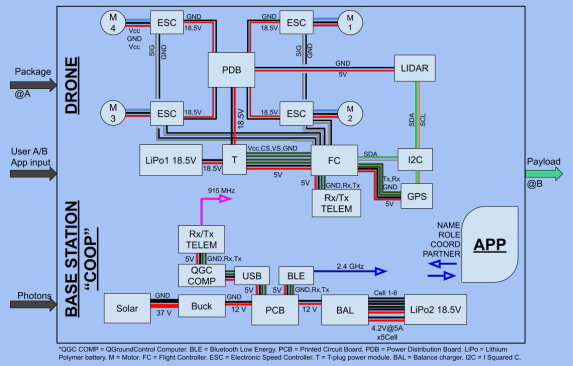


The Pigeon System



High-Level Diagram of the Entire Pigeon System:
***BLE** = Bluetooth Low Energy. **ESC** = Electronic Speed Controller. **FC** = Flight Controller.
****I2C** = I2C splitter. **M** = motor. **PDB** = Power Distribution Board. **T** = Power "T" module

Under the Hood



*QGC COMP = QGroundControl Computer. BLE = Bluetooth Low Energy. PCB = Printed Circuit Board. PDB = Power Distribution Board. LiPo = Lithium Polymer battery. M = Motor. FC = Flight Controller. ESC = Electronic Speed Controller. T = T-plug power module. BAL = Balance charger. I2C = I Squared C.

Base Station PCB

Custom design for power distribution to charge drone batteries and communication interface between app and drone