Quadrotor Payload Delivery System
Version 1.0
This project uses the Parrot AR drone to create a beacon-based parcel delivery system.

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1 Project Objective

Since the decline of the carrier pigeon industry in the 19th century, there has been a void in the mobile avian-based parcel delivery market. We hope to fill this void with our high-tech solution of a quadrotor delivery system.

2 Assumptions

We assume unlimited funding, complete access to the firmware of the device, license to cut big holes in its chassis, unlimited on-board power, and other made-up things.

3 Project Scope

The sponsor will take delivery of a modified Parrot AR Drone capable of locating an RF beacon, picking up the correct package from among several using RFID tags, reading its tag to determine where it should be delivered, carrying it to the point of delivery without crashing into any obstacles, delivering it, returning to the beacon, and landing.

4 Project Milestones

- Communicate with and control AR drone from a base station
- Integrate sensor platform and RF reader sensor
- Fly to RF beacon
- Identify package
- Pick up package with electromagnet
- Fly to delivery location
- Drop off package
- Fly to RF beacon with obstacle avoidance
- Fly to delivery location with obstacle avoidance

5 Impact Statement

This system could impact a variety of systems from pizza delivery to disaster relief efforts.

6 Resources

- Parrot AR Drone
- RF Reader/Tags
- External Wifi Adapter
- Ultrasound range finders
- Lightweight Microcontroller (sbRIO/Arduino)

7 Risks and Feasibility

The Parrot AR Drone can be dangerous. With improper handling, it may crash, causing damage to itself, the environment, or the operators.

8 Success Measurements

Our project will be a success if we meet all of the milestones. Or even most.