Project Report: Package Delivery Framework Using Drones

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Abstract

This Article provide a system and a method for delivering package using drone system.

General Terms   Package delivery

Keywords   quads, terrain ,request generator, Cyber-Physical Systems

1.   Introduction

One of the main economic and environmental concerns for package delivery arises within the last mile of transit. Often times deliveries are delayed at the warehouse so they may be grouped together to fill a truck's capacity. The truck is then responsible for delivering its entire payload by exhaustively traversing to each customer's house. This is not always the most efficient method and does not guarantee deliveries to be made in the least amount of time. Companies are exploring the use of small unmanned aerial systems (UAS) for local package deliveries in an attempt to minimize these inefficiencies and to offer rapid delivery services [1]. However, the effect this would have on the National Airspace (NAS) is mostly unstudied. In an attempt to study the traffic that would be produced, we aim to build a simulation that uses UAS vehicles flying at low altitude to deliver packages from local warehouses when requests are made. As we build this simulation we must assume certain parameters especially since this type of service is not yet offered. For the purposes of analyzing the air traffic on a larger scale, we will assume that the warehouse will manage ground level traffic for takeoff and landing purposes at the warehouse. When using small UAS vehicles, it is safe to assume this will not cause much change in the overall traffic of the simulation. Another assumption we will make for the early stages of development is that all warehouses are run independently of each other. This will allow us to focus on fully developing the traffic management around one warehouse at a time. Each warehouse will have its own fleet of UAS vehicles and interact with the local environment around it. For further development of the simulation, warehouses will need to communicate between each other so that traffic between two adjacent warehouses can be optimized in a way that meets demands of package requests around both warehouses. This assumption currently limits each warehouse to have nonover-lapping areas of delivery. Since UAS vehicles from different warehouses do not currently know the position of other UAS vehicles from other warehouses, collisions would not be avoided.

2.   Background

Although the idea of Package delivery system has been a wide area or research in the past few decades...

3.   Method

The method we used for ..

4.   Demonstration and Results

5.   Applications

5.1   Use In Commercial delivery systems

5.2   Project Extensibility

The success of this project has showen ..... We believe this project/article could be extended and research on...

We have shown he use of ...

Finally, the intermediate path shown on ...

6.   Conclusion

7.   Future Work

Our simulation only condisdered the follwoing createria .....Due to this....Futureworks could be done on....