Quadcopters Package Delivery System

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Abstract

Abstract of the project goes here

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 nonoverlapping areas of delivery. Since UAS vehicles from different warehouses do not currently know the position of other UAS vehicles from other

Approach

The following Systematic approach was used:

- Defining the problem
- Defining constraints and variable
- modeling
- implementation

May be if we want to itemize it in a diffrent way

1. Defining the problem
2. Defining constraints and variable
3. modeling
4. implementation

OverView

OverView info goes here

System Model

System model equations and picture goes here

Analysis

Analysis of the project.....Honestly I don't even know what goes here *may be some bs?*

Results

Conclusion

In order to show feasibility of Package delivery using drones, this project took a route in simulating ...

Additional Information

Add stuff here

- added stuff here

References

[1] A. B. Dacidson Helen and J. M. Smith. Dronedelivery service aims for take-off in november. *Journal title*, 2013.

[2]

[3]

Acknowledgements

we would like to thank Github and khan Accademy for helping us get through college

Contact Information

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