Imperial College London

Department of Computing

Large Scale Drone Simulation on SpatialOS - Interim Report

Author:
Paul Balaji

Supervisor:
Prof. William Knottenbelt

Second Marker:
To. Be Decided

Contents

1 Introduction **3**
1.1 Drones . . . 3
1.2 Autonomous Systems . . . 3
1.3 Making Money . . . 3

2 Background **4**
2.1 Delivery Networks . . . 4
2.1.1 Planes . . . 4
2.1.2 Trucks . . . 4
2.1.3 Drones . . . 4
2.2 Drone Deliveries . . . 4
2.3 AATC - Autonomous Air Traffic Control . . . 4
2.3.1 What is AATC? . . . 4
2.3.2 Global Layer . . . 4
2.3.3 Reactive Layer . . . 4
2.3.4 Where to take it next? . . . 4
2.4 Scheduling . . . 4
2.4.1 Type 1 . . . 4
2.4.2 Type 2 . . . 4
2.4.3 Type 3 . . . 4
2.4.4 What about the delivery use-case? . . . 4
2.5 Time-Based Delivery . . . 4

3 Project Plan **5**
3.1 Phase 1 . . . 5
3.2 Phase 2 . . . 5
3.3 Phase 3 . . . 5
3.4 Stretch Goals . . . 5

4 Evaluation Plan **6**

References **7**

Appendices **8**

A write something **8**

B write something else **8**

1 Introduction

1.1 Drones

1.2 Autonomous Systems

1.3 Making Money

2 Background

2.1 Delivery Networks

2.1.1 Planes

2.1.2 Trucks

2.1.3 Drones

2.2 Drone Deliveries

2.3 AATC - Autonomous Air Traffic Control

2.3.1 What is AATC?

2.3.2 Global Layer

2.3.3 Reactive Layer

2.3.4 Where to take it next?

2.4 Scheduling

2.4.1 Type 1

2.4.2 Type 2

2.4.3 Type 3

2.4.4 What about the delivery use-case?

2.5 Time-Based Delivery

3 Project Plan

3.1 Phase 1

3.2 Phase 2

3.3 Phase 3

3.4 Stretch Goals

4 Evaluation Plan

References

[1] K. Dorling, J. Heinrichs, G. G. Messier, and S. Magierowski. Vehicle Routing Problems for Drone Delivery. *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, 47(1):70–85, 2017.

Appendices

A write something

The contents...

B write something else

The contents...