



Quadcopter Swarming

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Background

In extension of cities and technology there is always a need of surveillance to monitor for incidences of interest. To achieve reliable monitoring via stationary sensors in a large area, it is necessary to deploy a huge number of them. Therefore, to solve the coverage within the limits of the system, use of mobile sensors, which the infrastructure can move within the urban area is of interest.

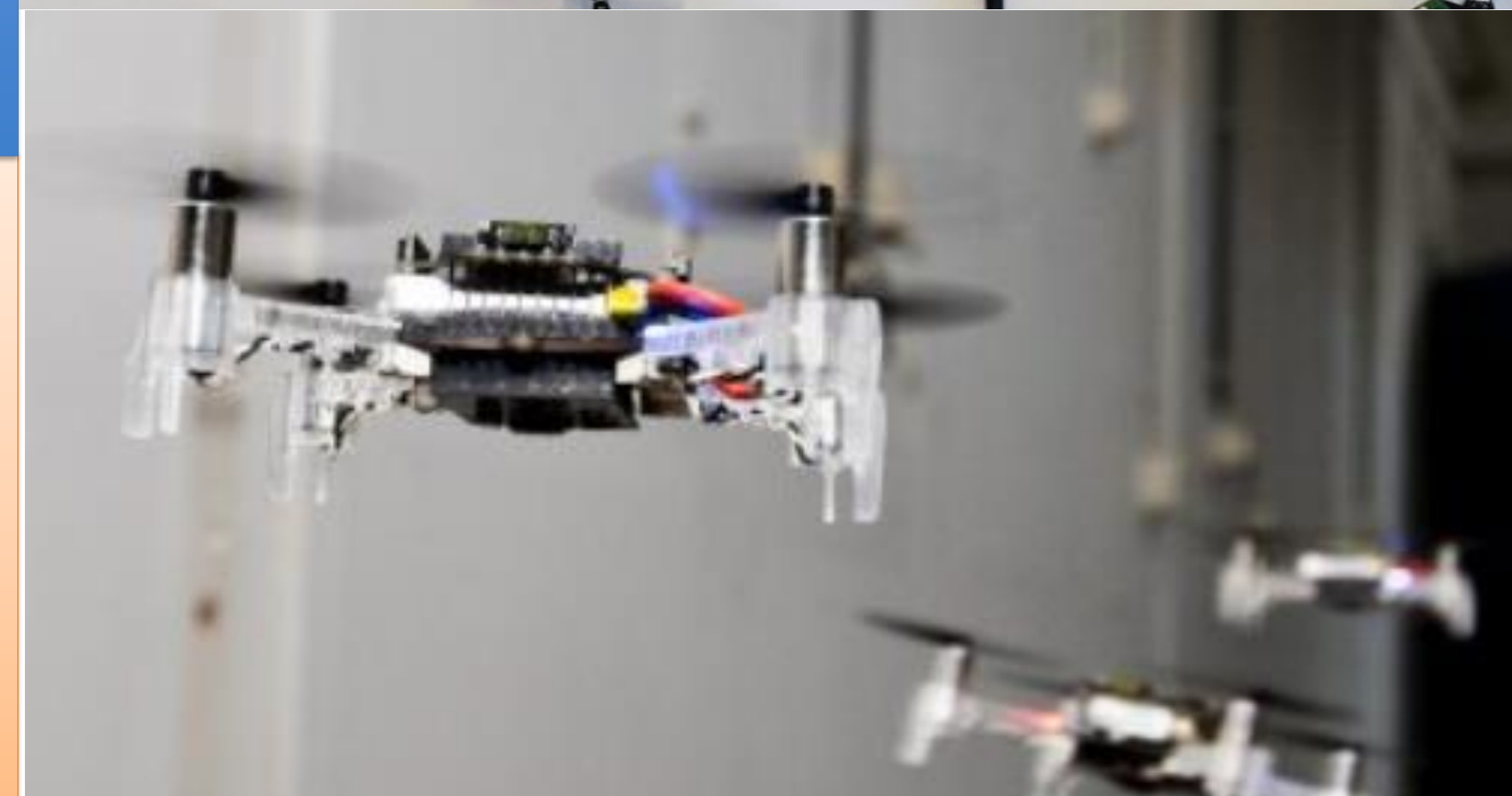
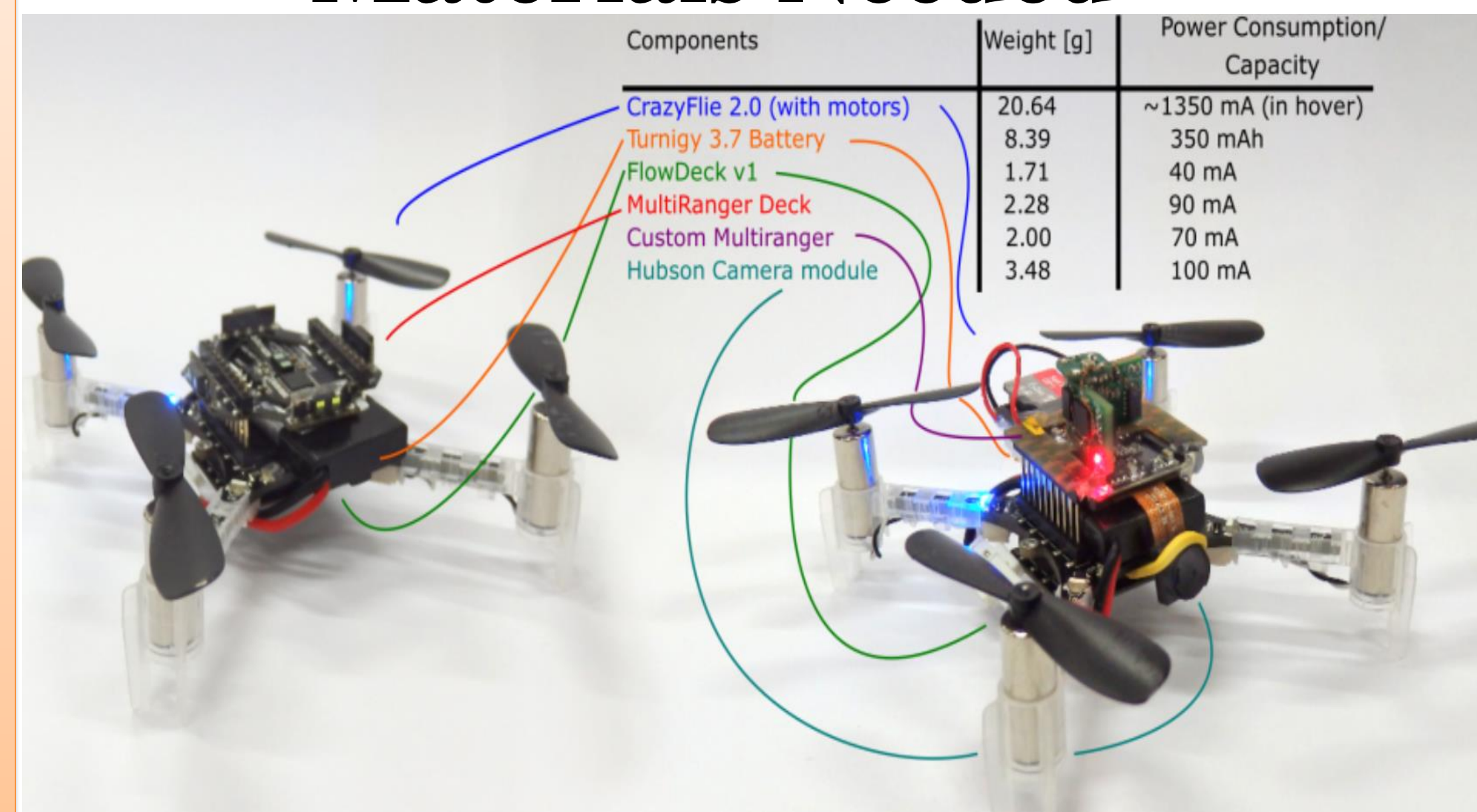
Project Goal

The purpose of this project is to design a program which could control the quadcopters under a reliable locating system. The program should be able to send command to several quadcopter simultaneously.

Challenges

1. Implementation of altitude hold, leading descent, and leading ascent
2. Use locating system to reduce instability
3. Implementation of Robotic Operating System

Materials Needed



Milestones

Fall quarter:

Week 3-7: Autonomous flight (✓)
implementing locating system (✓)

Week 8-10: implementing simulated environment (future work)

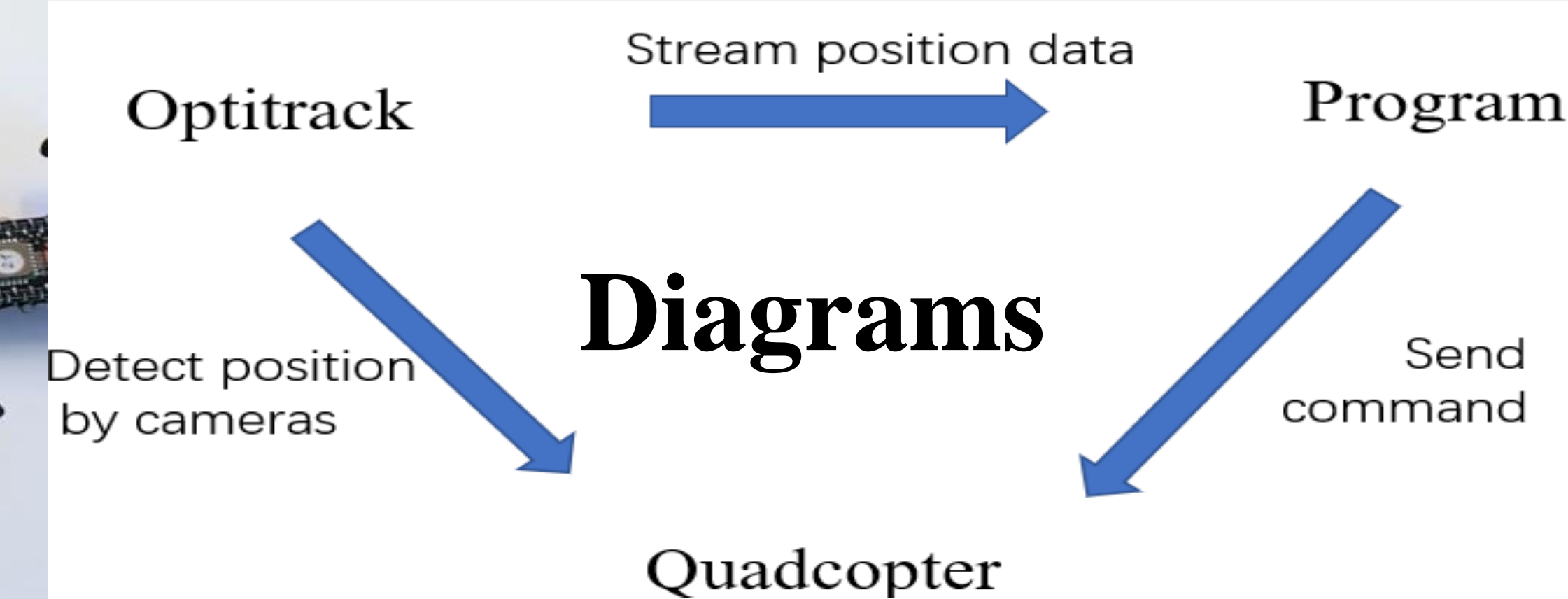
Winter quarter:

Week 1-2: implementing simulated environment (continue)

Week 3-5: UI Designing

Week 6-8: Swarming implementation

Week 9-10: Full system testing



Quadcopter

Reference

1. Giuseppe Silano ; Emanuele Aucone; Luigi Iannelli, "CrazyS: A SoftwareIn-The-Loop Platform for the Crazyflie 2.0 NanoQuadcopter", ISBN 2473-3504, 2018 26th Mediterranean Conference on Control and Automation (MED).
2. Arnaud, "Making plans for the Crazyflies app-layer"



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