Multi Drone Task Allocation

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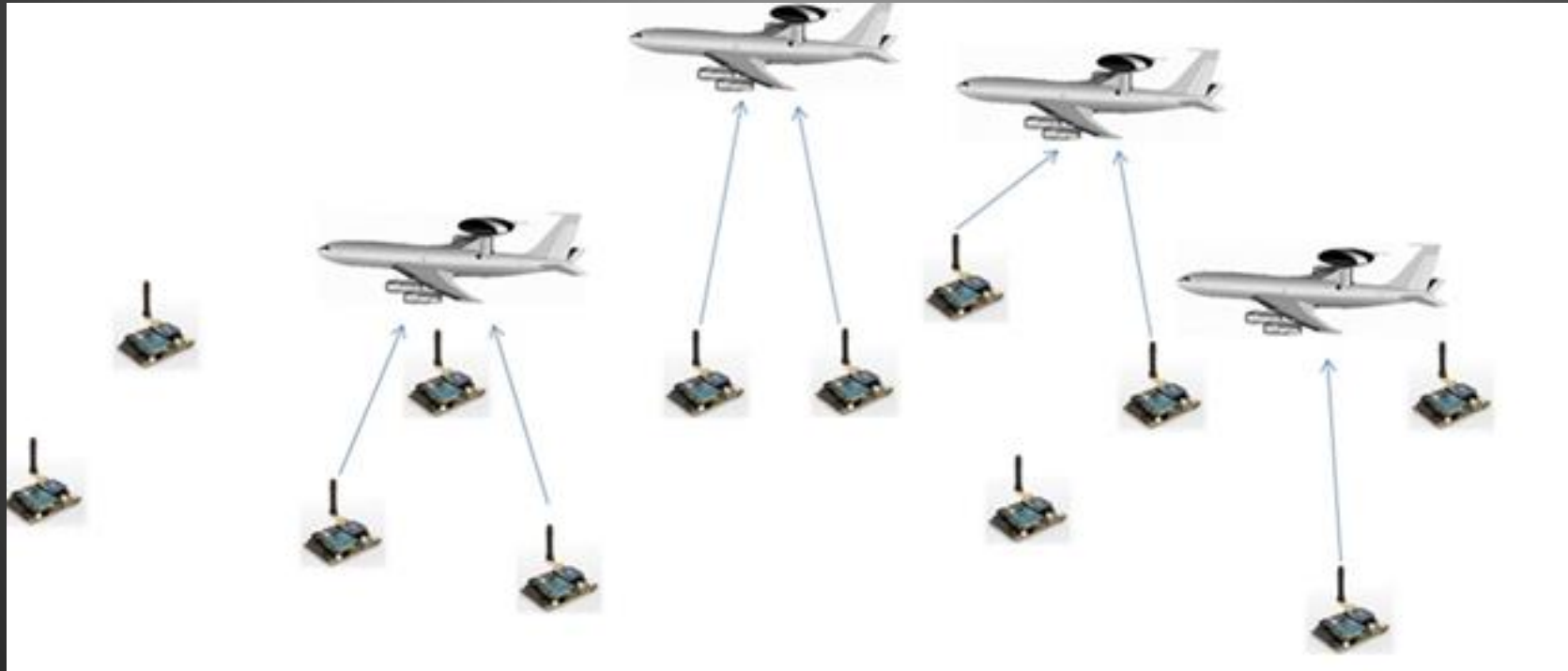Co-Supervisor: Mr Mehrdad Ghaziasgar

Overview

- Project Background
- Recap
- Drone Monitoring
- Implementation
- Tools

Background

- **Multi drone task allocation (MDTA)** consisting of coordinating a team of drones and assigning them tasks

Recap

- Target search
- Task allocation
- Drone monitoring
  - Collision avoidance
 - Restricted area avoidance

Drone Monitoring

- Collision avoidance
  - Track distance between the two drones
  - If the distance is increasing, the drones won't collide
  - If distance between drones is 1m or less, they will most likely collide
- Haversine formula
- Drone status
  - Retrieve drone Navdata

Drone Monitoring

- Restricted area avoidance
- Compare the distance between the point to visited and restricted point
- If distance to restricted area is smaller, compare angle
- If angle to access point is within restricted area , drift
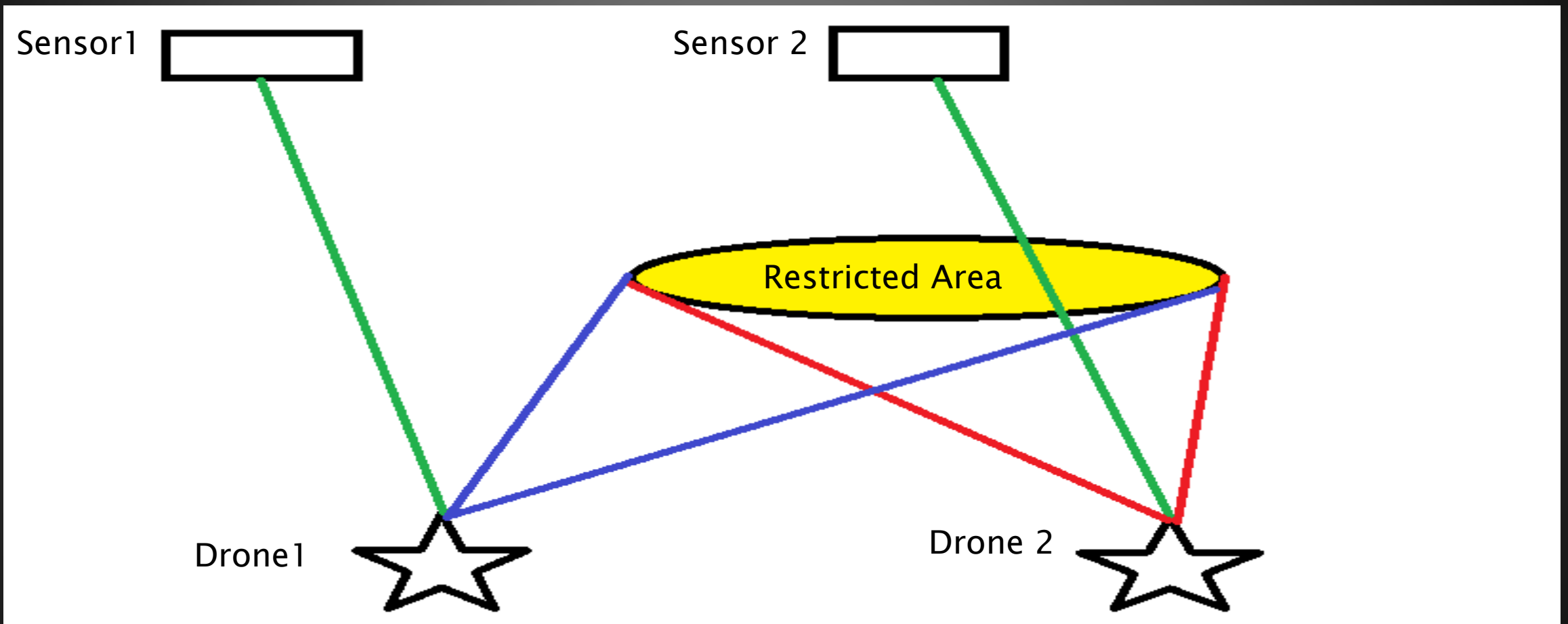
Implementation

What we have done so far

- Basic movement
- Rotation
- Simultaneous drone control
- Drone video live feed
- Save drone feed
- Pre-planned collision avoidance

Tools

- Parrot Bebop
- Parrot 2.0
- Wasp Mote
- OpenCv
- Python
- EDIMAX nano USB Wi-fi Adapter

References

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