instituto de telecomunicações

DroneRelay:

Aerial Drone Platform with relays for scenarios of limitation and emergency

Project in informatics engineering 2020/2021 **Milestone 2**

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Indice

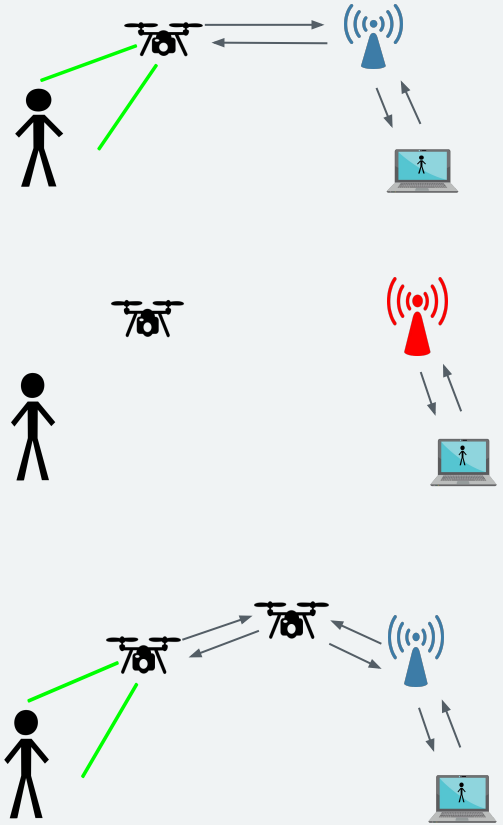
Problem

- Relay drone positioning in existing missions is static and based on distance which is inefficient.
- Need to dynamically adapt the quality of the communication between drones based on system conditions.

Goals

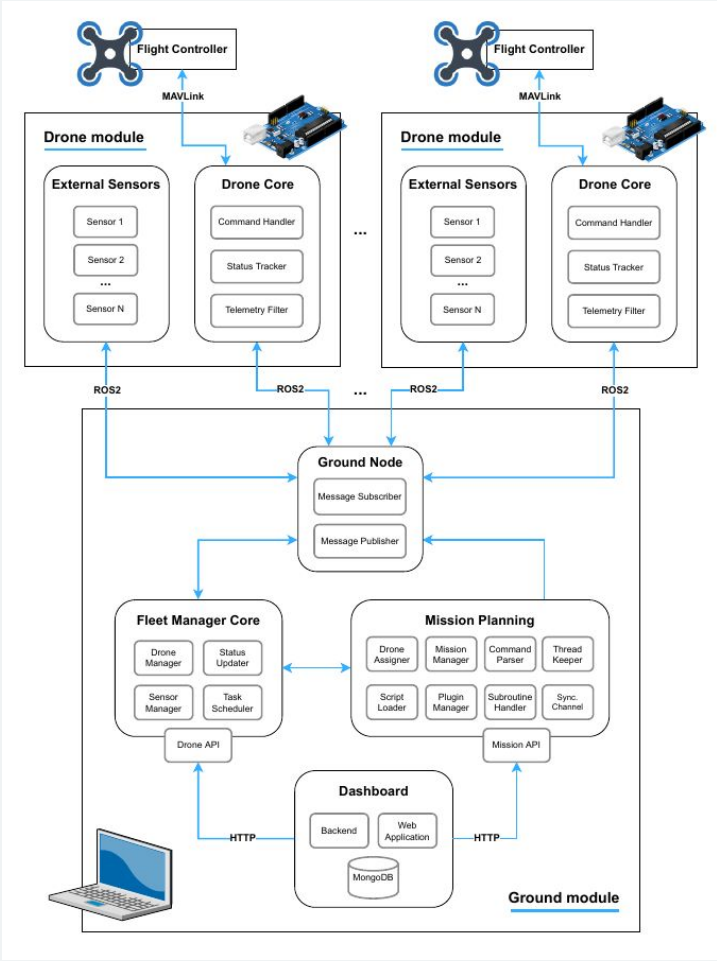
- Relay drone adopts an optimal position through some parameters like network, video quality etc.
  This position is dynamically updated

- Dynamically adapt telemetry frequency, transmission ratio and video quality according to the current communication quality



Architecture

- Ground module responsible for controlling and receiving data from drones.
- Drone module that receives data from the base station, and controls the flight controller.



Tasks

1

Analysis and Planning

- Analysis on previous project implementation

- Study Technologies

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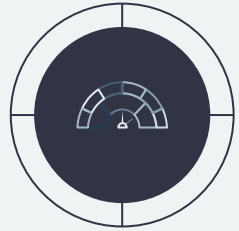
2

Network Monitoring

- Development of a network monitoring sensor.

- Network statistics analysis



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3

Relay And Video System

- Improve drone relay

- Automatically adapt frequency and quantity of telemetry, sensors and video quality information

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Tasks

4

Dashboard Implementation

- Dashboard for drone control, mission planning and displaying live camera feed.

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5

Field Testing

- Live testing of relay and video transmission via dashboard

- Live mission with all working components

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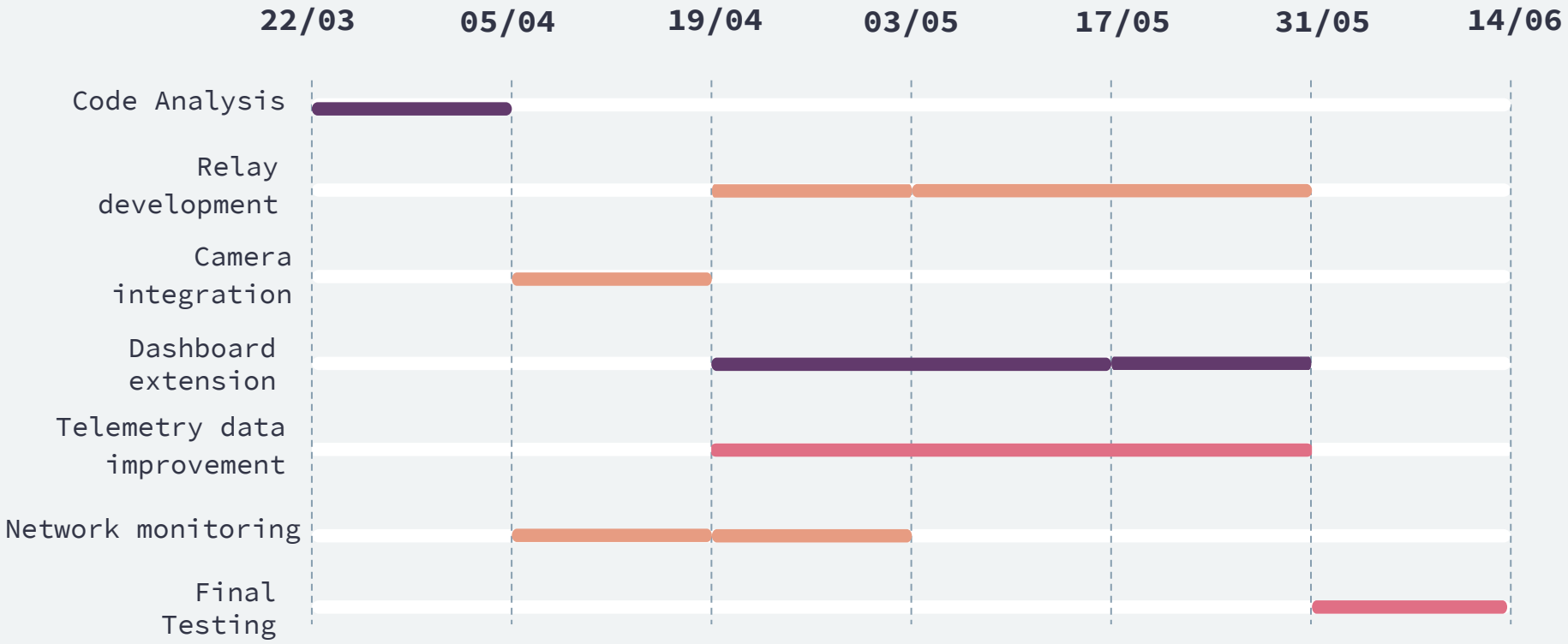
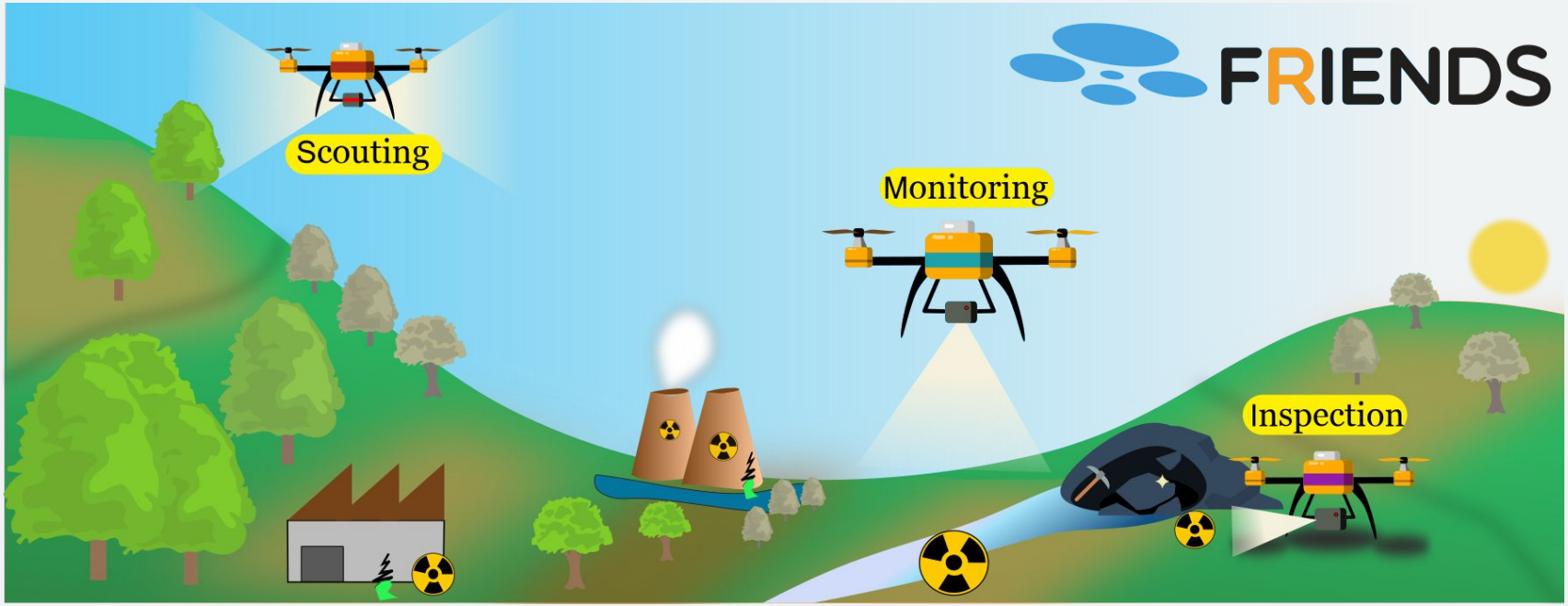
Project schedule



Communication tools

Related work



Projeto FRIENDS:https://www.ipfn.tecnico.ulisboa.pt/FRIENDS

Thanks !

Do you have any questions?

Micro site github
Micro site