Autonomous Target Scoring Drone

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Background/Purpose

- The navy has the need to score their mortar testings
- As of now it is very inefficient and requires manual flying and scoring
- The purpose is to rather than have all done manually, it will be autonomous.

Progress/Challenges

- The drone is mostly fabricated
- The image processing algorithm is complete
- The GUI is mostly complete
- Testing and debugging still needs to be done
- Challenges include implementing how the power is delivered to the drone and the Pi's

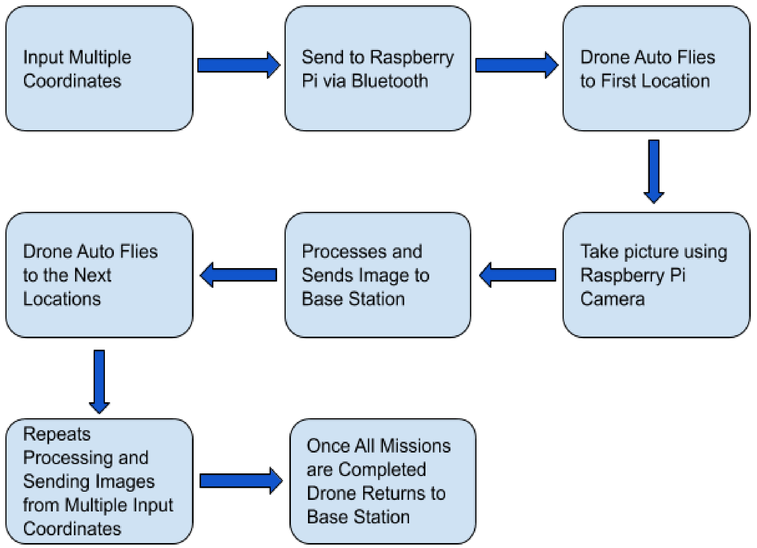

Fig. 1 Process

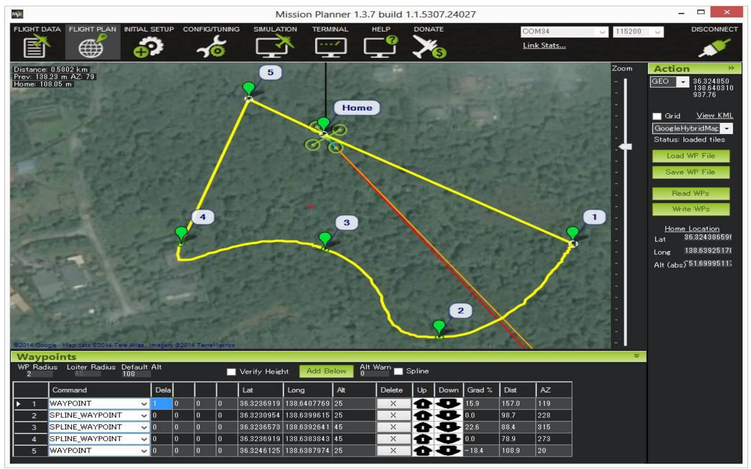

Fig. 2 Path Developed from multiple waypoints

Materials

- 2 Raspberry Pi's
- Motors, ESCs, Propellers, Frame
- Flight Controller
- Raspberry Pi camera
- Base station(laptop)

Future Tasks

First Quarter:

- Put everything together and test flight. Debug code

Second Quarter:

- Expanding the range of the drone's flight.
- Have the drone fly to multiple waypoints instead of a singular one.
- Display the processed image and the flight path on the GUI.