Task 5 : Finding yellow block and publishing Geo - Coordinates

blogpost-style

Smit 1 February 20, 2023, 7:59am

@sd_22_s2

Task 5

Aim

Aim of this task is to find a yellow block on the arena and publish its geo location with respect to the geo tagged image available (map). This task is same as task 2D but just for 1 block

Prerequisites

For implementing this task, you need to be ready with a position control of the drone as you will be using that for waypoint navigation.

Problem statement

The drone needs to takeoff from the center of arena, search for a block on the arena and detect its position in terms of latitude and longitude using the geo referencing techniques and publish the location over a rostopic

Procedure

- Keep 1 yellow block on the area coordinate C2 and drone at the center of arena
- The drone needs to takeoff from the center of arena, and begin the search operation
- The drone can take any path for searching the block but the maximum height of the drone cannot be less than 20 in WhyCon Z axis coordinate
- Use the camera frames sent over ROS and subscribe them to detect the yellow block on the arena and use the frames to pass it to your geo referencing algorithm to detect the latitude and longitude of the yellow block
- Once the block is found, you can publish the latitude and longitude of yellow block on rostopic `geolocation` . Land the drone back on the [0, 0, base_height] coordinate to end the run

Recording and submission instructions

- After completing the task, you need to record a video. On the screen, half window should be showing the camera frame from ceiling and half should be showing the camera frame from drone’s camera. At the end, QGIS window should be shown with all the co-ordinates overlaying on a openstreetmap. Use screen recorder if your laptop/pc can support or else use an external camera for recording but make sure the camera is steady and has a clear view of the screen.

- Upload a one-shot continuous video with the title `SD_<Teamid>__Task5` (For example: If your team ID is 1234 then, save it as SD_1234_Task5

Please note that while uploading the video on YouTube select the privacy setting option as Unlisted

Upload a zip file containing the following:

This should be the structure of zip file.

|__SD_1234.zip
… |__SD_1234_task5.py
… |__SD_1234_doc.txt
… |__SD_1234_lat_long.txt

SD_1234_task5.py should contain your python script. If you have multiple script you can add it and mention it in the ***_doc.txt*** file. SD_1234_doc.txt should contain the description of your implementation methodology as done in task2d. SD_1234_lat_long.txt should have the lat long co-ordinated calculation from your script of an object kept in arena.

> SD_1234_lat_long.txt should have comma separated latitude and logn values from geolocation topic.
> eg. 19.13438725934338, 72.92550009394265

Deadline

The deadline for submitting this task is **06th March 23:59 hrs**

All the best

2 Likes

Regarding reminder for Task5 and Task6

Smit Closed 2 February 20, 2023, 7:59am

Saail Unlisted 3 February 24, 2023, 10:03am

Saail Listed 4 February 24, 2023, 10:03am