Task 5 - Bonus Configuration

1 Problem Statement

Aim of this task is to implement the Bonus Configurations of Survey and Rescue.

2 LED Configuration:

Cell Location	LED module No
E2	1
D1	2
A2	3
B5	4
C6	5
D5	6
F5	7
E4	8
C4	BASE

3 Procedure

1. Update to the latest survey_and_rescue package from Github.

2. We've provided you with the LED_Bonus_Config.tsv (named as LED_Config.tsv in earlier tasks) along with this document. Please read the tsv file in your scheduler and position hold scripts so that they know where the *Base* is.

3. Place the LEDs on the cells according to serial number mentioned.

4. There are two separate Bonus Configuration, which can be called/run by two separate pyc files, namely:

    (a) monitor_bonus_config_1.pyc

    (b) monitor_bonus_config_2.pyc

Each of this files has a different Beacon timing sequence inside. You can score more by performing and submitting both of the configuration's bag files, less by submitting only either one of them or **zero if neither is submitted**. Make this submission as mentioned in Bag Files.

NOTE: To gain information regarding *Beacons*, only image-processing should be used i.e. by running your *detect_beacon.py* script. The usage of *currentLit* information from the *stats_sr* topic is strictly prohibited.

5. Please follow all the steps mentioned in the Original Configuration's Problem Statement to perform the task. However, launching the *monitor* node is done differently in Bonus Configuration. Make sure to follow the steps below.

   - To launch the first bonus configuration, edit the detect_beacon.launch **line 32**, change *type* param from *monitor.pyc* to *monitor_bonus_config_1.pyc*

   - Similarly to launch the second bonus configuration. Change the param *type* from *monitor.pyc* to *monitor_bonus_config_2.pyc*

   - launch detect_beacons.launch file. We insist you to record your each run, along with maintaining a log of that run, so at the time of submission you can avoid wrong bag file upload:

     ```
     roslaunch survey_and_rescue detect_beacons.launch record:=True
                         rec_name:=nth_iteration.bag
     ```

     This will initialise the following nodes :

     - **monitor node:** monitor_org_config.pyc script.
     - **sr_beacon_detector node:** your beacon_detection.py script.
     - **Rosbag Recording node:** will record a 3 minutes bag file.

6. After, LEDs start glowing, your *scheduler.py* script should inform the position hold script about cell which it needs to service, refer the Task 4.2 document for more information.

7. At the end of the 3 minute run. The monitor script (in in this case the *monitor_org_config.pyc* script) will publish the following message so as to inform you the end of the run.

   location:"C4"
   info:"END"

   Where C4 is the Base Location for Original Configuration. The score will stop being computed after this point.

4   Expected Output

Adhere to the instructions in the Expected Output section in the Original Configuration.

5   Points to Remember

1. Keep in mind all of the Points mentioned in the document of the Original Configuration.

2. Use extra precaution to name the bag files appropriately as multiple files as to be recorded for this task.

6 Submission Instructions

Follow the instructions below to submit your bonus task. You will submit your bag files and videos for this task.

6.1 Bag Files

- Follow the instructions in the Original Configuration document to record bag files for each of the bonus configurations.

- Name the rosbag file for the 1st Bonus Configuration as `bonus_1.bag`

- Name the rosbag file for the 2nd Bonus Configuration `bonus_2.bag`

6.2 Video:

- You will upload two unedited videos for this Task.

- Create a playlist on YouTube, add these two videos to it and submit the link of the Playlist on the portal.

- Make sure that the visibility of the Playlist is Unlisted as well.

6.2.1 Uploading video/s on YouTube:

- Upload a one-shot continuous video with the title eYRC#SR#Task5_Bonus_Config_1#<TeamID> (For example: If your team ID is 123 then, save it as eYRC#SR#Task5_Bonus_Config_1#123)

- Change the title to eYRC#SR#Task5_Bonus_Config_2#<TeamID> for the video of the 2nd bonus configuration.

- Please note that while uploading the video on YouTube select the privacy setting option as Unlisted as shown in Figure 1. You need to upload the video as instructed on the portal.

6.3 Overview:

1. Please place these files inside a .zip file before uploading:

   - bag file
   - Miscellaneous files (if any)

   Your final .zip output must be of the following structure:
   <team_id>_5.zip

   - `bonus_1.bag`
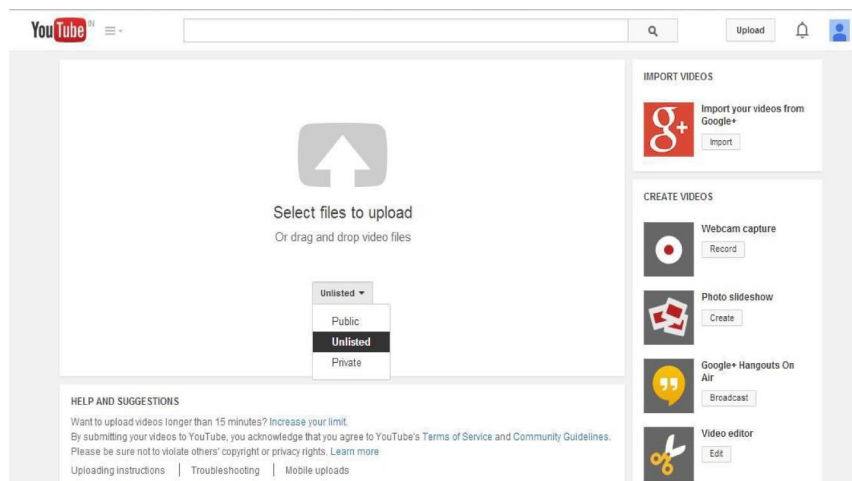   - `bonus_2.bag`

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Figure 1: Uploading unlisted video on YouTube

2. You must upload the videos to YouTube as mentioned in the above instructions, make a playlist of these videos. You will have to submit the playlist link on the portal.

Please follow the naming convention strictly as specified in each step. Failure to do so may lead to repercussions.
NOTE: The videos uploaded on playlist after the deadline will not be considered in any case.

Instructions for uploading the folder will be provided on portal.
Good Luck!!!