TP – Project University Evry

Tools

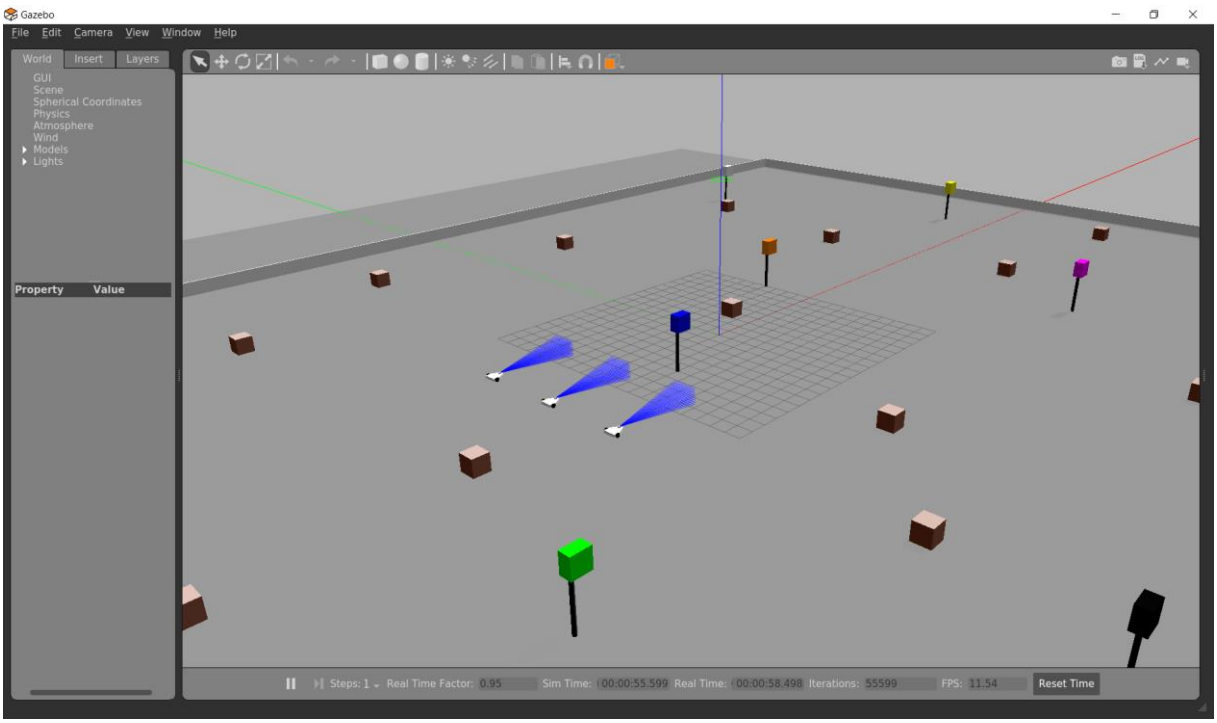
- ROS Melodic
- Gazebo

Subject

In this project, the group of students will implement a fleet of at least three robots to localize cooperatively a maximal number of flags in order to win the game. We characterize the robots as follow:

- Each robot has its own ID
- Each robot can communicate with another one
- Each robot embeds an ultrasonic sensor to observe the environment through a restricted range (3 meters)
- Each robot moves in the environment with two wheels

The flags are placed randomly in the robot environment and send a continuous signal. Each flag has its own ID. By calling a service, robots can have an estimation of the distance with the closest flag and the flag's ID.



Objective

The objective of the project is to find as fast as possible a maximum flag's positions.

The students must find the best strategy for their robots and elaborate a good coordination system.

Submissions

At the end of the project, each group of students needs to send us:

- The description of the proposed solution (2, 3 pages)
- The implemented approach with the adequate comments (source code)
- An evaluation of the approach using several environments

Outcomes

- Understanding topics and services on ROS
- Navigation with obstacles in unknown environment
- Perform communication inside a coordination fleet

Supervisors

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