Agenda EMC Meeting #8

Date: 05-06-2020
Time: 12:00 – 13:00
Location: Online (Microsoft Teams)
Tutor: Wouter Kuijpers
Chairman: **Emre**
Secretary: **Stan**

1. **Opening meeting**

   a. Everyone present?

   b. Tutor announcements

      i. Need a new representative for the HR challenge. Not sure if actual live commentary can be used.

   c. Group members announcements?

2. **Presentation**

   a. Evaluation

   b. 2 questions

      i. Local map being stored

      ii. Explicit assumptions needed for localization

   c. Powerpoint should be put on the wiki in pdf format

3. **Progress**

   a. **FSM updates**

      i. Localization failed added.

      ii. Better add additional info about what happens in each state on the wiki rather than in the FSM.

      iii. Failsafe is a state, which can break a link in case we take more than 150% of the time following a link should take.

      iv. Make sure that the failsafe is also tested, other groups have really needed it in the past.

   b. Localization

      i. Smart solution to fix localization failed, which turns a small bit until enough edges are seen.

ii. If relocalization is required, we still take into account the position where the robot thinks it is. Don't just start relocalizing if there is too little info.

iii. Probability function might be a bit too strict, sometimes only 0 or 1 particles pass the test.

iv. Would be good if objects could be added in the global map to aid navigation at a later stage. Might run into issues with dynamical objects.

v. Dynamical objects will for now not be identified and saved as such. We only consider them as walls for now.

c. JSON parser

i. Now running on c++ 11. Own parsers have also been improved.

ii. Convex/concave edges need to be identified.

iii. A way to save the waypoints corresponding to the cabinets needs to be designed.

d. Visualization improvements

e. Particle filter improvements

f. Obstacle detection

i. Walls are the only things considered for breaking links. No distinctions between objects and walls.

g. Monitor & Strategy

i. Small issue with the robot rotating when reaching a waypoint, will be looked at after the meeting.

ii. Pico can drive backwards.

h. A*

i. Failsafe

4. **Coming week**

a. Integration of components (strategy)

b. Testing in hospital map

i. Declare edge types

ii. Waypoints and cabinets

    c. Wiki update

5. Division of tasks

    a. Emre and Stan – Edges convex/concave, Waypoints and Cabinets in map, before Saturday night

    b. Joep and Bram – Objects in map, strategy for localization

    c. Pim and Aris – Updating wiki, strategy for failsafe,

6. AOB

7. End of meeting

    a. Next meeting

        i. Monday testing all day

        ii. Tuesday 1300 with Wouter

DEADLINES: **3th of June, Presentation of final design (1 day)**
                     10th of June, Final Competition (~1 weeks)
                     24th of June, Deadline Wiki pages (~3 weeks)