Software Engineering and Project

Group 2 *Coding Pharaohs*

MILESTONES draft for Week 9 and Week 10

1. Refer to GUI. Depicting the area explored by the robot.

   including

   - proper presentation of the map, a smaller sized full view on side and a bigger sized partial view in the main map panel. (this was discussed on last client meeting. This may be hard to achieve. We can eliminate this item on Week 8 if we think it's too hard to achieve)
   - representation of different structures on the map, both in existed map and detected by the robot
   - current location of the robot and the representation of the robot
   - traversed path by the robot, using a different colour to display
   - the ability of saving new explored map
   - real-time map generation, the newly explored area will be presented on the GUI in real-time

2. The manual control of the robot

   including

   - moving and rotating, including move forward and backward, turn left, and turn right.
   - ability to stop the robot
   - road closure marking

3. AI mode of the robot

   including

   - automatically follow the road and explore uncleared area
   - obstacle and disaster area avoidance
   - automatically road closure marking

- if stop, the robot has the ability to continue AI mode exploration
- the robot has the ability to go back to the starting position in AI mode

4. Mission completion control

   - after finishing the exploration of the whole map, the robot should wait for a while (1 minute?), and send the mission completion message to the operator asking for manual control. If the operator did nothing, the robot will automatically come back to the starting position.

5. Communication

   including

   - button on GUI to control the connection
   - initiating the connection, message will be showed on screen, ask for confirmation and running connection
   - show real-time message on the display of control panel of GUI
   - ensure the real-time control with connection
   - ability to detect the battery life and signal strength, and show them on screen

6. Safety performance

   including

   - movement speed should be an accepted low speed (5cm/s?)
   - collision detection. Once collision happened, the robot should stop immediately.
   - low power performance. (how low is low power? 10% or 5%?) send a warning to the operator and immediately stop, waiting for the manual control.
   - lost of connection performance. Stop, and once connected go to manual control mode.
   - dangerous zone. the robot should never go into the dangerous zone. once it reaches the edge of the area, it will immediately stop.

7. This one is not sure. I'm asking on forum if we need to prepare the A1 sized map site by ourselves.

   including

   - A1 size map with basic features
   - put obstacles on the map and test
   - road closure marking features on real map

Not decided which should go to Week 9 and which should go to Week 10. please feel free to comment.