

Milestone 5

1. Project Name: IGVC - Intelligent Ground Vehicle Competition
2. Team members:
 - Viet Dung Nguyen (CSE) (dnguyen2016@my.fit.edu)
 - Jinwen Zhang (jzhang2015@my.fit.edu)
 - John Light (jlight2016@my.fit.edu)
 - Sijin Yang (yangs2017@my.fit.edu)
 - Peter Tarsoly (ptarsoly2016@my.fit.edu)
3. Faculty Sponsor: Dr. Marius Silaghi (msilaghi@fit.edu)
4. Client: Dr. Ken Gibbs
5. Meetings with the Client:
 - 02/21/2020
 - 02/28/2020
 - 03/06/2020
6. Date of meeting faculty sponsor:
 - 03/27/2020

1 Task matrix:

Task	Completion %	Viet Dung	To do
Software Documentation	80	80	Code standard, development process
Improving the simulation	50	50	Refactoring the code
Control the robot movement	100	100	

2 Task Discussion:

2.1 Change of plan:

Because of the situation with the Coronavirus, the team could physically access the robot. As a result, the team decided to focus more on documentation and simulation. In addition, the team will change the main priority from building the robot to developing software functions.

2.2 Documentation:

Currently, the documentation of the project includes instructions for running and building the simulation and study resources used during the process of the project.

The main document of the repository listed the dependencies and how to use the makefile script to build and run the simulation.

The resource document listed all reference sources for the project. Major changes to the processes in the guides were noted.

2.3 Improving the simulation:

In the last milestone, all new ROS nodes were unstable and needed to run separately. After the source code became more stable, it is necessary to launch all ROS nodes simultaneously for integration test and developing new nodes.

Using `roslaunch` to manage multiple ROS nodes and other parameters within ROS. Makefile was used to setup environment and simplify the process of executing the program.

2.4 Control the robot movement:

The robot movement are control primarily using the two rear wheels. The robot turn by applying different velocity to the two rear wheel.

In order to control the robot's movement within the simulation, the plugin controlling the joints will receive a custom ROS message type which allow varied speed between wheel.

3 Contribution discussion:

- Viet Dung Nguyen
 - Write the document for the simulator.
 - Streamline the process for building and running the simulator.
 - Update the plugin, which allow the varied speed between the robot's rear wheels.
 - Consult about the implementation of other members work into the simulation.

4 Plan for the next milestone:

- Complete the documentation.
 - Add coding standards and development instruction.
- Refactor the code.
- Assist other members to implement other key modules like obstacle detection and path planning.

5 Faculty Sponsor feedback on each task for the current milestone:

- Task 1

- Task 2

- Task 3

Signature

Date

6 Faculty Sponsor evaluation:

Viet Dung Nguyen 0 1 2 3 4 5 6 7 8 9 10

Signature

Date