

Progress review #1

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Teammates:

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ILR #2

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a. Individual Progress

For the first Progress Review, I worked on the research and finalization of the Planning and Navigation subsystem development schedule. Besides this, I worked on the website development task and also went through the ROS tutorials.

I. Planning and Navigation Subsystem

I went through the Team Roborn's (Team C-2014) ^[1] website to study their planning and navigation system. I researched on the World Model Builder and the Global Planner that the Team Roborn used in their system. Rohit and I talked to their team members to get more insight into the system. I also contacted Christopher R. Baker from NREC to further clear my doubts. Finally, both of us (Rohit and me) combined our individual research on the planning and navigation sub-system to finalize a work plan for the Fall semester given in Figure 1. We have also fixed weekly meetings with Jaaneel Dalal (Team Roborn) to help us with any problems in the tasks involved. For the Fall Validation Experiment, we will use the same algorithm for relative and absolute localization of Turtlebots using April Tags as used by Roborn. If it works successfully in this semester, we will start working on using Global Camera for April Tag localization in the next semester.

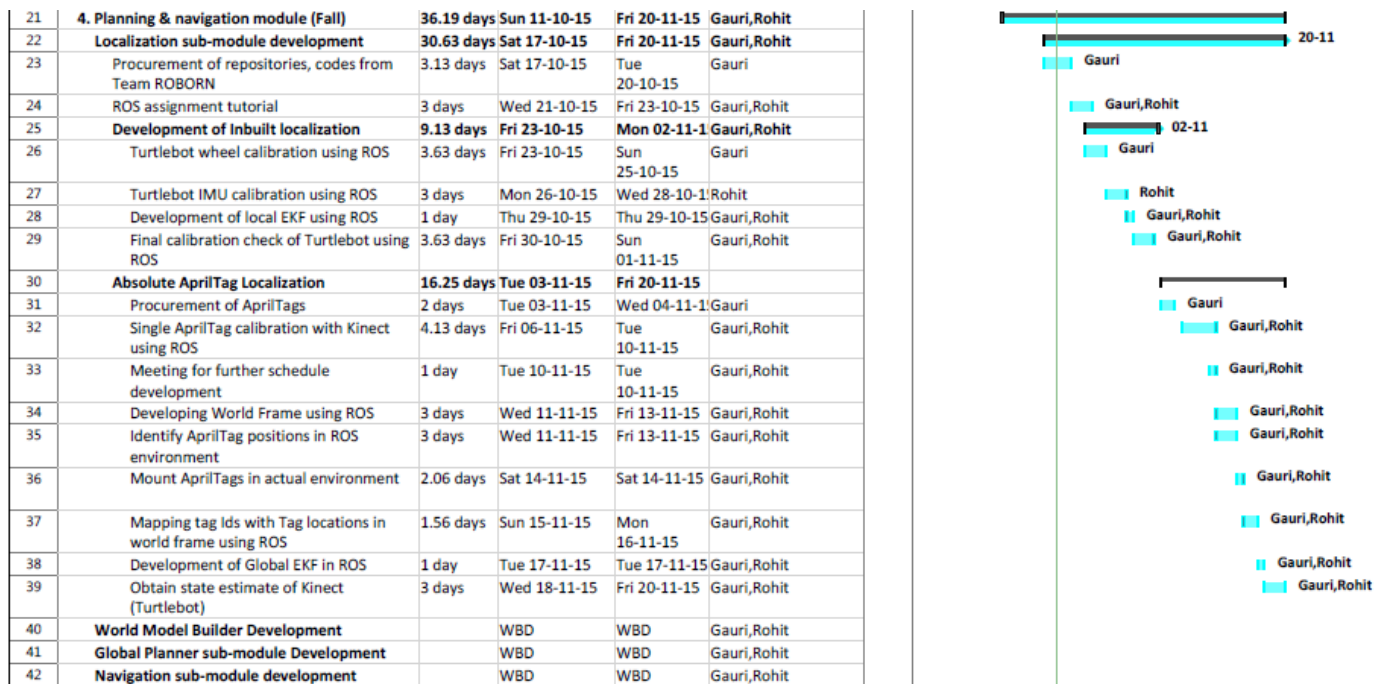


Figure 1 Work Plan for Planning and Navigation Sub-System for the Fall Semester

II. Website Development

I am responsible for the development of the website ^[2] of our team. I am using WordPress Optimizer theme for designing it. I have added all the information

that is relevant till date for our project. This includes the information related to Systems study, Project Management, The Team, our Mentors and all the graded documents (Individual Lab Report #1 of each member, Conceptual Design Review Report and Systems Engineering presentation).

III. ROS Tutorials

The major part of the Planning and Navigation sub-system involves programming in ROS. Moreover, we have a task on ROS Familiarization due next week. Therefore, I am going through the tutorials and familiarizing myself with it so that I can start working with Turtlebots.

b. Challenges

- I. The first major challenge I faced this time was understanding the concepts of path planning and navigation. I don't have any background in this field. Even after finalizing the schedule, there are still many concepts which I am unclear of. I will get them cleared once I start working on the actual hardware and software.
- II. Initially, it took me some time to familiarize with the WordPress interface. But now I am comfortable in using its features.

c. Team Work

For the planning and navigation sub-system, I am working collaboratively with Rohit Dashrathi. For the research phase, we divided our topics to study. After that we combined all the information that we had gathered and worked out on a task plan that suited both of us.

d. Future Plans

Before the next progress review, I will be working on the following tasks:

- I. Calibrate the IMU and wheel odometry of the TurtleBots.
- II. Finish the ROS Familiarization Task with my partner Richa Varma.
- III. Work with Jimit Gandhi to finalize the work task schedule of the Swarm Collaboration sub-system.
- IV. Update the team website.

e. References

[1]Team Roborn's website-

<https://sites.google.com/site/mrsdproject201415teamc>

[2]Team Robographers' website-

<http://mrsdprojects.ri.cmu.edu/2015teamg>