EE 491 Senior Design Group Meeting

Safe Communication Between Lead and Following Vehicle

Week 3 Report

Team Members:

Bradley Stiff- Software Lead, Project Lead
Justin Wheeler- Software Lead
Sanguk Park- Scribe Lead, Communication Lead
Zhize Ma- Scribe Lead, Hardware Lead
Junho Chun- Hardware Lead
Yifan Lu- Hardware Lead
Jose Candelario- Project Lead, Communication Lead

This Week Accomplishments:

Description:
This week on Wednesday 9/13/17 we met with our group sponsor, Vishal. During the group meeting, we discussed about setting milestones for our project. Vishal gave us information on the following things to keep in mind:
·   He wants to do a weekly presentation where each team talks about the objective and progress for 10 minutes.
·   Documentation and uploading the documents are important: ie) 001 is required documents, 002 is design document.
·   Scribe lead (Sang Un Park) works with Luis
·   The main concerns of hardware are : FLR camera, Lidar, Radar
·   Vehicle, computer platform, Ubuntu is all on shellpoint

Vishal also discussed about the objectives concerning our road map:
·   Hardware à everything is working with everything else
·   Software à Communication

· ROS(Robot Operating System) function off of Ubuntu 16.04 à C++, Python
· Would like a progress portfolio

Group Meeting Description: This week we were organizing the roles for our group members and also discussed about what our specific roles as a group were. Some of the questions that needed to be answered were:

· Are the sensors responsible for the incoming data and do we want to send the data as raw data or the converted interface data?
· Will we have 2 or more people communicating with us when making sure the inputs are correct (Robotics and Communication personnel)
· We will also need to get in contact with the robotics team to get a better idea of what we are supposed to do and not overstep on the other group's job.

Along with these questions, we also set the Milestones for each time frame:
Milestone 1: 2~3 weeks (Early October)
· Know how each component works
- Figure out all necessary hardware
· Understand the hardware and begin getting data for both the hardware and software
· Understand ROS
- Install on top of Ubuntu

Milestone 2: 1 month (Early November)
· Have communication between the teams (Robotics + Controls)
· Know how to format the raw data through ROS
· Format received input data?
· Use the received data to control the car

Milestone 3: Before Dead Week (12/1/17)
· Test all inputs and see if they are functioning properly
· Do some cornercase testing
After getting solid information from Robotics and Control's team, we would understand the format of data to import and export to ROS. For GPS, the returned data would be consisted of X-Y location, altitude, and time. We would format the returned data depending on what the control's team wants. If they want binary bits masks, we format it into bit masks. If they want it in decimal value representations, we format them into decimals. The formatting process would most likely take place on a microcontroller with a microprocessor. The lidar would return distance values in meters, feet, inches depending on what the needs are from the controls team. The conversion of units should be very straight forward. Bits conversion can also be achieved with the microprocessor. The Lidar also returns the value of angles in degrees. Again, formatting can be adjusted depending on other team's needs.

Individual Contributions (9/10~9/16)

Team Member	Contribution	Weekly Hours	Total Hours
Brad Stiff	Gathered data on the meeting with Vishal	3	11
Jose Candelario	Looked up information on the Lidar we were using and how to power it up.	3	8
Junho Chun	Gathered data on the meeting with Vishal. Interpreted more information from given sources	3	10
Justin Wheeler	Gave a detailed illustration on the milestones and how we approach the project	3	6
Sang Uk Park	Gathered data on the meeting with Vishal	3	12
Yifan Lu	Gathered data on the meeting with Vishal	3	9
Zhize Ma	Gathered data on the meeting with Vishal	3	11

Goals for Next Week:
- Send an email to see exactly what the robotics and control team is doing
- Figure out which file is important for each sensor