Progress Report 1

Project Title

Transmission Control System Design using CRIO Real Time Controller: Data Gathering and Actuator Control

Team Members

Group 35

Shayan Ahmad
260350431
shayan.ahmad@mail.mcgill.ca

Alejandro Carboni Jimenez
260523638
alejandro.carbonijimenez@mail.mcgill.ca

Aditya Saha
260453165
aditya.saha@mail.mcgill.ca

Supervisors

Yingxuan Duan PhD.
Research Associate

Benoit Boulet PhD.
Associate Professor - Department of Electrical and Computer Engineering
Associate Chair - Operations

Group Meetings with Advisor

A preliminary group meeting was held on January 12th to establish the strategy for this semester's work.

A meeting was held with our immediate supervisor on January 13th. During the meeting, short-term goals and the meeting schedule for the rest of the semester was discussed. During the meeting, we also received feedback on our final deliveravbles from last semester. Following this meeting, follow-up meeting was held to check our progress and verify the feasability of the new goals for this term.

A last meeting was held with our supervisor on January 19th to demo the work accomplished during the first work session.

Project Readings

The CAN J1939 specification document has been provided for us by the supervisor.

Recent Progress

We continued our previous work on the CAN bus communication. An Arduino was set up as a write node, and both an Arduino and a CAN handle connected to a laptop were set up as read nodes. Both two-node and 3 node systems were tested. Initial steps to read sensor data and transmit it over the CAN communication channel were taken.

We also added tools for collaborative report writing and source version control.

Future Plans

For the following weeks, the plan is to further test configurations of the communications links. We will henceforth adhere to the J1939 CAN protocol. The configuration includes collision handling on a multiple write-node network and priority message handling. Once the transmission of sensor data is complete, the receiving Arduino node will have to respond by driving a circuit. This circuit will be designed in conjunction with the supervisor. This response will be used to close the feedback loop.

Group Work Report

So far, the work has been adequately and fairly shared bewteen two team members, Aditya and Alejandro. The third team member, Shayan Ahmad, has not been present since the beginning of the term. We two are still awaiting an official notice of his plans for the semester. The supervisor has been made aware of the situation. At the moment of writing this report, he has not made any contributions to the work.