Progress Report 2

Project Title

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

Team Members

Group 35

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Group Meetings with Advisor

Since the previous progress report, meeting with the supervisor has primarily served to demonstrate the work accomplished so far. Prioritizing the next steps of the project was done together as well.

Project Readings

Specification document corresponding to the newly acquired data logging module.

Recent Progress

The J1939 variant of the CAN communication protocol was established. 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. Rigorous testings were carried out subsequently with both two and three node configuration to check for integrity of the transmitted data, bus arbitration and collision handling. Furthermore a sensor was introduced to the CAN network to to simulate a more realistic model and tests checking for consistency of the network were carried out.

The project source code base has been updated and shared with the immediate supervisor for ease of reference and discussion. The final deliverables will include the proper documentation and presentation of this code base for future use in the lab.

Future Plans

In the following weeks the system implementation will be updated to include the data logging module. Furthermore, a new force sensor will be acquired and calibration tests will be exercised. An analog to digital converter will be designed for this new sensor, and implemented for use with the Arduino. A driving circuit will also be designed to synergize with the Arduino and close the feedback loop. Once the supervisor verifies the existing CAN transmission capabilities of the cRIO module, the individual system components will be integrated and tested.

Group Work Report

All the work so far has been evenly shared between two team members, Aditya and Alejandro. The third team member has officially informed of his intention to pursue an internship in a different city and work remotely. However due to the nature of current work necessitating lab attendance, he will coordinate directly with the supervisor to determine what tasks he can be assigned. The result of their coordination should be available for the next progress report and will be discussed then.