Summary

The proposal document provides a comprehensive review of the team’s contribution in semester one. Theoretical and technical decisions were decided in this semester, which is summarised in the technical overview. Gearbox 2 has been selected to generate enough torque that the Buggy need to take when facing an incline. To maximise the efficiency of the gearbox, the optimum intermediate shaft location has been set as (16.7, 17.6) mm. TCRT5000 sensor has been chosen because of its excellence performance and available to be further tested. Five TCRT5000 sensors have been located in a line to detect the shaking of the Buggy. An ultrasonic sensor, as winning feature, can detect walls and ramps to help the Buggy to take more advantage on the race day. The outline of software operation has been discussed, which guide the Buggy runs correctly and efficiently.

The whole team runs orderly during semester one in general. The team held regular meetings every week to ensure communication and interconnection between members. Health and safety risk on the final race day has been discussed, which can provide a plan in case of an emergency. Each group member’s workload had been distributed rationally through Gantt Chart. All group members took part in every team decision, which is essential because all members should contribute to every step.

Next semester, the team will have three technical demonstrations: PWM control, line sensors, and steering. Then the final race and report will integrate all deliverable for this academic year.