



Improving the Carrera Vehicle Control

Simulating Cooperative Adaptive Cruise Control (CACC), where vehicles exchange status messages and adapt their driving behavior accordingly, is already possible with VEINS or ARTERY. However, in order to present the concept of CACC, an attack on it and the prevention, a live system would better demonstrate the need of a misbehavior detection system (MDS). For this we have chosen a Carrera Digital track, which allows controlling multiple cars in one lane, each with a different speed. However, currently only 15 speed levels can be used which prevents a more fine grained control.

In this project, you have to improve the control over the speed levels from the Carrera cars. For this, the student has to disassemble a Carrera vehicle, and determine if the motor and/or controller has to be changed. If so, the student has to choose a suitable hardware which can replace the current one. Then, a protocol has to be defined and implemented which is modulated over the power supply to control the speed of different vehicles on the same track.



This project is suitable for students with knowledge in micro controllers and C/C++.

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If you are interested or you need additional details, feel free to contact me or drop by for a non-binding chat.

