Delphi project
project title
University of Luxemburg
project place

Project description:

Modern vehicles are increasingly equipped with Electronic Control Units (ECUs). The amount and the complexity of software embedded in the ECUs of today's vehicles is rapidly increasing. To ensure the high quality of software and software-based functions on ECUs, the automotive and ECU manufacturers have to rely on effective techniques for analysis and verification of their software systems. In the past years, we have been exploring the use of Model Driven Engineering (MDE) in system requirements and design to improve the cost-effectiveness and accuracy of software development activities for embedded software systems. The use of MDE in this context has been motivated by two main principles:
1. models expressed in standard notations, such as UML, SysML and their extensions, avoid the ambiguity and redundancy problems associated with text-based specifications, and
2. models present opportunities for partial or full automation of many laborious analysis tasks (e.g., impact analysis, completeness and consistency checking, and test case generation).

In this project, we collaborate with Delphi Automotive (http://delphi.com/), one of the world leading suppliers to the automotive industry, to develop MDE-based methodologies and techniques to help with automated change impact analysis of their software-based functions.

As a student assistant working on this project:
- you gain an in-depth knowledge on Model-Driven Engineering tools and technologies that are increasingly being used in various industries
- you interact with Delphi engineers and learn about automotive software system development
- you interact with researchers at the SVV lab (http://www.svv.lu/), and have an opportunity to do research and publish papers.