Introduction

Software-intense systems play an increasing role in automotive system development. More than 90% percent of innovations are realized by means of electric/electronic systems. Among them, more than 80% are implemented by means of software.

Usually, software-based systems are not implemented by the OEMs themselves, but by external suppliers. This kind of workforce sharing demands clear, precise, unambiguous specifications that have to be created and maintained by suitable requirements engineering processes.

There are a number of factors that are specific to the automotive domain, which all together put specific requests on the requirements engineering activities. Three of them are elaborated below:

♦ Complex, distributed systems: Recent cars embody often more than 50 electronic control units (ECUs) that are connected by means of several communication busses. System functionality (e.g. exterior lightning) is often distributed across various ECUs. If a single component needs to change its behavior, this might cause a number of changes in connected components.

♦ Distributed development activities: Beside the workforce sharing between OEM and supplier, which requests clear commitments, milestones, communication channels, and so on, there are often more partners involved. (both on the OEM and supplier side). Platform or common modules strategies on OEM side mean that several engineers who might be located all over the globe, have jointly to work on one specification. On the supplier side we see more and more complex supplier structures that include tier-2 and tier-3 suppliers.

♦ High degree of variation: Many components do not only have one realization, but there are a number of variations. Some variations are realized by means of software parameters (that might even be altered later in the garage), some other variations are realized by physically different variants. This variation needs to be systematically managed (e.g., Which variation has already been released? Which combination of components and their variations have already been tested? Which particular variants are affected by a given change request?)

The workshop Automotive Requirements Engineering addresses questions and issued that are specific to requirements engineering in the automotive domain. It provides both practitioners and researchers a forum to discuss new concepts, share ideas and learn from each other.

September 2006,
Betty Chang, Frank Houdek, Shigeyuki Kawana
(workshop organizers)

Workshop program committee:

Mikio Aoyama,
Nanzan University, Japan
Manfred Broy,
Technical University of Munich, Germany
Ken Butts,
Toyota Technical Center, USA
Ingolf Krüger,
University of California, San Diego, USA
Klaus Müller,
Robert Bosch GmbH, Germany
Klaus Pohl,
University of Duisburg-Essen, Germany
Alexander Pretschner,
ETH, Switzerland
Matthias Weber,
DaimlerChrysler AG, Germany