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Towards a Common Software/Hardware Methodology for Future Advanced Driver Assistance Systems

The DESERVE Approach

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Description:

The European research project **DESERVE** (DEvelopment platform for Safe and Efficient dRiVE, 2012-2015) had the aim of designing and developing a platform tool to cope with the continuously increasing complexity and the simultaneous need to reduce cost for future embedded Advanced Driver Assistance Systems (ADAS). For this purpose, the DESERVE platform profits from cross-domain software reuse, standardization of automotive software component interfaces, and easy but safety-compliant integration of heterogeneous modules. This enables the development of a new generation of ADAS applications, which challengingly combine different functions, sensors, actuators, hardware platforms, and Human Machine Interfaces (HMI).

This book presents the different results of the DESERVE project concerning the ADAS development platform, test case functions, and validation and evaluation of different approaches. The reader is invited to substantiate the content of this book with the deliverables published during the DESERVE project.

Technical topics discussed in this book include:

- Modern ADAS development platforms;
- Design space exploration;
- DRIVER MODELLING;
- Video-based and Radar-based ADAS functions;
- HMI for ADAS;
- Vehicle-hardware-in-the-loop validation systems

Keywords: Advanced Driver Assistance Systems (ADAS), development platforms, DRIVER MODELLING, ADAS functions, Human Machine Interfaces (HMI), vehicle-hardware-in-the-loop