

## Media Release

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### **AUTOSAR – Paving the Way for Advanced Automotive Electronics**

These days there may be up to 70 ECUs (Electronic Control Units) in a car, responsible for controlling major functions of the vehicle. Ever more demanding requirements on safety, environmental protection and comfort/convenience over recent years have resulted in a sharp increase in the number of electronic systems to be found in vehicles. Increasingly stringent legal requirements on exhaust emissions and safety have also fed the trend, as have the numerous infotainment and driver assistance systems, whose functioning relies on the simultaneous interaction of a variety of different sensors, actuators and control units.

Today's car manufacturers and Tier 1s rely on individual basic software standards which have to be maintained and integrated individually. The derived maintenance and integration efforts in the whole automotive community therefore have potential for improvement in providing standards.

The **AUTOSAR (AUTomotive Open System ARchitecture)** initiative aims to develop an open standardised software architecture for automotive electronics. This architecture is being developed by a partnership of automotive manufacturers, suppliers and tool providers.

The partnership is focused on managing the growing complexity in the development of automotive electric/electronic architecture, with the aim of both enabling new technologies and improving development efficiency – without making compromises on quality.

#### **AUTOSAR - The Idea**

The AUTOSAR standard enables the application of independent software components. These can be used in vehicles of different manufacturers and in electronic components of different suppliers and can span multiple product generations. It results in high reliability of the overall system and significant cost and capacity benefits.

Automotive manufacturers can focus on achieving competitive differentiation of the defined and developed software, provide functions which are compatible across platforms and cater for a large number of versions and equipment features.

Suppliers can partition development activities, contain the proliferation of manufacturer-specific versions and enhance the efficiency of function-specific development.

Tool providers benefit from standardised development interfaces. They can more easily complete their tool chain by integrating tools from third-party suppliers or integrate their own tools into existing chains.

New market entrants come into a barrier-free market thanks to the formulated open standards.

### **AUTOSAR – Cooperate on Standards, Compete on Implementations**

The AUTOSAR partners anticipate the standardisation to enhance quality and lower costs at the same time. In future, the separation of software and hardware will make it easier to integrate proven software solutions into new vehicles. However, the aim of the partnership is not a standardisation of the functions in the car. Rather, AUTOSAR aims to move away from a device-led and towards a function-oriented software development process. In this way the standard creates scope for new developments.

These days, software is often still developed for a specific control unit; with AUTOSAR, on the other hand, the idea is to generate application software modules for multiple use irrespective of the hardware platform.

As to how car manufacturers implement the functions within the car, however, that will remain an area of competition: the slogan of the AUTOSAR partnership is “Cooperate on standards, compete on implementations.”

### **AUTOSAR Partnership**

The AUTOSAR partnership, which is currently made up of more than 100 companies, which are organized as Core Partners, Premium Members, Associated Members and Development Members. The Core Partners are in charge of organizing and running the AUTOSAR project. Within this core an Executive Board defines the strategy and objectives of the partnership. The Steering Committee is responsible for the project control, admitting new members and for press and contractual matters. It is also responsible for all non-technical day-to-day affairs. A Project Leader Team is responsible for technical matters. It coordinates the technical working groups, which in turn provide reports to the Project Leader Team. The Premium Members and

Development Members do actively contribute to the work in the working groups.

### **Current Status**

In May 2006, a first set of Release 2.0 of the AUTOSAR specification was published. It defines 42 of the 46 Basis Software packages that have been completed. The release comprises more than 90 documents.

The modules of Release 2.0 have been implemented and are currently integrated on two different hardware platforms (validator 2). Any feedback results of this validation phase, together with any missing architecture elements, will be incorporated into the Release 2.1, which will be completed by end of the year.

The first AUTOSAR products are expected to be implemented in vehicles from 2008.

**AUTOSAR (AUTomotive Open System ARchitecture)** is a global development partnership of automotive manufacturers, suppliers and companies specialized in electronics, semiconductors and software. Since 2003, they are working together to develop and establish an open and standardized automotive software architecture. By facilitating the exchange and update of software and hardware, AUTOSAR will be an enabling technology to manage the growing electrics/electronics complexity and to improve cost-efficiency without making any compromise with respect to quality. The core partners of AUTOSAR are the BMW Group, Bosch, Continental, DaimlerChrysler, Ford, Opel, PSA Peugeot Citroën, Siemens VDO, Toyota, and Volkswagen. In addition to these companies, the about 50 premium members are playing a significant role in the success of the partnership. AUTOSAR specifications can be used free of charge by any companies that join the AUTOSAR development partnership.

For further information:

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