DESERVE

DEvelopment platform for Safe and Efficient dRiVE

ARTEMIS

EXECUTIVE *summary*

DESERVE aims to design and develop a tool platform for embedded Advanced Driver Assistance Systems (ADAS) to exploit the benefits of cross-domain software reuse, standardised interfaces, and easy and safety-compliant integration of heterogeneous modules to cope with the expected increase of function complexity and the urgent need to reduce costs.

RELEVANCE CALL *objectives*

DESERVE aims to foster the creation of a European standard reference technology platform, embodying meta-models, methods and tools for safety-critical, hard real-time ADAS development supported by European tool vendors (guaranteed by their involvement in the consortium).

The DESERVE platform will provide the environment for ADAS design, development, pre-validation and even pre-certification of software and hardware modules to be integrated in ADAS applications. With safety-critical requirements considered in the design and systems development, integrated, trusted, interoperable tools and tool-chains will become available.

MARKET *innovation*

The introduction of new safety regulation have acted as a catalyst for the growing ADAS market. However, they are still expensive, mainly because their development is time-consuming in terms of integration and validation. Moreover, the inclusion of ADAS is not always affordable for low-cost car customers. Therefore, by reducing time and costs, the DESERVE project will promote the ADAS market, and

it will spread the use of safety functions. Furthermore, the sharing of software and hardware resources will enable higher levels of complexity to be taken into consideration without a proportional increase in the price of the modules and the vehicle.

TECHNICAL *innovation*

The three DESERVE prototypes will be integrated to the 5 demonstration vehicles including both heavy good vehicles and passenger car. The following applications are implemented during the project:

> Lane change assistance system
> Pedestrian safety systems
> Forward/Rearward looking system
  (distant range)
> Adaptive light control
> Park assistant
> Night vision system
> Cruise Control System
> Traffic sign and traffic light recognition
> Map supported systems
  (Note: only DAS scope, no driver information)
> Vehicle interior observation

The two base software platforms have been selected (RTMaps and ADTF) which creates the standardised "operating system" for adding the DESERVE functions. One example of the results is the HMI strategy to adapt different output devices (displays, acoustic and haptic) for supporting driver's night vision capability and adapting lighting according to driving situation. Moreover, cooperative and in-vehicle functions have been developed to support protection of pedestrians and intersection safety with the communication sub-systems between traffic infrastructure and vehicles.

DESERVE
Development Platform for Save and Efficient Drive

PROJECT COORDINATOR Matti Kutila	**START** September 2012
INSTITUTION VTT	**DURATION** 42 months
EMAIL matti.kutila@vtt.fi	**TOTAL INVESTMENT** €25M
WEBSITE www.deserve-project.eu	**PARTICIPATING ORGANISATIONS** 24
	NUMBER OF COUNTRIES 9

FINLAND
TTS
VTT

SWEDEN
VOLVO

THE NETHERLANDS
NXP
Technolution

GERMANY
DAIMLER
dSPACE
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IMS Institut für Mikroelektronische Systeme Leibniz Universität Hannover

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