POLLUX

Process oriented electronic control units for electric vehicles developed on a multi-system real-time embedded platform

ARTEMIS

COMPLETED

PROJECT *description*

POLLUX will reduce the development time and cost of the complex, high reliability mechatronic systems needed for the mass deployment of electric vehicles through the creation of a reference architecture for distributed embedded systems-, including real-time middleware, multi-core hardware and in-vehicle communication.

RELEVANCE CALL *2009 objectives*

POLLUX addresses the industrial priority area of reference designs and architectures in order to offer common architectural approaches (standardized and interoperable) for Electric Vehicles according to AUTOSAR® guidelines, reducing computational effort, and targeting high levels of reusability, reliability and dependability of systems, thus reducing development time and costs.

MARKET *innovation*

Electrified mobility, like renewable energy, is showing some 40% annual growth worldwide, driven by the need to reduce primary energy consumption and greenhouse gas emissions while improve road transport safety and the constraints of raw material scarcity. The POLLUX project, addressing the development of a standard reference technology platform for electric vehicle design, will boost the competitiveness of industries in the EU and member states, particularly in the semiconductor, embedded systems and automotive sectors. At the same time POLLUX will address the most relevant automotive industry bottlenecks related to the cost and the reliability of electronic architectures.

TECHNICAL *innovation*

The new electric vehicle architectures based on distributed embedded computing and electronics system will allow significant energy saving, with enhanced fun-to-drive, safety and comfort. In this context the key technological innovations are:

> Development of a platform concept for EV architecture, electronics, communication and embedded systems modelling and simulation.
> Layered EV architecture (electronics, communication, energy management, software) based on ICT models.
> AUTOSAR® compliant parallel computing real-time and secure platform.
> Specify, design, and develop two multicore microcontroller platforms validated for motor controller and battery management modules.
> Implementation of novel circuits for in-vehicle network links (Ethernet validation in EVs, CAN Partial Networking and FlexRay networks).
> X-by-Wire concept for semi-automatic parking assistance for urban EVs.
> Novel HMI concepts and customizable haptic feedback system for electric vehicle steer-by-wire interfaces.
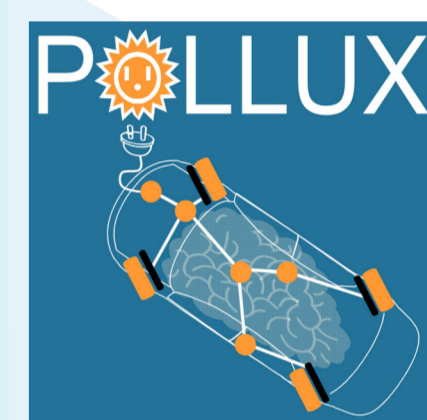
PROJECT COORDINATOR Ovidiu Vermesan	**START** March 2010
INSTITUTION SINTEF	**DURATION** 43 months
EMAIL info@artemis-pollux.eu	**TOTAL INVESTMENT** 33 M€
WEBSITE www.artemis-pollux.eu	**PARTICIPATING ORGANISATIONS** 35
	NUMBER OF COUNTRIES 10

THE NETHERLANDS
NXP founded by Philips

NORWAY
SINTEF
ZEM
City motion

BELGIUM
ON
ON Semiconductor
triphase

GERMANY
NXP founded by Philips
AVL

UK
QinetiQ
The University Of Sheffield.
Infineon

CZECH REPUBLIC

AUSTRIA
TTTech
amu
CISC semiconductor
virtual vehicle
FH JOANNEUM ELEKTRONIK & TECHNOLOGIEMANAGEMENT
AVL
AIT AUSTRIAN INSTITUTE OF TECHNOLOGY
Infineon
CEA-LETI, CEA, France

FRANCE
AKKA TECHNOLOGIES
cea leti
Continental
PSA PEUGEOT CITROËN

SPAIN
aicia
CNM Centre Nacional de Microelectrònica IMB
UAB Universitat Autònoma de Barcelona
GreenPower tech
FICOSA

ITALY
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CRF CENTRO RICERCHE FIAT

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