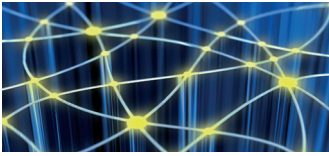# ARTEMISPROJECTS
CALL2008&2009

ACROSS *100208*

ACROSS will develop and implement an ARTEMIS cross-domain architecture for embedded Multi-Processor SoCs based on the architecture blueprint developed in the FP7 project GENESYS (Generic Embedded System Architecture), and develop a first generic MPSoC implementation in an FPGA. The key notion is component-based development of embedded systems with short-time-to-market, low cost and high dependability.

CAMMI *100008*

The man in the control loop of a complex system is exposed to physiological, psychological and time stresses that lead to a human cognitive decrement, thus diminishing the performance and safety of the overall system. Adaptive cognitive man-machine interfaces and human-centred communication can be exploited to raise operational levels.

CHARTER *100039*

CHARTER will develop concepts, methods and tools for embedded system design and deployment that master the complexity and substantially improve the development, verification and certification of critical embedded systems commonly found in cars, aircraft, medical instruments and major industrial and utility plants. They assist, accelerate, and control various aspects.

CHIRON *100228*
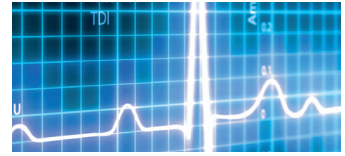
CHIRON intends to combine state-of-the-art technologies and innovative solutions into an integrated frame-work for effective and person-centric health management throughout the complete (health)care cycle thus responding to the present-day demographic and socio-economic challenges facing healthcare: from an ever ageing population to the need for affordable 'global' healthcare provided by fewer and fewer professionals and medical infrastructures for critical, often mobile, patients.

ASAM *100265*

ASAM addresses a uniform process of automatic architecture synthesis and application mapping for heterogeneous, multi-processor embedded systems, defining a new and unified design methodology, as well as related synthesis and prototyping tool-chains. The automatic synthesis flow will allow system and algorithm designers a higher-level focus.

CESAR *100016*

CESAR targets the significant reduction of overall development time and effort by up to 50%, using a Reference Technology Platform (RTP). The aim is, within five years, to double the number of European technology providers and SMEs joining tool chains (depending on the domain).

CHESS *100022*

CHESS aims to build languages for the modelling of extra-functional properties and develop tools to evaluate these properties as component contracts. It will adapt component infrastructures for the integration of real-time and dependable patterns, and validate the approach through multi-domain case studies.

eDIANA *100012*

eDIANA will create a multi-faceted, multi-purpose framework for the building sector to access, handle and optimise energy consumption in Cells (living/working units) and MarcoCells (residential and non-residential buildings) and so reduce energy demand as well as allow utility companies to more effectively manage energy load and allow consumers to adjust consumption and to make real-date-based decisions.

EMMON   *100036*

Given the social significance of smart locations and ambient intelligent environments (smart cities, smart homes, smart public spaces, smart forests, etc), EMMON will research, develop and test a functional prototype for large-scale wireless sensor networks. The aim will be to increase tenfold the number of devices possible and develop simulation tools for networks a hundred times greater than at present.

iFEST   *100203*

iFEST will specify and develop an integration framework for establishing and maintaining tool chains for the engineering of complex industrial embedded systems. Specific emphasis is placed on open tool chains for HW/SW co-design of heterogeneous and multi-core solutions, and life cycle support for an expected operational life time of several decades.

INDEXYS   *100021*

INDEXYS will develop a cross-domain instantiation of the GENESYS embedded system architecture for industrial-grade exploitation on real-world platforms in the railway, aerospace, automotive and industrial control domains. This will boost European excellence in computing architectures.

POLLUX   *100205*

POLLUX will develop a distributed real time embedded systems platform for next generation electric vehicles, by using a component and programming-based design methodology. The focus will be on composability, networking, security, robustness, diagnosis, maintenance, integrated resource management, evolvability and self-organisation.

eSONIA   *100223*
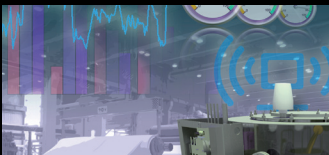
eSONIA aims to enable greater predictability of plant behaviour and visibility, reduced safety risks, enhanced security and improved cost efficiency by realising the asset-aware and self-recovering plant. This will be achieved through pervasive, heterogeneous (wireline and wireless) IPv6-based embedded devices with on-board specialised services, glued together by middleware and capitalising on the service oriented approach.

iLAND   *100026*
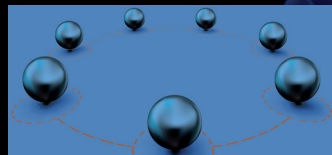
ILAND will develop enabling technologies for modular, component-based middleware for networked systems that demand deterministic, dynamic functional composition and reconfiguration. It will offer deterministic services and QoS-based resource management, and an approach for modelling deterministic, dynamic reconfiguration and composition of applications, validated by three application demonstrators.

ME³Gas   *100266*

The goal of ME³Gas is to specifically address reduction in energy usage and CO_2 footprint in households and commercial buildings. Embedded Intelligence makes energy smart, and is the heart of energy-efficient technologies. ME³Gas will develop an energy-aware middleware platform to create services and applications across heterogeneous devices.

p.S.HI.E.L.D.   *100204*

This pilot version (hence: 'p.S.HI.E.L.D') of the S.HI.E.L.D. project is intended to be a pioneer investigation to address Security, Privacy and Dependability (SPD) in the context of embedded systems as 'built in' rather than as 'add-on' functionalities. It proposes the first step toward SPD certification for future embedded systems.

R3-COP *100233*

3-COP, or Resilient Reasoning obotic Cooperative Systems, ddresses robotic autonomous ystems to establish an nvironment to design and evelop resilient autonomous ooperating systems aimed at acilitating the faster, more cost-ffective development of new, afe robotic and autonomous ystems applications in domains uch as surveillance and rescue, griculture, people care, home nvironments and transport.

SCALOPES *100029*

The main objective of SCALOPES is to enable an industrially sustainable path for the evolution of low-power, multi-core computing platforms for application domains with strategic value for European competitiveness.
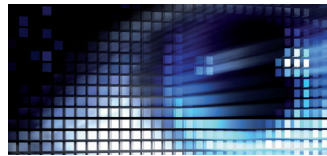
SMARCOS *100249*

SMARCOS helps users of interconnected embedded systems by enabling devices and services to communicate in UI level terms and symbols, exchange context information, user actions, and semantic data. It allows applications to follow the user's actions, predict needs and react appropriately to unexpected actions.

RECOMP *100261*

ECOMP will establish methods, ools and platforms for enabling ost-efficient certification of afety-critical and mixed-criticality ystems. Applications addressed re automotive, aerospace, ndustrial control systems, and lifts nd transportation systems.

SIMPLE *100008*

The goal of SIMPLE is to research and deliver an intelligent, self-organising embedded middleware platform, designed for the integration of manufacturing and logistics. SIMPLE will address the self-organisation and cooperation of wireless sensors and smart (RFID) tags for federated, open and trusted use in the manufacturing and logistics applications.

SMART *100032*

The SMART (Secure, Mobile visual sensor networks ARchiTecture) project will create an innovative low-power Wireless Video-Capable Sensor Network infrastructure, based on off-the shelf reconfigurable devices (FPGAs) and specially designed Reconfigurable Application Specific Instruction Set Processors (RASIPs). This infrastru cture will support video and data compression as well as high levels of security with lower power consumption than existing solutions.

About ARTEMIS

Innovations made possible by embedded systems make our lives healthier and more interesting, our transport safer, and our energy use more sustainable. They are at the heart of industrial innovation and competitiveness, creating and sustaining jobs and economic well-being. Over 4 billion embedded processors were sold in 2006 and the global market is worth €60 billion with annual growth rates of 14%. The economic impact in terms of jobs and growth is expected to exceed €100 billion over ten years.

Computing technology is facing many threats and challenges from fragmentation, globalisation and fierce competition. In recognition of the strategic importance of embedded computing systems the European Union launched the ARTEMIS Joint Technology Initiative as a Joint Undertaking or public-private partnership, between: The European Commission, Member States (22 countries) and ARTEMIS Industry Association (a non-profit association with 200+ members)

ARTEMIS aims to tackle the research and structural challenges faced by European industry by defining and implementing a coherent research agenda for embedded computing systems. Its ambition is to help European industry consolidate and reinforce its world leadership in embedded computing technologies.

The ARTEMIS Industry Association represents the research community including industry (large, small and medium sized companies), universities and research institutes. It continues the work of the European Technology Platform and is therefore responsible for the ARTEMIS-ETP Strategic Research Agenda set up by the European Technology Platform in March 2006.

The ARTEMIS Joint Undertaking adopts a commonly agreed research agenda closely following the recommendations of the Strategic Research Agenda developed by the ARTEMIS Technology Platform.

SMECY *100230*
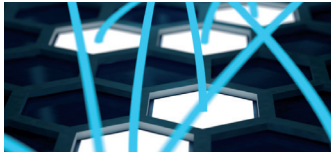
SMECY aims to launch an ambitious European initiative to match those initiatives in Asia and the USA and so enable Europe to become the leader in multi-core technology by developing new programming technologies that enable the exploitation of many (hundreds of) core architectures.

SYSMODEL *100035*

SYSMODEL will develop supportive modelling tools to design and implement heterogeneous systems where time and power are critical factors. The focus is on the reuse of existing models and integrating them into a heterogeneous system. This will give SMEs the confidence to build cost-efficient ambient intelligence systems with optimum performance, reduced time-to-market and faster deployment.

SOFIA *100039*

The SOFIA project makes 'information' in the physical world available for smart services in embedded and ubiquitous systems. With the SOFIA Open Innovation Platform (OIP) architecture and Application Development Kit (ADK), it is easy to develop devices and services that can interact across vendor and industry domain boundaries.

ARTEMIS PROJECTS CALL 2008&2009

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