ARTEMIS Call 2008 Project
100029

SCALOPES

SCalable LOw Power Embedded platformS

EXECUTIVE *summary*

The top-level goal 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. The project focuses on cross-domain technology and tool developments for multi-core architectures.

These developments are driven by and proven for four different application domains:

- Communication Infrastructure
- Surveillance systems
- Smart mobile terminals
- Stationary video & entertainment.

CONTRIBUTION *to SRA*

ARTEMIS has identified a number of representative 'Application Contexts' to focus upon for the development of new technologies. The identified ' Application Contexts' are:

- 'Industrial systems' (1)
- 'Nomadic Environments' (2)
- 'Private Spaces' (3)
- Public Infrastructure' (4).

The SCALOPES project is focusing on all four application areas and in addition is looking into a maximum commonality of technological developments across these sectors. The specific applications covered in SCALOPES and their link with the above ARTEMIS Application Contexts, are:

- Communication infrastructure for next generation networks (1, 2, 3, 4)
- Distributed surveillance systems with audio-video processing & communication capability (1, 3)
- Smart mobile terminals with mobile multimedia support (2, 3, 4)
- Stationary video: home TV and distributed quality monitoring environments (1, 3, 4).

MARKET INNOVATION *& impact*

The objectives of the SCALOPES project will be considered as successfully reached when the following measures of success are obtained after the finalization of the SCALOPES project:

- The power consumption is reduced by 30 % while the performance is increased by 20 % for multi-core embedded systems in all application domains of SCALOPES.
- Compared to reference Home TV's from 2008, power savings of >35% in 2009, and 50% at the end of the project in March 2011.
- Design tools developed allow a reduction of design time of 20% for the typical embedded system architecture designs for the application area covered.
- The resource management framework for the display controller should allow 50% increase in resource usage with 50% decrease in form factor.

RELEVANCE & CONTRIBUTIONS *to Call 2008 Objectives*

SCALOPES is focusing on ARTEMIS Sub Programme 5: ' Computing Environments for Embedded Systems'.

The main technology focus in SCALOPES is on:

- Energy & resources management solutions
- Low-energy design methods & associated runtime methods
- Design of energy-efficient multiprocessor systems.

Those technologies are developed in consistency with existing and emerging standards and based on existing state-of-the-art tools as available in industry and in the key research institutes in Europe involved in this area, who are all partner in SCALOPES.

R&D INNOVATION *and technical excellence*

- Move from vertically-integrated platform-specific to horizontally structured multi-domain solutions.
- The development of platforms to provide real-time data processing capabilities (image, video, audio, packet processing) with high energy efficiency.
- Enable high-productivity development and retargeting of software with reliability, predictability and energy efficiency.

At the level of innovation, having a large number of relevant partners involved in SCALOPES leads to the following benefits:

- The visibility achieved through the size and relevance of the partnership may lead to an ad-hoc 'industrial network of excellence'.
- The creation of a critical mass can lead to the support for pushing new standards or evolving existing ones.
- For universities, the access to a wider scope of real-life industrial applications.
- For application developers, the exchange of ideas far beyond their own corporations that in turn lead to more advanced functionalities.

PROJECT *partners*

ARTEMIS

www.artemis.eu

SCALOPES

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WEBSITE
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START
January 2009

DURATION
27 months

TOTAL INVESTMENT
€36 M

PARTICIPATING ORGANISATIONS
36

NUMBER OF COUNTRIES
11