ARTEMIS Call 2009 Project
100230

SMECY

Smart Multicore Embedded SYstems

EXECUTIVE *summary*

Multi-core technologies are strategic to keeping and winning market shares in all areas of embedded systems. SMECY's mission is to develop new programming technologies enabling the exploitation of these multi-core architectures.

RELEVANCE CALL *2009 objectives*

While ARTEMIS covers most aspects of embedded systems, efficient programming of multi-core architectures for various resource-constrained embedded system applications, such as consumer, wireless multimedia, communications and some transportation fields, is still a grand challenge waiting to be solved.

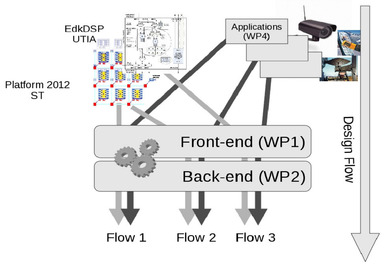
MARKET *innovation*

Since it is now feasible to integrate more than a billion transistors on a single silicon chip, the number of processor cores per chip will rise above one hundred in the next couple of years. As the number of cores increase, traditional multiprocessor techniques will no longer be efficient and this will require new approaches, e.g. network-on-chip like communication interconnects. However, the grand challenge is how to program these parallel platforms to fully exploit the available computing power efficiently within reasonable efforts. In the short term, an even more urgent challenge is how to transform current non-scalable, sequential, legacy assets to run on multi-core platforms.

TECHNICAL *innovation*

The vision of the SMECY consortium is that a holistic approach for the integration of multi-core SoC and embedded software technologies is required. To find such an approach, interactive research and development of programming and design methods, multi-core architectural solutions and associated supporting tools are needed. All of this is strongly driven by the requirements and constraints from different application areas as well as the target.

The conceptual approach of the SMECY project is based on the statement that the front-end / back-end should take both the application requirements and the platform specificities of various embedded systems in different industries into account to become efficient.



PROJECT COORDINATOR François Pacull	START February 2010
INSTITUTION French Atomic Energy and Alternative Energy Commission	DURATION 36 months
	TOTAL INVESTMENT 20,5 M€
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WEBSITE www.smecy.eu	NUMBER OF COUNTRIES 9