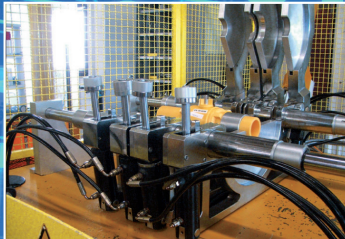


# RECOMP

*System Level Modelling Environment for SMEs*



## **EXECUTIVE** *summary*

RECOMP will reduce the cost of certifying or re-certifying embedded systems across many safety-critical and mixed-criticality applications. It will achieve this by providing platform architectures and components, especially for advanced multi-core systems, together with the required design methods, tools and guidelines to ensure certifiability.

## **CONTRIBUTION** *to SRA*

RECOMP contributes to the following industrial priorities of the AWP 2009:

- > Design methods and tools for certification and re-certification of mixed criticality applications on multi-core platforms.
  - RECOMP aims to measurably reduce the cost of system design for mixed criticality by integrating certifiable components.
  - RECOMP aims to reduce development cycles for systems in sectors requiring certification by providing guidelines that ensure certifiability.
- > Reference design, platform (HW/SW) and cross-domain compatible components to be used as a base for future mixed-

criticality multi-core system .

- RECOMP aims to manage greater complexity by providing components and platforms.

The general availability of the modeling methodologies will be facilitated by the open source and/or free software approach, where all tools will be made available free of charge.

## **MARKET INNOVATION** *& impact*

- > Enable broad usage of multi-core technologies since no efficient multi-core HW/SW solution for certification will hinder the full utilisation of its potential.
- > Enable faster time-to-market in competitive product areas with large European economic interests (automation, rail, aerospace, automotive, etc.) due to faster, cheaper and more highly transparent and reliable certification.
- > Enable optimum competitive positioning of chip and tool vendors in a global system design market.
- > Allow SMEs to access safety-critical markets without the obstacle of extremely high certification costs.

- > Help maintain a sustainable position for European certification service providers with an international world leadership reputation.

### RELEVANCE & CONTRIBUTIONS to Call 2009 Objectives

RECOMP will develop a common multi-domain architecture, APIs, design tools and associated runtime support for multi-core HW/SW platforms under safety requirements, thereby contributing to ASP1 and ASP5.

RECOMP addresses the following industrial objectives:

- > Lower total system cost by using multi-core running full applications on a circuit board module that saves mass, volume and power.
- > Lower the cost of the certification of first version of the product by using a certified computing platform.
- > Accelerated time-to-market by integrating pre-certified components and platforms to reduce certification efforts.
- > Less re-certification effort supported by modular certification and separation into different levels of criticality and re-certification limited to safety-critical functionalities.
- > Supplier-based development process with the possibility to develop pre-certified components to enable component suppliers to take on a bigger share of the product development, distributing costs over several customers, and thus reducing the overall costs of the development process.

### R&D INNOVATION and technical excellence

The RECOMP approach will provide the necessary design methods, tools, practices and processes to support the modular certification and pre-certification of multi-core components. RECOMP will also provide Hardware and Software platforms based on application independent HW/SW mechanisms that enable safe multi-core virtualisation and core-to-core communication.

RECOMP will enable a transition from sectoral, vertically structured markets to a horizontally structured market by providing common methods, tools and reference platforms for mixed-criticality multi-core embedded applications.

RECOMP will have an impact on standardisation through liaison with relevant standardisation activities in the following areas: Functional Safety EC/EN/DIN 61508, SW standards (e.g. ISO/IEC 15504 SPICE and CMMI + SAFE extension) and middleware with AUTOSAR.

### PROJECT partners



[www.artemis.eu](http://www.artemis.eu)



#### PROJECT COORDINATOR

Jarkko Mäkitalo

#### INSTITUTION

Kone Oyj (FI)

#### EMAIL

Jarkko.Makitalo@kone.com

#### WEBSITE

-

#### START

April 2010

#### DURATION

36 months

#### TOTAL INVESTMENT

€25.7 M

#### PARTICIPATING ORGANISATIONS

41

#### NUMBER OF COUNTRIES

9