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Poster

Embedded Multi-Core systems for Mixed Criticality applications in dynamic and changeable real-time environments

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Abstract

EMC2 finds solutions for dynamic adaptability in open systems. It provides handling of mixed criticality multicore applications in r eal-time conditions, withscalability and utmost flexibility, full-scale deployment and management of integrated tool chains, through the entire lifecycle.

ARTEMIS Call 2013 Project
621429

EMC²

Embedded Multi-Core systems for Mixed Criticality applications in dynamic and changeable real-time environments

PROJECT *description*

EMC² finds solutions for dynamic adaptability in open systems. It provides handling of mixed criticality multicore applications in real-time conditions, with scalability and utmost flexibility,full-scale deployment and management of integrated tool chains, through the entire lifecycle.

RELLEVANCE CALL *2013 objectives*

> EMC² reduces cost of the system design by 15%.
> It reduces by 15% the effort and time required to re-validate systems after making changes.
> It achieves 15% reduction in development cycles, especially in sectors requiring qualification or certification.

MARKET *innovation*

The EMC² project expests to facilitate the EU's ability to deploy and use Embedded Systems across important European market sectors:

> Automotive: Embedded Systems are the key innovation driver, enabling the majority of innovations.
> Avionics: main challenges are related to the acceleration of technology cycles and cost of software development.
> Space: main challenges are related to the increase of performance/weight ratio, high reliability and long lifetime.
> Industrial control and factory automation: the key areas will be energy efficiency and sustainability.
> Healthcare: challenges are related to workflow efficiency, integration of diagnosis and treatment, quality assurance.
> Internet of Things: the increased amount of data available, as well as safety and security issues, will need to be processed.

TECHNICAL *innovation*

> Cost of the system design: EMC² multi-core architecture, with its development ecosystem of improved programmability, dynamic runtime environment and tool support, eases design and analysis.
> Effort and time required for revalidation and recertification of systems after making changes: through architectural support for mixed-critical applications, the early consideration of non-functional properties and the holistic integration of development and validation/certification activities in the EMC² nteroperability framework.
> Management of increased complexity: EMC² multi-core architecture and the development ecosystem reduce software complexity and leverage the benefits of module consolidation.
> Cross-sector reusability of Embedded Systems devices and architecture platforms: through crosssector embedded hardware architecture including a dynamic runtime environment.

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Infineon

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WEBSITE
www.artemis-emc2.eu

START
1 April 2014

DURATION
36 months

TOTAL INVESTMENT
€ 93.92 m

PARTICIPATING ORGANISATIONS
100

NUMBER OF COUNTRIES
16

ABB AB
Aicas GmbH
Airbus Defence and Space GmbH - Cassidian
Airbus Defence and Space GmbH - EADS
Alenia Aermacchi S.p.A
Alten Sweden AB
AMBAR Telecomunicaciones S.L.
ArcCore AB
Arcticus Systems AB
Austrian Institute of Technology
AVL List GmbH
AVL Software and Functions GmbH
Blueice BVBA
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CEA
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Consorzio Interuniversitario Nazionale per l'Informatica
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Denso Automotive Deutschland GmbH
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