CONTACT

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EICOSE

European Institute for
Complex Safety Critical Systems
Engineering

ACTIVITIES AND IMPACT

FOUNDING EICOSE

The European Institute for Complex Safety Critical Systems Engineering EICOSE is a virtual institute that leverages R&D activities for future embedded systems onto a European and cross domain dimension. It was founded in 2006 by three recognised competence clusters:

www.aerospace-valley.com

The Aerospace Valley non-profit association is a world-class cluster which aims at developing the competitiveness of the aerospace and embedded systems sector. Founded in July 2005.

www.safetrans-de.org

The SafeTRANS competence cluster is the leading competence network in the domain of processes and development methods for embedded safety critical applications. Founded in December 2006.

www.systematic-paris-region.org

At the heart of the digital revolution, the SYSTEMATIC world-class cluster aims to maintain the leadership of large system integrators by supporting their R&D activities in the Paris region. Founded in October 2005.

ASSOCIATED MEMBERS

EICOSE brings together European experts in the domain of safety critical embedded systems engineering. Associated members may be organisations, e.g. industrial companies or research institutes. Furthermore, members of ARTEMIS-IA are welcome to EICOSE and need not necessarily be legal bodies. Therefore, it is also possible for a subdivision of a research institute to become an associated member of EICOSE.

www.artemis-austria.net

www.tecnalia.es

EICOSE IS

- ☐ promoting the development of enabling technologies for mastering safety, security, reliability, and robustness of future embedded systems
- ☐ creating an innovation eco-system able to share tools and technologies across various domains, initially focussing on automotive, railway, and aerospace
- ☐ fostering the incubation of strategically aligned projects

BY WORKING ON

- ☐ harmonising industrial priorities
- ☐ assuring synergies of large-scale research projects
- ☐ implementing the relevant parts of the ARTEMIS Strategic Research Agenda (SRA), and contributing to national and European funding programmes
- ☐ fostering information exchange between important European stakeholders in the transportation domain

IMPACT

The development and strategic alignment of European funding instruments is one of EICOSE´s high level objectives. EICOSE contributed to:

- ☐ ARTEMIS Strategic Research Agenda 2006 and 2011
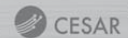- ☐ ITEA 2 Roadmap 3
- ☐ FP 7 Support Action: ARCADIA

EICOSE experts are active in national embedded systems communities and contribute to the development of national funding instruments. A selection of initiatives and White Books taken into account by EICOSE are:

- ☐ Germany: National Roadmap Embedded Systems, 2009
  Agenda Cyber Physical Systems, agendaCPS, 2012
- ☐ France: Le Livre blanc des Systèmes Embarqués, 2009
  Briques Génériques du Logiciel Embarqué, 2010
- ☐ Austria: Forschung, Innovation, Technologie – Informationstechnologie FIT IT
- ☐ Spain: Report on the Open Source Software Situation in Spanish companies
  that supply and integrate embedded systems 2010, 2010
- ☐ and many more

EICOSE supports project incubation activities. Projects fostered by EICOSE are strategically aligned, benefit from exchange of know how and are borne by high class consortia. Examples for projects supported by EICOSE are:

- ☐ CESAR, D3CoS and MBAT – ARTEMIS
- ☐ DANSE – FP7
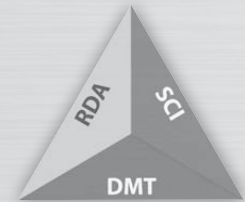- ☐ SAFE – ITEA2
- ☐ and many more

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EICOSE PRIORITY LIST

The cluster has a list of prioritised research topics updated yearly defined by E²GEST
(EICOSE Expert Group on Embedded Systems for Transportation, see page 12).
This consists of »horizontal components« similar to the ARTEMIS SRA and is the basis
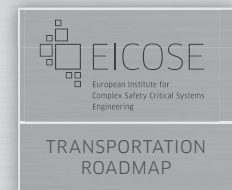for project incubation:

- RDA (Reference Designs and Architectures)
- SCI (Seamless Connectivity and Interoperability)
- DMT (Design Methods and Tools)

EICOSE TRANSPORTATION ROADMAP

A focused strategic research programme requires R&D priorities defined by the
industries involved in cooperation with leading academic institutions and harmonised
both, on a national as well as on a European level. The EICOSE Transportation
Roadmap covers the following topics:

- Market challenges and market impact
- Key trends in automotive, aerospace, and railway; cross domain fertilisation
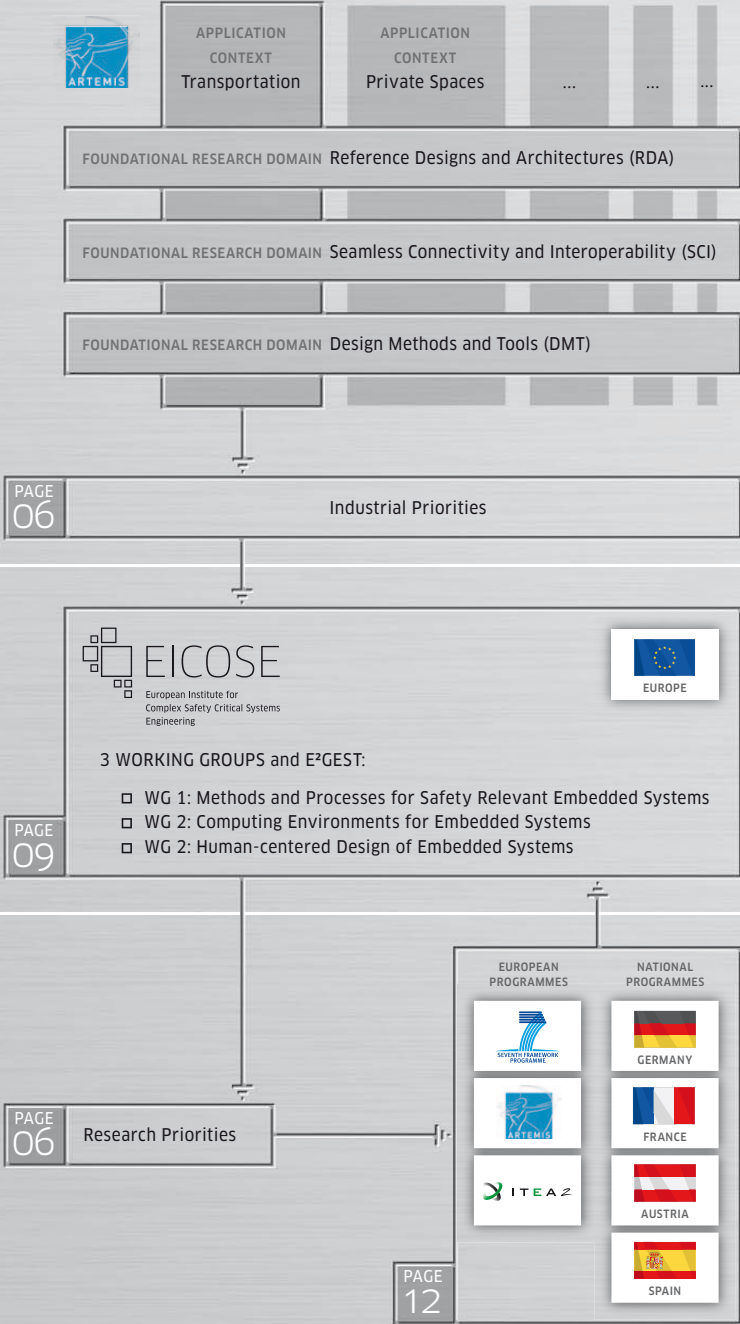- Technology roadmap for RDA, SCI, and DMT

FOSTERING AN INNOVATION ECO SYSTEM

In 2007, EICOSE was the first cluster to be granted the ARTEMIS label Centre of
Innovation Excellence (CoIE). The label has been renewed by the ARTEMIS Industry
Association (ARTEMIS-IA) in March 2011.

ACTIVITIES

ARTEMIS

| APPLICATION CONTEXT Transportation | APPLICATION CONTEXT Private Spaces | ... | ... | ... |

FOUNDATIONAL RESEARCH DOMAIN Reference Designs and Architectures (RDA)

FOUNDATIONAL RESEARCH DOMAIN Seamless Connectivity and Interoperability (SCI)

FOUNDATIONAL RESEARCH DOMAIN Design Methods and Tools (DMT)

Industrial Priorities

EICOSE
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EUROPE

3 WORKING GROUPS and E²GEST:

- WG 1: Methods and Processes for Safety Relevant Embedded Systems
- WG 2: Computing Environments for Embedded Systems
- WG 2: Human-centered Design of Embedded Systems

Research Priorities

EUROPEAN PROGRAMMES

SEVENTH FRAMEWORK PROGRAMME

ARTEMIS

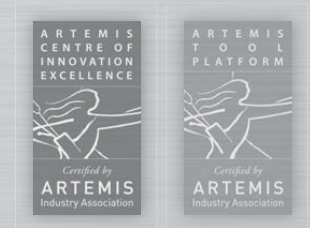ITEA2

NATIONAL PROGRAMMES

GERMANY

FRANCE

AUSTRIA

SPAIN

ARTEMIS-IA WORKING GROUPS

EICOSE partners are members of the following ARTEMIS-IA Working Groups:

- ☐ Tool Platforms
- ☐ Centre of Innovation Excellence (CoIE)
- ☐ Standardisation

EICOSE WORKING GROUPS

EICOSE is managing three theme-oriented Working Groups:

- ☐ WG 1: Methods and Processes for Safety Relevant Embedded Systems
- ☐ WG 2: Computing Environments for Embedded Systems
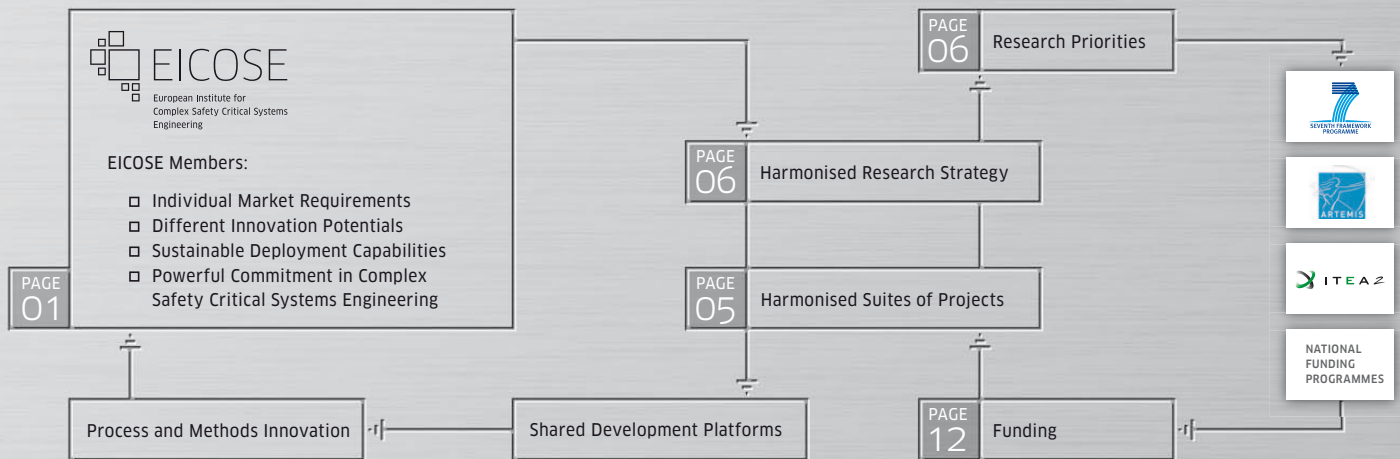- ☐ WG 3: Human-centered Design of Embedded System

E²GEST

Results from the Working Groups are harmonised within E²GEST
(EICOSE Expert Group on Embedded Systems for Transportation), which
comprises experts of the EICOSE clusters and other leading industrial
and academic experts of ARTEMIS-IA organisations.

THE INNOVATION ECO SYSTEM

»Addressing these ambitious objectives will require the mobilisation of resources on a large scale and the close collaboration of all stakeholders.«

Erkii Liikanen, European Commissioner, Building ARTEMIS,
Report by the High-level Group on Embedded Systems, June 2004

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EICOSE Members:

- Individual Market Requirements
- Different Innovation Potentials
- Sustainable Deployment Capabilities
- Powerful Commitment in Complex Safety Critical Systems Engineering

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PAGE 06 — Research Priorities

PAGE 06 — Harmonised Research Strategy

PAGE 05 — Harmonised Suites of Projects

Process and Methods Innovation

Shared Development Platforms

PAGE 12 — Funding

SEVENTH FRAMEWORK PROGRAMME

ARTEMIS

ITEA2

NATIONAL FUNDING PROGRAMMES

APPLIED SCIENCES

FUNDING INSTRUMENTS

STRATEGIC NETWORKING

ON THE NATIONAL LEVEL

The partners of EICOSE drive wide-spread activities and have influential contacts in their national R&D domain. They generate visibility of embedded systems technology and represent interests of R&D stakeholders.

ON THE EUROPEAN LEVEL

EICOSE promotes the national achievements in the international context and bundles forces to align R&D activities. So far, EICOSE

- □ has a wealth of contacts to European industrial and academic partners
- □ contributes to FP7, ARTEMIS
- □ contributes to EUREKA initiatives as ITEA
- □ contributes to other initiatives, e.g. ACARE, ERRAC, EUCAR, CLEPA, ERA

JOIN EICOSE!

EICOSE members are involved in strategic plannings and influence cross domain R&D activities on a European level. They have direct knowledge about developments of European and national R&D activities.

Membership is open to:

- □ **individuals as members of EICOSE Working Groups or E²GEST**
- □ **organisations or clusters active in the area of embedded systems as EICOSE members or associated partners**

If you want to benefit from the know how and information exchange across various application domains you should join EICOSE! For more information please contact **info@eicose.eu**

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Organisations and companies cooperating in projects incubated by EICOSE:

AbsInt

AIRBUS

Alenia Aeronautica
A Finmeccanica Company

ALSTOM

AnsaldoSTS
A Finmeccanica Company

AVL

BOSCH
Technik fürs Leben

BTC

CASSIDIAN
AN EADS COMPANY

cea list

Cnrs

Continental

DAIMLER

DASSAULT
SYSTEMES

DELPHI

DLR

EADS

EADS astrium

ENAC

ESI European Software Institute
tecnalia

ESTEREL
Technologies

Fraunhofer
IUK-TECHNOLOGIE

FZI

infineon

Inria

isae
Institut Supérieur de l'Aéronautique et de l'Espace

OFFIS
INSTITUT FÜR INFORMATIK

ONERA
THE FRENCH AEROSPACE LAB

Messier-Bugatti
SAFRAN Group

Sagem
SAFRAN Group

Turbomeca
SAFRAN Group

SAFRAN
Snecma

SIEMENS

THALES

Valeo

Verified

VOLVO

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