

# Objective ICT-2007.3.3

## Embedded Systems Design

ICT Proposers Day  
Köln, 1 February 2007



# Challenges

- Time to market puts pressure on design time
- The increased complexity demands for *assembled by design rather than* re-designed from scratch
- Quality of new designs has to improve and *guaranteed by design* is preferred to testing
- Moving from feasibility to optimality requires new radical design processes
- Emergence of independent embedded systems tool vendors



# Target outcomes of “Embedded Systems Design” Objective in FP7-ICT Call1

- a) Theory and methods for system design
- b) Suites of interoperable design tools for rapid design and prototyping
- c) Coordination of national, regional and EU-wide R&D programmes



## a) 1<sup>st</sup> Target outcome: Theory and methods for system design

- **Methods and tools that can increase system development productivity while achieving predictable system properties**
  - Key issues are heterogeneity, composability, predictability, security and adaptability
  - Unification of approaches from computer science, electronic engineering and control is encouraged
  - International cooperation should address foundational research challenges and provide mutual benefits



- **Instruments: STREP and NoE**



b) 2<sup>nd</sup> Target outcome:  
Suites of interoperable design tools for rapid design and prototyping

**Integrated tool chains that respond to the needs of industry for designing and prototyping embedded systems:**

- 1. Increased interoperability of tools from SME vendors**
  - Instruments: STREP and CSA
- 2. Consolidating tool developers joint RTD work**
  - Instruments: IP
- 3. Open tool frameworks facilitating new entrants**
  - Instruments: STREP and CSA

**Key issues include resource management, optimising compiler technologies, optimised tools, model-driven development**



c) 3rd Target outcome:  
Coordination of national, regional and EU-wide  
R&D programmes

- **Initiatives to advance the European Research Area in the field of embedded systems**
- **Instruments: CSA**



# Expected Impact

- Increase productivity of embedded systems development by an order of magnitude
- Improved competitiveness of European companies by reducing costs and time to market
- Emergence and growth of independent embedded systems tool vendors
- Reinforced European scientific and technological leadership in the engineering of complex systems
- Enhanced synergies between national policies and emergence of a European Research Area in embedded systems



# Instruments and Budget

- a) Theory and methods for system design**
  - STREP and NoE
- b) Suites of interoperable design tools for rapid design and prototyping**
  - 1. Interoperable tools from SMEs: STREP and CSA
  - 2. Tool developer's RTD work: IP
  - 3. Open tool frameworks: STREP and CSA
- c) Coordination of national, regional and EU-wide R&D programmes**
  - CSA

**Budget<sup>1</sup>: 40 M€**

**CP 34 M€** of which a minimum of 5 M€ IP and a minimum of 19 M€ to STREP,

**NoE 4.5 M€,**

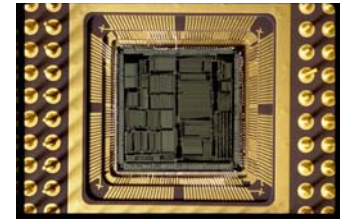
**CSA 1.5 M€**

<sup>1</sup> Amounts to be confirmed after the Commission decision on 2008 budget





# Relation to other parts of the Programme



- Complements Objective ICT-2007.3.1 “Next-Generation Nanoelectronic Components and Electronics Integration” that focus on chip design including SoC and SiP
- Complements Objective ICT-2007.3.4 “Computing Systems” that focus on architectures for multi-core computing systems



# For Further Information

## **General FP7:**

<http://cordis.europa.eu/fp7/>

<http://www.cordis.lu/>

## **IST:**

<http://www.cordis.lu/ist>

## **Embedded Systems:**

<http://www.cordis.lu/ist/embedded>

## **Info Day Embedded Systems on 7 March 2007 in Brussels:**

[http://cordis.europa.eu/ist/embedded/news\\_events.htm](http://cordis.europa.eu/ist/embedded/news_events.htm)



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