

# *ARTIST2 – Year 1 Review*

*Grenoble, October 3rd-4th, 2005*

Spreading Excellence

*Artist2 Technical Coordinator: Bruno Bouyssounouse  
(Verimag)*

# Outline of the Presentation

## **Vision**

- Ingredients for a successful NoE
- Structure of ARTIST2

## **Standards**

## **Funding for Events & Interaction**

## **International Collaboration**

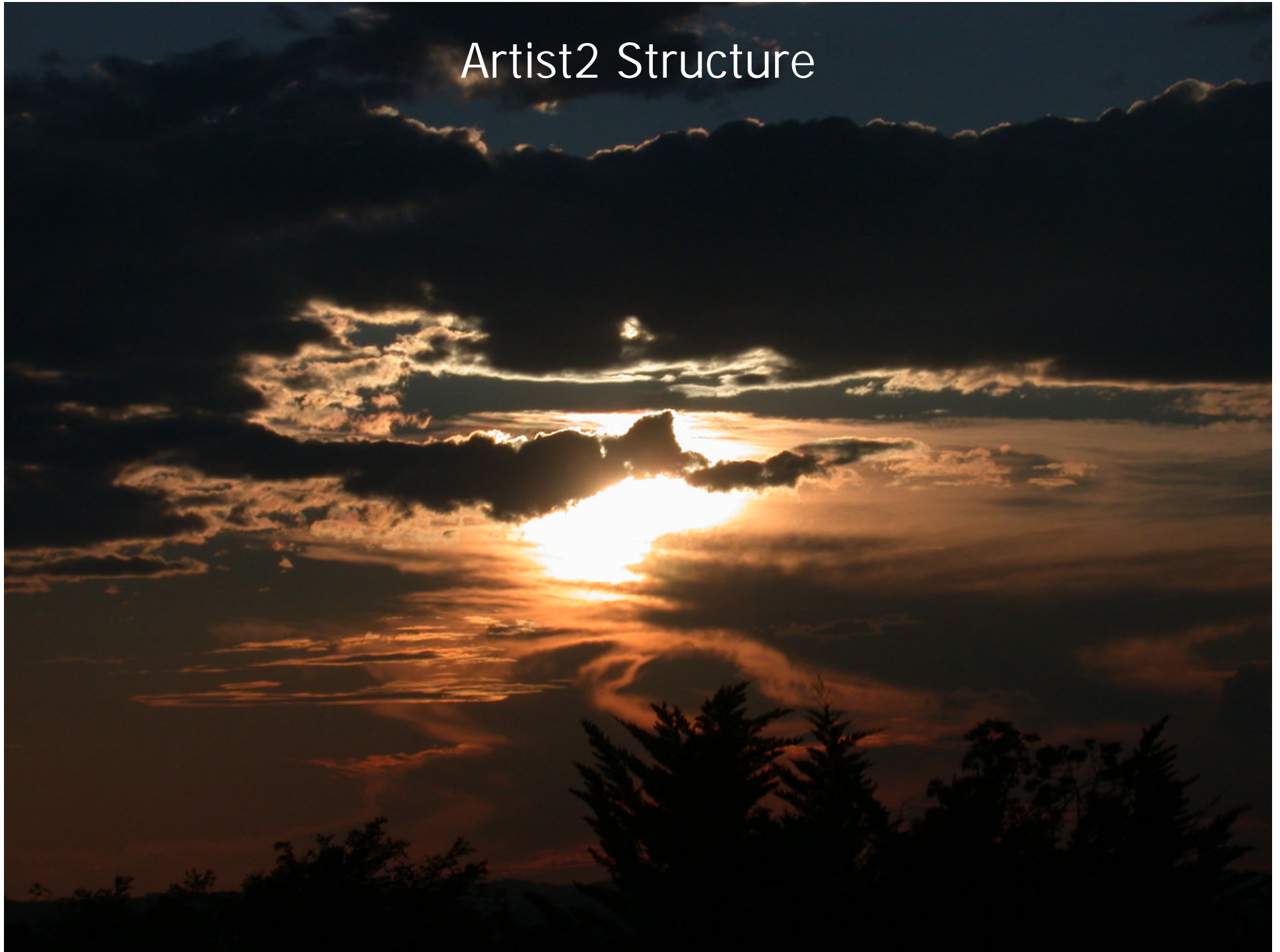
- Events
- Proposals for Common Projects
- Affiliated International Collaboration Partners

## **Affiliated Partners**

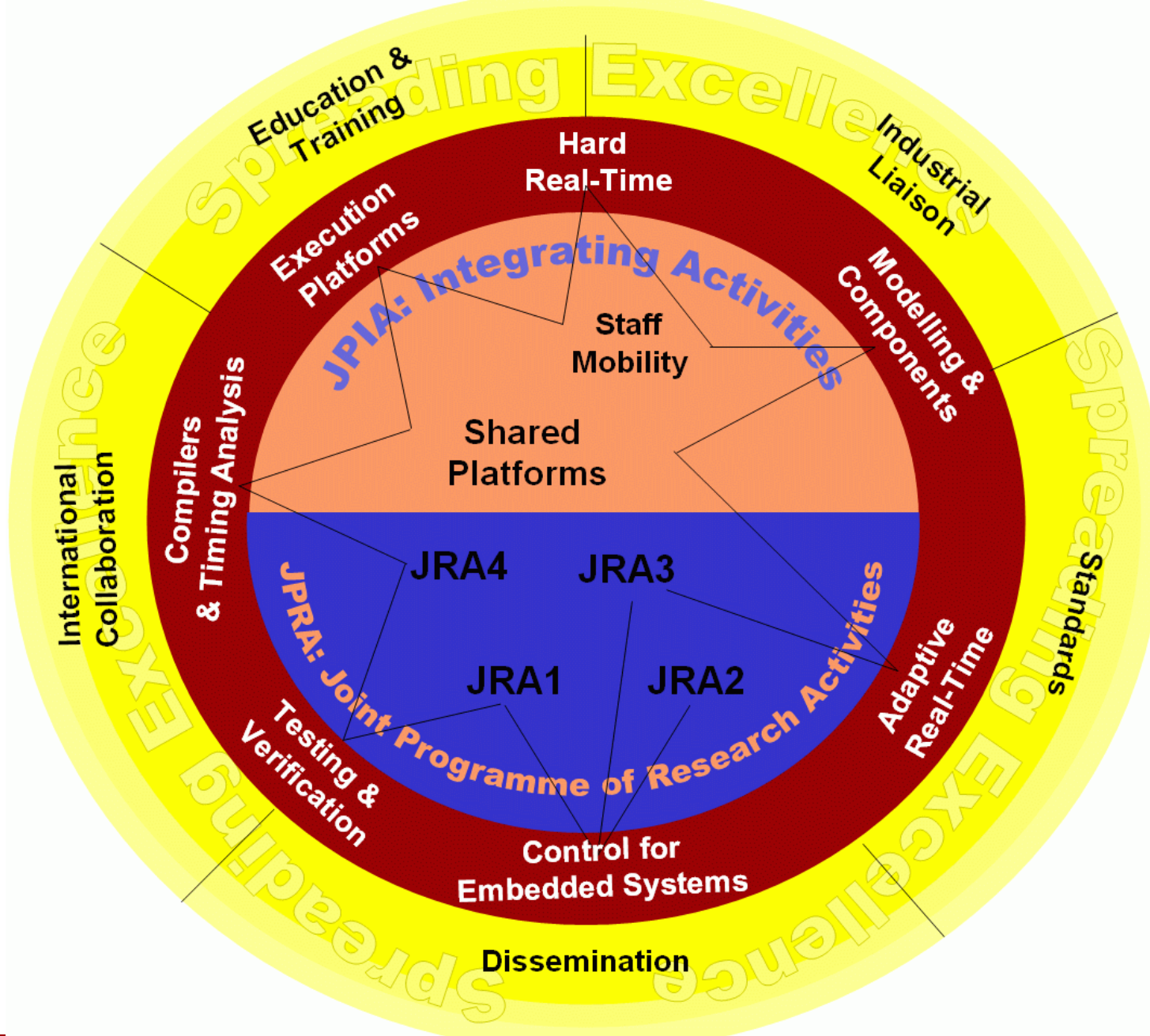
- Industrial
- SME
- International

## **Extensions in Year 2: ARTIST Institute**

# Artist2 Structure

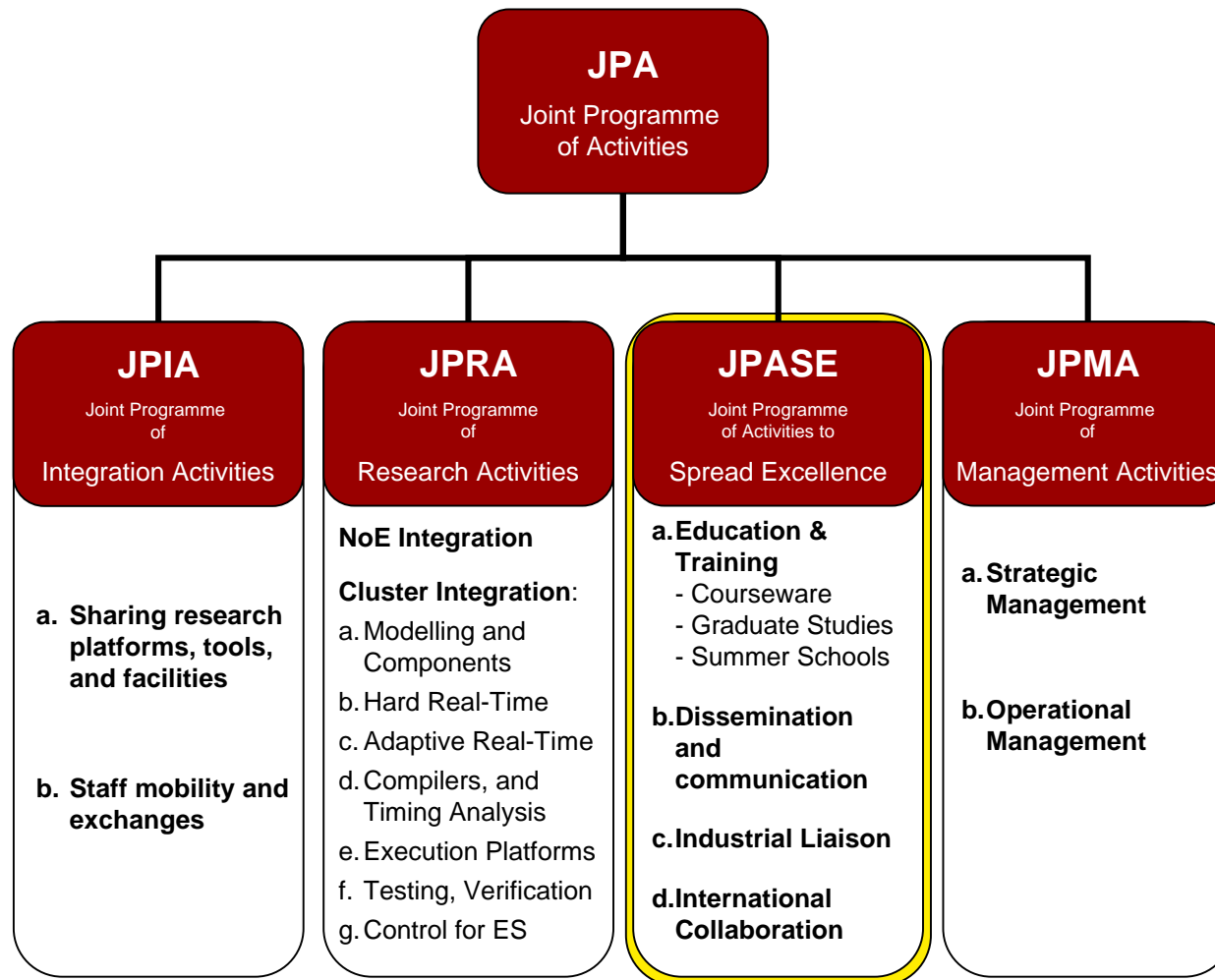


# Artist2 Structure



# ARTIST2

## Joint Programme of Activities





*Spreading Excellence through Contributions to and Promotion of*

# Standards

- **POSIX, IEEE 1003** – Portable Operating Systems Interface  
*Michael Gonzalez Harbour – University of Cantabria*
  - ✦ Flexible Scheduling Technologies
  - ✦ Adaptive Resource Management for Consumer Electronics
- **Ada Programming Language, RTSJ**  
*Alan Burns, And Wellings – University of York*
  - ✦ A Common Infrastructure for Adaptive Real-time Systems
  - ✦ Flexible Scheduling Technologies
- **OMG**  
**UML Profile for Schedulability, Performance, and Time Specification v1.0**  
**UML Profile for Modeling Quality of Service & Fault Tolerance Characteristics**  
*Francois Terrier – CEA*  
*Juan Antonio de la Puente – UP Madrid*
  - ✦ Platform for Component Modelling and Verification
  - ✦ Component Modelling and Composition
- **C Extensions to Support Embedded Processors - ISO/IEC TR 18037**  
*Rainer Leupers – RWTH Aachen*
  - ✦ Architecture-aware Compilation
  - ✦ Compilers Platform
- **ETHERNET Powerlink – (EPL v2)**  
*Luis Almeida – University of Aveiro*
  - ✦ A Common Infrastructure for Adaptive Real-time Systems
  - ✦ Flexible Scheduling Technologies
  - ✦ Adaptive Resource Management for Consumer Electronics

# Funding for Events and Interaction

## Conferences & Seminars

Some of the main  
events organized

- **Workshops at DATE05** *also DATE04, Date06*  
*“Embedded Systems Design: An Emerging Unified Discipline”*  
*Organizers: Albert Benveniste, INRIA, Bruno Bouyssounouse, VERIMAG, Giorgio Buttazzo, Pavia, Peter Marwedel, Dortmund, Reinhard Wilhelm, Saarland U, DE*
- **ARTIST Seminar on Adaptive Real-Time Systems**  
with emphasis on Real-Time Control Systems  
*Organized by TU Catalonia, with Pau Marti (Catalonia), Gerhard Fohler (Malardalen), , Technical University of Catalonia (UPC), Barcelona, Spain, June 20-23, 2005*
- **WESE 04 - Workshop on Embedded Systems Education** *at EmSoft 05*  
*Organized by Paul Caspi (Verimag), Jeff Jackson*
- **MARTES 05: Workshop on Modeling and Analysis of Real-Time and Embedded Systems** , *in conjunction with MoDELS/UML 2005, organised by Sebastien Gerard (CEA, France), Susanne Graf (Verimag, Grenoble, France), Øystein Haugen (Univ. of Oslo, Norway), Iulian Ober (Verimag, Grenoble, France), Bran Selic (IBM, Canada)*

# Funding for Events and Interaction

## Summer Schools and Courses

- ARTIST2 Summer School on Component & Modelling, Testing & Verification, and Statistical Analysis of Embedded Systems

Sept 29 - Oct 2, 2005

*Bengt Jonsson (Uppsala), Ileana Ober (Verimag), Sebastien Gérard (CEA), Alberto Ferrari (PARADES), PA Muller, Joseph Sifakis (Verimag), Susanne Graf (Verimag), Jean-Francois Raskin, Thierry Jéron (INRIA), Reinhard Wilhelm, Brian Nielsen (Aalborg), Stavros Tripakis (Verimag), Joost-Pieter Katoen (Twente)*

**NB: This is actually a part of year 2**

- Artist2 Graduate Course on Embedded Control Systems

*Pedro Albertos (Valencia)*

*with Lund University (Control Department), Universidad Politécnica de Valencia (Computer Engineering and Systems Engineering Departments), Royal Institute of Technology (KTH) Stockholm (Control Dept, Mechatronics Dept, Optimization & Systems Dept), Czech Technical University Prague (Control Dept), Universidad Politécnica de Madrid (Real-Time Systems Group)*



# International Collaboration

- July 7 **Component-based Engineering for Embedded Systems**

July 8 **Transatlantic Research Agenda:**

## **Future Challenges in Embedded Systems Design**

Participants: Airbus, Boeing, UC Berkeley, Carnegie Mellon, Polytechnic of Catalonia, CEA-DRT, CEA-List, CNRS, EADS, Ericsson, Embedded Systems Institute, European Commission, European Space Agency, Ford Research, Honeywell Labs, INRIA, ISI/Vanderbilt, I-Source Gestion, Israel Aircraft Industries, Naval Research Lab, NSF, OFFIS, Philips Research, Porto Advanced Engineering Institute, Princeton, Rolls Royce UTC, Raytheon, Rutgers, Saarland University, Stanford University, Thalès, Verimag, TU Vienna, Volvo Technology

- **Common project proposals**

eg: discussions with:

- Tata Research Development & Design Centre (TRDDC)
- Indian Institute of Science, Bangalore, India
- National University of Singapore
- and others

# International Collaboration

- **International Collaboration Affiliated Partners**

- UC Berkeley – Ed Lee, Shankar Sastry
- University of Michigan - Kang G Shin
- University of Notre Dame – Sharon Hu
- University of Illinois at Urbana–Champaign – Lui Sha
- Stanford University – Giovanni De Micheli
- Tata Research and Development – Mathai Joseph
- University of Singapore - P.S. Thiagarajan
- University of Virginia – John Stankovic, Tarek Abdelzaher
- Columbia University – Stephen Edwards

*Spreading Excellence through*  
**Affiliated Partners**

**Affiliated Industrial Partners**

ABB, Airbus, Bosch, DaimlerChrysler, EADS, EDF, Ericsson Mobile Platforms, Hispano-Suiza, Honeywell Prague, Infineon, Israeli Aircraft Industries, Nokia Mobile Phones, Philips Research, Siemens Mobile Phones, STMicroelectronics, SymTA Vision, Telelogic, Thalès Research and Technology, Volkswagen, Volvo, Volvo Car Corporation

**Affiliated SME Partners**

ACE, ARTiSAN Software, dSPACE, Enea Embedded Technology, Esterel Technologies, Evidence, IAR Systems, Tidorum, TNI-ValioSys, TTTech

**Affiliated Academic Partners**

Miroslaw Malek (Humboldt-University of Berlin), Francky Catthoor (IMEC), Isabelle Puaut (IRISA), Geert Deconinck (K.U. Leuven), Stefan van Baelen (K.U. Leuven), Ahmed Bouajjani (LIAFA-Paris), Ivica Crnkovic (Mälardalen \*\*), Jan Tretmans (Nijmegen), Laurent Pautet (Paris Telecom), Luciano Lavagno (Politecnico di Torino), Giuseppe Lipari (Scuola Superiore S. Anna), Marius Minea( Timisoara), Andreas Krall (TU Vienna \*\*), Carlos Delgado Kloos (U. Carlos III of Madrid), Marisol García-Valls (U. Carlos III of Madrid), Willem-Paul de Roever (U. Kiel), Julio Medina (Univ. of Cantabria \*\*), Lucia Lo Bello (Univ. of Catania), Pau Marti (Universitat Politècnica de Catalunya), Lubos Brim (University Brno), Bernhard Steffen (University Dortmund \*\*), Andrea Bondavalli (University of Florence)

\*\* different team from the Artist2 partner

Underlined: affiliated partners present here at the Artist2 review

## Extensions in Year 2

Durable Structures

# ARTIST Institute