

Year 2 Review  
Brussels, February 12th, 2010

*Achievements and Perspectives :*  
**Spreading Excellence**

leader : Bruno Bouyssounouse  
UJF/Verimag Laboratory

## Main Highlights

### **ARTIST Summer School in Europe 2009 - 5th edition**

- high quality technical programme, excellent feedback from participants
- 85 participants (out of 150 applicants) and 16 invited speakers.

### **International ARTIST Summer School in China 2009 – 4<sup>th</sup> edition**

### **International ARTIST Summer School in South America 2009 – 3<sup>rd</sup> edition**

### **New international Summer School in Rabat, Morocco**

### **Graduate Schools:**

- ARTIST Graduate Course: Automated Formal Methods for Embedded Systems
- ARTIST Graduate Course on Embedded Control Systems
- New ARTIST Graduate school on Quantitative Model Checking in 2010

### **Conferences**

support for CPS Week, ES Week, FORMATS, MEMOCODE, DATE

### **Embedded Systems Seminar** for the Embedded Systems Unit in June 2009

### **ARTIST Workshops**

UML&FM, WESH, CRTS, WSS'09 ,WESE'09, RePP , WFCD, APRES', SEEC'09 , IRTAW-14, ACESMB, VVPS, WCET, OSPERT, Mapping Applications to MPSoCs, Runtime Verification, DySCAS

### **ARTIST web portal**

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*red = recurring*

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*blue = international  
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### **ARTIST web portal**

# Education

All of the recurring International Collaboration events from Artist2 continue and will be expanded within ArtistDesign in 2009:

- 4 Major International Summer Schools in 2010
- Workshop on Embedded Systems Education (WESE)
- 3 Graduate Schools in 2010
- Special Issues / Publications
- Common Technical Baseline



# Education: WESE Workshops

*ArtistDesign:*

- **WESE'09: WS on Embedded Systems Education** October 15th, 2009 Grenoble, France (in ESWEEK)
- **WESE'08: WS on Embedded Systems Education** October 23rd, 2008 Atlanta, Georgia - USA (in ESWEEK)

*Artist2:*

- **WESE'07: WS on Embedded Systems Education** October 4-5, 2007 Salzburg, Austria (within ES Week)
- **WESE'06 - Embedded Systems Education** October 26th, 2006 Seoul, Korea
- **WESE'05 - WS on Embedded Systems Education** September 22nd, 2005 Jersey City – USA
- **ACM - Special Issue on Education**

*and back in Artist FP5:*

- **Artist International Collaboration Days 2003 - Education** October 11th 2003 – Philadelphia
- **Artist FP5 Guidelines for a Graduate Curriculum on Embedded (publication)**

## Workshops organized and funded in Y2

(1/6)

- **UML&FM'2009**

*December 8th, 2009     Rio de Janeiro, Brasil*

<http://www.artist-embedded.org/artist/-UML-FM-2009-.html>

UML is the de facto standard for modelling various aspects of software systems in both industry and academia, despite the inconvenience that its current specification is complex and its syntax imprecise.

- **WESH 2009**

*December 7th, 2009     Eindhoven - The Netherlands*

<http://www.artist-embedded.org/artist/-WESH-2009-.html>

The goal of this workshop is to strengthen the connections between academic research and industry, or to be more precise, to increase the understanding in the academic world of industrial issues in embedded systems engineering and together come to a shared agreement on research directions that seem worthwhile to pursue. The speakers at the workshop work at different medical companies or are participants in the ArtistDesign network with extensive experience in healthcare.

- **CRTS 2009**

*December 1st, 2009     Washington, D.C., USA (co-located with RTSS 2009)*

<http://www.artist-embedded.org/artist/-CRTS-2009-.html>

This workshop (CRTS 2009) provides a forum for researchers and technologists to discuss the state-of-the-art, present their work and contributions, and set future directions in compositional technology for real-time embedded systems. The technical program of CRTS 2009 will consist of invited talks and paper presentations.

- **WSS'09**

*October 16th, 2009     Grenoble, France (within ES Week)*

<http://www.artist-embedded.org/artist/-WSS-09-.html>

The workshop aims at bringing the software generation and software synthesis communities together and at identifying research problems which should be addressed by the scientific community.

## Workshops organized and funded in Y2

(2/6)

- **WESE'09**

*October 15th, 2009    Grenoble, France, within ESWeek 2009*

<http://www.artist-embedded.org/artist/-WESE-09-.html>

As embedded system designs grow more complex and the time to market diminishes, quality embedded systems education becomes more and more important. This fifth workshop on the subject aims to bring researchers, educators, and industrial representatives together to assess needs and share design, research, and experiences in embedded systems education.

- **RePP 2009**

*October 15th, 2009    Grenoble, France, within ESWeek 2009*

<http://www.artist-embedded.org/artist/-RePP-2009,1122-.html>

The RePP workshop is concerned with embedded systems that are characterized by efficiency requirements on the one hand and critical constraints on the other. Such systems occur in many industry-relevant embedded application domains such as avionics, automotive, railway systems, power plants, construction machinery, and robotics.

- **WFCD - Foundations and Applications of Component-based Design 2009**

*October 11th, 2009    Grenoble, France, within ESWeek 2009*

<http://www.artist-embedded.org/artist/-WFCD-2009-.html>

The workshop aims to discuss recent results on component-based design with emphasis on design frameworks for real-time systems encompassing heterogeneous composition and models of computation. The focus is not only on fundamental results but also on their implementation in methods and tools and their concrete application in areas such as automotive, avionics, consumer electronics and automation.



- **APRES'09**

*October 11th, 2009    Grenoble, France, within ESWeek 2009*

<http://www.artist-embedded.org/artist/-APRES-09-.html>

Adaptive systems can respond to environmental changes including hardware/software defects, resource changes, and non-continual feature usage. As such, adaptive systems can extend the area of operations and improve efficiency in the use of system resources. However, adaptability also incurs overhead in terms of system complexity and resource requirements. The purpose of the workshop is to discuss new and on-going research that is centered on the idea of adaptability as first class citizen and consider the involved tradeoffs.

- **SEEC'09**

*October 8-9, 2009    Trento, Italy*

<http://www.artist-embedded.org/artist/-SEEC-09-.html>

The focus of the workshop is on energy efficiency as an alternative source of energy. Data shows that alternative energy sources alone are insufficient to meet the increasing demand. Higher efficiency is therefore required to address the energy problem, and is important also from an environmental point of view. Emphasis will be on addressing the problem from a system standpoint.

- **IRTAW-14**

*October 7-9, 2009    Portovenere, Italy*

<http://www.artist-embedded.org/artist/-IRTAW-14-.html>

For over 20 years the series of International Real-Time Ada Workshop meetings has provided a forum for identifying issues with real-time system support in Ada and for exploring possible approaches and solutions, and has attracted participation from key members of the research, user, and implementer communities worldwide.

- **ACES<sup>MB</sup> 2009**

*October 6th, 2009     Denver, Colorado, USA (in conjunction with MODELS 2009)*

<http://www.artist-embedded.org/artist/-ACES-MB-09-.html>

The objective of this workshop is to bring together researchers and practitioners interested in model-based software engineering for real-time embedded systems. We are seeking contributions relating to this subject at different levels, from modelling languages and semantics to concrete application experiments, from model analysis techniques to model-based implementation and deployment. Given the criticality of the application domain, we particularly focus on model-based approaches yielding efficient and provably correct designs. Concerning models and languages, we welcome contributions presenting novel modelling approaches as well as contributions evaluating existing ones.

- **VVPS 2009**

*September 19-20, 2009     Thessaloniki, Greece (within ICAPS 2009)*

<http://www.artist-embedded.org/artist/-VVPS-2009-.html>

Planning and scheduling (P&S) systems are finding increased application in safety- and mission-critical systems that require a high level of assurance. However tools and methodologies for verification and validation (V&V) of P&S systems have received relatively little attention. The goal of this workshop is to initiate an ongoing interaction of the P&S and V&V communities to identify specialized and innovative V&V tools and methodologies that can be applied to P&S.

- **WCET 2009**

*June 30th, 2009     Dublin, Ireland (just before ECRTS'09)*

<http://www.artist-embedded.org/artist/-WCET-2009-.html>

The goal of the workshop is to bring together people from academia, tool vendors and users in industry that are interested in all aspects of timing analysis for real-time systems. The workshop fosters a highly interactive format with ample time for in-depth discussions.

- **OSPERT 2009**

*June 30th, 2009    Dublin, Ireland (in conjunction with ECRTS09)*

<http://www.artist-embedded.org/artist/-OSPERT-2009-.html>

Developers of Real-Time Operating Systems (RTOS) are faced with many challenges arising from two opposing needs: extreme optimisation of resource usage (processor, energy, network bandwidth, etc.) and dynamic configuration, flexible scheduling, component-based development and deployment, etc. While real-time systems continue to be used in many small embedded applications, real-time services are being introduced and used in general-purpose operating systems. Notable examples are the various flavours of Linux that provide support to time-sensitive applications.

- **Mapping Applications to MPSoCs 2009**

*June 29-30, 2009    Schloss Rheinfels, St. Goar, Germany*

<http://www.artist-embedded.org/artist/-map2mpsoc-2009-.html>

The aim of the workshop is to provide a forum for brainstorming and road-mapping the future of mapping applications to MPSoCs. Knowledge about constraints and directions for future MPSoC architectures should be collected. Existing mapping techniques should be briefly presented and analyzed. Directions for future research should be proposed and evaluated.

- **Runtime Verification 2009**

*June 26-28, 2009    Grenoble, France*

<http://www.artist-embedded.org/artist/-Runtime-Verification-.html>

The objective of RV'09 is to bring scientists from both academia and industry together to debate on how to monitor and analyze the execution of programs, for example by checking conformance with a formal specification written in temporal logic or some other form of history tracking logic. The purpose might be testing a piece of software before deployment, detecting errors after deployment in the field and potentially triggering subsequent fault protection actions, or the purpose can be to augment the software with new capabilities in an aspect oriented style. The longer term goal is to investigate whether the use of lightweight formal methods applied during the execution of programs is a viable complement to the current heavyweight methods proving programs correct always before their execution, such as model checking and theorem proving.

- **SCOPES 2009**

*April 23-24, 2009    Nice, France*

<http://www.artist-embedded.org/artist/-SCOPES-2009-.html>

12th International Workshop on Software and Compilers for Embedded Systems

- **DySCAS 2009**

*February 18th, 2009    Volvo Office Brussels, Belgium*

<http://www.artist-embedded.org/artist/-DySCAS-2009-.html>

The DySCAS public results dissemination workshop will highlight the advances made during the project. You will learn about a future embedded automotive technology which has sophisticated capabilities to configure itself in context-aware ways to meet the quality-of-service requirements of applications, to automatically optimize resource usage, and to dynamically detect and resolve certain categories of fault.



# ARTIST Summer School in Europe 2009

	Monday	Tuesday	Wednesday	Thursday	Friday
9:00					<b>Koen De Bosschere</b>
9:30	<b>Hermann Kopetz</b>  <i>The Role of Time in Embedded System Design</i>	<b>Nicolas Halbwachs</b> <i>Synchronous Programming, and its use for Modeling Non-synchronous Systems</i>	<b>Luca Benini</b>  <i>Designing scalable and predictable SoC communication fabrics</i>	<b>Kim Larsen</b>  <i>Validation, Performance Analysis and Synthesis of Embedded Systems</i>	<i>The HiPEAC 2012-2020 vision</i>
10:30		break	break	break	break
11:00		<b>Eran Yahav</b>  <i>Verification and Synthesis of Concurrent Programs</i>	<b>Lothar Thiele</b>  <i>Scalable Software for MPSoC Platforms</i>	<b>Michael Backes</b>  <i>Machine-assisted design and analysis of certifiably secure protocols</i>	<b>Krishnendu Chakrabarty</b>  <i>Design Automation Methods for Digital Microfluidic Biochips</i>
12:30	lunch	lunch	lunch	lunch	lunch
14:00	<b>Reinhard Wilhelm</b>  <b>Jan Reineke</b>  <i>Timing Analysis and Timing Predictability: extension to multi-processor systems</i>	<b>Sanjoy Baruah</b>  <i>Techniques for multiprocessor real-time scheduling</i>	<b>Luis Almeida</b>  <i>Mobile Cyber-Physical Systems</i>	<b>Armando Walter Colombo</b>  <i>Service-oriented architecture based distributed Control and Automation Systems</i>	
15:30		break	break	break	
16:00		<b>Jan Beutel</b>  <i>Tools for Distributed Embedded Systems</i>	<b>Gilbert Edelin</b> <i>Embedded Systems at THALES: the Artemis Challenges for an industrial group</i>	<b>Tarek Abdelzaher</b>  <i>Sensor Networks: Theoretical Challenges and Practical Applications</i>	
16:15					
17:30					
18:30		Dinner in 2 groups: Auberge de la Ferme	Gala Dinner: Château de	Farwell buffet	

Online videos !







# Embedded Systems Seminar

June 18-19, 2009 Beaulieu - Brussels, Belgium

## Professor Luis Almeida

University of Porto, Portugal



Course: **Networks and Middleware**

### Abstract:

Computer communication technologies have strongly evolved along the past decades and have deeply affected many domains, embedded systems included. They fostered the proliferation of distributed embedded systems, exploiting

potential advantages and composability, as systems targeting co-protocols became, the support the necessary other hand, developing complex, requiring abstractions and coo

In this talk we will do embedded systems. visit relevant issues i protocol stack, obser typically used in emb middleware layers ar issues and on-going

## Professor Karl-Erik Arzen

Lund University, Sweden



Course: **Adaptive Embedded Systems**

### Abstract:

An embedded hardware-software system is adaptive, if it can modify its behavior and/or architecture to changing requirements. Adaptivity is increasingly important as the complexity and au

required both off-line and required to handle change or product-family based dynamically respond to c improve performance and types of resource require external conditions. Adap both hardware and softw with flexible and adaptive hardware-level adaptivity supply voltage and clock resources, e.g., processi we need adaptivity in em give example of how ada adaptivity, robustness, su discussed. Connections and adaptivity in the field

## Professor Luca Benini

University of Bologna, Italy



Course: **Multi-Core Architectures**

### Abstract:

In this talk I will give an overview of recent trends in many-core platforms for embedded computing. The shift toward many-core architectures has been imposed by technology reasons (power consumption and design closure issues in nanometer technology) and not by the "coming of age" of parallel programming models, compilation, analysis and verification environments. Thus, we may be building terascale architectures that we cannot program efficiently (in terms of performance and power). Even worse, we may not be able to give any guarantees on execution timing, constraints and real-time properties of applications.

This is a challenge AND an opportunity for the software design and verification community: I will give some views on what is being done in hardware and software, what could be done, and what I hope will be done to build efficient and predictable multi-core platforms.

## Professor Sebastian Hack

Saarland University, Germany



Course: **Compilers and Timing Analysis**

### Abstract:

Run-time guarantees play an important role in the area of embedded systems

hard real-tim g constraints nment. Ther es that all titi analysis r s of each tas verestimation

rocessor: performance. avior of insti e execution t 1 time predict real executio

## Professor Brian Nielsen

CISS, Aalborg University, Denmark



Course: **Testing and Verification of Embedded Systems**

### Abstract:

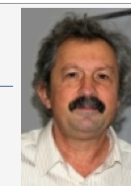
Embedded Software systems have high demands on quality, correctness and reliability. At the same time it is growing dramatically in size and complexity.

Functional correctness, quantitative aspects including real-time and constraints on quality of services are of utmost importance. In

stria etw

## Joseph Sifakis

VERIMAG Laboratory, France



Course: **Introduction to Embedded Systems Design**

### Abstract:

The development of a satisfactory Embedded Systems Design Science provides a timely challenge and opportunity for reinvigorating Computer Science.

Embedded systems are components integrating software and hardware jointly and specifically designed to provide given functionalities, which are often critical. They are used in many applications areas including transport, consumer electronics and electrical appliances, energy distribution, manufacturing systems, etc. Embedded systems design requires techniques taking into account extra-functional requirements regarding optimal use of resources such as time, memory and energy while ensuring autonomy, reactivity and robustness.

Jointly taking into account these requirements raises a grand scientific and technical challenge: extending Computer Science with paradigms and methods from Control Theory and Electrical Engineering. Computer Science is based on discrete computation models not encompassing physical time and resources which are by their nature very different from analytic models used by other engineering disciplines. We summarize some current trends in embedded systems design and point out some of their characteristics, such as the chasm between analytical and computational models, and the gap between safety

# Graduate Courses in Y2

## **ARTIST Graduate Course: Automated Formal Methods for Embedded Systems - 2009**

*June 17-25, 2009 DTU - Lyngby, Denmark*

<http://www.artist-embedded.org/artist/-Automated-Formal-Methods-2009-.html>

The aim of this course was to introduce advanced topics in connection with models, analysis and verification of embedded systems. The course will cover theory and applications, and hands-on experience with state-of-the-art tools.

The topics vary from year to year. The focus this year was on:

Real time validation of embedded systems based on timed automata and the Uppaal tool suite, including priced timed automata and timed games, and Uppaal CORA, Uppaal TIGA and Uppaal Tron.

Model-Based Development and Validation of Multirobot Cooperative System.

Analysis of systems with resource constraints.

# Graduate Courses in Y2

## **ARTIST Graduate Course on Embedded Control Systems 2009**

*June 8-12, 2009 Scuola Superiore Sant'Anna - Pisa, Italy*

<http://www.artist-embedded.org/artist/-ARTIST-Embedded-Control-2009-.html>

The course has two main objectives:

Introducing the most important concepts and methodologies used to develop a real-time embedded system, including fundamentals of real-time scheduling, control and distributed systems;

Showing how to apply these concepts to develop simple real-time control applications using an embedded platform specifically developed for education.

The course is developed in five days, each dedicated to a specific topic.



# Graduate Courses Planned in Y3

**ARTIST Graduate Course: Automated Formal Methods for Embedded Systems - 2010**

**ARTIST Graduate Course on Embedded Control Systems 2010**

## **Quantitative Model Checking**

*PhD School, Copenhagen, 2-5 March 2010*

The PhD school on quantitative model checking, QMC 2010, is organized by the European Network of Excellence ARTIST Design and the Danish VKR Center of Excellence MT-LAB and takes place at the IT University Copenhagen from 2 to 5 March 2010. It features lectures and other activities by world-renowned experts within the areas of real-time, probabilistic, and hybrid model checking.

The lectures will present advances within this broad field of quantitative model checking, providing an in-depth account of state-of-the-art modeling and logical formalisms, model checking algorithms as well as practical applications and offering hands-on experience of state-of-the art quantitative model checking tools.



# ARTIST Workshops planned in 2010 (subset)

- **GREEMBED 2010**      *April 12th, 2010      Stockholm, Sweden      (ES Week 2010)*  
First Workshop on Green and Smart Embedded System Technology: Infrastructures, Methods and Tools Efficient production, transmission, distribution and use of energy is a fundamental requirement for our modern society and its economy.
- **FESA 2010**      *April 12th, 2010      Stockholm, Sweden      (ES Week 2010)*  
Formalisms for Embedded Systems Architecture description & visualization:
  - What key formalisms, ADL's and visual languages, for design of embedded systems are there and what are the trends?
  - What is the maturity (languages, tools) and industrial adoption of such formalisms?
  - What are the key outstanding research issues to pave way for larger scale industrial adoption?
- **WARM 2010**      *April 12th, 2010      Stockholm, Sweden      (ES Week 2010)*  
The focus of WARM is software-based approaches to adaptive resource management for soft or adaptive embedded real-time applications, e.g., multimedia applications or non-safety critical control applications. Special emphasis will be given to multi-resource management, in particular including CPU time and power consumption. Special emphasis will also be given to multi-core platforms.
- **Mapping Applications to MPSoCs 2010**      *June 29-30, 2010      St. Goar, Germany*  
The aim of the workshop is to provide a forum for brainstorming and road-mapping the future of mapping applications to MPSoCs. Knowledge about constraints and directions for future MPSoC architectures should be collected. Existing mapping techniques should be briefly presented and analyzed. Directions for future research should be proposed and evaluated.
- **WCET 2010**      *July 6th, 2010      Brussels, Belgium (in conjunction w/ 22nd Euromicro Conference on Real-Time Systems)*  
Reliable WCET bounds are a necessary component for the construction and verification of dependable real-time systems. They are an input for doing task CPU allocation, creating task schedules, and performing schedulability analysis.
- **OSPERT 2010**      *July 6th, 2010      Brussels, Belgium (in conjunction w/ 22nd Euromicro Conference on Real-Time Systems)*  
Research on innovative RTOS architectures and services is a hot topic. Developers of Real-Time Operating Systems (RTOS) are faced with many challenges arising from two opposing needs: extreme optimisation of resource usage (processor, energy, network bandwidth, etc.) and dynamic configuration, flexible scheduling, component-based development and deployment, etc. While real-time systems continue to be used in many small embedded applications, real-time services are being introduced and used in general-purpose operating systems. Notable examples are the various flavours of Linux that provide support to time-sensitive applications.



## Organized with ARTIST Partners in Y2

- **CODES+ISSS 2009** *October 15-16, 2009*
- **RePP 2009** *October 15th, 2009*
- **NWPT '09** *October 14-16, 2009*
- **ESWeek 2009** *October 11-16, 2009*
- **Multiparadigm Modeling 2009** *October 4-9, 2009*
- **SAMOS IX** *July 20th - January 23rd 2009*
- **SIES 2009** *July 8-10, 2009*
- **ECRTS 2009** *July 1-3, 2009*
- **LCTES'09** *June 19-20, 2009*
- **UML&AADL'2009** *June 2nd, 2009*
- **SCOPES 2009** *April 23-24, 2009*
- **MDD for Distributed Real-time Embedded Systems (MDD4DRES) 2009** *April 20-24, 2009*
- **DATE 2009** *April 20-24, 2009*
- **FeBID 2009** *April 16th, 2009*
- **Cyber Physical Systems Week 2009** *April 13-16, 2009*
- **HSCC 2009** *April 13-15, 2009*



Network of Excellence  
on Embedded Systems Design

# Artist Web Portal

[Home Page](#) | [Participants](#) | [Research and Integration](#) | [Dissemination](#) | [Embedded System Links](#) | [intranet](#) |

## About the ArtistDesign NoE



Overview of the NoE  
Joint Programme of Activities (JPA)  
ArtistDesign Core Partners  
Workshops  
Education  
International Collaboration  
Related Projects  
Becoming an Affiliated Partner  
Leaflet  
Site Map

## About the Artist2 NoE



Strategic Objectives  
Approach  
Joint Programme of Activities (JPA)  
Artist2 Core Partners  
Research and Integration  
Workshops  
Education  
International Collaboration  
State of the Art  
Related Projects  
Conclusions from the Final Review

## ArtistDesign Research Topics

- Modeling and Validation
- SW Synthesis, Code Generation and Timing Analysis
- Operating Systems and Networks
- Hardware Platforms and MPSoC Design
- Intercluster activity: Design for Adaptivity
- Intercluster activity: Design for Predictability and Performance

## Upcoming Artist Events

- UML&AADL'2010 March 24th, 2010
- CPS Week 2010 April 12-16, 2010
- GREENBED 2010 April 12th, 2010
- FESA 2010 April 12th, 2010
- WARM 2010 April 12th, 2010
- EuroSys 2010 April 13-16, 2010
- SCOPES 2010 June 28-29, 2010
- Mapping Applications to MPSoCs 2010 June 29-30, 2010
- WCET 2010 July 6th, 2010
- OSPERT 2010 July 6th, 2010

## ARTEMIS / ARTEMISIA

- ARTEMIS European Technology Platform
- Strategic Research Agenda
- ARTEMISIA Industrial Association

## Hot Topics

- Smart and Efficient Energy Council (SEEC'2009) PRESS RELEASE
- WCET Special Issue
- Guide to Embedded Systems Concepts Common Technical Baseline

## ACM SIGBED

- ACM Special Interest Group on Embedded Systems
  - Publications
  - Events
  - Membership

## Other ES Links

- Journals
- Conferences
- Hot Topics
- Standards
- Tools and Platforms
- Main Projects
- Position Papers
- Roadmaps
- Newsletters and Magazines
- Mainstream Press
- Announcements
- Publications

## Schools & Seminars

- 1st AVACS Spring School March 15-19, 2010

## WS & Conferences

- UML&AADL'2010 March 24th, 2010
- CPS Week 2010 April 12-16, 2010
- GREENBED 2010 April 12th, 2010
- FESA 2010 April 12th, 2010
- WARM 2010 April 12th, 2010
- EuroSys 2010 April 13-16, 2010
- MoBE-RTES 2010 May 4th, 2010
- ECRTS'10 June 6-9, 2010
- ICE'10 June 10th, 2010
- SCOPES 2010 June 28-29, 2010
- Mapping Applications to MPSoCs 2010 June 29-30, 2010
- WCET 2010 July 6th, 2010
- OSPERT 2010 July 6th, 2010
- SIES 2010 July 7-9, 2010
- DSD 2010 - 13th Euromicro September 1-3, 2010
- ICT 2010 September 27-29, 2010



## Subscriptions

- ARTIST Mailing List

## Past Events

### Organised by Artist

- UML&FM'2009 December 8th, 2009
- WESH 2009 December 7th, 2009
- CRTS 2009 December 1st, 2009
- WSS'09 October 16th, 2009
- WESE'09 October 15th, 2009
- RePP 2009 October 15th, 2009
- WFCD - Foundations and Applications of Component-based Design 2009 October 11th, 2009
- APRES'09 October 11th, 2009
- SEEC'09 October 8-9, 2009
- IRTAW-14 October 7-9, 2009
- ACES<sup>MB</sup> 2009 October 6th, 2009
- VVPS 2009 September 19-20, 2009
- ARTIST Summer School in Europe 2009 September 7-11, 2009
- ARTIST Summer School in South America 2009: Embedded Systems Design August 3-7, 2009
- ARTIST Summer School in China 2009 July 19-24, 2009
- WCET 2009 June 30th, 2009
- OSPERT 2009 June 30th, 2009
- Mapping Applications to MPSoCs 2009 June 29-30, 2009
- Runtime Verification 2009 June 26-28, 2009
- ArtistDesign NoE - Embedded Systems Seminar June 18-19, 2009
- ARTIST Graduate Course: Automated Formal Methods for Embedded Systems - 2009 June 17-25, 2009
- ARTIST Graduate Course on Embedded Control Systems 2009 June 8-12, 2009
- DySCAS 2009 February 18th, 2009
- Mapping of Applications-to MPSoCs - ArtistDesign Working Meeting November 27-28, 2008
- Embedded Systems: Industrial Applications '08 November 12-13, 2008
- WS on Multicores: Theory and Practice October 28th, 2008
- UML&FM'08 October 27th, 2008
- WESE'08: WS on Embedded Systems Education October 23rd, 2008
- Workshop on Foundations and Applications of Component-based Design October 19th, 2008

### Sponsored by Artist

- NWPT '09 October 14-16, 2009
- ESWeek 2009 October 11-16, 2009
- CAV 2009 June 26th - July 2nd 2009
- UML&AADL'2009 June 2nd, 2009
- MDD for Distributed Real-time Embedded Systems (MDD4DRES) 2009 April 20-24, 2009
- DATE 2009 April 20-24, 2009
- FeBID 2009 April 16th, 2009
- HSCC 2009 April 13-15, 2009
- RNTS'08 October 16-17, 2008
- DATE'08 March 10-14, 2008
- EmSoft'07 October 1-3, 2007
- Embedded Systems Week 2007 September 30th - October 5th 2007
- EPSAD 2007 September 10-14, 2007
- FOSAD 2007 September 9-15, 2007
- UML&AADL'2007 July 14th, 2007
- CAV 2007 July 3-7, 2007
- FMGALS'2007 May 29th, 2007
- SCOPES 2007 April 20th, 2007
- HSCC'07 April 3-5, 2007
- SLA++P 2007 March 31st, 2007
- ARCS 2007 March 12-15, 2007
- CASTNESS'07 Workshop and School January 15-17, 2007
- CASTNESS'07 Workshop and School January 15-17, 2007
- Synchron 2006 November 27th - December 1st 2006
- JTRES 2006 October 11-13, 2006
- MARTES 2006 October 2nd, 2006
- ADSD 2006: Advanced Digital Systems Design September 25-29, 2006
- FOSAD 2006: 6th International School on Foundations of Security Analysis and Design September 10-16, 2006
- Workshop: Distributed Embedded Systems November 21-24, 2005
- OSPERT 2005 July 5th, 2005
- HSCC '05 - Hybrid Systems: Computation and Control March 9-11, 2005

### Organised with Artist Partners

- CODES+ISSS 2009 October 15-16, 2009
- RePP 2009 October 15th, 2009
- NWPT '09 October 14-16, 2009
- ESWeek 2009 October 11-16, 2009
- Multiparadigm Modeling 2009 October 4-9, 2009
- SAMOS IX July 20th - January 23rd 2009
- SIES 2009 July 8-10, 2009
- ECRTS 2009 July 1-3, 2009
- LCTES'09 June 19-20, 2009
- UML&AADL'2009 June 2nd, 2009
- SCOPES 2009 April 23-24, 2009
- MDD for Distributed Real-time Embedded Systems (MDD4DRES) 2009 April 20-24, 2009
- DATE 2009 April 20-24, 2009
- FeBID 2009 April 16th, 2009
- Cyber Physical Systems Week 2009 April 13-16, 2009
- HSCC 2009 April 13-15, 2009
- CiberMouse@RTSS2008 November 30th, 2008
- ESWeek 2008 October 19-24, 2008
- RNTS'08 October 16-17, 2008
- ECRTS 2008 July 2-4, 2008
- Ada-Europe'08 June 16-20, 2008
- Cyber Physical Systems Week 2008 April 21-24, 2008
- DATE'08 March 10-14, 2008
- CASTNESS 2008 January 15-18, 2008
- RTSS 2007 December 3-6, 2007
- FORMATS'07 October 3-5, 2007
- EmSoft'07 October 1-3, 2007
- CODES+ISSS 2007 September 30th - October 5th 2007
- RTCSA 2007 August 21-24, 2007
- UML&AADL'2007 July 14th, 2007
- ECRTS 2007 July 4-6, 2007
- WCET'07 July 3rd, 2007
- DCDS'07 June 13-15, 2007
- Dagstuhl: Tools for the Model-based Development of Certifiable, Dependable Systems June 10-15, 2007





# Web Portal - Features

## Objective

The ARTIST Web Portal is a major tool for Spreading Excellence within the Embedded Systems Community.

- The web portal disseminates information about **contacts** (core and affiliated partners), and **web links** about:
  - the JPA events and activities,
  - a fairly thorough set of links to sites of interest to the embedded systems community
- We regularly receive spontaneous requests for:
  - adding information to the site
  - subscriptions to the Artist Mailing List
- Authorised users (principally, the ArtistDesign partners) can access the back end of the site to modify and update information directly. The changes are immediately visible on the site, which greatly streamlines the updating process.
- Ergonomics are set for the entire site. The “look and feel” of the site is always homogeneous throughout the site. It’s possible to change these ergonomics, and these changes are applied homogeneously throughout the site, via automated mechanisms.



## ARTIST Website: Evolution

- In 2009: Updated the underlying software package
- In 2010: plan to add advanced tracking via:

Google Analytics

# Common Technical Baseline

### Overview

- Introduction
- Partners
- Site Map
- Index of Terms
- References

### Baseline

- ES Definition
- ES History
- View: System
- View: Lifecycle
- View: Methods
- View: Tools
- Architecture Examples

### Contributors

- Initial Expert Committee

### Other Information

- Background Documents
- Contact

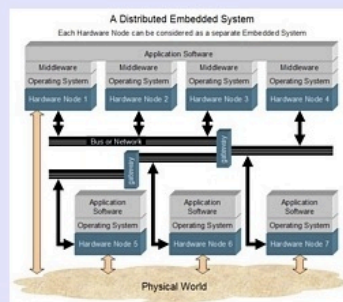
## Overview

The aim for this Common Technical Baseline is to become a **common language** shared by the stakeholders (systems, software and service providers, system integrators, and public authorities).

### Level 1 Views

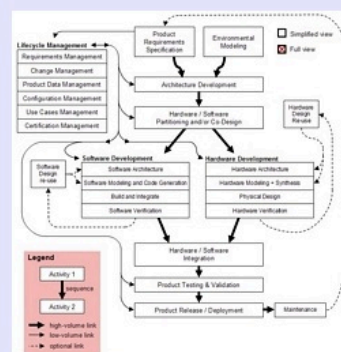
#### System View

This provides a *lego-like decomposition* of what actually composes an embedded system, both hardware and software.



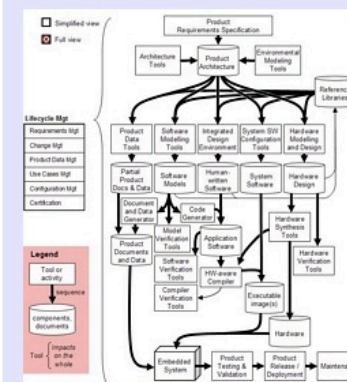
#### Lifecycle View

This covers the different steps in the lifecycle of an embedded system.



#### Tools View

This shows the different types of tools, including both their main inputs and outputs.



### Functional evolution:

- Migrated to database
- Referencing on google

### Dissemination planned:

- Increase visibility on google
- Embedded Systems Conference (ESC) 2010
- ERTS (Embedded Real Time Software and Systems) 2010





# Google Analytics

## Dashboard

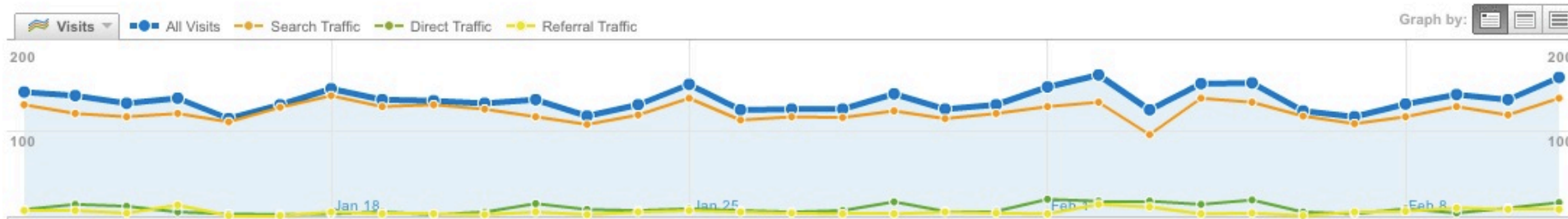
Jan 12, 2010 - Feb 11, 2010



Thursday, February 11, 2010  
**All Visits (Segment): 163**  
**New Visitors (Segment): 132**  
**Returning Visitors (Segment): 31**

## Traffic Sources Overview

Jan 12, 2010 - Feb 11, 2010



Thursday, February 11, 2010  
**All Visits (Segment): 163**  
**Search Traffic (Segment): 139**  
**Direct Traffic (Segment): 16**  
**Referral Traffic (Segment): 8**



# Google ranking

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