

# Strategies for Embedded Computing Research

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International policy conference  
Vienna, March 18 - March 19, 2010



## Conference programme

### Day I - March 18, 2010

08:30 - 10:00	Registration	Ground Floor Palais
09:00 - 10:00	Welcome Coffee / Tea	2 <sup>nd</sup> Floor, Foyer
10:00	Welcome and Opening - <i>Michael Wiesmueller, BMVIT</i> - <i>José Cotta, EC</i>	2 <sup>nd</sup> Floor, Room: Freud / Schroedinger
10:15 - 12:30	<b>Session 1</b> <b>Everyware - Towards Systems of Embedded Systems</b> New challenges and trends in Embedded Technology	2 <sup>nd</sup> Floor, Room: Freud / Schroedinger
10:15	Design Challenges for Cyber Physical Systems - <i>Edward A. Lee, University of California, Berkeley</i>	facilitated by Erich Prem eutema
11:00	Towards a Quantitative Evaluation of Systems - <i>Tom Henzinger, ISTA, AT</i>	
11:30	Dependable Systems of Systems - <i>Hermann Kopetz, Vienna University of Technology</i>	
12:00	Discussion	
12:30 - 14:00	Lunch	Restaurant, Hotel Strudlhof
14:00 - 17:30	<b>Session 2</b> <b>Embedded Support for Policy Makers</b> Effects of Embedded Technologies in Economy and Society	2 <sup>nd</sup> Floor, Room: Freud / Schroedinger
14:00	Embedded Systems: Critical Technology for Systems of Systems - <i>Michael Winokur, Israel Aerospace Industries</i>	facilitated by Josef Affenzeller ARTEMIS Austria AVL LIST
14:30	The German Embedded Systems Roadmap - <i>Werner Damm, OFFIS, DE</i>	
15:00	The Embedded Systems Institute: A Public-Private Partnership for Innovation in High-Tech Systems - <i>Boudewijn Haverkort, ESI TU/e, NL</i>	
15:30	Coffee / Tea	2 <sup>nd</sup> Floor, Foyer
16:00	Energy Efficient Buildings - <i>Iñaki Eguía, eDIANA, ES</i>	
16:30	Embedded Systems in Production Processes - <i>Andreas Kugi, Vienna University of Technology</i>	
17:00	The Full Electrical Vehicle as Device Source of the Internet of Energy: V2G+I - <i>Pietro Perlo, FIAT – CRF, IT</i>	
17:30	End of Day 1	
19:30	<b>Networking Event</b>  Enjoy an international Viennese evening with conversation, music and networking in a baroque ambiance at the former Palais Schoenborn in the heart of Vienna.	MOYA Renngasse 4 1010 Vienna

## Conference programme

### Day II - March 19, 2010

09:00 - 12:00	<b>Session 3</b> <b>Positions and Challenges for EU and National Strategies</b>	2 <sup>nd</sup> Floor, Room: Freud / Schroedinger
09:00	ARTEMIS as an industry strategy ... for the next decade? - <i>Giovanni Barontini, VP Civil Products, Finmeccanica Spa, IT</i>	facilitated by Herbert Zeisel DLR
09:45 - 12.00	Strategies for ES Research: Experiences and Trends (Panel discussion)	
	Embedded Systems Research Design in the EU - <i>José Cotta, Head of Unit, EC</i>	
	Structuring French Territory through Competitiveness Clusters – The Way Forward - <i>Fabrice Derepas, CEA, FR</i>	
	Aligning Research Agendas - <i>Sergio Bandinelli, ARCADIA, ES</i>	
	ARTEMIS a Cornerstone for European Industries - <i>Eric Schutz, ARTEMIS-JU, NL</i>	
	ITEA2 - <i>Fopke Klok, ITEA2, DE</i>	
	The impact of ARTEMIS on national programmes - <i>Erich Prem, COSINE2, eutema, AT</i>	
	ProSE: Standardization in Embedded Systems - <i>Laila Gide, Thalesgroup, FR</i>	
12:00 - 13:30	Lunch	Restaurant, Hotel Strudlhof
13:30 - 16:00	<b>Session 4</b> International Practices and Co-operation in Embedded Research	2 <sup>nd</sup> Floor, Room: Freud / Schroedinger
13:30	Korea's R&D policy environment - <i>Johng-Ihl Lee, Namseoul University, South Korea</i>	facilitated by Bruno Woeran eutema
13:50	Australia's Experience and Strategies - <i>Chris Nicol, CTO National ICT Australia</i>	
14:10	US View Point (incl. Q&A) - <i>Helen Gill (via VTC), U.S. National Science Foundation</i>	
14:30	Coffee/Tea	2 <sup>nd</sup> Floor, Foyer
15:00	Embedded Systems Innovation for SME Clusters in Ireland - <i>Kieran Delaney, Manager TECentre, CIT</i>	
15:20	Embedded Systems in Brazil - <i>Marylin Peixoto, Undersecretary MCT, BR</i>	
15:45 - 16:00	Closing Statement - End of Conference	

## Speakers

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**Sergio Bandinelli** is R&D Projects Area Director at the European Software Institute. Since 1995 he has managed and participated in development and technology transfer projects regarding process improvement, with specific emphasis in component-based development, reuse management, architecture modelling and systems integration. Bandinelli has an extensive research record, having lead and taken part in many European projects.

**Giovanni Barontini** is Vice President, Civil Products at Finmeccanica Spa. He received the Laurea in Electronics Engineering from La Sapienza University in Rome in 1976 and a Master in Business Administration from the American University in Washington in 1984. Before joining Finmeccanica in 2003, he was with Telecom Italia.

**José Cotta** is Head of Unit "Embedded Systems and Control", Directorate General for Information Society and Media of the European Commission. He also was the Interim Executive Director of the ARTEMIS Joint Undertaking.

**Werner Damm** holds the Chair for Safety Critical Embedded Systems (ES) at the Carl von Ossietzky University of Oldenburg. He is a member of the Board of Directors of OFFIS, the Steering Board of EICOSE, the ARTEMIS WG on Innovation, the National Roadmap ES Steering Board and chairman of the SafeTRANS competence cluster. His research covers foundational research on mathematical models of ES, specification languages, hybrid systems, formal verification methods, real-time & safety analysis and applied research in avionics, automotive & train system application. He focuses on enhancing model-based development processes with formal method-based approaches to verification, testing, safety & real-time analysis, and on enabling component-based design for ES.

**Kieran Delaney** is Manager of the Technologies for Embedded Computing (TEC) Centre at the Cork Institute of Technology. Formed in 2006, the Centre drives industry-led research and technology-transfer programmes for new and established companies in the domain of next generation embedded software and hardware computing technologies.

**Iñaki Eguía** is responsible of the Prometeo FP7 office. He is engineer in computer science and Industrial Engineering in Lund and Deusto Universities. He started his PhD in 2007 dealing with Research Management. various contracts with Deusto University and Panda Software S.L. for analysis and research of different products development, analyst / programmer for anti-malware solutions and as a researcher for planning and production organisation area researching genetic algorithms. Contracted by ESI-Tecnalia for executing European projects about Security, Dependability and Trust, technology roadmapping, innovating units and keeping in touch with ETPs (Artemis and NESSI).

**Laïla GIDE** is Director Advanced Studies Europe in THALES Corporate Research and Technology. She is coordinating the participation of THALES in the European R&D programmes, and is involved in a number of JTIs ( ARTEMIS, ENIAC) and ETPs ( NESSI, Photonics 21, ISI). She holds a BSc in Electronic Engineering, and built an industrial experience through her several positions in the international cooperation, licensing partners in various regions of the world ( Europe, South America, Far East and Middle East) and as former quality director of Thales naval activities in France.

**Helen Gill** is Program Director for the Embedded & Hybrid Systems program of the National Science Foundation's Directorate for Computer and Information Science and Engineering (CISE) Division of Computer and Network Systems (CNS). Previously, she served as a Program Manager in the Information Technology Office of DARPA and was a Principal Scientist with the MITRE Corporation. Dr. Gill received her Ph.D. in Computer Science from Auburn University.

**Boudewijn Haverkort** is chairman and scientific director of ESI - Embedded Systems Institute, Eindhoven. He received his MSc and PhD (1991) from University of Twente. He was professor for distributed systems at RWTH Aachen, visiting scientist at the University of Adelaide, professor for design and analysis of communication systems and Head of department Computer Science at University of Twente. He is a member of ACM, GI and IFIP WGs (6.3 & 7.3), serves on the editorial board of the journal Performance Evaluation and chairs an IEEE SC (Quantitative Evaluation of Systems). He has published over 100 scientific papers on performance and dependability evaluation of computer and communication systems.

**Tom Henzinger** is President of ISTA, the new Institute for Science and Technology Austria and professor for Computer Science at EPFL, Lausanne, Switzerland, and Adjunct Professor of Electrical Engineering and Computer Sciences at the University of California, Berkeley. He received his Ph.D. from Stanford University in 1991 and was Director at the Max-Planck Institute for Computer Science in Saarbruecken, Germany.

**Fopke Klok** studied Mathematics at Groningen University. He started his professional career at Groningen University and Delft University of Technology. In 1986 he started to work at Philips Electronics as a CAD Systems analyst. From 1991 to 2007 he worked at Philips Research in various managerial positions in the Netherlands and in the UK in areas like Computer Graphics, Compiler Technology, Wireless Communication and User Interfaces. In 1998 he became Head of the Strategy and Program Office and was responsible for Planning & Programming at Philips Research. Since 1 June 2007 Fopke Klok is Office Director at ITEA 2.

## Speakers

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**Hermann Kopetz** received his PhD degree in physics "sub auspiciis praesidentis" from the University of Vienna, Austria in 1968. He was a manager at Voest Alpine in Linz, Austria, before joining the Technical University of Berlin as a professor for Computer Process Control in 1978. Since 1982 he is professor for Real-Time Systems at the Vienna University of Technology, Austria. Dr. Kopetz has published more than 100 papers and patents in the fields real-time computing, distributed computing and fault tolerance.

**Andreas Kugi** is professor for Complex Dynamical Systems and head of the Automation and Control Institute at the Vienna University of Technology. He received his Ph.D. degree and his Habilitation degree in the field of automatic control, both from the Johannes Kepler University in Linz, Austria, in 1995 and 2000, respectively. From 2002 to 2007 he was a professor for System Theory and Automatic Control at the Saarland University, Germany. Dr. Kugi serves as the Deputy-Editor-in-Chief of Control Engineering Practice and is member of the expert commission of the German Research Foundation.

**Edward A. Lee** is Robert S. Pepper Distinguished Professor and former chair of the Electrical Engineering and Computer Sciences (EECS) department at U.C. Berkeley. His bachelors degree is from Yale University, his masters from MIT, and his Ph.D. from U. C. Berkeley. His research interests center on design, modelling, and simulation of embedded, real-time computational systems. He is a director of Chess, the Berkeley Center for Hybrid and Embedded Software Systems, and is the director of the Berkeley Ptolemy project. He is co-author of five books and numerous papers.

**Johng-Ihl Lee** is a professor of Namseoul University in Korea and manages the IIIS(a policy research institute). As the CEO for Korea-Israel R&D foundation and the director of International technology cooperation center of the KIAT in charge of international R&D programs such as FP and EU-REKA, he has served publicly and privately in the international technology cooperation community of more than 30 countries for 25 years. He also played a significant role in Korea's participation on EUREKA as an associate member. He was the first Korean who was invited to make a speech in the EUREKA NPC conference. His research area is technology policy and international R&D programs. Recently he is studying on the Asian R&D network.

**Chris Nicol** joined National ICT Australia as CTO, Embedded Systems in 2006. Previously he was Principal Investigator of Research at AT&T Bell Labs in the US, created and led the first Bell Labs Research facility in Asia Pacific which became as its founder and manager Agere Systems in 2003, a centre of excellence for digital base-band processors for 3G mobile wireless products. He holds a BSc and PhD from University of New South Wales and is an inventor of 17 US patents. He has served on several committees, as an editor of the IEEE Journals of (JSAC) and (JSSC), the Board of the Australian Research Council (ARC) and is a fellow of the The Australian Academy of Technological Sciences and Engineering (ATSE).

**Pietro Perlo** joined Centro Ricerche Fiat CRF in 1981 where he is Director and Senior Chief Scientist. He is also a lecturer in applied optics with the Institute of Physics of the University of Torino. Pietro is the author of a large number of patents that has lead to a variety of products in lighting, sensors and shape memory actuators. He is the author of a hundred Technical and Scientific papers or chapters on books. His focus is on technologies and building blocks design/integration for Full Electrical Vehicles.

**Erich Prem** is the director and chief strategist of eutema. He holds a Master and a doctoral degree in Computer Science from the Technical University in Vienna and an MBA in General Management from Donau University. He is the author of more than 40 scientific articles and was a visiting scientist at the Massachusetts Institute of Technology. He is the co-ordinator of many national and international projects in the area of ICT research and strategy development. His clients include international ICT industry, research councils, ministries, universities and the European Commission.

**Eric Schutz** was elected "Executive Director of the ARTEMIS Joint Undertaking" in 2009. Before that he was Vice-President of EU and Northern Europe Public Affairs of STMicroelectronics (2008-2009), Vice President of External Technology Coordination (2004-2007), Vice President of Technology (Telecom Group) and Vice President of Strategic Corporate Business Development (Alcatel Microelectronics). Between 1983 and 1999 he worked for GTE, Philips and Motorola. He also pursued 5 years research in semiconductor technology at Leuven University. Eric Schutz is a civil engineer and graduated from the University of Leuven, Belgium.

**Michael Winokur** is Director of Cooperate Engineering and Development at Israel Aerospace Industries Ltd. Dr. Winokur holds a B.S. Summa Cum Laude in Electrical Engineering (1976) and an M.S. in Nuclear Engineering (1979) from the Technion in Haifa Israel, and a Ph.D. in Systems Engineering (1982) from Imperial College, London. He has been Chairman of the Israeli Chapter of INCOSE and has been chairman of IEEE Computer Society Israeli Chapter. Dr. Winokur is a senior external lecturer in the Computer Science Department at Tel Aviv University and at the MS in Systems Engineering in the Technion in Haifa.

The enormous success of embedded computing has stimulated new research policies and programmes in this thriving area of information technology world-wide. The economic significance of embedded systems is as undoubted as the scientific challenges ahead of us.

The purpose of this conference is to better understand current directions in the field of embedded systems research at a policy level. The conference brings together researchers with strategic decision makers in Embedded Computing, policy makers and RTD managers.

But where exactly is the field going? What are the major challenges that improved policies need to address? What are the trends in recent programmes and what are current opportunities not to be missed by Embedded Computing Research? These are the topics of the conference on “Strategies for Networked Embedded Computing Research”.



Existing and planned national initiatives are of particular interest for strategic decision making in the field. These initiatives need to be put in a global context and discussed in relation to other European developments. This conference should mark the starting point for an improved mutual understanding and co-operation of national ES research initiatives.

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**Chairmen**

Michael Wiesmueller  
Austrian Federal Ministry for Transport, Innovation and Technology

José COTTA  
Head of Unit Embedded Systems and Control, European Commission

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the Austrian Federal Ministry of Transport, Innovation and Technology  
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**Hosted by**

eutema Technology Management GmbH.  
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[www.cosine-ist.org](http://www.cosine-ist.org)

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## Strategies for Embedded Computing Research

International conference on Embedded Systems Research Policies and Programmes

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March 18 - March 19, 2010

Palais Strudlhof  
Strudlhofgasse 10  
A 1090 Vienna



### Registration information

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Registration deadline: March 5, 2010

Please send your registration details by email to Mr. Bruno Woeran, eutema Technology Management, woeran@eutema.com, Tel. +43 1 5245316 or fax to +43 1 5245396.

#### **Participant**

First name:  
Last name:  
Telephone number:  
Email:

#### **Invoice recipient**

Organisation:  
Name (if different from above):  
Address:  
Telephone number:  
Email:  
VAT number:

The registration fee of EUR 276,- must be transferred to the following account. The registration fee includes 20% VAT, all coffee breaks, lunches and the conference dinner.

Bank: easybank AG Vienna  
Branch address: Quellenstrasse 51-55, A-1100 Vienna, Austria  
IBAN: AT 381420020010319570  
BIC: EASYATW1  
Account Holder: eutema Technology Management GmbH  
Account Nr.: 20010319570  
Payment reference: ES Conference Vienna

**Hotel information:** A limited number of rooms has been reserved in the conference hotel.

For any further questions, please do not hesitate to contact Mr. Woeran.