Eighth European Dependable Computing Conference

Valencia, Spain, April 27-30, 2010

Eighth European Dependable Computing Conference





Modern society increasingly relies on mission- and safety-critical computer systems whose failure can have extreme and catastrophic consequences. As the range and nature of computer technologies expand, insuring the dependability of these systems is becoming increasingly difficult, and must encompass a swathe of complementary approaches to provide emergent dependability properties such as quality of service, availability, survivability, confidentiality, and fault and intrusion tolerance. These efforts must further consider all phases of a system's life cycle, from its inception and design, through to its use, maintenance, and decommissioning.

Organised every two years, EDCC is the leading regional conference series to discuss advances on the dependability of computer systems in Europe. As in previous years, its eighth edition aims at providing a European-hosted venue for researchers and practitioners from all over the world to present and discuss their latest research results on fault-tolerance, dependability, security, and testing. Original papers are solicited on theory, techniques, systems, and tools for the design, validation, operation and evaluation of dependable and secure computing systems, covering any fault model, from traditional hardware and software faults to accidental and malicious human interactions.

GENERAL INFORMATION

Conference location

The EDCC conference will take place in the Ciudad Politécnica de la Innovación (CPI) on the Campus of the Universidad Politécnica de Valencia (UPV). A bus shuttle service will be available for attendees but in case you loose the bus or you plan to get to EDCC by your own, you need to ask to your taxi to bring you to "Universidad Politécnica de Valencia, Entrada de las Banderas en la calle Ingeniero Fausto Elio", which corresponds to the meeting point 7 in the map below.



The conference will be located at the 3rd floor of the CPI. So in order to get to that floor you should get the elevador located in access J of the CPI (next to the meeting point mentioned before).

In the following figure you will find different cubes of different colors. We will use code colors to locate where the various events of EDCC will be held. Here is a map of what the different existing cubes.



Location of sessions

All workshops will be held in cube Red (J). Fast Abstracts and Student Forum papers will be presented also in the red Cube (J), while presentation of regular papers, keynotes and conference opening and closing sessions will be organized in the auditorium of the Blue cube (N).

Breaks and Lunches

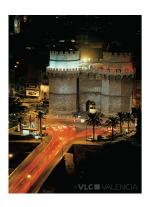
On April 27th, lunch and Breaks will be served in the purple (F) cube, while the rest of the conference days all lunches and breaks will be organized in the hall of the Blue cube (N).

Welcome reception

At the end of the Workshops day (April 27th) all conference and Workshops attendees will be invited to a welcome reception, which will be held in the 39°27N restaurant, which is located next to "Las Arenas" Beach. A bus service will be available at the end of the day in order to bring everyone from the university to the restaurant, and then back to the conference Hotels.

Further information about the restaurant can be found in http://www.3927.es.





Social Event

On Thursday, April 29th, it is planned to go for a guided walk around the City downtown. A bus service will bring all attendees to their Hotels and then to the excursión meeting point.

Then, everyone will be invited to attend the conference banquet that will be help in "El huerto de Santa María", a restaurant located next to Valencia, in a village named "El Puig". Further information about the restaurant can be found in http://www.huertodesantamaria.com.





Conference information



EDCC2010 AT A GLANCE

	Workshop day Tuesday, 27/04/2010		Conference day I Wednesday, 28/04/2010		Conference day II Thursday, 29/04/2010	Conference day III Friday, 30/04/2010	
8:30-9:00	Workshop session I				111d13ddy, 23/04/2010		
9:00-10:30	CARS	DY	'ADEM	Conference ope Keynote (Brendan Murphy, Mid	Talk 1	Keynote Talk 2 (José Duato, DISCA-UPV)	Conference session IV (I) Distributed Protocols
10:30-11:00						Break	
	Workshop session II			Student Forum	Conference session VI Dependability modelling	Conference session IV (II) Distributed Protocols	
11:00-13:00	CARS	DY	/ADEM	Conference session I Fault injection	& Fast Abstracts (session A)	Conference session VII Embedded systems and hardware	Conference closing session
13:00-14:30						Lunch	
14:30-16:30	Workshop session III		Conference session I	Student Forum	Conference session III Approaches and methodologies		
	CARS	DD4LCCI	DYADEM	Middleware and mechanisms	& Fast Abstracts (session B)		* Colors of sessions (Red and Blue) denote the building (CPI cubes) where such
16:30-17:00				Break			sessions will be held (For
	Workshop session IV						further information abo ut the CPI and the location o f
17:00-19:00	CARS	DD4LCCI	DYADEM	Conference session V Diagnosis and monitoring	Student Forum & Fast Abstracts (session C)	Conference excursion & Dinner	its cubes, please chek the M nap on page 5)
19:00	Welcome reception		Steering Committee Meeting & Dinner				

WORKSHOP INFORMATION April 27th

Workshop CARS@EDCC2010 Critical Automotive applications: Robustness & Safety

The increasing range and complexity of automotive applications, the need to master development costs using off-the-shelf components, the coexistence of critical and non-critical applications, and the emergence of new architectural paradigms may have a strong impact on dependability of automotive embedded systems. This situation calls for novel design and validation methods, but also tools to improve the robustness of automotive systems and their safety properties. The evolution of automotive systems is currently supported by standards (like AUTOSAR and ISO26262) that respectively advocate a software architecture but also recommend specific development approaches.

The goal of the workshop is to bring together researchers and practitioners interested in the design, implementation and operation of critical automotive applications and systems. Particular emphasis will be put on dependability issues, software engineering for robustness, security and safety issues, real time embedded systems technologies, architectural solutions and development processes for dependable automotive embedded systems.

PROGRAMME

Morning

08:00-08:30	REGISTRATION
08:30-08:45	WELCOME ADDRESS
08:45-09:30	KEYNOTE SPEECH ISO 26262: Challenge or chance in Automotive Industry Speaker: Christoph Jung (Formerly BMW AG, now with CATS Software Tools GmbH, Germany) Chaired by Mario Trapp (Fraunhofer IESE, Kaiserslautern, Germany)
09:30-10:30	Chaired by Olivier Guetta (Renault TechnoCentre, Paris, France) • Application of ISO DIS 26262 in Practice Marc Born, Olaf Kath (ikv++ technologies ag Berlin, Germany), John Favaro (Intecs S.p.A. Pisa, Italy)

Automatic Allocation of Safety Integrity Levels

Yiannis Papadopoulos, Martin Walker, (University of Hull, UK), David Servat (CEA-List DTSI/SOL/LISE, France), Rolf Johansson (Mentor Graphics, Sweden), Mark-Oliver Reiser (Technische Universität Berlin, Germany), A. Abele & F.Stappert (Continental Automotive GmbH, Germany), F. Tagliabo & S. Torchiaro (Centro Ricerche Fiat S.C.p.A., Italy), D. Chen & M. Törngren (Royal Institute of Technology Stockholm, Sweden), H. Lonn & L. Berntsson (Volvo Technology Corp., Sweden), Matthias Weber (Carmeq AG, Germany)

· Requirement traceability in safety critical systems

Marie-Agnès Peraldi-Frati (CNRS, University of Nice Sophia-Antipolis, INRIA. France), Arnaud Albinet (Continental Automotive SAS Toulouse. France)

10:30-11:00 BREAK

11:00-12:00 SESSION 2: ARCHITECTURE FOR ROBUSTNESS

Chaired by Johan Karlsson (Chalmers University of Technology, Göteborg, Sweden)

Memory Protection at Option

Michael Stilkerich, Daniel Lohmann, Wolfgang Schröder-Preikschat (Friedrich-Alexander University Erlangen-Nuremberg, Germany)

- A Road-Map for Enabling System Analysis of AUTOSAR-Based Systems Stefan Bunzel (Continental Automotive Frankfurt, Germany), Marc Graniou (PSA Peugot Citroën Vélizy, France), Rolf Johansson (Mentor Graphics Göteborg, Sweden), Henrik Lönn (Volvo Technology Göteborg, Sweden), Håkan Sivencrona (Mecel Engine Systems Göteborg, Sweden), Friedhelm Stappert (Continental Automotive Regensburg, Germany)
- Temporal isolation for the cohabitation of applications in automotive embedded software

Dominique Bertrand, Sebastien Faucou, Yvon Trinquet (IRCCyN, Université de Nantes, France)

12:00-12:45 WRAP-UP / DISCUSSION SESSION

Open discussion of morning sessions

Chaired by: Mario Trapp, Olivier Guetta, Johan Karlsson

13:00-14:30 LUNCH

Afternoon		17:00-18:00	SESSION 4: SCHEDULING AND REAL-TIME
14:30-15:30	WORK IN PROGRESS SESSION Chaired by Jean-Charles Fabre (LAAS-CNRS, INPT / University of Toulouse, France) • A Calculation Method for Software Safety Integrity Level Takaji Fujiwara, Juan Manuel Estevez (Business Cube & Partners, Inc, Japan), Yoshinobu Satoh, Shigeru Yamada (Tottori University, Japan) • Towards Verification-based Development of In-Vehicle afety Critical Software: A Case Study Martijn M.H.P. van den Heuvel, Reinder J. Bril (Techniische Universiteit Eindhoven, The Netherlands), Peter van de Velde (Verum B.V., The Netherlands), Johan J. Lukkien (Technische Universiteit Eindhoven, The Netherlands) • Unambiguous Semantics in Automotive Timing Modelling Johan Nordlander (Lulea University, Sweden), Rolf Johansson (Mentor Graphics, Sweden), Risat Mahmud Pathan (Chalmers University, Sweden) • Enforcing Trust in Control Automotive Platforms Christophe Jouvray, Grégoire Chartier, Nicolas François (Trialog, France), Ismael Ripoll, Miguel Masmano, Alfons Crespo (Universidad Politecnica de Valencia, Spain) • VESBA – A Middleware Oriented Architecture for Virtualized Embedded Systems Artur Schiefer, Gruhn Volker, Hrushchak Ruslan (Lieipzig University, Germany)	18:00-18:45 18:45-19:00	Chaired by Juan-José Serrano Martín (Universidad Politécnica deValencia, Spain) • Experimentation of WCET computation on both ends of automotive processor range Hugues Cassé, Pascal Sainrat, Clément Ballabriga, Marianne De Michiel (Université de Toulouse, IRIT, France) • Tree scheduling versus sequential scheduling Christian Fotsing, Annie Geniet (LISI, ENSMA, France), Guy Vidal-Naquet (Supelec, France) • Enabling Mode Changes in a Distributed Automotive System Martin Mitzlaff (Ingolstadt Institute of the Friedrich-Alexander University Erlangen-Nuremberg, Germany), Rüdiger Kapitza, Wolfgang Schröder-Preikschat (Friedrich-Alexander University Erlangen-Nuremberg, Germany) WRAP-UP / DISCUSSION SESSION Open discussion of afternoon sessions Chaired by: Jean-Charles Fabre, Yiannis Papadopoulos, Juan-José Serrano Martin CLOSING ADDRESS
15:30-16:30	SESSION 3: DESIGN AND VALIDATION Chaired by Yiannis Papadopoulos (University of Hull, UK) • Use of Formal Methods for Building Qualified Code Generator for Safer		rs 2010 ternational Workshop on Dynamic Aspects in Dependels els for Fault-Tolerant Systems
	Automotive Systems Nassima Izerrouken (Continental Automotive, Université de Toulouse/ IRIT, France), Olivier Ssi Yan Kai (Continental Automotive Toulouse, France), Marc Pantel (Université de Toulouse/IRIT, France), Xavier Thirioux (Université de Toulouse/IRIT, France)	pute the system's	y of fault-tolerant systems is usually quantified by using stochastic models which s dependability from the properties of its components. Most frequently, combina es like fault trees or reliability block diagrams are used for this purpose.
		- 1 1	

ic Aspects in Depend-

using stochastic models which comnents. Most frequently, combinatorial sed for this purpose.

The above-mentioned techniques are very mature and well understood both in industry and the academic environments. However, their classical solution methods only work for Boolean components and Boolean systems with a static behavior, and only under the assumption that there are no dependencies and interactions between the components of the system.

Examples of important properties which cannot be modeled using classical techniques are dependent, cascading and common cause events, imperfect fault coverage, error propagation, load sharing, standby-redundancy, delayed models, multi-phase systems, limited repair facilities and corresponding

16:30-17:00

12

Sweden)

BREAK

Conditional Safety Guarantees in Open Systems

Software Engineering, IESE Kaiserslautern, Germany)

Daniel Schneider, Mario Trapp (Fraunhofer Institute for Experimental

• Opportunities from Standardization in Automotive Safety Assessment

Raul Barbosa, Johan Karlsson (Chalmers University of Technology Göteborg,

policies, ageing effects, and so on. Therefore, the classical solution methods based on simplified assumptions can provide inaccurate or even dangerously over-optimistic results.

It is the aim of the workshop to discuss novel ideas, methods, algorithms, and software tools for indepth studies of these dynamic aspects of dependable-fault tolerant systems.

PROGRAMME

09.00 - 09.30	Welcome and Opening Session (chair: Max Walter)
09.30 - 11.00	TUTORIAL Dynamic Dependability Models: an Overview Suprasad Amari
11.00 - 11.30	Coffee Break
11.30 - 13.00	• A Hierarchical Method for the Reduction of Temporal Expressions in Pandora Martin Walker and Yiannis Papadopoulos: • Symbolic calculation of k-shortest paths and related measures with the stochastic process algebra tool CASPA Michael Günther, Johann Schuster and Markus Siegle • Characterization and Evaluation of Standby in Reliability Salvatore Distefano
13.00 - 14.30	LUNCH
14.30 - 15.30	• Dependability analysis of Wireless Sensor Networks with active-sleep cycles and redundant nodes Dario Bruneo, Antonio Puliafito and Marco Scarpa • Dependability Evaluation of Complex Systems With TimeNET (tool presentation) Armin Zimmermann • Dependability modelling with the stochastic process algebra tool CASPA (tool presentation) Johann Schuster and Markus Siegle
15.30 - 16.00	Coffee Break

Environment (tool presentation)

Max Walter

• The KB3-BDMP (Boolean logic Driven Markov Processes) © tool and its applications (tool presentation)

Marc Bouissou

• RobuCheck: A Robustness Checker for Digital Circuits (tool presentation)

Stefan Frehse, Goerschwin Fey, Andre Suelflow and Rolf Drechsler

• DyRelA (Dynamic Reliability and Assessment) (tool presentation)

Gabriel Antonio Pérez Castañeda, Jean-François Aubry and Nicolae Brinzei

17.00 - 17.30

Coffee Break

EXTENDED HANDS-ON TOOL SESSION

• OpenSESAME - The Simple but Extensive, Structured Availability Modeling

(in addition, tools will also be presented/discussed in the coffee breaks)

SESSION III (chair: to be announced)

Ist International Workshop on Data Dissemination for Large scale Complex Critical Infrastructures (DD4LCCI 2010)

This workshop aims at providing a forum for researchers and engineers in academia and industry to foster an exchange of research idead, results, experiences, and products in the area of reliable, timely and scalable data dissemination in large-scale critical systems from a middleware support perspective. The scope is to envision new trends and ideas about theoretical and practical aspects of designing, implementing, and evaluating future data distribution platforms for the next generation critical networked infrastructures.

PROGRAMME

16.00 - 17.00

14:30-16:30: **KEYNOTE TALK & INDUSTRIAL EXPERIENCE**

Session Chair: Domenico Cotroneo

• Data Dissemination supporting collaborative complex event processing:

characteristics and open issues

Roberto Baldoni, University of Rome La Sapienza

• Data distribution technologies in wide area systems: lessons learned from the SWIM-SUIT project experience

Gabriella Carrozza, Dario Di Crescenzo and Antonio Strano

16:30-17:00 BREAK

17:00-18:40 SESSION 2: Research on Publish/Subscribe Middleware in large-scale

systems Session

Chair: Christian Esposito

• Redefinable Events for Dynamic Reconfiguration of Communications in Ubiquitous Computing

Carlos Rodríguez-Domínguez, Kawtar Benghazi, Manuel Noguera and José Luis Garrido

• Adapting and Evaluating Distributed Real-time and Embedded Systems in Dynamic Environments

Joe Hoffert, Douglas Schmidt and Anirudha Gokhale

 Adaptive Parallel Computing for Large-scale Distributed and Parallel Applications

Jaiganesh Balasubramanian, Alexander Mintz, Andrew Kaplan, Grigory Vilkov, Artem Gleyzer, Antony Kaplan, Ron Guida, Pooja Varshneya and Douglas C. Schmidt

Schmidt

[Invited paper] Angelo Corsaro

18:40-19:00 **DISCUSSIONS & WORKSHOP END**

CONFERENCE INFORMATION April 28th-30th

Morning

8:00-9:00	Registration	
9:00-10:30	Conference Opening and Keynote 1: (Chair: Karama Kanoun) Brendan Murphy (Microsoft Research Centre in Cambridge)	
10:30-11:00	Break	
11:00-13:00	Session 1: Fault Injection (Chair: Cristian Constantinescu)	Fast Abstracts & Student Forum (Session A): Architectures, platforms, and mechanisms (Chair: Juan Carlos Ruiz)
	Comparing and Validating Measurements of Dependability Attributes.	Generic Interface to a Safe Processing Platform.
	Daniel Skarin, Raul Barbosa and Johan Karlsson	Karsten Hoffmeister, Rafael Zalman, Marc Graniou and Bertrand Delord
	Slice Your Bug: Debugging Error Detection Mechanisms using Error Injection Slicing. Ute Schiffel, André Schmitt, Martin Süßkraut and Christof Fetzer Emulation of Transient Software Faults for Dependability Assessment: A Case Study. Roberto Natella and Domenico Cotroneo Evaluating and comparing the impact of software faults on web servers. Naaliel Mendes, Joao Duraes and Henrique Madeira	A Proposal of a Fault-Tolerant Mechanism for Microprocessor Buses. Luis-J. Saiz-Adalid, JCarlos Baraza-Calvo, Joaquin Gracia-Moran and Daniel Gil-Tomas Dependable IP based messaging for real-time control over challenged wireless networks. Jaime Martin Losa e-NOTIFY: A Proposal to Improve the Responsiveness of Emergency Services. Francisco J. Martinez, Juan C. Cano, Carlos T. Calafate, Pietro Manzoni and Jose M. Barrios About the Feasibility of Transactional Support in Cloud Computing. Francisco Maia, Rui Oliveira and José Enrique Armendáriz-Iñigo
		Vertical integration on Real-Time Ethernet: A proposal. FJavier Sánchez-Bolumar, Juan-Carlos
		Baraza, Juan-Carlos Ruiz and Pedro Gil • A reliable distributed desktop for collaborative environments.
		Carlos Gómez-Calzado

Afternoon

(Cha	cion 2: Middleware and mechanisms iir: Algirdas Avizienis) cowards On-Line Adaptation of Fault folerance Mechanisms. ean-Charles Fabre, Marc-Olivier Kil- ijian and Thomas Pareaud calability Evaluation of the Replication Support for JOnAS, an industrial J2EE Application Server Practical Experience Report). Alberto Paz, Francisco Perez-Sorrosal,	Fast Abstracts & Student Forum (Session B): Formal methods, verification, and tool support (Chair: Marco Vieira) • Enhancing Program Verification for SPARK Eduardo Brito, Luís Pinto and Jorge Sousa Pinto • Towards a Worst-Case Execution Time Calculation Platform with Certificate Production
• O	Marta Patino-Martinez and Ricardo imenez-Peris In Hardware Resource Consumption for Aspect-Oriented Implementation of Fault Tolerance (Practical Experience Report). Ruben Alexandersson and Peter Dhman artitioned Embedded Architecture	Diogo Fialho, Nuno Gaspar, Simão Sousa, Jorge Pinto and Rogério Reis • Formal Modeling of Safety Requirements in the Model-Driven Development of Safety Critical Embedded Systems Dominik Sojer, Alois Knoll and Christian Buckl • System Architecture, Dependability
k a t	pased on Hypervisor: the XtratuM approach (Prototype-Tool descrip- ion). smael Ripoll, Miguel Masmano and Alfons Crespo	and Modes Linas Laibinis, Elena Troubitsyna, Alexei Iliasov and Alexander Romanovsky Robots, Software, Mayhem? Towards a Design Methodology for Robotic Software Systems Dietmar Schreiner and Franz Puntigam Abortable Consensus for Group Membership in Partitionable Systems Léon Lim
16:30-17:00 Brea	ak	

17:00-19:00 **Fast Abstracts & Student Forum Session 5: Diagnosis and monitoring** (Chair: Luca Simoncini) (Session C): Testing, fault and attack injection, and benchmarking Assessing the Impact of Imperfect (Chair: Dietmar Schreiner) **Diagnosis on Service Reliability: A** Parsimonious Model Approach. · Improvement of the fault injection Jesper Grønbæk, Hans-Peter Schwefel, effectiveness rate on data memory Jens Kristian Kjærgård and Thomas S. **Toftegaard** Carlos Carrión, Nacho Piqueras, Pedro · Analysis of Inter-Module Error Yuste, Rafael Ors and Juan Jose Serrano **Propagation Paths in Monolithic** · Resilience Benchmarking for Self-**Operating System Kernels. Adaptive Systems: A Research** Challenge Roberto Jung Drebes and Takashi Raquel Almeida and Marco Vieira Narrowing Down Possible Causes On-line wire diagnosis for vehicles of Performance Anomaly in Web Marc Olivas Carrion **Applications (Practical Experience** · An attack-goal driven approach for Report). web applications security assess-Satoshi Iwata and Kenji Kono · Finding Error Handling Bugs in Rim Akrout and Anthony Dessiatnikoff **OpenSSL using Coccinelle (Practical** Towards Benchmarking Software **Experience Report). Requirements Documentation for** Julia Lawall, Ben Laurie, René Rydhof **Space Applications** Hansen, Nicolas Palix and Gilles Muller Paulo Véras, Emilia Villani, Ana Ambrosio, Marco Vieira and Henrique Madeira Key Factors for Attack Injection on **MANETs: Towards Enhancing Experi**ment Representativeness Jesús Friginal, David de Andrés, Juan-Carlos Ruiz and Pedro Gil

Morning

8:00-9:00	Registration
9:00-10:30	Keynote 2: (Chair: Francois Taiani) Prof. Jose Duato Marín (Universidad Politécnica de Valencia)
10:30-11:00	Break
11:00-12:00	Session 6: Dependability modelling (Chair: Felicita Di Giandomenico) • Beyond attack trees: dynamic security modeling with Boolean logic Driven Markov Processes (BDMP). Ludovic Piètre-Cambacédès and Marc Bouissou • Online Monitoring of Software System Reliability. Roberto Pietrantuono, Stefano Russo and Kishor S. Trivedi
12:00-13:00	Session 7: Embedded systems and hardware (Chair: David de Andrés Martínez) • Codesign and simulated fault injection of safety-critical embedded systems using System C. Jon Perez, Mikel Azkarate-Askasua and Antonio Perez • How to Speed-up Fault-Tolerant Clock Generation in VLSI Systems-on-Chip via Pipelining Matthias Függer, Andreas Dielacher and Ulrich Schmid

Afternoon

14:30-16:00	Session 3: Approaches & Methodologies (Chair: Jean-Claude Laprie) • Software Process Synthesis in Assurance Based Development of Dependable Systems. Patrick Graydon and John Knight • Towards Understanding the Importance of Variables in Dependable Software. Matthew Leeke and Arshad Jhumka • Reliability and availability requirements engineering within the Unified Process using a Dependability Analysis and Modeling profile. Simona Bernardi, José Mersequer and Robyn Lutz
	, ,
16:00	Social Event: Excursion and dinner

Morning

9:00-10:30	Session 4 (I): Distributed Protocols (Chair: Mikel Larrea)		
	• Early Consensus in Message-passing Systems Enriched with a Perfect Failure Detector and its Application in the Theta Model.		
	François Bonnet and Michel Raynal		
	• HP: Hybrid Paxos for WANs.		
	Dan Dobre, Matthias Majuntke, Marco Serafini and Neeraj Suri		
	 Eventual Leader Election in Infinite Arrival Message-passing System Model with Bounded Concurrency. 		
	Sara Tucci-Piergiovanni and Roberto Baldoni		
10:30-11:00	Break		
11:00-12:30	Session 4 (II): Distributed Protocols		
	(Chair: Ricardo Jimenez Peris)		
	• D2HT: the best of both worlds Integrating RPS and DHT.		
	Marin Bertier, François Bonnet, Anne-Marie Kermarrec, Vincent Leroy, Sathya Peri and Michel Raynal		
	 Dependability Analysis of Diffusion Protocols in Wireless Networks with Heterogeneous Node Capabilities. 		
	Paolo Masci, Silvano Chiaradonna and Felicita Di Giandomenico		
	 A Membership Service for a Distributed, Embedded System based on a Time- Triggered FlexRay Network (Industrial Track Paper). 		
	Martin Mitzlaff, Rüdiger Kapitza, Michael Lang and Wolfgang Schröder-Preikschat		
12:30-13:00	Closing Session		





Organised by:



Sponsored by:











Escuela Técnica Superior de Ingeniería Informática

In partnership with:





