

Preface

With great pleasure we welcomed the attendees to EWSN 2004, the 1st European Workshop on Wireless Sensor Networks, held in the exciting and lively city of Berlin.

Wireless sensor networks are a key technology for new ways of interaction between computers and the physical environment which surrounds us. Compared to traditional networking technologies, wireless sensor networks are faced with a rather unique mix of challenges: scalability, energy efficiency, self-configuration, constrained computation and memory resources in individual nodes, data-centricity, and interaction with the physical environment, to name but a few. The goal of this workshop is to create a forum for presenting new results in the flourishing field of wireless sensor networks. By bringing together academia and industry we hope to stimulate new opportunities for collaborations.

In compiling the scientific program we have been quite selective. Thanks to the efforts of 90 reviewers who delivered 252 reviews for the 76 papers originally submitted from all over the world, a strong selection of the 24 best contributions was made possible. The Technical Program Committee created an outstanding program covering the broad scope of this highly interdisciplinary field: from distributed signal processing through networking and middleware issues to application experience.

Running such a workshop requires dedication and much work from many people. We want to thank in particular Petra Hutt, Irene Ostertag and Heike Klemz for their valuable and esteemed help in the local organization of this workshop.

We hope that you enjoy this volume, and if you were lucky enough to attend we hope that you enjoyed the discussions with colleagues working in this fascinating area.

Adam Wolisz
Holger Karl
Andreas Willig

Committees

General Chair

Adam Wolisz, Technische Universität Berlin

Program Committee

Holger Boche,	Heinrich-Hertz-Institute, Berlin
Erdal Cayirci,	Yeditepe University, Istanbul
Kurt Geihs,	Technische Universität Berlin
Paul Havinga,	University of Twente
Holger Karl,	Technische Universität Berlin
Thomas Lentsch,	Infineon
Ian Marshall,	BT exact
Friedemann Mattern,	ETH Zürich
Chiara Petrioli,	University “La Sapienza,” Rome
Radu Popescu-Zeletin,	FhG Fokus
Jan Rabaey,	University of California at Berkeley
Herbert Reichl,	FhG IZM
Lionel Sacks,	University College London
Jochen Schiller,	Freie Universität Berlin
Thomas Sikora,	Technische Universität Berlin
Martin Vetterli,	Swiss Federal Institute of Technology, Lausanne (EPFL)
Andreas Willig,	Hasso-Plattner-Institut, Potsdam
Adam Wolisz,	Technische Universität Berlin
Michele Zorzi,	Università degli Studi di Ferrara
Richard Zurawski,	ISA Corp

Organizing Committee

Holger Karl,	Technische Universität Berlin
Andreas Willig,	Hasso-Plattner-Institut, Potsdam

Reviewers

Bengt Ahlgren, SICS, Sweden
Matthias Anlauff, Kestrel Institute, USA
Stefano Basagni, Northeastern University, USA
Sebnem Baydere, Yeditepe University, Turkey
Baltasar Beferull-Lozano, Swiss Federal Institute of Technology,
Lausanne (EPFL), Switzerland
Ljubica Blazevic, ST Microelectronics, USA
Holger Boche, Heinrich-Hertz-Institut für Nachrichtentechnik Berlin GmbH,
Germany
Holger Bock, Infineon Technologies, Austria
Jürgen Bohn, ETH Zürich, Switzerland
Matthew Britton, University College London, UK
Sonja Buchegger, IC-LCA, Swiss Federal Institute of Technology,
Lausanne (EPFL), Switzerland
Nirupama Bulusu, National Information Communication Technology
Australia Ltd., Australia
Srdan Capkun, Swiss Federal Institute of Technology,
Lausanne (EPFL), Switzerland
Erdal Cayirci, Istanbul Technical University, Turkey
Alberto Cerpa, University of California at Los Angeles, USA
Shyam Chakraborty, Helsinki University of Technology, Finland
Carla-Fabiana Chiasserini, Politecnico di Torino, Italy
Jim Chou, University of California at Berkeley, USA
Edward Coyle, Purdue University, USA
Razvan Cristescu, Swiss Federal Institute of Technology,
Lausanne (EPFL), Switzerland
Svetlana Domnitcheva, ETH Zürich, Switzerland
Stefan Dulman, University of Twente, The Netherlands
Jean-Pierre Ebert, Technische Universität Berlin, Germany
Claudia Eckert, TU Darmstadt, Germany
Andras Farago, University of Texas at Dallas, USA
Laura Feeney, Swedish Institute of Computer Science, Sweden
Michael Gastpar, University of California at Berkeley, USA
Kurt Geihs, Technische Universität Berlin, Germany
Mario Gerla, University of California at Los Angeles, USA
Silvia Giordano, SUPSI, Lugano, Switzerland
Peter Gober, FhG Fokus, Germany
James Gross, Technische Universität Berlin, Germany
Joerg Haehner, University of Stuttgart, Germany
Robert Hahn, Fraunhofer IZM, Germany
Vlado Handziski, Technische Universität Berlin, Germany
Paul Havinga, University of Twente, The Netherlands
Hans-Ulrich Heiss, Technische Universität Berlin, Germany

Christian Hoene, Technische Universität Berlin, Germany
 Daniel Hollos, Technische Universität Berlin, Germany
 Phillip Hünerberg, FhG Fokus, Germany
 Friedrich Jondral, Karlsruhe University, Germany
 Holger Karl, Technische Universität Berlin, Germany
 Wolfgang Kastner, TU Vienna, Austria
 Wolfgang Kellerer, DoCoMo EuroLaboratories, Germany
 Ralph Kling, Intel, USA
 Manish Kochhal, Wayne State University, USA
 Rolf Kraemer, IHP Microelectronics, Frankfurt/Oder, Germany
 Bhaskar Krishnamachari, University of Southern California, USA
 Srikanth Krishnamurthy, University of California at Riverside, USA
 Koen Langendoen, Technical University of Delft, The Netherlands
 Jangwon Lee, University of Texas at Austin, USA
 Thomas Lentsch, Infineon, Austria
 Jason Liu, Dartmouth College, USA
 Mingyan Liu, University of Michigan, USA
 Ian Marshall, BT, UK
 Friedemann Mattern, ETH Zürich, Switzerland
 Gianluca Mazzini, University of Ferrara, Italy
 Suman Nath, Carnegie Mellon University, USA
 Sven Ostring, University of Cambridge, UK
 Sergio Palazzo, University of Catania, Italy
 Seung-Jong Park, Georgia Institute of Technology, USA
 Chiara Petrioli, University of Rome “La Sapienza”, Italy
 Jan Rabaey, University of California at Berkeley, USA
 Ilja Radusch, Technische Universität Berlin, Germany
 Kay Römer, ETH Zürich, Switzerland
 Hartmut Ritter, Freie Universität Berlin, Germany
 Michael Rohs, ETH Zürich, Switzerland
 Lionel Sacks, University College London, UK
 Asuman Sünbül, Kestrel Institute, USA
 Guenter Schaefer, Technische Universität Berlin, Germany
 Jochen Schiller, Freie Universität Berlin, Germany
 Morten Schläger, Technische Universität Berlin, Germany
 Thomas Schoch, ETH Zürich, Switzerland
 Katja Schwieger, TU Dresden, Germany
 Rahul Shah, University of California at Berkeley, USA
 Thomas Sikora, Technische Universität Berlin, Germany
 Rainer Steinwandt, Universität Karlsruhe, Germany
 John Sucec, Rutgers University, USA
 Zhi Tian, Michigan Technological University, USA
 Petia Todorova, FhG Fokus, Germany
 Robert Tolksdorf, Free University Berlin, Germany
 Jana van Greunen, University of California at Berkeley, USA
 Harald Vogt, ETH Zürich, Switzerland
 Dirk Westhoff, NEC Europe Ltd., Germany

Andreas Willig, Hasso-Plattner-Institut, Potsdam, Germany
 Ibiso Wokoma, University College London, UK
 M. Juergen Wolf, Fraunhofer IZM, Germany
 Paul Wright, University of California at Berkeley, USA
 Jin Xi, Technical University of Munich, Germany
 Zixiang Xiong, Texas A&M University, USA
 Feng Zhao, Parc, USA
 Holger Ziemek, Fraunhofer Institute for Open Communication
 Systems (FOKUS), Germany
 Michele Zorzi, Università degli Studi di Ferrara, Italy