SENSORCOMM 2013

Foreword

The Seventh International Conference on Sensor Technologies and Applications [SENSORCOMM 2013], held between August 25-31, 2013 in Barcelona, Spain, continued a series of events covering related topics on theory and practice on wired and wireless sensors and sensor networks.

Sensors and sensor networks have become a highly active research area because of their potential of providing diverse services to broad range of applications, not only on science and engineering, but equally importantly on issues related to critical infrastructure protection and security, health care, the environment, energy, food safety, and the potential impact on the quality of all areas of life.

Sensor networks and sensor-based systems support many applications today on the ground. Underwater operations and applications are quite limited by comparison. Most applications refer to remotely controlled submersibles and wide-area data collection systems at a coarse granularity.

Underwater sensor networks have many potential applications such as seismic imaging of undersea oilfields as a representative application. Oceanographic research is also based on the advances in underwater data collection systems.

There are specific technical aspects to realize underwater applications which cannot be borrowed from the ground-based sensors net research. Radio is not suitable for underwater systems because of extremely limited propagation. Acoustic telemetry could be used in underwater communication; however off-the-shelf acoustic modems are not recommended for underwater sensor networks with hundreds of nodes because they were designed for long-range and expensive. As the speed of light (radio) is five orders of magnitude higher than the speed of sound, there are fundamental implications of time synchronization and propagation delays for localization. Additionally, existing communication protocols are not designed to deal with long sleep times and they can't shut down and quickly restart.

In wireless sensor and micro-sensor networks, energy consumption is a key factor for the sensor lifetime and accuracy of information. Protocols and mechanisms have been proposed for energy optimization considering various communication factors and types of applications. Conserving energy and optimizing energy consumption are challenges in wireless sensor networks, requiring energy-adaptive protocols, self-organization, and balanced forwarding mechanisms.

We take here the opportunity to warmly thank all the members of the SENSORCOMM 2013 Technical Program Committee, as well as the numerous reviewers. The creation of such a high quality conference program would not have been possible without their involvement. We also kindly thank all the authors who dedicated much of their time and efforts to contribute to SENSORCOMM 2013. We truly believe that, thanks to all these efforts, the final conference program consisted of top quality contributions.

Also, this event could not have been a reality without the support of many individuals, organizations, and sponsors. We are grateful to the members of the SENSORCOMM 2013...
organizing committee for their help in handling the logistics and for their work to make this professional meeting a success.

We hope that SENSORCOMM 2013 was a successful international forum for the exchange of ideas and results between academia and industry and for the promotion of progress in the area of sensor technologies and applications.

We are convinced that the participants found the event useful and communications very open. We hope Barcelona provided a pleasant environment during the conference and everyone saved some time for exploring this beautiful city.

**SENSORCOMM 2013 Chairs:**

**SENSORCOMM Advisory Chairs**
Jean Philippe Vasseur, Cisco Systems, Inc., France
Petre Dini, Concordia University, Canada / China Space Agency Center, China
Jaime Lloret Mauri, Polytechnic University of Valencia, Spain
Jens Martin Hovem, Norwegian University of Science and Technology, Norway
Pascal Lorenz, University of Haute Alsace, France
Sergey Yurish, IFSA, Spain

**SENSORCOMM 2013 Industry Liaison Chairs**
Sarfraz Khokhar, Cisco Systems, Inc., USA
Harkirat Singh, Samsung Electronics Co., Korea
Javier Del Ser Lorente, TECNALIA-Telecom - Zamudio (Bizkaia), Spain
Michael Niedermayer, Fraunhofer IZM, Germany

**SENSORCOMM 2013 Research/Industry Chairs**
Hristo Djidjev, Los Alamos National Laboratory, USA
Teng Rui, National Institute of Information and Communication Technology, Japan
S. Biju Kumar, Philips Research - Eindhoven, The Netherlands

**SENSORCOMM 2013 Special Area Chairs**
**Embedded systems**
Joshua Ellul, Imperial College, London, UK

**Security**
Yenumula Reddy, Grambling State University, USA

**Body networks**
Alessandro Pozzebo, Università degli Studi di Siena, Italy

**Underwater systems**
Mylène Toulgoat, Communications Research Centre - Ottawa, Canada

**Applications**
Elena Gaura, Coventry University, UK

**Performance**
Canfeng Chen, Nokia Research Center - Beijing, China
Atmospheric Icing and Sensing
Muhammad Shakeel Virk, Narvik University College, Norway