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Algorithmic Aspects of Wireless Sensor Networks

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Revised Selected Papers

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Preface

Wireless ad-hoc sensor networks are a very active research subject, as they have high potential to provide diverse services to numerous important applications, including remote monitoring and tracking in environmental applications and low-maintenance ambient intelligence in everyday life. The effective and efficient realization of such large-scale, complex ad-hoc networking environments requires intensive, coordinated technical research and development efforts, especially in power-aware, scalable, robust wireless distributed protocols, due to the unusual application requirements and the severe resource constraints of the sensor devices.

On the other hand, a solid foundational background seems necessary for sensor networks to achieve their full potential. It is a challenge for abstract modeling, algorithmic design and analysis to achieve provably efficient, scalable and fault-tolerant realizations of such huge, highly dynamic, complex, non-conventional networks. Features including the extremely large number of sensor devices in the network, the severe power, computing and memory limitations, their dense, random deployment and frequent failures pose new, interesting challenges of great practical impact for abstract modeling, algorithmic design, analysis and implementation.

This workshop aimed at bringing together research contributions related to diverse algorithmic and complexity-theoretic aspects of wireless sensor networks. This was the fourth event in the series. ALGOSENSORS 2004 was held in Turku, Finland, ALGOSENSORS 2006 was held in Venice, Italy, and ALGOSENSORS 2007 was held in Wrocław, Poland. Since its beginning, ALGOSENSORS has been collocated with ICALP. Previous proceedings have appeared in the Springer LNCS series: vol. 3121 (2004), vol. 4240 (2006), and vol. 4837 (2007).

ALGOSENSORS 2008 was part of ICALP 2008 and was held on July 12 2008 in Reykjavik, Iceland. After a careful review by the Program Committee, 11 out of 27 submissions were accepted; in addition, a keynote speech was given by Roger Wattenhofer. The Program Committee appreciates the help of 35 external referees, who provided additional expertise. We are also thankful for the help of the sponsors (EU-project "FRONTS" and coalesenses), who supported the organization of the meeting as well as a best-paper award.

October 2008 Sándor P. Fekete

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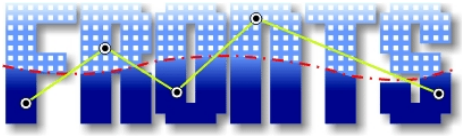

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