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PERFORMANCE CONTROL IN WIRELESS SENSOR NETWORKS

A WORKSHOP AT THE 2006 IFIP NETWORKING CONFERENCE

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OVERVIEW

WIRELESS SENSOR NETWORKS ARE CURRENTLY THE SUBJECT OF INTENSE RESEARCH AND MANY PROTOTYPE INSTALLATIONS ARE CURRENTLY INVESTIGATED. THESE EXISTING SENSOR NETWORK INSTALLATIONS HAVE IN COMMON THAT THEY ARE NOT CONSIDERED TIME CRITICAL. NO IMMEDIATE ACTION HAS TO BE UNDERTAKEN AS A RESPONSE TO THE RECEIVED DATA. HOWEVER, MANY FUTURE APPLICATION AREAS OF WIRELESS SENSOR NETWORKS SUCH AS PLANT AUTOMATION AND CONTROL, TRAFFIC MANAGEMENT OR MEDICAL APPLICATIONS REQUIRE THIS FEATURE. IN SUCH ENVIRONMENTS, DATA HAS TO BE TRANSPORTED RELIABLE AND IN TIME THROUGH THE SENSOR NETWORK. IN OTHER WORDS, PERFORMANCE GUARANTEES REGARDING A VARIETY OF NETWORK PARAMETERS ARE REQUIRED. DUE TO THE LACK OF APPROPRIATE MODELS, COMPONENTS AND PROTOCOLS IT IS CURRENTLY VERY DIFFICULT TO CONSTRUCT AND OPERATE A WIRELESS SENSOR NETWORK WITH A CONTROLLED PERFORMANCE. THUS, THE COMMERCIAL SUCCESS OF WIRELESS SENSOR NETWORKS IN MANY APPLICATION AREAS IS UNSURE UNLESS THIS PARTICULAR PROBLEM IS UNDERSTOOD AND SOLVED.

TOPICS

THIS WORKSHOP INTENDS TO BRING TOGETHER RESEARCHERS AND PRACTITIONERS, WORKING ON PERFORMANCE ISSUES WITHIN WIRELESS SENSOR NETWORKS. AREAS OF INTEREST INCLUDE, BUT ARE NOT LIMITED TO:

- **MODELS:** TRAFFIC MODELS, CHANNEL MODELS, MATHEMATICAL MODELS TO BALANCE PERFORMANCE PARAMETERS IN THE NETWORK.
- **MAC PROTOCOLS:** MAC PROTOCOLS WITH DETERMINISTIC BEHAVIOR, MAC PROTOCOLS BALANCE FORWARDING PERFORMANCE AND ENERGY CONSUMPTION.
- **ROUTING AND TOPOLOGY CONTROL:** METHODS TO STABILIZE NETWORK TOPOLOGY, TOPOLOGY ROBUSTNESS.
- **DATA TRANSPORT:** CONTROL OF DATA TRANSPORT DELAY AND RELIABILITY, METHODS TO IMPROVE DATA FORWARDING PERFORMANCE IN SENSOR NETWORKS.
- **OPERATING SYSTEMS:** PERFORMANCE OPTIMIZATION AND CONTROL OF SENSOR NETWORK OPERATING SYSTEMS.
- **MIDDLEWARE AND FRAMEWORKS:** MIDDLEWARE/FRAMEWORKS PROVIDING PERFORMANCE GUARANTEES FOR SENSOR NETWORK APPLICATIONS.
- **SECURITY:** THE IMPACT OF SECURITY FEATURES ON NETWORK PERFORMANCE.

SUBMISSIONS

THE PAPER CAN REPORT ON **WORK IN PROGRESS**. THE SIZE OF THE PAPER SHOULD NOT EXCEED **8 PAGES** (PLEASE ADHERE TO THE FORMATTING STANDARD FOR A MANUSCRIPT OF THE SPRINGER-VERLAG LNCS). THE COVER PAGE MUST CONTAIN AN ABSTRACT OF ABOUT 150 WORDS 3-5 KEYWORDS, NAME AND AFFILIATION OF AUTHOR(S) AS WELL AS THE CORRESPONDING AUTHOR'S E-MAIL AND POSTAL ADDRESS. AUTHORS OF ACCEPTED PAPERS ARE EXPECTED TO REGISTER AND PRESENT THE PAPER AT THE WORKSHOP.

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