Connectivity Improvement in Wireless Sensor Networks Based on Mobile Nodes

Ciubotaru, B. ; Cioarga, R. ; Chiciudean, D. ; Micea, M.V. ; Stratulat, M. ;
Univ. of Timisoara, Timisoara

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ABSTRACT

In this paper we address the topic of wireless sensor networks deployment, redeployment and post-deployment network maintenance based on mobile robotic nodes in order to achieve optimal connectivity and minimum energy consumption. The research is based on the CORE-TX platform, which provides the necessary hardware and software modules used for evaluation and testing of the solutions discussed. The quality of the communication link has an important role in energy saving due to packet loss ratio and the required power level of the transceiver. The paper proposes and discusses an automated approach to network deployment and network maintenance based on local connectivity evaluation.

INDEX TERMS

- **INSPEC**
  - **Controlled Indexing**
    mobile radio , mobile robots , radio links , transceivers , wireless sensor networks
  - **Non Controlled Indexing**
    CORE-TXplatform , communication link , connectivity improvement , local connectivity evaluation , mobile nodes , network deployment , post-deployment network maintenance , robotic nodes , transceiver , wireless sensor networks
- **Author Keywords**
  Wireless sensor networks , mobile nodes , network deployment , obstacle avoidance