Mobile sensor network deployment using cellular learning automata approach

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ABSTRACT

Deployment problem is how to deploy a number of nodes in the area of the network so that the covered area is maximized. In this paper we consider the problem of self-deployment of a mobile sensor network. Such networks with locomotion capability are able of self-deployment; i.e., starting from some random initial configuration, the nodes in the network can distribute such that the area 'covered' by the network is maximized. This paper describes an irregular cellular learning automata based deployment algorithm of mobile sensor network. The proposed algorithm first clusters the network and then let the base-stations to help the deployment process by controlling the number of nodes in their clusters. This algorithm is designed for real-time online deployment for maximum coverage of the environment. Experimental results are present to evaluate our algorithm.

INDEX TERMS

- **Author Keywords**
  Cellular Learning Automata , Coverage , Deployment , Wireless sensor network