

**SIMULATION OF COVERAGE CONFIGURATION
PROTOCOL FOR SELF ORGANISING WSN**

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CERTIFICATE

This is to certify that the Dissertation/Project report entitled “**Simulation of Coverage Configuration Protocol for Self Organizing Sensor Networks**” is the work of **Deepak Yadav (07/ECE/ME/2K9)**, a student of Delhi Technological University (Formerly Delhi College of Engineering). This work is completed under my direct supervision and guidance and forms a part of Master of Engineering (Electronics and Communication) course and curriculum. To the best of my knowledge, the matter embodied in this thesis has not been submitted to any other University/ Institute for the award of any other degree or diploma.

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ABSTRACT

This paper tackles the problems of localization and coverage in randomly deployed high density sensor networks. In particular, it presents a novel and integrated approach that performs at once localization and coverage. The most important factor to consider in the development of a coverage scheme is that of energy constraints. Sensor nodes usually depend upon a battery for their energy source and in most deployments battery replacement is not feasible. It therefore becomes very important to conserve energy and prolong battery life.

We introduce here an energy efficient approach based on a single mobile beacon (sink) aware of its position. Here sink nodes moves around broadcasting beacons. From beacon all nodes receive network information. Beacon is a MAC packet: RTS and CTS. Sensor nodes receiving beacon packets first calculates its ideal next-hop relay position on the straight line toward this sink based on the energy-optimal forwarding distance, and each forwarder selects the neighbor closest to its ideal next-hop relay position as the next-hop relay using the Request-To-Send/Clear-To-Send (RTS/CTS) handshaking mechanism. On the other hand, We exploit this relay selection to construct sets of active nodes that ensure as much as possible the zone coverage.

In our approach the mobile sink trajectory follows a Hilbert curve. The results of experiments conducted using the discrete event simulator Omnet++.

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