

## **A distance threshold analysis on Energy Aware Distributed Clustering (EADC) routing protocol for wireless sensor networks with non-uniform node distribution**

### **ABSTRACT**

Clustering routing protocols are more energy efficient than the other types of routing protocols for Wireless Sensor Networks (WSN) which also improve lifetime, as well as scalability of the network. Energy Aware Distributed Clustering (EADC) is one of the cluster-based routing protocols proposed for network with non-uniform node distribution. The authors introduced a distant threshold to select the nodes which should communicate with Base Station (BS) directly in multi-hop communication. The value of this parameter has a significant impact on the energy consumption and lifetime of the network. However, the presented value for this parameter is not adequate. Thus, in this study a distance threshold analysis is performed on EADC in order to study the impact of different values of threshold parameter on the network. In conclusion, an appropriate range for distance threshold is introduced.

**Keyword:** Wireless sensor network; Cluster-based routing protocols; EADC routing protocol; Distance threshold; Multi-hop communication