World Academy of Science, Engineering and Technology
International Journal of Electronics and Communication Engineering
Vol:10, No:12, 2016

Proposing a Boundary Coverage Algorithm for Underwater Sensor Network

Authors : Seyed Mohsen Jameii

Abstract : Wireless underwater sensor networks are a type of sensor networks that are located in underwater environments and linked together by acoustic waves. The application of these kinds of network includes monitoring of pollutants (chemical, biological, and nuclear), oil fields detection, prediction of the likelihood of a tsunami in coastal areas, the use of wireless sensor nodes to monitor the passing submarines, and determination of appropriate locations for anchoring ships. This paper proposes a boundary coverage algorithm for intrusion detection in underwater sensor networks. In the first phase of the proposed algorithm, optimal deployment of nodes is done in the water. In the second phase, after the employment of nodes at the proper depth, clustering is executed to reduce the exchanges of messages between the sensors. In the third phase, the algorithm of "divide and conquer" is used to save energy and increase network efficiency. The simulation results demonstrate the efficiency of the proposed algorithm.

Keywords : boundary coverage, clustering, divide and conquer, underwater sensor nodes
Conference Title : ICCCIT 2016 : International Conference on Computer, Communications and Information Technology
Conference Location : Amsterdam, Netherlands
Conference Dates : December 01-02, 2016