Abstract

The communication range of underwater wireless sensor networks (UWSN) is limited by the underwater environment. Acoustic networks with huge number of sensors may have long communication range with appropriate protocols in literature. On the other hand, especially, the networks including small number of nodes have communication problems for long ranges. In energy constrained 3D underwater system environment it is essential to discover approaches to enhance the lifetime of the sensor nodes. Underwater sensors cannot utilize sunlight-based vitality to recharge the batteries. To challenge this problem, Multihop communication in underwater acoustic networks is a promising solution. In this study, a novel approach, Multihop Energy Efficient K-Means Clustering algorithm (MH-EKMC) is introduced and developed. The goal of this paper is to produce simulation results that would show the exhibitions of the proposed protocol for a given metric such as Network lifetime, No of dead nodes per round and total energy consumption. From the results, proposed protocol shows better performance for an energy-constrained network.
References


Index Terms

Computer Science Wireless
Keywords

Underwater Sensor Networks; K-Means Clustering; Energy Efficiency; Network Lifetime; Acoustic Communication