

Research on Routing Protocol in Ship Dynamic Positioning Based on WSN Clustering Data Fusion System

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Abstract : In the dynamic positioning system (DPS) for vessels, the reliable information transmission between each node basically relies on the wireless protocols. From the perspective of cluster-based routing protocols for wireless sensor networks, the data fusion technology based on the sleep scheduling mechanism and remaining energy in network layer is proposed, which applies the sleep scheduling mechanism to the routing protocols, considering the remaining energy of node and location information when selecting cluster-head. The problem of uneven distribution of nodes in each cluster is solved by the Equilibrium. At the same time, Classified Forwarding Mechanism as well as Redelivery Policy strategy is adopted to avoid congestion in the transmission of huge amount of data, reduce the delay in data delivery and enhance the real-time response. In this paper, a simulation test is conducted to improve the routing protocols, which turns out to reduce the energy consumption of nodes and increase the efficiency of data delivery.

Keywords : DPS for vessel, wireless sensor network, data fusion, routing protocols

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