

53. INCREASE THE EFFICIENCY OF ROUTING PATH AND REDUCE THE ROUTING OVERHEAD USING SHORTCUT TREE ROUTING

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ZigBee is the emerging industrial standard for ad hoc networks. Due to characteristics of low data rate, it is expected to be used in wireless sensor networks. Since tree routing does not require any routing tables to send the packet to the destination, it can be used in ZigBee end devices that have limited resources. Tree routing has the problem that the packets follow the tree topology to the destination even if the destination is located nearby. In our proposed system, shortcut tree routing protocol is used to reduce the routing cost of ZigBee tree routing by using the neighbor table that is originally defined in the ZigBee standard. It forwards the packet to the neighbor node if it can reduce the routing cost to the destination. A neighbor coverage-based probabilistic rebroadcast protocol for reducing routing overhead in wireless networks. In order to effectively exploit the neighbor coverage knowledge, we propose a novel rebroadcast delay to determine the rebroadcast order, and then it can obtain the more accurate additional coverage ratio by sensing neighbor coverage knowledge.

Index Terms -- ZigBee, tree routing, shortcut

Journal of Science and Innovative Engineering & Technology