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Abstract

Localization has become one of the mandatory services in wireless sensor networks (WSNs) while dealing with critical operations such as coverage, deployment, routing, target tracking and rescue operations. Since the necessity of WSN has increased drastically to provide best solution with accurate results of sensor nodes, it mainly depends on the WSN node localization. This paper initially describes on Mobile Anchor Positioning - Mobile Anchor & Neighbour (MAP - M&N), a range-free localization method, which makes use of the beacon packets of mobile anchor and the location packets of neighboring nodes to estimate the position of nodes and to improve the localization accuracy. The anchor node, which is equipped with global positioning

system (GPS), broadcasts its coordinates to the sensor nodes as it moves through the network. The result of MAP-M&N method serves as input to Heuristic Particle Swarm Optimization (H-PSO) algorithm. By using H-PSO algorithm, it can be observed that localization accuracy of the sensor nodes seems to improve significantly than by using only MAP-M&N method for location estimation.

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