A Comprehensive Real-Time High-Performance Object-Tracking Approach for Wireless Sensor Networks

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Abstract

Besides sensing the environment variables and detecting the events in the deployment area, tracking of objects has gained much attention in the wireless sensor network research fields. Unlike the other range-free localization schemes which are not effective in real time performance, we propose a mechanism based on the received signal strength to develop real time object-tracking strategy, which determines the location of the moving object according to dynamically changing signal strength. Moreover, to improve the tracking accuracy and to be more practical, we consider a comprehensive approach, called CAUSS (Comprehensive Algorithm Using Signaling Strength), which can be applied in deployment which may result in various anchor node coverage. Simulation results demonstrated that our algorithm is more effective in the sense of real time tracking scheme compared with previous results.

Keyword：wireless sensor network, range-free, localization, tracking, real-time