Localization Techniques for Wireless Sensor Networks

Abstract

Wireless sensor networks (WSNs) have recently emerged as promising technology in wireless communication field and gained special attention by research groups. It uses small and cheap gadgets with low energy requirements and limited on board computing resources which communicates with each other’s or base stations without any pre-defined infrastructure. The property of being infrastructure less makes it suitable in distinctive application situations including remote monitoring, disaster management, military applications and biomedical health observing devices. In many of these applications, node localization is unavoidably one of the important system parameters for example in target tracking if the nodes are not able to obtain the accurate location information, the related task cannot be performed. It is also helpful in routing, network coverage and quarry management of sensors. In general the localization techniques are ordered into two general classifications: range based and range free. In this paper, we discussed the various localization algorithms with their applicable areas, requirements and limitations. Moreover, on conclusion we compare these localization algorithms and analyze the future research directions for the localization algorithms in WSNs.

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Index Terms

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