Abstract

Wireless sensor networks (WSNs) have been deployed in many workplaces (hangars, warehouses, etc.) for general-purposes (climatic data collection, security and so on). Also, in these kinds of workplaces, localization systems are often required for monitoring, tracking and guidance, but this means extra charge. In this article, an application of a low-cost localization system, which can track and guide vehicles by the help of an existing WSN system, is introduced. For the system, a technique called "Edge-Masking Technique" was proposed. Besides, "Bounding Box" method was used for the position detection. The empiric RSSI-distance relationship equation used in the method was obtained from experimental studies. In addition to this, the equation was improved by a technique named "Circular Calibration with Offset Value". The practicability of the system was demonstrated by both simulation and real nodes.

References

An Application of a Low-Cost Monitoring and Guidance System in a WSN

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Index Terms

Computer Science  Wireless

Keywords

Wireless Sensor Networks  Position Detection  TinyOS  TOSSIM  Min-Max Method