

基于ZigBee无线传感器网络的智能交通系统设计

作者: 刘文军, 樊建席, 李春胜, 杨帆

单位: 苏州大学

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摘要:

针对交通系统中移动流量监测和查询应用, 提出了一种基于ZigBee标准的无线传感器网络智能交通系统设计, 以该体系结构考虑节点的异构性, 将系统中的节点分为MS、VS和SN三种不同角色。设计中给出了包括初始化过程的详细一种基于预测的路由转发机制。VS节点接收来自SN的数据, 基于MS的移动性信息计算MS位置并确定路由。此外, 实验表明与现存同类方法相比, 本文方法能有效加快数据获取速度, 在延迟方面具有显著提升。

关键词: 无线传感器网络; 智能交通系统; ZigBee; 异构性

An Intelligent Transportation System Supported by ZigBee-based Wireless Ser

Author's Name:

Institution:

Abstract:

An intelligent transportation system using ZigBee-based Wireless Sensor Network is designed for mobile traffic-related data wireless solution. Considering nodes' heterogeneity, the elements in the system are identified as MS, VS and SN. The detail phase is presented. In order to accelerate response speed, a routing strategy with prediction is introduced. After receiving the base on gathered mobility information. In addition, a data-caching mechanism is utilized to further optimize the results. Compared application scenario, the proposed solution demonstrates better scalability and less delivery latency.

Keywords: Wireless Sensor Network; Intelligent Transportation Systems; ZigBee; Heterogeneity

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