



基于拥塞控制的无线多媒体传感网地理位置路由协议

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Location Aided Routing Protocol Based on Congestion Control in Wireless Multimedia Sensor Network

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摘要 无线多媒体传感网络(wireless multimedia sensor network, WMSN)是一个能量受限的网络,能量问题直接影响到网络的生命周期.如果知道目的节点的地理位置信息,路由请求(routing requests, RREQs)就可以减小包的转发范围,减少不必要的能量消耗.地理位置路由(location aided routing, LAR)基于该思想被提出.在LAR协议的基础上,利用媒体访问控制层(media access control, MAC)的拥塞信息,提出基于拥塞控制的LAR路由协议——ILAR(improved LAR).仿真结果表明,ILAR具有路由开销少、吞吐量大和包时延小的特点,适合作为WMSN的路由协议.

关键词: 无线多媒体传感网络 请求区域 拥塞信息 地理位置路由 ILAR

Abstract: Wireless multimedia sensor network (WMSN) is an energy constrained network. Energy issue of WMSN directly affects the network lifetime. If the location of a destination node is known, routing requests (RREQs) can reduce forwarding range of the packet, and therefore unnecessary energy consumption. Location aided routing (LAR) thus appears. This paper proposes an improved LAR (ILAR) protocol to conduct cross layer routing design by using congestion information of the media access control (MAC) layer. Simulation results show that ILAR possesses several features such as low overall latency, small routing overhead and high throughput, which are suitable for WMSN routing protocol.

Keywords: wireless multimedia sensor network (WMSN), request area, congestion information, location aided routing (LAR), improved, LAR (ILAR)

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