

一种新型的无线传感器执行器网络协议

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摘 要: 针对无线传感器执行器网络节点能量消耗公平性的问题, 提出了一种基于加权维诺图和度约束最小生成树的协议. 协议基于加权维诺图的方法将网络分簇, 每个簇由一个簇头执行器节点和一些传感器节点组成. 协议将网络运行分成多个循环执行的回合, 每个回合根据网络情况重新使用度约束最小生成树算法来计算路由路径. 仿真结果显示协议可以提升网络节点剩余能量的公平性, 延长网络寿命.

关键词: 无线传感器执行器网络; 维诺图; 度约束最小生成树

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A Novel Protocol in Wireless Sensor and Actor Network

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Abstract: This paper proposes a protocol for wireless sensor and actor network based on weighted Voronoi diagram and degree-constrained minimum spanning tree (VDMST), considering residual energy balance of network nodes. Based on weighted Voronoi diagram, the protocol organizes network nodes to some clusters which include an actor and some sensors. The operation of VDMST protocol is divided into rounds and the degree-constrained minimum spanning trees are dynamically generated according to network states in each round. The simulation results show that VDMST protocol can improve the residual energy balance of network nodes and prolong network lifetime.

Key words: WSAN; Voronoi diagram; degree-constrained minimum spanning tree

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