

無線感測網路覆蓋問題研究

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摘要

在無線感測網路研究中，節省能源是一項重要的議題。由於感測器仰賴電池來運作，因此電池的壽命就是感測器的壽命，甚至是整個感測網路的壽命。在過去的研究中，Tian 和 Georganas 找出被完全覆蓋的感測器節點，將感測器節點進行睡眠的排程，以延長無線感測網路的壽命。本研究以 Tian 和 Georganas 提出的方法做為研究基礎，做出改進。提出了改良分散式覆蓋感測器判斷法。在我們的方法中，可以比 Tian 和 Georganas 提出的方法找出更多的被覆蓋感測器節點。在顧及感測範圍完整性的前提下，可以達到更省電、更長網路壽命的目的。

關鍵詞：覆蓋、連接、省電、無線感測網路

An Improved Algorithm for Coverage Problem in Wireless Sensor Networks

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Abstract

Wireless sensor network is an important technology extended from wireless Ad Hoc network. This new technology can apply on many business and science research. In the past few years, wireless sensor network has some great advance, but it still not good enough and still has much work to do. The most important feature is that every sensor use battery to operate and the battery cannot recharge or replacement. In other word the life of the battery is the life of the sensor or even the sensor network. The import issue about wireless sensor network is "how to save energy". The purpose of this research is to extend the life of wireless sensor networks. In this paper, we proposed a new way to let much more sensors go into sleep mode while maintaining the same sensing area

Key words: coverage, connectivity, power saving, wireless sensor networks.