Abstract

Sensor networks are used in wide variety of real-world applications including detecting, tracking and monitoring. One of the main issues in the deployment of the sensor nodes in the field of target tracking is power optimization. Various methods of target tracking are available such as making improvement in hardware, processor design etc. But still, an optimized solution to this problem is not available. To rectify this problem here we formulate the mechanism that
the sensors may be put into a sleep mode with a timer that determines the sleep duration. The assumption made is that a sensor that is asleep cannot be with or waken up, and hence the sleep duration depends on the timely information it receives during the awaken period. The objective is to track the location of the objects to within the accuracy of the range of the sensor. The result is in the form of a trade-off between the energy savings and the tracking errors that result from the sleeping policies of the sensors. Sub-optimal sleeping policies that optimize this trade-off are designed, and their performance in a different tracking architecture is examined.

Reference


Index Terms

Computer Science Wireless

Key words

Target tracking Detecting Monitoring

Energy efficiency

Power optimization

Centralized and Decentralized tracking