S & M 0995

Manager Election of Power-Aware Wireless Sensor Networks Using Fuzzy Theory

Shu-Ching Wang, Shun-Sheng Wang*, Chih-Ming Chang and Kuo-Qin Yan**

Department of Information Management, Chaoyang University of Technology, 168, Jifong E. Rd., Wufong District, Taichung County 41349, Taiwan, ROC

(Received January 23, 2014; accepted March 13, 2014)

Key words: wireless sensor network, power-aware management, mobile agent

The power consumption rate and bandwidth of sensor nodes (SNs) in wireless sensor networks (WSNs) are important issues. For increasing the reliability of WSNs, in this paper, we propose a power-aware mechanism to select a stable cluster manager (CM) from SNs using fuzzy-based inference systems. Furthermore, our mechanism can trigger a mobile agent (MA) to distribute the managerial workload.

*Corresponding author: e-mail: sswang@cyut.edu.tw **Corresponding author: e-mail: kqyan@cyut.edu.tw