

Teerachai Rachmanee 2012: Coordination Mechanism for Multi-Actor Selection in Wireless Sensor and Actor Networks. Master of Engineering (Computer Engineering), Major Field: Computer Engineering, Department of Computer Engineering.
Thesis Advisor: Assistant Professor Chaiporn Jaikaeo, Ph.D. 54 pages.

Selecting actors for environmental control without taking time-constraints into consideration can have a great impact on energy consumption. Inappropriate selection of actors, though capable of bringing the environment back to desired conditions, may cause unnecessary amount of energy and/or fail to satisfy the time-constraints. This research presents a heuristic-based actor selection algorithm which aims to minimize overall energy consumption while satisfying the time-constraints. Actors are represented by multiple air conditioners and wireless sensor nodes are employed for temperature probing at desired locations.

The results show that the set of actors selected by the proposed method time constraints consume less energy than when all actors are to be turned on and off altogether, and not much more than the inefficient brute-force method. In addition, the proposed method yields much less processing time compared to the brute-force method.

Student's signature

Thesis Advisor's signature