World Academy of Science, Engineering and Technology
International Journal of Electronics and Communication Engineering
Vol:8, No:03, 2014

Energy-Efficient Contact Selection Method for CARD in Wireless Ad-Hoc Networks

Authors : Mehdi Assefi, Keihan Hataminezhad

Abstract : One of the efficient architectures for exploring the resources in wireless ad-hoc networks is contact-based architecture. In this architecture, each node assigns a unique zone for itself and each node keeps all information from inside the zone, as well as some from outside the zone, which is called contact. Reducing the overlap between different zones of a node and its contacts increases its performance, therefore Edge Method (EM) is designed for this purpose. Contacts selected by EM do not have any overlap with their sources, but for choosing the contact a vast amount of information must be transmitted. In this article, we will offer a new protocol for contact selection, which is called PEM. The objective would be reducing the volume of transmitted information, using Non-Uniform Dissemination Probabilistic Protocols. Consumed energy for contact selection is a function of the size of transmitted information between nodes. Therefore, by reducing the content of contact selection message using the PEM will decrease the consumed energy. For evaluation of the PEM we applied the simulation method. Results indicated that PEM consumes less energy compared to EM, and by increasing the number of nodes (level of nodes), performance of PEM will improve in comparison with EM.

Keywords : wireless ad-hoc networks, contact selection, method for CARD, energy-efficient
Conference Title : ICCNMC 2014 : International Conference on Communications, Networking and Mobile Computing
Conference Location : London, United Kingdom
Conference Dates : March 15-16, 2014

Open Science Index, Electronics and Communication Engineering Vol:8, No:03, 2014 publications.waset.org/abstracts/4374.pdf