## IJARSCT



International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 3, Issue 1, February 2023

# A Discussion of WSN Energy Optimization Methods

Vinod Dattatray Shinde<sup>1</sup> and Dr. Ram Mohan Singh Bhadoria<sup>2</sup>

Research Scholar, Department of Electronics & Communication Engineering<sup>1</sup> Associate Professor, Department of Electronics & Communication Engineering<sup>2</sup> Sunrise University, Alwar, Rajasthan, India

**Abstract:** Over the course of many decades and the use of a wide range of technological approaches, the issue of optimizing energy consumption in wireless sensor networks (WSNs) has been resolved. These technologies may be categorized as those that entail making physical modifications to the network nodes or sensors, as well as those that involve making changes to the routing protocol, dealing with different optimizations on the network parameters, and so on. There were a few different protocols that were proposed as ways to increase the lifetime of the sensor node. As a consequence of these protocols, wireless energy transfer (WET) has been viewed as a potentially useful strategy for prolonging the lifetime of WSN. However, it is also feasible to save energy on the network by compressing the data flow inside the network, reducing the amount of overhead involved in transmission, and increasing the amount of energy that can be sent wirelessly.

Keywords: Wireless Sensor Networks, Energy-Efficient Techniques

### REFERENCES

- [1]. Rahul C. Shah and Jan M. Rabaey. 2002. Energy Aware Routing for Low Energy Ad Hoc Sensor Networks. Berkeley Wireless Research Center University of California, Berkeley 2002 IEEE.
- [2]. G M Shafiullah, Adam Thompson, Peter JWolfs, Shawkat Ali. 2008. Energy-Efficient TDMA MACProtocol for Wireless Sensor Networks Applications. Proceedings of International Workshop on Internet and Distributed Computing Systems (IDCS' 08) 24 December, 2008, Khulna, Bangladesh.
- [3]. Meena Malik, Dr. Yudhvir Singh, AnshuArora. 2013. Analysis of LEACH Protocol in Wireless Sensor Networks. International Journal of Advanced Research in Computer Science and Software Engineering. 3(2), ISSN: 2277 128X.
- [4]. Stephanie Lindsey Cauligi S, Raghavendra. PEGASIS: Power-Efficient Gathering in Sensor Information Systems. Computer Systems Research Department the Aerospace Corporation.
- **[5].** Suman Sarkar, Hong-Hsu Yen, Sudhir Dixit, and Biswanath Mukherjee. 2007. DARA: Delay-Aware Routing Algorithm in a Hybrid Wireless-Optical Broadband Access Network (WOBAN). IEEE Communications Society subject matter experts for publication in the ICC 2007 proceedings.
- [6]. Arslan Munir and Ann Gordon-Ross. OptimizationApproaches in Wireless Sensor Networks. Department of Electrical and Computer Engineering University of Florida, Gainesville, Florida, USA.
- [7]. Diep N. Nguyen and Marwan Krunz. Cooperative MIMO Framework for Wireless Sensor Networks. Department of Electrical and Computer Engineering. University of Arizona, ACM Transactions on Sensor Networks.
- [8]. Dipak Wajgi and Dr. Nileshsingh V. Thakur. 2012. Load Balancing Based Approach To Improve Lifetime of Wireless Sensor Network. International Journal of Wireless & Mobile Networks (IJWMN). 4(4).
- [9]. Harneet Kour, Ajay K. Sharma. 2010. Hybrid Energy Efficient Distributed Protocol for Heterogeneous Wireless Sensor Network. International Journal of Computer Applications (0975-8887). 4(6).
- [10]. Jihe Wang, Bing Guo, Meikang Qiu, Zhong Ming. Design and Optimization of Traffic Balance Broker for Cloud-Based Telehealth Platform. 2013 IEEE/ACM 6th International Conference on Utility and Cloud Computing.

Copyright to IJARSCT www.ijarsct.co.in

DOI: 10.48175/568



697

## IJARSCT



International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

#### Volume 3, Issue 1, February 2023

- [11]. Daniel Sebastião, Luis M. Correia. 2009. Towards an Optimisation of Parameters Setting in WLANs. IEEE.
- [12]. MihaelaCardei My T. Thai Yingshu Li Weili Wu. 2005. Energy -Efficient Target Coverage in Wireless Sensor Networks. IEEE.
- [13]. Nizar Hadi Abbas, Tarik Zeyad Ismaeel, Rassim Nooraldin Ibrahim. 2013. Optimization of Energy Consumption in Wireless Sensor Networks based on Nature-Inspired Algorithms. International Journal of Computer Applications (0975-8887). 77(14).
- [14]. G. Ravi Chandra Reddy, Dr. B. Tarakeswara Rao, B. Satyanarayana Reddy. 2015. Minimizes the Energy Consumption in Wireless Sensor Networks. 5(1), ISSN: 2277 128X International Journal of Advanced Research in Computer Science and Software Engineering Research.
- [15]. Chin Keong Ho, Rui Zhang, Yong Liang Guan. 2015 Throughput Optimization for Massive MIMO Systems Powered by Wireless Energy Transfer. IEEE Journal on Selected Areas in Communications. 33(8).
- [16]. Mohammed Abo-Zahhad, Sabah M. Ahmed, Nabil Sabor and Shigenobu Sasaki. 2014. Energy-Efficient Adaptive Clustering Protocol Based on Genetic Algorithm for Improving the Lifetime and the Stable Period of Wireless Sensor Networks. International Journal of Energy, Information and Communications. 5(3): 47-72.
- [17]. Ying Zhao and George Karypis. Hierarchical Clustering Algorithms for Document Datasets. NSF CCR-9972519, EIA-9986042, ACI-9982274, ACI- 0133464, and by Army High Performance Computing www.arpnjournals.com Research Center contract number DAAD19-01-2-0014.



698