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Abstract

With the recent technological advances of wireless sensor network (WSN) and the nature of wireless sensor networks which is the power constraint, researchers face new challenges related to the design of algorithms and protocols. This work tries to survey the research that has been conducted on a number of levels to design and assess the deployment of wireless sensor networks. It highlights the current state of the Medium Access Control (MAC) protocol in WSN with a view to advance the research in the field.

Refer

ences

- Ray N. K. and Turuk, A. K. (2009) "A Review on Energy Efficient MAC Protocols for Wireless LANs," in Fourth International Conference on Industrial and Information Systems, ICIIS 2009, , Sri Lanka.
- Jurdak, R. , Lopes, C. V. and Baldi, P. (2004) "A survey, classification and comparative analysis of medium access control protocols for ad hoc networks," IEEE

Communications Surveys and Tutorials Vol. 6, no. 1, pp. 2-16.

- Gummalla, A. C. V. and Limb, J. O. (2000) "Wireless medium access control protocols," IEEE Communications Surveys and Tutorials Vol. 3, no. 2, pp. 2-15.
- Yang, O. and Heinerman, W. B. (2012) "Modeling and Performance Analysis for Duty-Cycled MAC Protocols with Applications to S-MAC and X-MAC," IEEE Transactions On Mobile Computing, vol. 11, no. 6, pp. 905-921.
- Gopalan S. A. and Park, J. -T. (2010) "Energy-Efficient MAC Protocols for Wireless Body Area Networks: Survey", IEEE.
- Hamady, F. , Sabra, M. , Sabra, Z. , Kayssi, A. , Chehab A. and Mansour, M. (2010) "Enhancement of the S-MAC Protocol for Wireless Sensor Networks,"
- A. -H. Lee, M. -H. Jing and C. -Y. Kao, (2008) "LMAC: An Energy-Latency Trade-off MAC Protocol for Wireless Sensor Networks," in International Symposium on Computer Science and its Applications.
- G. Amato, A. Caruso and S. Chessa, (2009) "Application-driven, energy-efficient communication in wireless sensor networks," in Computer Communications.
- C. Ceken, (2007) "An energy efficient and delay sensitive centralized MAC protocol for wireless sensor networks," Computer Standards & Interfaces, vol. 30, pp. 20-31
- B. Zhang, X. Wang, S. Li and L. Dong, (2009) "An Adaptive energy-efficient Medium Access Control Protocol For Wireless Sensor Networks," in Fifth International Conference on Mobile Ad-hoc and Sensor Network.
- T. -H. H. P. -Y. Yen, (2011) "Adaptive time division multiple access-based medium access control protocol for energy conserving and data transmission in wireless sensor networks," IET Communications, vol. 5, no. 18, pp. 2662-2672.
- T. Wu and S. Biswas, (2005) "A Self-Reorganizing Slot Allocation Protocol for Multi-cluster Sensor Networks,"
- S. U. Hashmi, J. H. Sarker, H. T. Mouftah and N. D. Georganas, (2010) "An Efficient MAC Protocol with Correlated Connection Arrival and Variable Slot Assignment in Wireless Sensor Networks,"
- S. U. Hashmi, J. H. Sarker, H. T. Mouftah and N. D. Georganas, (2010) "An Efficient TDMA Scheme with Dynamic Slot Assignment in Clustered Wireless Sensor Networks,".
- H. -C. Le, H. Guyennet and N. Zerhouni, (2007) "A New Contention Access Method for Collision Avoidance in Wireless Sensor Networks," in Proceedings of the Sixth International Conference on Networking,.
- J. Vidhya, G. Kalpana and P. Dananjayan, (2009) "Energy Minimi ation using NanoMAC Protocols in Multihop Wireless Sensor Network," in INTERNATIONAL CONFERENCE ON "CONTROL, AUTOMATION, COMMUNICATION AND ENERGY CONSERVATION -2009.
- D. Messina, M. Ortolani and G. L. Re, (2008) "Adaptive Collision Avoidance through Implicit Acknowledgments in WSNs," IEEE Asia-Pacific Services Computing Conference.
- S. Rashwand, J. Mistic, V. Mistic, S. Biswas and M. M. Haque, (2009) "A Novel Asynchronous, Energy Efficient, Low Transmission Delay MAC Protocol for Wireless Sensor networks," in 2009 29th IEEE International Conference on Distributed Computing Systems Workshops.

- A. Samanta, D. Bakshiy, A. Mukherjee and M. Nasipuri, (2009) "Energy Efficient Wireless Sensor Mac Protocol for Collision Avoidance," First International Conference on Networks & Communications.
- A. Roy and N. Sarma, (2011)"AEEMAC: Adaptive Energy Efficient MAC Protocol for Wireless Sensor Networks," in India Conference (INDICON).
- I. Rhee, A. Warriar, M. Aia, J. Min and M. L. Sichitiu, (2008) "Z-MAC: A Hybrid MAC for Wireless Sensor Networks," IEEE/ACM TRANSACTIONS ON NETWORKING, vol. 16, no. 3, pp. 511-524.
- H. -W. Cho, M. -H. Cho, J. -M. Chung and W. -C. Jeong, (2007) "A Centralized Hybrid MAC Protocol for Wireless Sensor Networks,"
- J. Li and G. Y. La aroul, (2004) "A Bit-Map-Assisted Energy-Efficient MAC Scheme for Wireless Sensor Networks," in IPSN'04, Berkeley.
- M. Tan, L. Tang, H. Chang and H. Tian, (2009) A Hybrid MAC Protocol for Wireless Sensor Network, IEEE.
- L. Sitanayah, C. J. Sreenan and K. N. Brown, (2010) "ER-MAC: A Hybrid MAC Protocol for Emergency Response Wireless Sensor Networks," Fourth International Conference on Sensor Technologies and Applications,.
- S. Zhuo, Y. -Q. Song, Z. Wang and Z. Wang, (2012) "Queue-MAC: A queue-length aware hybrid CSMA/TDMA MAC protocol for providing dynamic adaptation to traffic and duty-cycle variation in wireless sensor networks," pp. 10 -114.
- N. K. Ray and A. K. Turuk, (2009) "A Review on Energy Efficient MAC Protocols for Wireless LANs," in Fourth International Conference on Industrial and Information Systems, ICIIS 2009, , Sri Lanka.
- B. Priya and S. Solai Manohar (2013) " EE-MAC: Energy Efficient Hybrid MAC for WSN" Hindawi Publishing Corporation International Journal of Distributed Sensor Networks Volume 2013, Article ID 526383, 9 pages [http://dx. doi. org/10. 1155/2013/526383](http://dx.doi.org/10.1155/2013/526383)
- Abdelmalik Bachir and Mischa Dohler, Thomas Watteyne and Kin K. Leung, (2010) " MAC essentials for Wireless Sensor Networks"
- Eiko Yoneki and Jean Bacon (2005), "A survey of Wireless Sensor Network technologies: research trends and middleware's role" Technical reports published by the University of Cambridge Computer Laboratory, ISSN 1476-2986
- Jamal N. Al-Karaki Ahmed E. Kamal (2006) "Routing Techniques in Wireless Sensor Networks: A Survey" [http://www. ece. iastate. edu/~kamal/Docs/kk04. pdf](http://www.ece.iastate.edu/~kamal/Docs/kk04.pdf)

Computer Science

Index Terms

Wireless

Keywords

MAC Network lifetime TDMA and CSMA Sensor