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Authors:

Vishal Gupta

Mukesh Kumar Rohil

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Abstract

According to IEEE 802. 11 protocol, beacon frames are periodically transmitted by the Access Point (AP) and carry mostly network specific information. All the wireless stations (or wireless clients) with in the "vicinity" of transmission range of AP receive corresponding beacon and use the information embedded in it for various purposes. The arrangement of information in beacon is standardized by 802. 11, thus facilitating communication between different devices manufactured by different vendors. Also, the IEEE 802. 11-2007 is the base protocol and its several amendments have been published by IEEE till date. In this paper we show that with out breaching the standard, where additional non-standard information can be

embedded on the transmitted fields of 802. 11 beacon frame. This facilitates the non-standard, vendor/network specific communication of information from AP to wireless clients without Association.

References

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- Gupta V. , Rohil M. K. , Mobile Data Offloading: benefits, issues, and technological solutions. *Advances in Computer Science, Engineering & Applications*, Springer Berlin / Heidelberg, Volume: 167, pp 73-80, 2012.
- Nicholson A. J. , Wolchok S. , Noble B. D. Juggler: Virtual Networks for Fun and Profit. *IEEE Transactions on Mobile Computing*, vol. 9, no. 1, pp. 31-43, Jan. 2010
- Grunenberger Y. , Rousseau F. Virtual Access Points for Transparent Mobility in Wireless LANs. In proceedings of IEEE Wireless Communications and Networking Conference (WCNC) (Sydney, Australia, April 18 - 21, 2010)
- Mhatre V. , Lundgren H. , Baccelli F. , and Diot C. Joint MAC-aware routing and load balancing in mesh networks. In Proceedings of the 2007 ACM CoNEXT conference (CoNEXT '07). ACM, New York, NY, USA, , Article 19 , 12 pages.
- Chandra R. , Padhye J. , Ravindranath L. Wi-Fi Neighborcast: Enabling Communication Among Nearby Clients. Proceedings of the 9th workshop on Mobile computing systems and applications. (Napa Valley, California, February 25-26, 2008).
- Chen W. , Liu J. C. , Huang H. An adaptive scheme for vertical handoff in wireless overlay networks. In proceedings of tenth international conference on Parallel and Distributed Systems, ICPADS 2004. (Newport Beach, California, July 7-9, 2004)
- Hasswa A. , Nasser N. , Hassanein H. Tramcar: A Context-Aware Cross-Layer Architecture for Next Generation Heterogeneous Wireless Networks. In proceedings of IEEE international conference on communications. (Istanbul, Turkey, June 11 - 15, 2006)
- Tawil R. , Pujolle G. , Salaza O. A Vertical Handoff Decision Scheme in Heterogeneous Wireless Systems. In proceedings of Vehicular Technology Conference. (Marina Bay, Singapore, May 11 - 14, 2008)
- IEEE standard 802. 11. Part 11: wireless LAN Medium Access Control (MAC) and Physical Layer specifications, 2007
- IEEE standard 802. 11k. Part 11: wireless LAN Medium Access Control (MAC) and Physical Layer specifications - amendment 1: Radio resource management of wireless LANs, 2008.
- IEEE standard 802. 11r. Part 11: wireless LAN Medium Access Control (MAC) and Physical Layer specifications - amendment 2: Fast Basic Service Set (BSS) transition, 2008.
- IEEE standard 802. 11y. Part 11: wireless LAN Medium Access Control (MAC) and Physical Layer specifications - amendment 3: 3650 - 3700 MHz operation in USA, 2008.
- IEEE standard 802. 11w. Part 11: wireless LAN Medium Access Control (MAC) and Physical Layer specifications - amendment 4: Protected Management Frames, 2009.
- IEEE standard 802. 11n. Part 11: wireless LAN Medium Access Control (MAC) and Physical Layer specifications - amendment 5: Enhancements for Higher Throughput, 2009.
- IEEE standard 802. 11p. Part 11: wireless LAN Medium Access Control (MAC) and Physical Layer specifications - amendment 6: wireless access in vehicular environments, 2010.

- IEEE standard 802. 11z. Part 11: wireless LAN Medium Access Control (MAC) and Physical Layer specifications - amendment 7: Extensions to Direct-link setup (DLS), 2010.
- IEEE standard 802. 11v. Part 11: wireless LAN Medium Access Control (MAC) and Physical Layer specifications - amendment 8: IEEE 802. 11 wireless network management, 2011.
- IEEE standard 802. 11u , Part 11: wireless LAN medium access control (MAC) and physical layer (PHY) specifications – amendment 9: interworking with external networks, 2011
- IEEE standard 802. 11s, Part 11: wireless LAN medium access control (MAC) and physical layer (PHY) specifications – amendment 10: Mesh Networking, 2011
- Zhu f. , McNair J. Optimizations for vertical handoff decision algorithms. In proceedings of IEEE wireless communications and networking conference (Atlanta, USA, March 21-25, 2004).
- Bowman, M. , Debray, S. K. , and Peterson, L. L. 1993. Reasoning about naming systems.
- Chandra R. , Padhye J. , Ravindranath L. , Wolman A. Beacon-Stuffing: Wi-Fi without Associations. In Proceedings of the Eighth IEEE workshop Mobile Computing Systems and Applications (Tucson, Arizona, February 26-27, 2007).

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