IV. CONCLUSION

In this review paper we briefly discussed major QoS aware MAC protocol especially asynchronous protocols. These asynchronous MAC protocols are more suitable for mobile ad hoc networks as these networks do not have centralized controlling node. As multimedia applications are growing over such ad hoc networks, QoS parameters and issues become more important. The MAC layer plays an important role in the performance of the overall system, affecting other layers in particular the network layer. Here discussed various MAC protocols that provides provision for Quality of Service means support multimedia traffic. The advantages and disadvantages are discussed for each protocol.

REFERENCES

[1] S. Chakrabarti and A Mishra, "QoS Issues in Ad Hoc Wireless Networks," IEEE Commun.Mag., Vol. 39(2), Feb. 2001, pp. 142-48. http://dx.doi.org/10.1109/35.900643

[2] E. M. Royer and C. K. Toh, "A Review of Current Routing Protocols for Ad Hoc Mobile Wireless Networks," IEEE Personal Commun., Vol. 6(2), April 1999, pp. 46-55. http://dx.doi.org/10.1109/98.760423

[3] I. F. Akyildiz, J. McNair, L.C. Martorell, R. Puigjaner and Y. Yesha, "Medium access control protocols for multimedia traffic in wireless networks," IEEE Network, Vol. 13, July/August 1999, pp. 39-47. http://dx.doi.org/10.1109/65.777440

[4] C. L. Fullmer and J. J. Garcia-Luna-Aceves, "Floor Acquisition Multiple Access (FAMA) for Packet-Radio Networks," Proc. ACM SIGCOMM, Cambridge, MA, Aug. 28 - Sep. 1, 1995.

[5] K. C. Chen, "Medium Access Protocols of Wireless LANs for Mobile Computing," IEEE Network, Vol. 8(5), 1994, pp. 50-63. http://dx.doi.org/10.1109/65.313014

[6] IEEE 802.11 Working Group, "Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specification, 1997.

[7] Bob O'Hara and Al Petrick, IEEE 802.11 Handbook: A Designer's Companion, IEEE Press 1999.

[8] B. P. Crow, I. Widjaja, J. G. Kim and P. T. Sakai, "IEEE 802.11 wireless local area networks," IEEE Commun. Mag., Sept. 1997. http://dx.doi.org/10.1109/35.620533

[9] P. Mahapatra, J. Li, C. Gui, "QoS in Mobile Ad Hoc Networks," IEEE Wireless Commun., Vol. 10(3), 2003, pp. 44-52. http://dx.doi.org/10.1109/MWC.2003.1209595

[10] D. Chalmers and M. Slomon, "A survey of quality of service in mobile computing environments," IEEE Commun. Surveys, Vol. 2(2), 1999.

[11] D. D. Perkins and H.D. Hughes, "A survey on quality-of-service support for mobile ad hoc networks," Wirel. Commun. Mob. Comput., Vol. 2, 2002, pp. 503-513. http://dx.doi.org/10.1002/wcm.73

[12] A. Veres, A. T. Campbell, M. Barry and L. H. Sun, "Supporting Service Differentiation in Wireless Packet Networks Using Distributed Control," IEEE J. of Sel. A. in Commun., Vol. 19(10), 2001, pp. 2081- 93.

[13] D. Thomson, N. Schult and M. Mirhakkak, "Dynamic Quality-of-Service for Mobile Ad Hoc Networks," MobiHoc 2000, Boston, Massachusetts, USA.

[14] H. Xiao, W. K. G. Seah, A. Lo and K. C. Chua, "A Flexible Quality of Service Model for Mobile Ad-hoc Networks," IEEE VTC-Spring, Japon/Tokyo, 2000.

[15] N. Nikaein and C. Bonnet, "A Glance at Quality of Service Models for Mobile Ad Hoc Networks," 16eme Congrès DNAC (De Nouvelles Architectures pour les Communications),Paris, Dec. 2-4, 2002.

[16] G. S. Ahn, A. T. Campbell, A. Veres and L. H. Sun, "SWAN: Service Differentiation in Stateless Wireless Ad Hoc Networks," IEEE INFOCOM, 2002.

[17] S. B. Lee and A. T. Campbell, "INSIGNIA: In-band Signaling Support for QoS in Mobile Ad Hoc Networks," Proc. 5th International Workshop on Mobile Multimedia Communication MoMuc, October 12-14, 1998, Berlin, Germany..

[18] Multimedia Operating Systems and Networking (MONET) Group, "iMAQ: An Integrated Mobile Ad-hoc QoS Framework," http://cairo.cs.uiuc.edu/adhoc/

[19] C. R. Lin and J. S. Liu, "QoS Routing in Ad Hoc Wireless Networks," IEEE J. Sel. A. Commun., Vol. 17, No. 8, Aug. 1999.

[20] M. Gerla and J. Tzu-Chieh Tsai, "Multicluster, Mobile, Multimedia Radio Network," Wireless Networks, Vol. 1, 1995.

[21] C.R. Lin and M. Gerla, "Adaptive clustering for mobile wireless networks," IEEE J. Sel. A. in Commun., Vol. 15(7), 1997, pp. 1265-75.

[22] C.-H. Lin, A Multihop Adaptive Mobile Multimedia Network: Architecture and Protocols, Ph.D. disseration, CS Department, Univ. of California, Los Angeles, 1996.

[23] C. W. Ahn, C.G. Kang and Y. Z. Cho, "Soft reservation multiple access with priority assignment (SRMA/PA): A novel MAC protocol for QoS-guaranteed integrated services in mobile ad-hoc networks," Proc. IEEE VTC, Vol. 2, pp. 942-47, 2000.

[24] R. O. Baldwin, N. J. Davis IV and S. F. Midkiff, "A Real-time Medium Access Control Protocol for Ad Hoc Wireless Local Area Networks," Mobile Computing and Commun. Rev., Vol. 3(2), 1999, pp. 20-27. http://dx.doi.org/10.1145/584027.584028

[25] D. J. Deng and R. S. Chang, "A Priority Scheme for IEEE 802.11 DCF Access Method," IEICE Trans. Commun., E82-B(1), Jan. 1999, pp. 96-102.

[26] M. Benveniste, G. Chesson, M. Hoeben, A. Singla, H. Teunissen and M. Wentink, "EDCF Proposed Draft Text," IEEE Working Document 802.11-01/12 1r1, March 2001.

[27] S. Choi, J. del Pedro, N. S. Shankar and S. Mangold, "IEEE 802.11e contention-based channel access (EDCF) performance evaluation," Proc. IEEE ICC, May 2003.

[28] S. Mangold, S. Choi, P. May, O. Klein, G. Hiertz and L. Stibor, "IEEE 802.11e wireless LAN for quality of service," Proc. European Wireless, Florence, Italy, 2002.

[29] J. L. Sobrinho and A. S. Krishnakumar, "Real-time Traffic Over the IEEE 802.11 Medium Access Control Layer," Bell Labs Technical Journal, Vol. 1, Autumn 1996, pp. 172-187.

[30] J. L. Sobrinho and A. S. Krishnakumar, "Quality-of-Service in Ad Hoc Carrier Sense Multiple Access Wireless Networks," IEEE J. Sel. Areas in Commun., Vol. 17(8), Aug. 1999, pp. 1353-1368. http://dx.doi.org/10.1109/49.779919

[31] A. Pal, A. Dogan and F. Ozguner, "MAC layer protocols for real-traffic in ad-hoc networks,"Proc. IEEE Intl. Conf. Parallel Processing, 2002. http://dx.doi.org/10.1109/ICPP.2002.1040911

[32] A. Pal, Distributed MAC Layer Protocols for Real-Time Communication in Ad-Hoc WirelessNetworks, M.S. Thesis, Ohio State University, 2001.

[33] C. R. Lin and M. Gerla, "MACA/PR: An Asynchronous Multimedia Multihop Wireless Network," Proc. IEEE INFOCOM, March 1997. http://dx.doi.org/10.1109/INFCOM.1997.635121

[34] Z. Ying, A.L. Anand and L. Jacob, "A QoS enabled MAC protocol for multi-hop adhoc wireless networks," Proc. 22nd IEEE Intl. Performance, Computing, and Commun. Conf. (IPCCC), Phoenix, AZ, April 2003, pp. 149-156.

[35] S.-T. Sheu and T.-F. Sheu, "A bandwidth allocation/sharing/extension protocol for multimedia over IEEE 802.11 ad hoc wireless LANs," IEEE J. Sel. Areas in Commun., Vol. 19(10), Oct.. 2001, pp. 2065-80. http://dx.doi.org/10.1109/49.957320

[36] N. H. Vaidya, S. Bahl and S. Gupta, "Distributed fair scheduling in a wireless LAN," 6th Annual Intl. Conf. Mobile Computing and Networking, Boston, August 2000.

[37] S. J. Golestani, "A Self-Clocked Fair Queuing Scheme for Broadband Applications," IEEE INFOCOM, 1994.

[38] R. Garces and J. J. Garcia-Luna-Aceves, "Near-Optimum Channel Access Protocol Based on Incremental Collision Resolution and Distributed Transmission Queues," IEEE INFOCOM, March-April, 1998.

[39] T. Nandagopal, T.-E. Kim, X. Gao and V. Bharghavan, "Achieving MAC layer fairness in wireless packet networks," Proc. MOBICOM, Boston, MA, Aug. 2000. http://dx.doi.org/10.1145/345910.345925