Review Paper on Standard Ethernet

Poorvika B M[1], Prajwal Gowda M M[2], Prasad R[3], Rahul R Poojary[4], Mr. Pradeep Nayak[5]
Students, Department of Information Science and Engineering[1,2,3,4]
Assistant Professor, Department of Computer Science and Engineering[5]
Alvas Institute of Engineering and Technology, Mijar, Karnataka, India
4al20is035@gmmail.com, prajwalgowdamm42@gmail.com, 4al20is037@gmail.com
4al20is038@gmail.com, pradeepnayak@aiet.org.in

Abstract: *Automation and other real-time applications that need systems with precise time synchronisation and high data throughput now depend on reliable connectivity. Recent developments have made Real-time Ethernet (RTE) protocols the industry standard for automation. For accurate motor control applications, EtherCAT is a real-time industrial field bus technology that offers exceptional performance at a reasonable price. Beckhoff Automation invented and first developed EtherCAT. The IEC has established the EtherCAT protocol as standard IEC61158. EtherCAT is capable of addressing the needs of numerous real-time applications as well as both hard and soft real-time systems in automation technology.*

Keywords: Synchronization; High-speed; Topological-flexibility; less-jitter; less cycle-time.

REFERENCES

[1]. Abramson, N. The Aloha system. AFIPS Conf. Proc., Vol. 37, 1970 FJCC, AFIPS Press, Montvale, N.J., 1970, pp. 281-285.

[2]. Abramson, N. and Kuo, F.F. Computer-Communication Networks. Prentice-Hall, Englewood Cliffs, N.J., 1975.

[3]. Ashenhurst, R.L., and Vonderohe, R.H. A hierarchical network. Datamation 21, 2 (Feb. 1975), 40--44.

[4]. Baran, P. On distributed communications. Rand Corp. Memo RM-3420-PR, Aug. 1964.

[5]. Barnes, G.H., Brown, R.M., Kato, M., Kuck, D.J., Slotaick, D.L., and Stokes, R.A. The Illiac IV Computer. IEEE Trans. Computers C-17, 8 (Aug. 1968), 758-770.

[6]. Binder, R., Abramson, N., Kuo, F., Okinaka, A., and Wax, D. Aloha packet broadcasting--a retrospect. AFIPS Conf. Proc., Vol. 44, 1975 NCC, AFIPS Press, Montvale, N.J., 1975.

[7]. Cerf, V.G., and Kahn, R.E. A protocol for packet network intercommunication. IEEETrans. Comm. COMM-22, 5 (May 1974), 637-648.

[8]. The shrinking world: computer networks and communications. Computer 7, 2 (Feb. 1974).

[9]. 9.Distributed-functioncomputer architectures. Computer 7, 3 (March 1974).

[10]. Crocker, S.D., Heafner, J.F., Metcalfe, R.M., and Postel, J.B. Function-oriented protocols for the Arpa computer network. AFIPS Conf. Proc., Vol. 40, 1972 SJCC, AFIPS Press, Montvale, N.J., 1972, pp. 271-279.

[11]. Crowther, W.R., Heart, F.E., McKenzie, A.A., McQuillan, J.M., and Walden, D.C. Issues in packet-switching network design. AFIPS Conf. Proc., Vol. 44, 1975 NCC, AFIPS Press, Montvale, N.J., 1975, pp. 161-175.

[12]. Farber, D.J., et al. The distributed computing system. Proc. 7th Ann. IEEE Computer Soc. International Conf., Feb. 1973, pp. 31-34.

[13]. Farber, D.J., A ring network. Datamation 21, 2 (Feb. 1975), 44-46.

[14]. Fraser, A.G. A virtual channel network. Datamation 21, 2 (Feb. 1975), 51-53.

[15]. Heart, F.E., Kahn, R.E., Omstein, S.M., Crowther, W.R., and Walden, D.C. The interface message processor for the Arpa computer network, AFIPS Conf. Proc., Vol. 36, 1970 SJCC, AFIPS Press, Montvale, N.J., 1970, pp. 551-567.

[16]. Heart, F.E., Ornstein, S.M., Crowther, W.R., and Barker, W.B. A new minicomputer-multiprocessor for the Arpa network. AFIPS Conf. Proc., Vol. 42, 1972 SJCC, AFIPS Press, Montvale, N.J., 1972, pp. 529-537.

[17]. Kahn, R.R. The organization of computer resources into a packet ratio network. AFIPS Conf. Proc., Vol. 44, 1975 NCC, AFIPS Press, Montvale, N.J., 1975, pp. 177-186.

[18]. Metcalfe, R.M. Strategies for interprocess communication in a distributed computing system. Prec. Symp. on Computer Commun. Networks and Teletratiic. Polytechnic Press, New York, 1972.

[19]. Metcalfe, R.M. Strategies for Operating Systems in Computer Networks, Proc. ACM National Conf., August 1972, pp. 278-281.

[20]. Metcalfe, R.M. Steady-state analysis of a slotted and controlled aloha system with blocking. Proc. 6th Hawaii Conf. on System Sci. Jan. 1973, pp. 375-380.

[21]. Metcalfe, R.M. Packet communication. Harvard Ph.D. Th., Project Mac TR-114, Dee. 1973.

[22]. Metealfe, R.M. Distributed algorithms for a broadcast queue. Talk given at Stanford University in November 1974 and at the University of California at Berkeley in February 1975, paper in preparation.

[23]. Murthy, P. Analysis of a carder-sense random-access system with random packet length. Aloha System Tech. Rep. B75-17, U. of Hawaii, May 1975.

[24]. Ornstein, S.M., Crowtber, W.R., Kraley, M.F., Bressler, R.D., Michel, A., and Heart, F.E. Pluribus--a reliable multiprocessor. AFIPS Conf. Proc., Vol. 44, 1975 NCC, AFIPS Press, Montvale, N.J., 1970, pp. 551-559.

[25]. Retz, D.L. Operating system design considerations for the packet switching environment. AFIPS Conf. Proc., Vol. 44, 1975 NCC, AFIPS Press, Montvale, N.J., 1970, pp. 155-160.