PERFORMANCE ANALYSIS OF FIBER DISTRIBUTED DATA INTERFACE NETWORK MEDIA ACCESS CONTROL PROTOCOL UNDER NON-UNIFORM HEAVY LOAD OF ASYNCHRONOUS TRAFFIC

Constance Kalu
Department of Electrical/Electronic and Computer Engineering
University of Uyo, AkwaIbom
NIGERIA

Simeon Ozuomba
Department of Electrical/Electronic and Computer Engineering
University of Uyo, AkwaIbom
NIGERIA

Umoren Mfonobong Anthony
Department of Electrical/Electronic and Computer Engineering
University of Uyo, AkwaIbom
NIGERIA

ABSTRACT

The classical timed token protocol employed in Fiber Distributed Data Interface (FDDI) networks for Media Access Control (MAC) has been well studied under uniform heavy load of asynchronous (non-real-time) traffic. However, in this paper, the protocol is studied under non-uniformly heavy load of asynchronous traffic and problems were identified. The problems are due to inappropriate definition of heavily loaded networks. The discovery was evident from both simulation and analytical results presented in this paper. The discovery in this paper is very essential to network designers and researcher as they strive to improve the performance of the timed token protocols under various network traffic configurations.

Keywords: Protocol, Asynchronous, Synchronous , Network, Bandwidth, FDDI, FDDI-M.