Abstract

TDMA (Time Division Multiple Access) networks are known for their predictable response. This is achieved because each node is allotted a time slot for data transfer. This mechanism results in low throughput as data is transmitted in its time slot irrespective of whether it is changed or not. A share-driven scheduled TDMA scheme has been recently proposed. This scheme promises to increase throughput of the network under certain scenarios. This paper extends this
work to drive an empirical model for response-time. The model gives response-time for a given network parameters (event rate, Frame size, Number of devices on network). The model will be useful tool for network/system designer for making design related decisions.

References

- Chien, Jade, Y. 1984 Performance analysis of the 802.4 token bus media access control protocol. Factory Floor Communication Workshop.
- Peterson, W. D. 1997 The VMEbus Handbook. VMEbus International Trade Association, Arizona, USA.
- Polenda, S. 1998 The time-triggered communication protocol. Real-Time Magazine,
Derivation of Response-time Model for Share-driven Scheduled TDMA Network

- Robinson, S. and Ioannou, A. The problem of the initial transient: Techniques for estimating the warm-up period for discrete-event simulation models. Warwick Business School, University of Warwick, Coventry, UNITED KINGDOM.

Index Terms

Computer Science

Information Technology

Keywords

Time Division Multiple Access (TDMA); Time-Triggered Protocol (TTP/C); throughput; event rate; discrete-event simulation