

C715476 : MAJOR ELECTRICAL ENGINEERING

KEY WORD: ATM MULTICAST SWITCH / BURSTY TRAFFIC

CHAIYAPORN KHEMAPATAPAN : PERFORMANCE ANALYSIS OF AN ATM MULTICAST SWITCH UNDER BURSTY TRAFFIC. THESIS ADVISOR : PROF. PRASIT PRAPINMONGKOLKARN, Ph.D. 50 pp. ISBN 974-637-156-8

This thesis is to study the performance of an ATM Multicast Switch which transfers the data from a node to other destination nodes. By defining the input traffic of data cells at the Head Of Line (HOL) as burst process mixed with uncorrelated data cells at several ratios which can be modeled by 2-state of Markov Modulated Poisson Process (MMPP), the G/D/1 queue is applied to analyse the throughput and delay time. The final result will be the analytical model of switch in MMPP/D/1 queue.

The study finds that the length of burst period does not affect the performance of the switch beyond the value of mean burst which is 4 time slots when the average ratio of burst cells to uncorrelated cells is fixed. The ratio will have influence on the performance of an ATM Multicast Switch. The performance and capability of an ATM Multicast Switch decrease when the ratio increases.

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