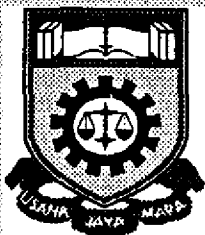


**ASYNCHRONOUS TRANSFER MODE (ATM)
REAL-TIME APPLICATIONS**

**Presented in partial fulfilment for the award of the
Bachelor of Engineering (Hons) (Electrical)
MARA Institute of Technology
40450 Shah Alam**



REIDZUAN BIN AHMAD (95033030)
Faculty of Electrical Engineering
MARA Institute of Technology
40450 Shah Alam
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ABSTRACT

For this paper, what is meant by real-time in data transmission in the ATM technology for the application such as video and data traffic will be described. It will also determine the bounded time that satisfy the real-time transmission. For that we will look into the congestion-control scheme that will satisfy the traffic-delay requirement.

There are many applications that needs a real-time control systems and one of it is a multimedia applications which is integrated of all types of message transmissions. The performance of the multimedia applications and its analysis will be described in this paper.

To evaluate the performance, we will designed a model of ATM network using a software COMNET III. Based on the description of the network, its algorithms and workload, COMNET III will simulate the operation of the network performance that support real-time applications.

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ABBREVIATIONS

AAL	ATM Adaptation Layer
ATM	Asynchronous Transfer Mode
B-ISDN	Broadband Integrated Services Digital Network
CBR	Constant Bit Rate
CLP	Cell Loss Priority
FIFO	First In First Out
GFC	Generic Flow Control
GOS	Grade-Of-Service
HEC	Header Error Check
IETF	Internet Engineering Task Force
ITU	International Telecommunication Unit
LAN	Local Area Network
NNI	Network-to-Network Interface
PCM	Pulse Code Modulation
PTI	Payload Type Indicator
SAR	Segmentation And Reassemble
SEAL	Simple Efficient Adaptation Layer
SONET	Synchronisation Optical Network
UNI	User-to-Network Interface
VBR	Variable Bit Rate
VCI	Virtual Channel Identifier
VPI	Virtual Path Identifier
WAN	Wide Area Network

CHAPTER**1****INTRODUCTION TO ATM TECHNOLOGY**

There is increasing dependence on computing and communication in the day to day operation of all types of organization using networks. As these networks become larger and more complex, the design and management of the system becomes an ever more challenging task. New technologies of computing and communication networks are constantly being explored and introduced as a reason of the variability of network traffic and the complexity of the total system. In the last six years, ATM has gone from being an obscure concept to being hailed as a next major step in communication technology as an alternative to the complex network and multimedia application.

Future applications are expected to require increasingly higher bandwidth and generate a heterogeneous mix of network traffic. Existing networks cannot provide the transport facilities to efficiently support a diversity of traffic with various service requirements. ATM is potentially capable of supporting all classes of traffic in one transmission and switching fabric technology. It provide greater integration of capabilities and services, increased and more flexible access to the network, and more efficient and economical service.