

# BANDWIDTH ALLOCATION AND QUALITY OF SERVICE (Qos) IN ATM NETWORK

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**NURSYAMSHADIHA BT MOHD. YUNUS**  
**Faculty of Electrical Engineering**  
**Mara University of Technology**  
**40450 Shah Alam, Selangor**  
**Malaysia**  
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Nursyamshadiha Mohd. Yunus  
Faculty of Electrical Engineering  
University Technology Mara  
Shah Alam (Nov 05)

## **ABSTRACT**

There has been a growing interest in the development of integrated multi-service enterprise and service provider networks, which consolidate voice, video, imaging and computer data traffic into a single network. The driving forces for this interest are the rapid rate of growth in non-voice traffic, the emergence of new strategic multimedia applications, and the significant cost savings which can be realized from network consolidation. A common direction for both enterprises and service providers is the evolution towards ATM networking.

This paper presents the application of ATM Network. ATM techniques are applied in creating broadband integrated networks, local area networks and exchanges. Bandwidth and QoS is the central theme of ATM.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Basic Theory

Asynchronous Transfer Mode (ATM) is a cell-based switching and multiplexing technology designed to be a general-purpose, connection-oriented transfer mode for a wide range of services. ATM handles both connection-oriented traffic directly or through adaptation layers, or connectionless traffic through the use of adaptation layers. ATM virtual connections may operate at either a Constant Bit Rate (CBR) or a Variable Bit Rate (VBR).

Each ATM cell sent into the network contains addressing information that establishes a virtual connection from originating node to destination node. All cells are then transferred, in sequence, over this virtual connection. ATM provides either Permanent or Switched Virtual Connections (PVCs or SVCs). ATM is asynchronous because the transmitted cells need not be periodic as time slots of data are in Synchronous Transfer Mode (STM).

ATM offers the potential to standardize on one network architecture defining the multiplexing and switching method, with STM providing the basis for the physical transmission standard for very high-speed rates. ATM also supports multiple Quality of Service (QoS) classes for differing application requirements on delay and loss performance. Thus, the vision of ATM is that an entire network can be constructed using ATM Layer and ATM Application Layers (AALs) switching and multiplexing principles to support a wide range of all services, such as voice, packet data (SMDS, IP, FR), video, imaging and circuit emulation.