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OF ITU

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**SERIES I: INTEGRATED SERVICES DIGITAL
NETWORK**

**General structure – General description of asynchronous
transfer mode**

**B-ISDN asynchronous transfer mode functional
characteristics**

ITU-T Recommendation I.150

(Previously CCITT Recommendation)

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INTEGRATED SERVICES DIGITAL NETWORK

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ITU-T RECOMMENDATION I.150

B-ISDN ASYNCHRONOUS TRANSFER MODE FUNCTIONAL CHARACTERISTICS

Summary

This Recommendation defines the functions of the Asynchronous Transfer Mode (ATM) layer. This ATM layer is common to all services including signalling and OAM.

Source

ITU-T Recommendation I.150 was revised by ITU-T Study Group 13 (1997-2000) and was approved under the WTSC Resolution No. 1 procedure on the 26th of February 1999.

FOREWORD

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The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1.

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Recommendation I.150**B-ISDN ASYNCHRONOUS TRANSFER MODE
FUNCTIONAL CHARACTERISTICS***(revised in 1999)***1 Introduction**

This Recommendation addresses specifically the functions of the Asynchronous Transfer Mode (ATM) layer. This layer is common to all services including signalling and OAM.

2 Basic principles of ATM

ATM is the transfer mode solution for implementing a B-ISDN. It influences the standardization of digital hierarchies, multiplexing structures, switching and interfaces for broadband signals.

ATM is used in this Recommendation for addressing a specific packet-oriented transfer mode which uses asynchronous time division multiplexing techniques. The multiplexed information flow is organized into blocks of fixed size called cells. A cell consists of an information field and a header. The primary role of the header is to identify cells belonging to the same virtual channel within the asynchronous time division multiplex. Transfer capacity is assigned by negotiation and is based on the source requirements and the available capacity. Cell sequence integrity on a virtual channel connection is preserved by the ATM layer¹.

ATM is a connection-oriented technique. Connection identifiers are assigned to each link of a connection when required and released when no longer needed. In general, signalling and user information are carried on separate ATM connections.

ATM offers a flexible transfer capability common to all services, including connectionless services. Additional functionalities on top of the ATM layer [e.g. in the ATM Adaptation Layer (AAL)] are provided to accommodate various services. The boundary between the ATM layer and the AAL corresponds to the boundary between functions supported by the contents of the cell header and functions supported by AAL-specific information. The AAL-specific information is contained in the information field of the ATM cell.

The information field is transported transparently by the ATM layer. No processing, e.g. error control, is performed on the information field at the ATM layer.

The header and information field each consist of a fixed integer number of octets. The header size (5 octets) and the information field size (48 octets) remain constant at all reference points, including the User-Network Interface (UNI) and the Network-Node Interface (NNI), where the ATM technique is applied.

¹ For a multipoint-to-point virtual channel connection, cell sequence integrity is preserved for cells from each VCC endpoint of the VCC.