



INTERNATIONAL TELECOMMUNICATION UNION

# CCITT

## G.781

THE INTERNATIONAL  
TELEGRAPH AND TELEPHONE  
CONSULTATIVE COMMITTEE

**GENERAL ASPECTS OF DIGITAL  
TRANSMISSION SYSTEMS  
TERMINAL EQUIPMENTS**

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**STRUCTURE OF RECOMMENDATIONS ON  
MULTIPLEXING EQUIPMENT FOR  
THE SYNCHRONOUS DIGITAL  
HIERARCHY (SDH)**

**Recommendation G.781**

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Geneva, 1990

## FOREWORD

The CCITT (the International Telegraph and Telephone Consultative Committee) is the permanent organ of the International Telecommunication Union (ITU). CCITT is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The Plenary Assembly of CCITT which meets every four years, establishes the topics for study and approves Recommendations prepared by its Study Groups. The approval of Recommendations by the members of CCITT between Plenary Assemblies is covered by the procedure laid down in CCITT Resolution No. 2 (Melbourne, 1988).

Recommendation G.781 was prepared by Study Group XV and was approved under the Resolution No. 2 procedure on the 14 of December 1990.

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## CCITT NOTE

In this Recommendation, the expression "Administration" is used for brevity to indicate both a telecommunication Administration and a recognized private operating agency.

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## **Recommendation G.781**

### **STRUCTURE OF RECOMMENDATIONS ON MULTIPLEXING EQUIPMENT FOR THE SYNCHRONOUS DIGITAL HIERARCHY (SDH)**

#### **1 General**

Recommendations G.707, G.708 and G.709 provide details of the bit rate, format, multiplexing structure and payload mappings for the Synchronous Digital Hierarchy (SDH).

Recommendations giving the characteristics of multiplexing equipment for the SDH are structured to take into consideration the following:

- i) in order not to constrain equipment design, there is a need to describe equipment characteristics in terms of functions in such a way as to avoid specifying particular implementations of those functions;
- ii) multiplexing equipment functionality can be usefully partitioned into a number of areas and the Recommendation structure reflects this partitioning;
- iii) some functions specified for multiplexing equipment may also be applicable to Recommendations on other SDH equipments and these latter Recommendations may make reference to Recommendations on multiplexing equipment, thus avoiding duplication of text and ensuring consistency of specification over a number of different equipments.

#### **2 Structure of Recommendations**

Taking into account the above points, the structure of Recommendations for synchronous multiplexing equipment is as follows:

- G.781 Structure of Recommendations on multiplexing equipment for the Synchronous Digital Hierarchy (SDH)
- G.782 Types and general characteristics of Synchronous Digital Hierarchy (SDH) multiplexing equipment
- G.783 Characteristics of Synchronous Digital Hierarchy (SDH) multiplexing equipment functional blocks
- G.784 Synchronous Digital Hierarchy (SDH) management

#### **3 Options**

Information and guidance on optional features contained in SDH Recommendations is given in the Annex A.

## ANNEX A

(to Recommendation G.781)

### **Considerations relating to the selection of optional features**

The Recommendations on SDH (G.707, G.708, G.709, G.781, G.782, G.783, G.784, G.957, G.958) provide a foundation towards ensuring a high degree of harmonization, and therefore inter-operability potential, between different practical implementations of the functions described in the Recommendations. However, it is important to note that the Recommendations contain a number of optional features, some of which are important to consider carefully in order to ensure inter-operability.

In selecting a consistent set of optional features, the following situations will need to be taken into account:

- single network operator's domain, even when using a single supplier's implementation of SDH equipment;
- single network operator's domain, when using multiple suppliers' implementations;
- inter-operation between different network operators' domains.

In the detailed design, implementation and operation of their networks, it is important that network operators make appropriate selections of optional features, and reach an understanding with their equipment suppliers and with other network operators to ensure that an appropriate level of inter-operability is achieved.

In terms of suppliers, it will be essentially a commercial judgement whether they choose to offer a particular option. In order to limit the number of variations, when an optional feature is provided, it should be in accordance with the recommended approach.



