INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

I.610

Amendment 1
(03/2000)

SERIES I: INTEGRATED SERVICES DIGITAL NETWORK

Maintenance principles

B-ISDN operation and maintenance principles and functions

Amendment 1

ITU-T Recommendation I.610 – Amendment 1

(Formerly CCITT Recommendation)

ITU-T I-SERIES RECOMMENDATIONS

INTEGRATED SERVICES DIGITAL NETWORK

GENERAL STRUCTURE	
Terminology	I.110–I.119
Description of ISDNs	I.120–I.129
General modelling methods	I.130–I.139
Telecommunication network and service attributes	I.140–I.149
General description of asynchronous transfer mode	I.150–I.199
SERVICE CAPABILITIES	
Scope	I.200–I.209
General aspects of services in ISDN	I.210–I.219
Common aspects of services in the ISDN	I.220–I.229
Bearer services supported by an ISDN	I.230–I.239
Teleservices supported by an ISDN	I.240–I.249
Supplementary services in ISDN	I.250–I.299
OVERALL NETWORK ASPECTS AND FUNCTIONS	
Network functional principles	I.310–I.319
Reference models	I.320–I.329
Numbering, addressing and routing	I.330–I.339
Connection types	I.340–I.349
Performance objectives	I.350–I.359
Protocol layer requirements	I.360–I.369
General network requirements and functions	I.370–I.399
ISDN USER-NETWORK INTERFACES	
Application of I-series Recommendations to ISDN user-network interfaces	I.420–I.429
Layer 1 Recommendations	I.430–I.439
Layer 2 Recommendations	I.440–I.449
Layer 3 Recommendations	I.450–I.459
Multiplexing, rate adaption and support of existing interfaces	I.460–I.469
Aspects of ISDN affecting terminal requirements	I.470–I.499
INTERNETWORK INTERFACES	I.500–I.599
MAINTENANCE PRINCIPLES	**I.600–I.699**
B-ISDN EQUIPMENT ASPECTS	
ATM equipment	I.730–I.739
Transport functions	I.740–I.749
Management of ATM equipment	I.750–I.759
Multiplexing aspects	I.760–I.769

For further details, please refer to the list of ITU-T Recommendations.

ITU-T Recommendation I.610

B-ISDN operation and maintenance principles and functions

AMENDMENT 1

Summary

This amendment contains only editorial enhancements, but no technical changes, to the third revision (02/99) of ITU-T Recommendation I.610.

Source

Amendment 1 to ITU-T Recommendation I.610 was prepared by ITU-T Study Group 13 (1997-2000) and approved under the WTSC Resolution 1 procedure on 10 March 2000.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T 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 World Telecommunication Standardization Conference (WTSC), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSC Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

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

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

ITU-T Recommendation I.610

B-ISDN operation and maintenance principles and functions

AMENDMENT 1

1 Introduction

This amendment contains only editorial enhancements, but no technical changes, to the third revision (02/99) of ITU-T Recommendation I.610.

2 Additions

2.1 History

Add the following document history information:

Document history	
Issue	**Notes**
02/99	Third revision of ITU-T Recommendation I.610. This revision includes editorial modifications to comply with ITU-T Recommendation A.3. Clauses 2 to 7 in the 1995 revision are as a consequence renumbered as clauses 5 to 10. Furthermore, this revision includes numerous modifications and extensions to most of the clauses and subclauses. Special attention should be given to: • subclause 8.2.1, which refers to the appropriate physical layer Recommendations for the OAM functions supported by the flows F1 to F3; • subclause 8.3, which defines additional OAM functions between the transmission path and ATM layer; • subclause 9.2 and its subclauses, which define the segment OAM cells "segment AIS" and "segment RDI" and the associated processing (generation and termination), introduces new "end to end APS" and "segment APS" OAM cells for which ITU-T Recommendation I.630 specifies the processing, has enhanced the specification for the use of the performance management OAM cells, introduces the ability to non-intrusively monitor OAM flows at intermediate points within the VPC or VPC segment, introduces an additional performance management mode in which forward performance monitoring is activated only; • clause 10 and its subclauses, which introduce the OAM cell detection procedure (10.1), introduce a coding structure for location identifiers (10.1), extend the definition of the segment loopback OAM cell and associate the processing required in connection points and segment endpoints (including an incoming segment loopback cell extraction option), extend the number of PM block sizes, delete one deactivation response code point; • Annex A, which is rewritten; • Annex C, which is rewritten; • Appendices II, III, IV and V, which are new.
11/95	Second revision
1993	First revision
1991	Initial version

2.2 New clause 11

Add a new clause 11 to address the interworking of the new functionality that is introduced in the third revision (02/99) of ITU-T Recommendation I.610 (i.e. segment VP-AIS, segment VC-AIS, segment VP-RDI, segment VC-RDI OAM cells, new loopback type, larger PM block sizes) in networks that also include equipment designed according to previous versions of ITU-T Recommendation I.610 that do not support this new functionality.

11 Backward compatibility

Equipment compliant with 1995 or earlier versions of ITU-T Recommendation I.610 will not generate segment VP/VC-AIS OAM cells, will not detect the segment VP/VC-AIS cells and associated defect conditions and will not declare the segment VP/VC-AIS state. When there is a situation in which a 1999 version of an I.610 compliant segment endpoint is interworking with equipment compliant with 1995 or earlier versions of I.610 within the segment, it will be necessary to use segment CC OAM to be able to declare a segment VP/VC AIS state.

Equipment compliant with 1995 or earlier versions of ITU-T Recommendation I.610 will not generate segment VP/VC-RDI OAM cells, will not detect the segment VP/VC-RDI cells and associated defect conditions and will not declare the segment VP/VC-RDI state.

Equipment compliant with 1995 or earlier versions of this ITU-T Recommendation will not recognize the all-0's LLID code in segment LB OAM cells as an MLT code.

Equipment compliant with 1995 or earlier versions of this ITU-T Recommendation will not recognize the codes for PM block sizes above 1024.

2.3 Subclause III.3.1.2 (Appendix III)

Add a Note at the end of the second paragraph in subclause III.3.1.2:

NOTE – When an unintended branch exists between CPID (c) and a second VPI [VCI] within CPID (d), two seg_LB cells will be returned with LLID is CPID (d). An additional (8th) LB cell will be returned if the CP following CP with CPID (r) has the VPI [VCI] listed as an expected VPI [VCI].

SERIES OF ITU-T RECOMMENDATIONS

Series A	Organization of the work of ITU-T
Series B	Means of expression: definitions, symbols, classification
Series C	General telecommunication statistics
Series D	General tariff principles
Series E	Overall network operation, telephone service, service operation and human factors
Series F	Non-telephone telecommunication services
Series G	Transmission systems and media, digital systems and networks
Series H	Audiovisual and multimedia systems
Series I	**Integrated services digital network**
Series J	Transmission of television, sound programme and other multimedia signals
Series K	Protection against interference
Series L	Construction, installation and protection of cables and other elements of outside plant
Series M	TMN and network maintenance: international transmission systems, telephone circuits, telegraphy, facsimile and leased circuits
Series N	Maintenance: international sound programme and television transmission circuits
Series O	Specifications of measuring equipment
Series P	Telephone transmission quality, telephone installations, local line networks
Series Q	Switching and signalling
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminals for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
Series X	Data networks and open system communications
Series Y	Global information infrastructure and Internet protocol aspects
Series Z	Languages and general software aspects for telecommunication systems

Geneva, 2001