
**Information technology —
Telecommunications and information
exchange between systems — Private
Integrated Services Network — Mapping
functions for the employment of 64 kbit/s
circuit mode connections with 16 kbit/s
sub-multiplexing**

*Technologies de l'information — Télécommunications et échange
d'information entre systèmes — Réseau privé avec intégration de
services — Fonctions d'application pour l'emploi de connexions en
mode circuit de 64 kbits/s avec sous-multiplexage de 16 kbits/s*

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO/IEC 2000

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.ch
Web www.iso.ch

Printed in Switzerland

Contents

Foreword.....	iv
Introduction	v
1 Scope	1
2 Conformance	1
3 Normative references	1
4 Definitions	2
4.1 External definitions	2
4.2 Special definitions	2
4.2.1 Channel	2
4.2.2 End PINX	2
4.2.3 Inter-PINX Connection	2
4.2.4 Inter-PINX Link	2
4.2.5 Transit PINX	2
5 Abbreviations	2
6 Introduction	2
7 Capabilities at the Q reference point	3
8 Mapping functions.....	3
8.1 Physical adaptation.....	3
8.1.1 64 kbit/s Unrestricted Digital Leased Line (D64U)	3
8.2 Mapping Matrix.....	4
8.2.1 Channel allocation.....	4
8.2.2 Bearer Conditioning for the D _Q -channel	4
8.2.3 Bearer Conditioning for the U _Q -channels.....	4
Annexes	
A Implementation Conformance Statement (ICS) Proforma.....	5
B Bibliography	8
C QSIG Protocol Codepoints	9
D Example figure for Bearer Conditioning of U _Q -channels	10

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

International Standard ISO/IEC 17310 was prepared by ECMA (as ECMA-253) and was adopted, under a special “fast-track procedure”, by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by national bodies of ISO and IEC.

Annex A forms a normative part of this International Standard. Annexes B, C and D are for information only.

Introduction

This International Standard is one of a series of standards defining mapping functions in exchanges of Private Integrated Services Networks. The series uses the ISDN concepts as developed by ITU-T (formerly CCITT) and is also within the framework of standards for open systems interconnection as defined by ISO/IEC.

This International Standard specifies mapping functions for the type of scenario where two PINXs are interconnected via a 64 kbit/s circuit mode connection with 16 kbit/s sub-multiplexing.

This International Standard is based upon the practical experience of ECMA member companies and the results of their active and continuous participation in the work of ISO/IEC JTC 1, ITU-T, ETSI and other international and national standardization bodies. It represents a pragmatic and widely based consensus.

Information technology - Telecommunications and information exchange between systems - Private Integrated Services Network - Mapping functions for the employment of 64 kbit/s circuit mode connections with 16 kbit/s sub-multiplexing

1 Scope

This International Standard defines the mapping functions in exchanges of Private Integrated Services Networks (PISNs) required for the utilization of scenarios in which 64 kbit/s circuit mode connections are sub-multiplexed into 4 x 16 kbit/s channels for carrying inter-PINX signalling and user information.

NOTE 1 - This International Standard has been prepared to meet the specific needs of an application for a particular user organisation. However, it may also be applicable elsewhere. The requirements contained in this International Standard will be incorporated in any future standard specifying a more generic approach to bearer conditioning.

In order to connect a Private Integrated Services Network Exchange (PINX) to another PINX, mapping functions are required to adapt the specific interfaces at the C reference point to the application at the Q reference point. As such, mapping functions provide for physical adaptation to the interface at the C reference point. Mapping functions also provide for the mapping of user channels and signalling information at the Q reference point to the appropriate channels or timeslots at the C reference point.

The C and Q reference points are defined in ISO/IEC 11579-1.

The type of interface at the C reference point covered by this International Standard is the 64 kbit/s Unrestricted Digital Leased Line (D64U) Terminal Equipment Interface, in accordance with ITU-T Rec. G.703.

At the Q reference point the mapping provides a 16 kbit/s service for user channels to support the transfer of unrestricted digital information and to support the transfer of speech, and a packet mode service for the signalling channel. The applied mapping is a static mapping, i.e. there is a fixed relationship between user and signalling channels at the Q reference point and the interface at the C reference point.

Management functions relating to failure management are outside the scope of this International Standard.

This International Standard is applicable to PINXs that can be interconnected to form a Private Integrated Services Network (PISN) and that support signalling protocols at the Q reference point.

2 Conformance

In order to conform to this International Standard, a PINX shall satisfy the requirements identified in the Implementation Conformance Statement (ICS) proforma in annex A.

3 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO/IEC 11579-1:1994, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Part 1: Reference configuration for PISN exchanges (PINX)*.

ITU-T Rec. G.703:1998, *Physical / electrical characteristics of hierarchical digital interfaces*.

ITU-T Rec. Q.920:1993, *Digital Subscriber Signalling System No. 1 (DSS1) — ISDN user-network interface data link layer — General aspects*.

ITU-T Rec. Q.920 Am. 1:2000, *Amendment 1 to ITU-T Recommendation Q.920*.

ITU-T Rec. Q.921:1997, *ISDN user-network interface — Data link layer specification*.

ISO/IEC 17310:2000(E)

ITU-T Rec. Q.921 Am. 1:2000, *Amendment 1 to ITU-T Recommendation Q.921*.

ITU-T Rec. I.112:1993, *Vocabulary of terms for ISDNs*.

ITU-T Rec. I.460:1999, *Multiplexing, rate adaption and support of existing interfaces*.

NOTE 2 - This International Standard also contains informative references. Details of these publications are given in annex B.