



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

Q.921

Amendment 1
(06/2000)

SERIES Q: SWITCHING AND SIGNALLING

Digital subscriber Signalling System No. 1 – Data link
layer

**ISDN user-network interface – Data link layer
specification**

Amendment 1

ITU-T Recommendation Q.921 – Amendment 1

(Formerly CCITT Recommendation)

ITU-T Q-SERIES RECOMMENDATIONS
SWITCHING AND SIGNALLING

SIGNALLING IN THE INTERNATIONAL MANUAL SERVICE	Q.1–Q.3
INTERNATIONAL AUTOMATIC AND SEMI-AUTOMATIC WORKING	Q.4–Q.59
FUNCTIONS AND INFORMATION FLOWS FOR SERVICES IN THE ISDN	Q.60–Q.99
CLAUSES APPLICABLE TO ITU-T STANDARD SYSTEMS	Q.100–Q.119
SPECIFICATIONS OF SIGNALLING SYSTEMS No. 4 AND No. 5	Q.120–Q.249
SPECIFICATIONS OF SIGNALLING SYSTEM No. 6	Q.250–Q.309
SPECIFICATIONS OF SIGNALLING SYSTEM R1	Q.310–Q.399
SPECIFICATIONS OF SIGNALLING SYSTEM R2	Q.400–Q.499
DIGITAL EXCHANGES	Q.500–Q.599
INTERWORKING OF SIGNALLING SYSTEMS	Q.600–Q.699
SPECIFICATIONS OF SIGNALLING SYSTEM No. 7	Q.700–Q.799
Q3 INTERFACE	Q.800–Q.849
DIGITAL SUBSCRIBER SIGNALLING SYSTEM No. 1	Q.850–Q.999
General	Q.850–Q.919
Data link layer	Q.920–Q.929
Network layer	Q.930–Q.939
User-network management	Q.940–Q.949
Stage 3 description for supplementary services using DSS1	Q.950–Q.999
PUBLIC LAND MOBILE NETWORK	Q.1000–Q.1099
INTERWORKING WITH SATELLITE MOBILE SYSTEMS	Q.1100–Q.1199
INTELLIGENT NETWORK	Q.1200–Q.1699
SIGNALLING REQUIREMENTS AND PROTOCOLS FOR IMT-2000	Q.1700–Q.1799
BROADBAND ISDN	Q.2000–Q.2999

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

ITU-T Recommendation Q.921

ISDN USER-NETWORK INTERFACE – DATA LINK LAYER SPECIFICATION

AMENDMENT 1

Summary

This Recommendation specifies the Link Access Procedures on the D-channel (LAPD) of an ISDN customer access. Implementations of this Recommendation are in use in existing networks.

This Recommendation has been amended in order to add a new Annex J and a new Appendix V to describe in general terms the link access procedure for use in a symmetrical application between two Private Integrated Network Exchanges (PINXs) at the Q reference point.

Source

Amendment 1 to ITU-T Recommendation Q.921 was prepared by ITU-T Study Group 11 (1997-2000) and approved under the WTSC Resolution 1 procedure on 15 June 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 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 2001

All rights reserved. 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 ITU.

CONTENTS

Page

J Annex J – Inter-exchange signalling data link layer protocol in Private Integrated Services Networks (PISNs) – Applicability and additions to frame structure, elements of procedures, formats of fields, elements for layer-to-layer communication, peer-to-peer procedures to accommodate PISN inter-exchange requirements	1
.1 Frame structure for peer-to-peer communication	2
J.1.1 General.....	2
J.1.2 Flag sequence.....	2
J.1.3 Address field.....	2
J.1.4 Control field.....	2
J.1.5 Information field.....	2
J.1.6 Transparency.....	2
J.1.7 Frame Check Sequence (FCS) field	2
J.1.8 Format convention	2
J.1.9 Invalid frames	2
J.1.10 Frame abort.....	2
J.2 Elements of procedures and formats of fields for data link layer peer-to-peer communication.....	2
J.2.1 General.....	2
J.2.2 Address field format	2
J.2.3 Address field variables	3
J.2.4 Control field format.....	3
J.2.5 Control field parameters and associated state variables	3
J.2.6 Frame types.....	3
J.3 Elements for layer-to-layer communication.....	4
J.3.1 General.....	4
J.3.2 Primitive procedures.....	5
J.4 Definition of the peer-to-peer procedures of the data link layer	5
J.4.1 Procedures for the use of the P/F bit.....	5
J.4.2 Procedures for unacknowledged information transfer.....	5
J.4.3 Terminal Endpoint Identifier (TEI) management procedures.....	5
J.4.4 Initialization of data link layer parameters	6
J.4.5 Procedures for establishment and release of multiple frame operation	6
J.4.6 Procedures for information transfer in multiple frame operation	6
J.4.7 Re-establishment of multiple frame operation	7
J.4.8 Exception conditions reporting and recovery	7
J.4.9 List of system parameters	8
J.4.10 Data link layer monitor function.....	8



	Page
Appendix V – Inter-exchange signalling data link layer protocol in PISNs – Occurrence of the MDL-ERROR.indication primitive in the data link layer protocol for the support of Inter-exchange signalling in PISNs	9
V.1 Introduction.....	9
V.2 Layout of Table V.1	9
V.3 Preferred management actions	10