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ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

Q.920

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 – General aspects

Amendment 1

ITU-T Recommendation Q.920 – Amendment 1

(Formerly CCITT Recommendation)

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ITU-T Recommendation Q.920

ISDN user-network interface data link layer – General aspects

AMENDMENT 1

Summary

This Recommendation describes in general terms the link access procedure on the D-channel, LAPD. Details are provided in ITU-T Q.921 [1].

The purpose of LAPD is to convey information between layer 3 entities across the ISDN user-network interface using the D-channel.

This Recommendation has been amended in order to add a new Annex A 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.920 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.

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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.

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ISDN user-network interface data link layer – General aspects

AMENDMENT 1

1) Clause 1

Add the following new final paragraph to clause 1:

Annex A of this Recommendation describes 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 (see ISO/IEC 11579-1 [14]).

2) References

Add a new reference [14] as follows:

[14] 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)*.

3) New Annex A

Insert a new Annex A as follows:

ANNEX A

Inter-exchange signalling data link layer protocol in Private Integrated Services Networks (PISNs) – Overview of the functions of the data link layer for the support of inter-exchange signalling in PISNs and additions to concepts and terminology to accommodate PISN inter-exchange requirements

A.1 Overview of the functions and procedures of the data link layer

A.1.1 General

Clause 3.1 shall apply whereby the data link layer user invokes those functions and procedures of the data link layer which allow two peer-to-peer layer 3 entities to communicate on a single point-to-point data link connection, making use of the acknowledged information transfer service. For the acknowledged information transfer, the properties defined in 3.3 apply.

Figure A.1 shows point-to-point information transfer in the case of two interconnected PINXs and depicts the point-to-point nature of both layers 1 and 2.

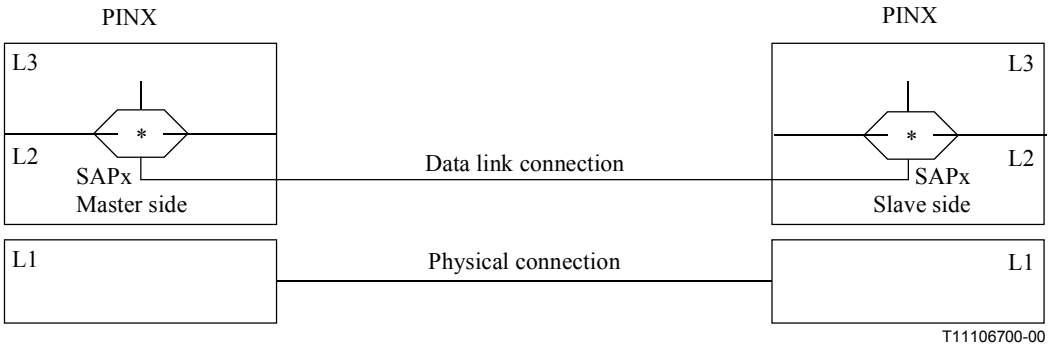

Figure A.1/Q.920 – Point-to-point data link connection

A.1.2 Overview of data link layer structure

A.1.2.1 Data link procedure

Clause 5.1 shall apply.

A.1.2.2 Multiplex procedure

Clause 5.2 shall apply.

A.1.2.3 Structure of the data link procedure and management function

The functional model of the data link procedure (including management functions) is shown in Figure A.2. This figure is shown for informative purposes only and is not intended to constrain implementations.

The Layer Management Entity (LME) provides for the management of resources that have a layer wide impact.

The Connection Management Entity (CME) provides for the management of resources that have an impact on individual connections.

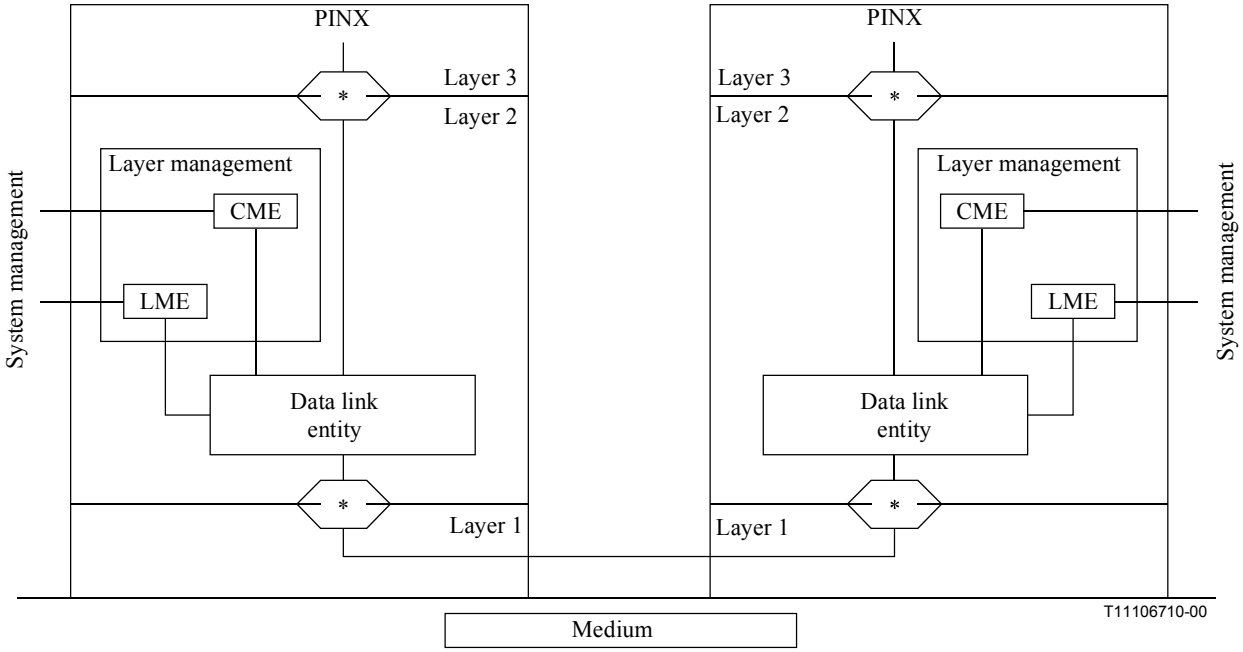

Figure A.2/Q.920 – Functional model of data link layer structure

A.2 Concepts and terminology

A.2.1 General

The concepts and terminology described in clause 2 shall apply with the following addition:

– all data link entities at one end of a particular inter-PINX signalling channel shall be designated as either "master" or "slave";

– PINXs conforming to this annex shall be capable of providing both master and slave functions on different inter-PINX signalling channels. Therefore, the configuration shown in Figure A.3 may exist.

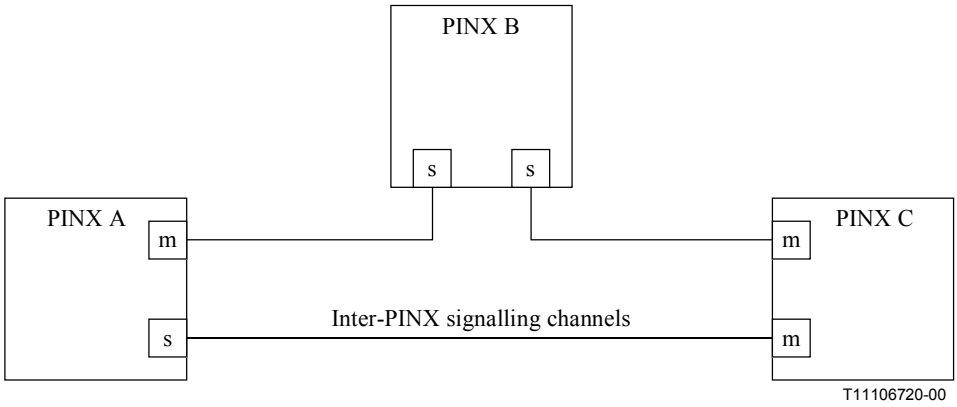

Figure A.3/Q.920 – Example of PINX configuration

The assignment of the master or slave shall occur on initialization (or reinitialization) of the inter-PINX signalling channels and the designation shall be decided at network configuration time. The assignment of master/slave relationships at the data link layer shall not preclude different master/slave relationships at other layers in the ISDN protocol reference model.

A.2.2 Data Link Connection Identification (DLCI)

Clause 3.4.1 shall apply with the following exception:

Automatic TEI-assignment procedures shall not be used by equipment conforming to this annex.

A.2.3 Data link states

Clause 3.4.2 shall apply.

A.2.4 Service characteristics

A.2.4.1 General

Clause 4.1 shall apply.

A.2.4.2 Service provided to layer 3

Clause 4.2 and its clauses shall apply whereby layer 3 invokes the acknowledged information transfer service only.

A.2.4.3 Services provided to layer management

In equipment conforming to this annex, all layer management functions shall be performed locally. Therefore, no links for peer-to-peer management information are required.

A.2.4.4 Administrative services

The procedures for assignment, checking and removal of TEIs referenced in 4.1 shall apply internally, but not on a peer-to-peer basis, to PINXs conforming to this annex. The following primitives are defined:

a) *MDL-ASSIGN request*

The primitive is used by the Layer Management Entity (LME) to deliver to the Data Link Entity (DLE) the TEI value that is to be used for communication.

b) *MDL-ERROR indication/response*

These primitives are used to report error situations between layer management and the data link layer entities.

A.2.4.5 Services required from the physical layer

Clause 4.6 shall apply.

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Geneva, 2001