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SERIES Q: SWITCHING AND SIGNALLING

Broadband ISDN – B-ISDN application protocols for
access signalling

**Broadband Integrated Services Digital Network
(B-ISDN) and Broadband Private Integrated
Services Network (B-PISN) – Prenegotiation**

ITU-T Recommendation Q.2984

(Formerly CCITT Recommendation)

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ITU-T RECOMMENDATION Q.2984

BROADBAND INTEGRATED SERVICES DIGITAL NETWORK (B-ISDN) AND BROADBAND PRIVATE INTEGRATED SERVICES NETWORK (B-PISN) – PRENEGOTIATION

Summary

This Recommendation specifies the signalling protocol for the purpose of prenegotiation at the Q_B , S_B , T_B and co-incident S_B/T_B reference points within, between and at the access to Broadband Private Integrated Services Networks and within, between and at the access to public Broadband Integrated Services Digital Networks. The protocol operates between two adjacent call control entities. The protocol is applicable in a separated call and bearer (connection) control environment for the support of calls having none, one or multiple bearers.

The purpose of prenegotiation is to allow a user to check compatibility and availability at the remote user with regard to one or more connections the user intends to establish during the lifetime of the call, without reserving connection-oriented resources in the network.

Source

ITU-T Recommendation Q.2984 was prepared by ITU-T Study Group 11 (1997-2000) and was approved under the WTSC Resolution No. 1 procedure on 3 December 1999.

Keywords

Bearer control, call control, prenegotiation, separation.

FOREWORD

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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-T Recommendation Q.2984

BROADBAND INTEGRATED SERVICES DIGITAL NETWORK (B-ISDN) AND BROADBAND PRIVATE INTEGRATED SERVICES NETWORK (B-PISN) – PRENEGOTIATION

(Geneva, 1999)

1 Scope

This Recommendation specifies the signalling protocol for the purpose of prenegotiation at the Q_B , S_B , T_B and co-incident S_B/T_B reference points within, between and at the access to Broadband Private Integrated Services Networks and within, between and at the access to public Broadband Integrated Services Digital Networks. The protocol operates between two adjacent call control entities. The protocol is applicable in a separated call and bearer (connection) control environment for the support of calls having none, one or multiple bearers. The protocol is applicable to a two-party call or a multi-party call. However, prenegotiation is performed between two parties. In the case of multi-party connections (point-to-multipoint connections), prenegotiation may be performed between the root and the first party.

This Recommendation is based on the transport capabilities as defined in ITU-T Recommendation Q.2932.1 and is closely related to the call control protocol specification as defined in ITU-T Recommendation Q.2981.

The purpose of prenegotiation as specified in this Recommendation is to allow a user to check compatibility and availability at the remote user with regard to one or more connections the user intends to establish during the lifetime of the call, without reserving connection-oriented resources in the network. Reservation of connection-oriented resources at the remote user is outside the scope of this Recommendation.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; all users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

- [1] ITU-T Recommendation Q.2931 (1995), *Digital Subscriber Signalling System No. 2 (DSS2) – User-Network Interface (UNI) – Layer 3 specification for basic call/connection control*.
- [2] ITU-T Recommendation Q.2932.1 (1996), *Digital Subscriber Signalling System No. 2 (DSS2); Generic functional protocol – Core functions*.
- [3] ITU-T Recommendation Q.2981 (1999), *Broadband Integrated Services Digital Network (B-ISDN) and Broadband Private Integrated Services Network (B-PISN) – Call control protocol*.
- [4] ITU-T Recommendation Q.2982 (1999), *Broadband Integrated Services Digital Network (B-ISDN) – Digital Subscriber Signalling System No. 2 (DSS2) – Q.2931-based separated call control protocol*.

- [5] ITU-T Recommendation Q.2983 (1999), *Broadband Integrated Services Digital Network (B-ISDN) – Digital Subscriber Signalling System No. 2 (DSS2) – Bearer control protocol*.
- [6] ITU-T Recommendation X.680 (1997) | ISO/IEC 8824-1:1998, *Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation*.
- [7] ITU-T Recommendation X.690 (1997) | ISO/IEC 8825-1:1998, *Information technology – ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER)*.
- [8] ITU-T Recommendation X.880 (1994) | ISO/IEC 13712-1:1995, *Information technology – Remote operations: Concepts, model and notation*.
- [9] ITU-T Recommendation Z.100 (1993), *Specification and Description Language*.

3 Definitions

This Recommendation defines the following terms:

3.1 External definitions

The definitions used in ITU-T Recommendations Q.2931, Q.2932.1, Q.2981 and Q.2982 apply.

3.2 Additional definitions

3.2.1 prenegotiation: A method allowing a user to check compatibility and availability at the remote user with regard to one or more bearer connections the user intends to establish during the lifetime of the call, without already reserving bearer connection-oriented resources in the network.

4 Abbreviations

For the purposes of this Recommendation, the abbreviations used in [1], [2], [3], [4] apply. In addition, this Recommendation uses the following abbreviations:

CC	Call Control
mp	modification possible (9.2.1.3, Figure 2)
PRN	Prenegotiation
T/F	True/False (9.2.1.3, Figure 2)
UM	User mandatory (9.2.1.3, Figure 2)
UO	User optional (9.2.1.3, Figure 2)

5 Description

5.1 Overview

This Recommendation specifies the procedures, messages, information elements and components needed for the support of prenegotiation.

Prenegotiation is an optional procedure which may be invoked by either the calling or called user at either the S_B or the co-incident S_B/T_B reference point. In both cases, it can only be invoked in conjunction with or after call establishment. Prenegotiation does not establish connections.

Prenegotiation is performed between two users. In the case of point-to-multipoint connections, it may be performed between the root and the first party.

The prenegotiation protocol operates between two adjacent call control entities (points of call and bearer coordination).

It is not required that the network interprets and processes the contents of the prenegotiation operation, except that incoming call segment identifier and bearer identifiers have to be mapped to the corresponding values on the outgoing side. The network may either relay the related information, or call control entities in the network(s) may also be involved in looking at various parameters of network relevance and may take action/possibly intervene in the prenegotiation procedure. Possible actions/interventions of network nodes based on the interpretation of the contents of the prenegotiation operation are outside the scope of this Recommendation.

In general, all connection related parameters for any number of connections can be prenegotiated.

The purpose of prenegotiation is to check compatibility and availability between the users without already reserving connection-related resources in the network. The response of a user to a prenegotiation request may be:

- positive, if a user is fully compatible with the parameters proposed by the remote party – in this case, the connections may be established with the parameters as proposed by the remote party;
- positive, if a user is not fully compatible with the parameters proposed by the remote party, but supports a compatible alternative/subset – in this case, the connections may be established with those parameters which were proposed as an alternative;
- negative, if a user is not compatible with the parameters proposed by the remote party;
- negative, if a user is compatible with the parameters proposed by the remote party, but the negotiated resources are currently unavailable.

NOTE – If prenegotiation is performed in combination with Call Establishment, i.e. if no connections are existing/pending, the call might be released if the result of the prenegotiation is negative.

The prenegotiation procedures allow a user to return either only one or several alternative acceptable parameter sets per connection.

5.2 Protocol model for prenegotiation

For prenegotiation, the basic protocol model outlined in Figure I.1 of ITU-T Recommendation Q.2932.1 applies. Figure 1 shows how prenegotiation fits into this basic model. It should be noted that Figure 1 only shows those ASEs which are directly related to prenegotiation.