

ü]fc_cdUgcj bc`X][]HJbc`ca fYÿ`Y`n`]bhY[f]fUbj]a]`gfcf]hj Ua]`f6 !-G8 BŁ]b
ý]fc_cdUgcj bc`nUgYVbc`ca fYÿ`Y`n`]bhY[f]fUbj]a]`gfcf]hj Ua]`f6 !D-GBŁĚ`8][]HJbU
bUfc b]ý_Ug][bU]nUMY`U`ýH`+`f8 GG&žý]fc_cdUgcj bUg][bU]nUMY`U`a YX`WbHfU`Ua]
f6 !E G- Ł]b`g][bU]nUMY`U`ýH`+`f8 G+ŁĚ`DfYXdc[U`Ub`Y`Ě`%`XY`:`GdYWZ`_UMY`U
dfcfc_c`U

Broadband Integrated Services Digital Network (B-ISDN) and Broadband Private Integrated Services Network (B-PISN); Digital Subscriber Signalling System No. two (DSS2), Broadband Inter-Exchange Signalling (B-QSIG), and Signalling System No. 7 (SS7); Prenegotiation; Part 1: Protocol specification

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Signalling Protocols and Switching (SPS) in collaboration with ECMA TC32-TG15.

The present document is part 1 of a multi-part standard covering the Digital Subscriber Signalling System No. 2 (DSS2), Broadband Inter-Exchange Signalling (B-QSIG), and Signalling System No. 7 (SS7) protocol specification for Broadband Integrated Services Digital Network (B-ISDN) and Broadband Private Integrated Services Network (B-PISN) Prenegotiation, as described below:

Part 1: "Protocol specification";

Part 2: "Protocol Implementation Conformance Statement (PICS) proforma specification";

Part 3: "Test Suite Structure and Test Purposes (TSS&TP) specification";

Part 4: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification".

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1 Scope

The present document 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 European 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 case of multi-party connections (point-to-multipoint connections), prenegotiation may be performed between the root and the first party.

The Q_B reference point is defined in ISO/IEC 11579-1 [11]. The S_B and T_B reference points are defined in ITU-T Recommendation I.327 [12].

The present document is based on the transport capabilities as defined in ETS 300 796-1 [4] and ECMA-254 [1], and is closely related to the call control protocol specification as defined in EN 302 092-1 [5].

The purpose of prenegotiation as specified in the present document 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 the present document.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

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- [1] ECMA-254: "B-PISN - Inter-Exchange Signalling Protocol - Generic Functional Protocol (B-QSIG-GF)".
- [2] ISO/IEC 13247: "Information technology - Telecommunications and information exchange between systems - Broadband Private Integrated Services Network - Inter-exchange signalling protocol - Basic call/connection control".
- [3] EN 300 443-1: "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; B-ISDN user-network interface layer 3 specification for basic call/bearer control; Part 1: Protocol specification [ITU-T Recommendation Q.2931 (1995), modified]".
- [4] ETS 300 796-1: "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Generic functional protocol; Core aspects; Part 1: Protocol specification [ITU-T Recommendation Q.2932.1 (1996), modified]".
- [5] EN 302 092-1: "Broadband Integrated Services Digital Network (B-ISDN) and Broadband Private Integrated Services Network (B-PISN); Digital Subscriber Signalling System No. two (DSS2), Broadband Inter-Exchange Signalling (B-QSIG), and Signalling System No. 7 (SS7); Call control in a separated call and bearer control environment; Part 1: Protocol specification".
- [6] EN 302 093-1: "Broadband Integrated Services Digital Network (B-ISDN); Digital Subscriber Signalling System No. two (DSS2) protocol; Point-to-point multiconnection bearer control specification in a separated call and bearer environment; Part 1: Protocol specification".

- [7] ITU-T Recommendation X.680: "Information technology - Abstract Syntax Notation One (ASN.1): Specification of basic notation".
- [8] ITU-T Recommendation X.690: "Information technology - ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER)".
- [9] ITU-T Recommendation X.880: "Information technology - Remote operations: concepts, model and notation".
- [10] ITU-T Recommendation Z.100: "CCITT specification and description language (SDL)".
- [11] ISO/IEC 11579-1: "Information technology - Telecommunications and information exchange between systems - Private integrated services network - Part 1: Reference configuration for PISN Exchanges (PINX)".
- [12] ITU-T Recommendation I.327: "B-ISDN functional architecture".

3 Definitions

3.1 External definitions

The definitions used in ECMA-254 [1], ISO/IEC 13247 [2], EN 300 443-1 [3], ETS 300 796-1 [4] and EN 302 092-1 [5] apply.

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3.2 Additional definitions

For the purposes of the present document the following additional definition applies:

prenegotiation: user action of checking 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 the present document, the abbreviations used in [1], [2], [3], [4], [5] and [6] apply. In addition, the following abbreviations are used:

CC	Call Control
PRN	Pre negotiation
mp	modification possible (9.2.1.3, figure 2)
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

The present document specifies the procedures, messages, information elements and components needed for the support of Prenegotiation (PRN).

PRN 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. PRN does not establish connections.

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

The PRN protocol operates between two adjacent call control entities (points of call and bearer co-ordination).

It is not required that the network interprets and processes the contents of the PRN 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 PRN procedure. Possible actions/interventions of network nodes based on the interpretation of the contents of the PRN operation are outside the scope of the present document.

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

The purpose of PRN 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 PRN 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 PRN 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 PRN is negative.

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

5.2 Protocol model for PRN

For PRN, the basic protocol model outlined in figure 1-1 of ETS 300 796-1 [4] applies. Figure 1 shows how PRN fits into this basic model. It should be noted that figure 1 only shows those ASEs which are directly related to PRN.

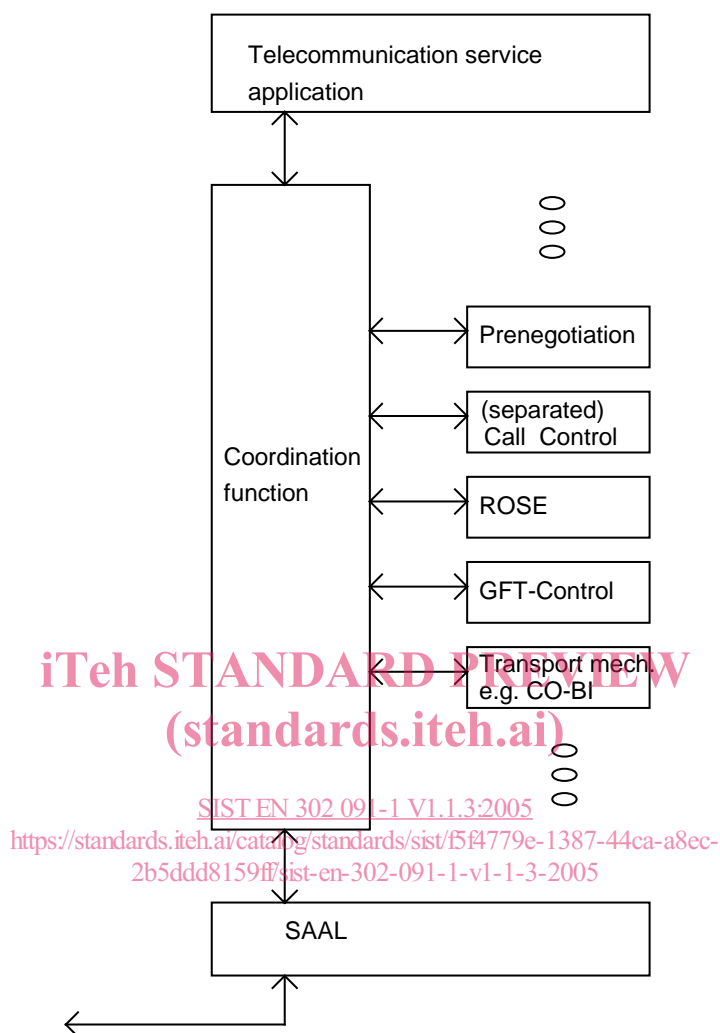


Figure 1: PRN within the B-QSIG/DSS2 protocol model

6 Operational requirements

PRN may be used within an environment of multiconnection calls. In such an environment, no specific operational requirements exist, and PRN may be invoked according to the procedures of subclause 9.2.1.

PRN is based on the transport capabilities as defined in ETS 300 796-1 [4] and ECMA-254 [1], and on the call establishment procedures as defined in EN 302 092-1 [5].