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**INTEGRATED SERVICES DIGITAL
NETWORK (ISDN)**

INTERNETWORK INTERFACES

**PARAMETER EXCHANGE
FOR ISDN INTERWORKING**

ITU-T Recommendation I.515

(Previously "CCITT Recommendation")

FOREWORD

The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the International Telecommunication Union. The 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, established the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

ITU-T Recommendation I.515 was revised by the ITU-T Study Group XVIII (1988-1993) and was approved by the WTSC (Helsinki, March 1-12, 1993).

NOTES

1 As a consequence of a reform process within the International Telecommunication Union (ITU), the CCITT ceased to exist as of 28 February 1993. In its place, the ITU Telecommunication Standardization Sector (ITU-T) was created as of 1 March 1993. Similarly, in this reform process, the CCIR and the IFRB have been replaced by the Radiocommunication Sector.

In order not to delay publication of this Recommendation, no change has been made in the text to references containing the acronyms "CCITT, CCIR or IFRB" or their associated entities such as Plenary Assembly, Secretariat, etc. Future editions of this Recommendation will contain the proper terminology related to the new ITU structure.

2 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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Recommendation I.515

PARAMETER EXCHANGE FOR ISDN INTERWORKING

(Melbourne, 1988; amended at Helsinki, 1993)

1 General

1.1 Scope

The objective of this Recommendation is to provide overall parameter exchange principles and functional descriptions for ISDN interworking. This Recommendation describes the principles for parameter exchange mechanisms. It is recognized that depending on the available (end-to-end) signalling capability, the exchange of parameters may use either out- or in-band procedures.

Parameter exchange may be necessary to establish compatible interworking functions for a variety of applications. Typical examples where parameter exchange takes place include, terminal adaption compatibility establishment, modem type selection and voice encoding compatibility establishment. This does not imply, however, any requirement for an ISDN to support network based modem interworking.

Figure 1 illustrates several voice and data applications, supported by different networks and mechanisms. Parameter exchange may be necessary where interworking between different terminals or networks (as per other Recommendations) is required.

NOTE – Where interworking procedures exist, the appropriate references are made herein.

1.2 Definitions

Use is made of the following terms within this Recommendation. These terms do not necessarily refer to any existing protocol structure, rather they define information requirements in the context of this Recommendation.

bearer capability information: Specific information defining the lower layer characteristics of the network.

low layer compatibility information: Information defining the lower layer characteristics of a TE or TA.

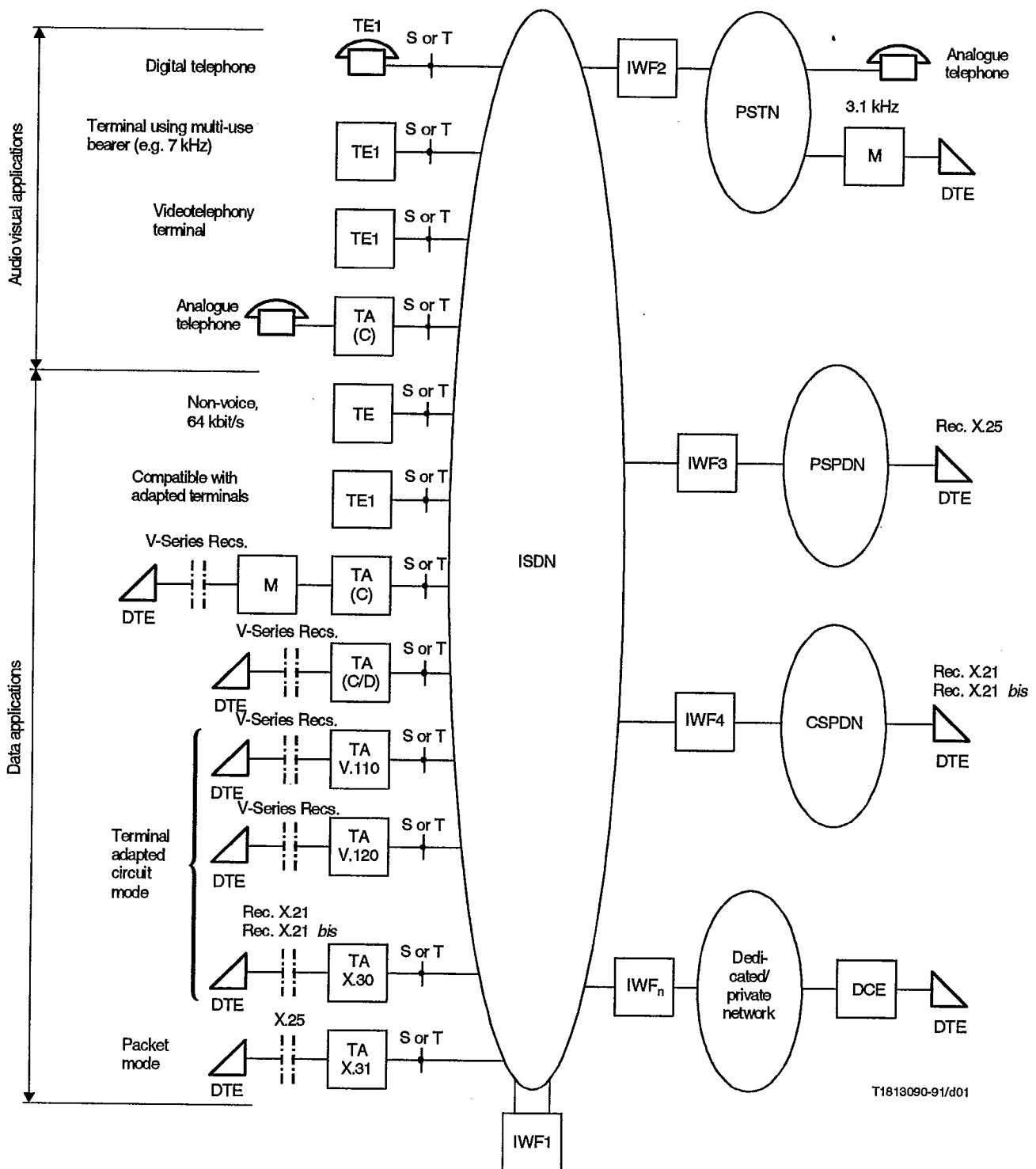
high layer compatibility information: Information defining the higher layer characteristics of a terminal.

protocol identifier: Information defining the specific protocols used by a terminal to support data transfer.

progress indicator: Information supplied to indicate to the ISDN terminal that interworking has occurred.

out-band parameter exchange: Information exchanged via signalling channels which are not within the channel used for user information transfer.

in-band parameter exchange: Information exchanged using the same information channel as that used for the user information transfer.



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IWF Interworking function (may include: physical requirements, signalling requirements, terminal adaptation modulation, etc.)
M Modem
TA(C) Terminal adaptor with codec
TA(C/D) Terminal adaptor with codec, modem and support of V.110 or V.120. This terminal or terminal adaptation may use the Multi-Use-Bearer service and associated procedure specified in Recommendation Q.931.

NOTES

- IWFs may be located:
 - within the network(s);
 - separate to the network(s);
 - within the customers premises.
- The requirement for interworking between terminals may not be inferred from this figure.
- This figure is not exhaustive.

FIGURE 1/I.515

2 Principles

2.1 Types of parameter exchanges

Three types of parameter exchange need to be considered:

- i) end-to-end, out-band as shown in Figure 2. Parameter exchange is accomplished via the D-channel and Signalling Systems No. 7;
- ii) end-to-end, in-band as shown in Figure 3;
- iii) parameter exchange to select IWFs as shown in Figure 4.

The in-band parameter exchange occurs after the establishment of an end-to-end connection and may provide for establishment of compatibility between the endpoints, based on characteristics such as protocol, rate adaption scheme and modem type.

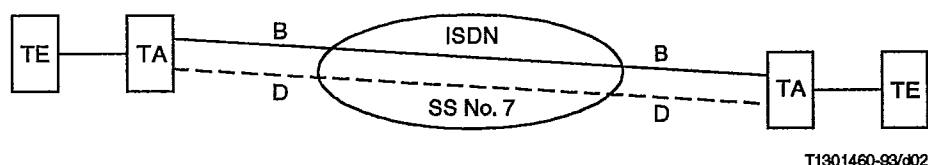
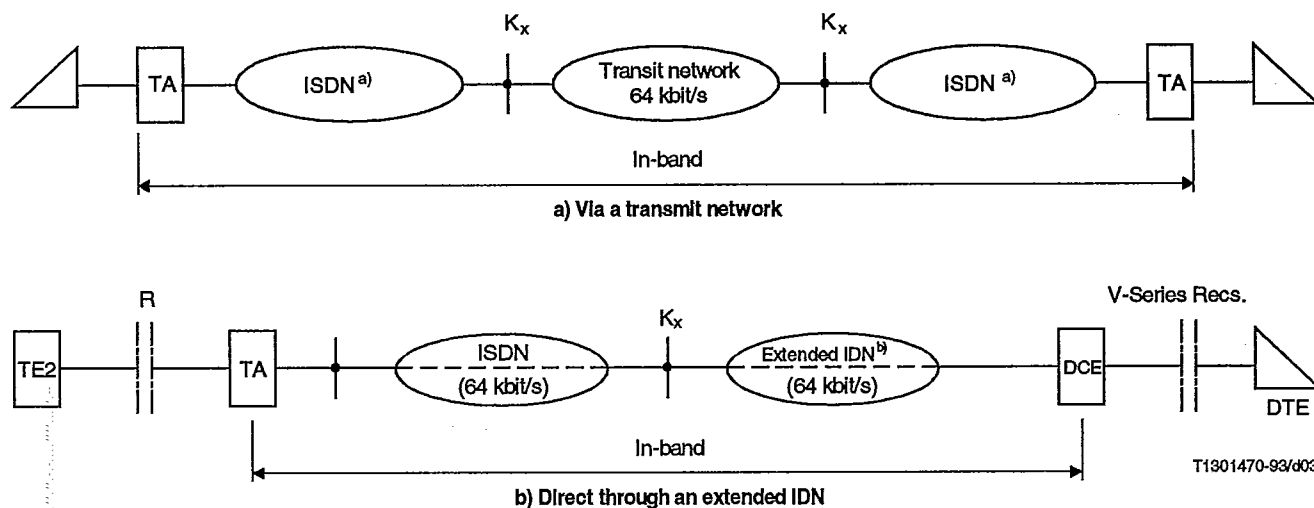


FIGURE 2/I.515
Out-band parameter exchange via D-channel



- a) 64 kbit/s connection type is assumed for ISDN.
- b) The extended IDN shown has a 64 kbit/s transmission channel (see Recommendation I.231), however its signalling system is not compatible with that of the ISDN.

FIGURE 3/I.515
In-band parameter exchange