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Information technology — Telecommunications and information exchange between systems — Private integrated services network —

Part 1:
Reference configuration for PISN Exchanges (PINX)

Technologies de l'information — Télécommunications et échange d'information entre systèmes — Réseau privé avec intégration de services —

Partie 1: Configuration de référence pour échanges de PISN (PINX)

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

International Standard ISO/IEC 11579-1 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems.*

ISO/IEC 11579 consists of the following parts, under the general title *Information technology — Telecommunications and information exchange between systems — Private integrated services network*:

— *Part 1: Reference configuration for PISN Exchanges (PINX)*

— *Part 2: Reference configuration for High-Speed PISN Exchanges (HS-PINX)*

Annexes A, B, C and D of this part of ISO/IEC 11579 are for information only.

Introduction

The purpose of a reference configuration (RC) is to define reference points by means of identifying functional groupings which interwork at the reference points.

Suitable definitions of functional groupings allow the proper definition of the behaviour and/or performance of such groupings, merely by referring to the corresponding reference points.

This applies to aspects such as:

- delimitation of areas of responsibility, e.g. for management, operation etc.;
- partitioning and apportioning of performance values;
- numbering;
- termination of signalling protocols;
- etc.

ISO/IEC 11579 will consist of several parts. This part of ISO/IEC 11579 defines the RC for a 64 kbit/s-based Private Integrated Services Network (PISN) exchange (PINX), including a description for modelling complete PISNs consisting of more than one PINX. It also forms a component for a RC for high-speed-PISNs (HS-PISN), i.e. PISNs which may be based on technologies such as broad-band ISDN, LAN, etc. The particularities for HS-PISN will be specified in other parts of this standard.

In addition to the user-to-ISDN reference configuration specified in CCITT Rec. I.411 [1] which allows the exchanges of a private integrated services network (PISN) to interwork with a public ISDN in a Concatenation Scenario, ISO/IEC 11579 specifies a reference configuration which allows to specify the functions which apply to the control of connections and calls between any two exchanges of a given PISN

The concept of this standard is based on the assumption that such inter-PISN-exchange connections are routed through an intervening network, which can be of any nature from, in the trivial case, a mere physical medium like a piece of wire, up to a switching network, such as the public ISDN, provided it offers the required capabilities for carrying user and control information between the PISN exchanges. In the case that the IVN is represented by a public ISDN, the PISN and the public ISDN interwork in an Overlay Scenario.

For further information on the Concatenation and the Overlay Scenarios see annex B.

In general, inter-PISN-exchange calls require that any two interconnected PISN exchanges

- can be provided with bearer capabilities between each other, which support and satisfy the requirements as requested by the users of the PISN; and

- can interchange control information, which allows mutual control of network layer connections, including the control of supplementary services, if applicable; and

- can interchange management information, enabling management actions with regard to, e.g., the use and supervision of the user information channels.

Reference point Q has been defined as a conceptual point (e.g. not as a real interface) where the exchange of connection control information between PISN exchanges shall be specified. Reference point C has been defined as an interface point where the access parameters and procedures and, if applicable, the control information between the PISN exchanges and the intervening network shall be specified.

Annex A shows the various information flows terminating at the reference points specified in this part of ISO/IEC 11579.

Information technology — Telecommunications and information exchange between systems — Private integrated services network —

Part 1 — Reference configuration for PISN Exchanges (PINX)

1 Scope

This part of ISO/IEC 11579 specifies a reference configuration (RC) for private integrated services network exchanges (PINX) for their interconnection to form private integrated services networks (PISN). The configuration is not intended to require any specific implementation of a PINX, but only to provide guidance for the specification of PINX capabilities.

This RC is sufficient to support ISDN-like applications. It can be extended to also support non-ISDN-like applications.

This RC describes a conceptual PINX. By combining multiple PINXs to a private integrated services network the RC becomes applicable to a PISN.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 11579. At the time of publication, the editions indicated are valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC 11579 are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

[1] CCITT Recommendation I.411 (1988), ISDN-User-Network Interfaces - Reference Configurations

[2] CCITT Recommendation I.570 (1992), Public/Private ISDN Interworking

3 Symbols and abbreviations

CC Call Control functional grouping

ICC Inter-PINX Connection Control functional grouping

IPC Inter-PINX Connection

IVN Intervening Network

ISCTX Integrated Services Centrex

ISPBX Integrated Services Private Branch Exchange

MP Mapping functional grouping

PIAT Public ISDN Access functional grouping

PINX Private integrated services network Exchange

PISN Private integrated services network

PTS Private Termination System functional grouping

RC Reference configuration

RP Reference Point

SW Switching functional grouping

TE Terminal Equipment functional grouping

4 Definitions

For the purposes of this part of ISO/IEC 11579, the following definitions apply:

4.1 reference configuration : A conceptual configuration showing functional arrangements within a public ISDN, a PISN or between a public ISDN and a PISN. Reference configurations are based on association rules of functional groupings and reference points. A functional arrangement may, but need not, be equivalent to a physical arrangements of units of equipment.

4.2 functional grouping : A set of functions needed in functional arrangements. A functional grouping may, but need not, be equivalent to a unit of equipment. Depending on the actual implementation, some of the functions of a functional grouping may or may not be present.

4.3 reference point (RP) : A conceptual point at the junction of two functional groupings. In a specific functional arrangement, a reference point may, but need not, correspond to a physical interface between units of equipment.

4.4 private integrated services network (PISN) : A private network providing services to a specific set of users (different from a public network which provides services to the general public).