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**Information technology —
Telecommunications and information
exchange between systems — Private
Integrated Services Network — Mapping
functions for the tunnelling of QSIG
through IP networks**

*Technologies de l'information — Télécommunications et échange
d'information entre systèmes — Réseau privé à intégration de
services — Tracé de fonctions pour le «tunnelling» de QSIG par des
réseaux IP*

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 21992 was prepared by ECMA (as ECMA-336) and was adopted, under a special "fast-track procedure", by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by national bodies of ISO and IEC.

Introduction

This International Standard is one of a series of standards defining mapping functions in exchanges of Private Integrated Services Networks required for the utilization of intervening network scenarios. The series uses the ISDN concepts as developed by ITU-T (formerly CCITT) and is also within the framework of standards for open systems interconnection as defined by ISO/IEC.

This International Standard is based upon the practical experience of ECMA member companies and the results of their active and continuous participation in the work of ISO/IEC JTC 1, ITU-T, ETSI and other international and national standardization bodies. It represents a pragmatic and widely based consensus.

Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Mapping functions for the tunnelling of QSIG through IP networks

1 Scope

This International Standard specifies functions for using a packet network that uses the Internet Protocol (IP) as its network layer protocol and UDP and TCP as its transport layer protocols, to interconnect two Private Integrated services Network eXchanges (PINXs) forming part of a Private Integrated Services Network (PISN). Interconnection is achieved by carrying the inter-PINX signalling protocol directly over the Transmission Control Protocol (TCP) and inter-PINX user information (e.g., voice) over the Real-time Transport Protocol (RTP), RTP being carried over the User Datagram Protocol (UDP). The inter-PINX signalling protocol is assumed to be QSIG, as specified in ISO/IEC 11572, ISO/IEC 11582 and other International Standards.

This International Standard provides for two types of interconnection:

- on-demand, where a separate TCP connection for QSIG is established at the start of each call and cleared down at the end of that call; and
- semi-permanent, where a single TCP connection with an indefinite lifetime carries QSIG on behalf of many single calls.

This International Standard is applicable to PINXs that can be interconnected to form a PISN using QSIG as the inter-PINX signalling protocol.

2 Conformance

In order to conform to this International Standard, a PINX shall satisfy the requirements identified in the Implementation Conformance Statement (ICS) proforma in Annex A.

3 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 11572:2000, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Circuit mode bearer services — Inter-exchange signalling procedures and protocol*

ISO/IEC 11574:2000, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Circuit-mode 64 kbit/s bearer services — Service description, functional capabilities and information flows*

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)*

ISO/IEC 11582:2002, *Information technology — Telecommunications and information exchange between systems — Private Integrated Services Network — Generic functional protocol for the support of supplementary services — Inter-exchange signalling procedures and protocol*

ITU-T Rec. I.112:1993, *Vocabulary of terms for ISDNs*

ITU-T Rec. I.210:1993, *Principles of telecommunication services supported by an ISDN and the means to describe them*

IETF RFC 760, *Internet Protocol*

IETF RFC 761, *Transmission Control Protocol*

IETF RFC 768, *User Datagram Protocol*

IETF RFC 1889, *RTP: A Transport Protocol for Real-Time Applications*

IETF RFC 2126, *ISO Transport Service on top of TCP (ITOT)*