

TECHNICAL REPORT

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Information technology — Telecommunications and information exchange between systems — Operation of an X.25 interworking unit

*Systèmes de traitement de l'information — Communication de données —
Fonctionnement d'une unité d'interfonctionnement X.25*



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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) together form a system for worldwide standardization as a whole. 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.

The main task of a technical committee is to prepare International Standards but in exceptional circumstances, the publication of a technical report of one of the following types may be proposed:

- type 1, when the necessary support within the technical committee cannot be obtained for the publication of an International Standard, despite repeated efforts;
- type 2, when the subject is still under technical development requiring wider exposure;
- type 3, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ('state of the art', for example).

Technical reports of types 1 and 2 are subject to review within three years of publication, to decide whether they can be transformed into International Standards. Technical reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

ISO/IEC/TR 10029, which is a technical report of type 2, was prepared by ISO/IEC JTC 1, *Information technology*.

Introduction

The preparation of ISO 8881 included, as an annex, the operation of an interworking unit that would enable a Local Area Network (LAN) to be interconnected to other X.25 Wide Area Networks (WANs). During these studies it became clear that the field of application of the X.25 interworking unit was not limited to LAN/WAN interconnection and the work was separated from ISO 8881 and attached to ISO 8880-2.

Following further development as part of ISO 8880-2 it was observed that the technical content was in the form of guidance to implementors and as a consequence the document contained no specification nor conformance requirements. However those studies indicated that further consideration should be directed towards ISO 8208 and in particular to the classification of facilities. For example, a facility marked as applicable only to DTE/DCE operation could also be applicable to DTE/DTE operation where one of the DTE's is an X.25 interworking unit (IWU) as described in this technical report.

Rather than delay the publication of this technical material until the complementary studies have been concluded, this technical report is published in order to give guidance to implementors on the operation of an IWU.

Various networks employ the ISO 8208 X.25 Packet Layer Protocol (PLP) to carry communications between data terminals. An IWU provides the means to interconnect those networks in order that a terminal on one network can communicate with a terminal or make use of facilities on a different network. Typically, an IWU could be located between a LAN where the attached terminals use the X.25 PLP as defined in ISO 8881, and a WAN which is a Packet Switched Data Network where the terminals use the X.25 PLP protocol as defined in ISO 8208, or between LANs.

This Technical Report describes the functions performed by an IWU which operates between subnetworks that use ISO 8208 in conjunction with various lower layer protocols. The ISO 8208 protocols on each side of the IWU are closely coupled but are not necessarily equal in configuration. The protocols at the lower layers are independent of each other.

NOTE — The method of interworking described in this Technical Report is a method of interworking at the level of the ISO 8208 Protocol Data Units. A standard specifying interworking using the semantics of the OSI Network Service is currently being developed.

In order to avoid duplicating the definitions for the operation of the X.25 PLP in this Technical Report, extensive reference to specific text in ISO 8208 is made. The references given are to clauses, figures, and tables as identified in the first edition of ISO 8208.

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1 Scope

This Technical Report describes the function of the IWU in terms of the mapping between Protocol Data Units (PDUs) that it receives from one interface, and PDUs that it then transmits, which could be on either interface of the IWU. Additionally, this Technical Report describes the procedures that an IWU can initiate on each interface independently.

Each interface corresponds to one instance of a DTE/DXE connection, and both interfaces of the Interworking Unit operate as a DTE as specified by ISO 8208.

NOTE — The term 'DXE' is used as defined in ISO 8208 meaning "...those contexts where it would not matter whether a DTE or a DCE was being referred to."

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Technical Report. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this Technical Report 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.

ISO 8208:1987, *Information processing systems — Data communications — X.25 Packet Level Protocol for Data Terminal Equipment*.

ISO 8880-2: —¹⁾, *Information processing systems — Protocol combinations to provide and support the OSI network service — Part 2: Provision and support of the connection-mode network service*.

ISO 8881: —¹⁾, *Information processing systems — Data communications — Use of the X.25 Packet Level Protocol in Local Area Networks*.

1) To be published.