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**Information technology — Use of X.25  
Packet Layer Protocol in conjunction with  
X.21/X.21 bis to provide the OSI  
connection-mode Network Service**

*Technologies de l'information — Utilisation du protocole X.25 de couche  
de paquet conjointement avec X.21/X.21 bis pour fournir le service de  
réseau OSI en mode connexion*

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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 10588 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in collaboration with the CCITT. The identical text is published as CCITT Recommendation X.613.

## INTERNATIONAL STANDARD

## CCITT RECOMMENDATION

# INFORMATION TECHNOLOGY – USE OF X.25 PACKET LAYER PROTOCOL IN CONJUNCTION WITH X.21/X.21 *bis* TO PROVIDE THE OSI CONNECTION- MODE NETWORK SERVICE

## 1 Scope

This CCITT Recommendation | International Standard is applicable to the environments where Recommendation X.21 or X.21 *bis* is used and where the X.25 packet layer protocol (PLP), as standardized in ISO/IEC 8208, is operated during the X.21/X.21 *bis* data phase to provide the OSI Connection-mode Network Service (CONS). These environments include a CSDN and an ISDN Terminal Adaptor complying with Recommendation X.30 which provides an X.21 access. The X.25 PLP operates either in the DTE/DTE or DTE/DCE mode.

This provision is achieved by specifying the mapping of the CONS primitives and parameters to and from the elements of the protocols used (i.e. X.25 PLP and X.21).

## 2 Normative references

The following CCITT Recommendations and International Standards contain provisions which, through reference in this text, constitute provisions of this Recommendation | International Standard. At the time of publication, the editions indicated were valid. All Recommendations and Standards are subject to revision and parties to agreements based on this Recommendation | International Standard are encouraged to investigate the possibility of applying the most recent edition of the Recommendations and Standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards. The CCITT Secretariat maintains a list of the currently valid CCITT Recommendations.

### 2.1 Identical Recommendations | International Standards

- CCITT Recommendation X.213 (1992) | ISO/IEC 8348:1993, *Information technology – Network service definition for Open Systems Interconnection*

### 2.2 Paired Recommendations | International Standards equivalent in technical content

- CCITT Recommendation X.200 (1988), *Reference Model of Open Systems Interconnection for CCITT Applications*.  
ISO 7498:1984, *Information processing systems – Open Systems Interconnection – Basic Reference Model*.
- CCITT Recommendation X.210 (1988), *Open Systems Interconnection Layer Service Definition Conventions*.  
ISO/TR 8509:1987, *Information processing systems – Open Systems Interconnection – Service conventions*.
- CCITT Recommendation X.223 (1988), *Use of X.25 to provide the OSI Connection-Mode Network Service for CCITT applications*.  
ISO 8878:1987, *Information processing systems – Data Communications – Use of X.25 to provide the OSI Connection-Mode Network Service*.

## 2.3 Additional references

- CCITT Recommendation X.2 (1988), *International data transmission services and optional user facilities in public data networks and ISDNs.*
- CCITT Recommendation X.21 (1992), *Interface between data terminal equipment and data circuit-terminating equipment for synchronous operation on public data networks.*
- CCITT Recommendation X.21 bis (1988), *Use on public data networks of data terminal equipment (DTE) which is designed for interfacing to synchronous V-Series modems.*
- CCITT Recommendation X.25 (1988), *Interface between data terminal equipment (DTE) and data circuit-terminating equipment (DCE) for terminals operating in the packet mode and connected to public data networks by dedicated circuit.*
- CCITT Recommendation X.30 (1988), *Support of X.21, X.21 bis and X.20 bis based data terminal equipments (DTEs) by an integrated services digital network (ISDN).*
- CCITT Recommendation X.31 (1988), *Support of packet mode terminal equipment by an ISDN.*
- CCITT Recommendation X.32 (1988), *Interface between data terminal equipment (DTE) and data circuit-terminating equipment (DCE) for terminals operating in the packet mode and accessing a packet switched public data network through a public switched telephone network or an integrated services digital network or a circuit switched public data network.*
- ISO 7776:1986, *Information processing systems – Data communication – High-level data link control procedures - Description of the X.25 LAPB-compatible DTE data link procedures.*
- ISO/IEC 8208:1990, *Information technology – Data communications – X.25 Packet Layer Protocol for Data Terminal Equipment.*