

Information technology — Open Systems Interconnection — Data link service definition

ICS 35.100.20

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National foreword

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- monitor related international and European developments and promulgate them in the UK.

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Cross-references

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the ISO/IEC title page, pages ii to iv, pages 1 to 22 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Amendments issued since publication

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**Information technology — Open Systems
Interconnection — Data link service
definition**

*Technologies de l'information — Interconnexion de systèmes ouverts
(OSI) — Définition du service de liaison de données*



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Descriptors: Data processing, information interchange, telecommunications, network interconnection, open systems interconnection, data link layer, data transmission, communication procedure, services.

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 8886 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems*, in collaboration with ITU-T. The identical text is published as ITU-T Recommendation X.212.

This second edition cancels and replaces the first edition (ISO/IEC 8886:1992), which has been technically revised.

Introduction

This Recommendation | International Standard is one of a set of Recommendations | International Standards produced to facilitate the interconnection of information processing systems. It is related to other Recommendations | International Standards in the set as defined by ITU-T Rec. X.200 | ISO/IEC 7498-1, OSI Reference Model — The Basic Model. The reference model described by ITU-T Rec. X.200 | ISO/IEC 7498-1 subdivides the area of standardization for Open Systems Interconnection (OSI) into a series of layers of specification, each of a manageable size.

This Recommendation | International Standard defines the services provided by the Data Link Layer to the Network Layer at the boundary between the Data Link and Network Layers of the OSI Reference Model. It provides for the designers of network protocols a definition of the Data Link Service existing to support the network protocol and for the designers of Data Link Protocols a definition of the services to be made available through the action of the Data Link Protocol over the underlying service. The relationship is illustrated in Figure Intro. 1.

Throughout the set of OSI Recommendations | International Standards, the term “service” refers to the abstract capability provided by one layer of the OSI Reference Model to the layer immediately above. Thus, the Data Link Service defined in this Recommendation | International Standard is a conceptual architectural service, independent of administrative divisions.

1 Scope

This Recommendation | International Standard defines the OSI Data Link Service in terms of:

- a) the primitive actions and events of the service;
- b) the parameters associated with each primitive action and event, and the form that they take; and
- c) the interrelationship between, and the valid sequences of these actions and events.

The principal objective of this Recommendation | International Standard is to specify the characteristics of a conceptual Data Link Service and thus, supplement the OSI Reference Model in guiding the development of Data Link Protocols.

This Recommendation | International Standard does not specify individual implementation or products, nor does it constrain the implementation of Data Link entities and interfaces within an information processing system.

There is no conformance of equipment to this Data Link Service Definition Recommendation | International Standard. Instead, conformance is achieved through implementation of conforming Data Link Protocols that fulfil the Data Link Service defined in this Recommendation | International Standard.

2 Normative references

The following 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 International 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 Telecommunication Standardization Bureau maintains a list of currently valid ITU-T Recommendations.

2.1 Identical Recommendations | International Standards

— ITU-T Recommendation X.200 (1994) | ISO/IEC 7498-1:1994, *Information technology — Open Systems Interconnection — Basic Reference Model: The Basic Model*.

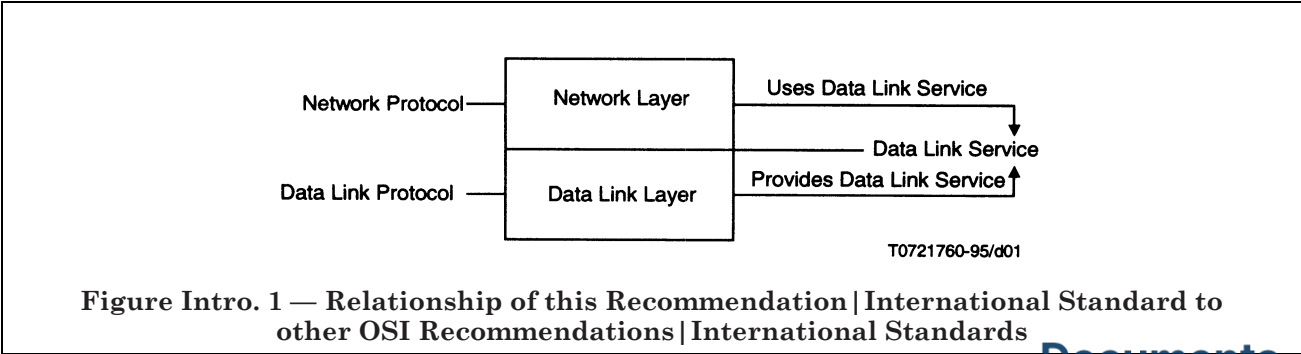


Figure Intro. 1 — Relationship of this Recommendation | International Standard to other OSI Recommendations | International Standards

— ITU-T Recommendation X.210 (1993) | ISO/IEC 10731:1994, *Information technology — Open Systems Interconnection — Basic Reference Model: Conventions for the definition of OSI services*.

Part 1 — General

3 Definitions

3.1 OSI Reference Model definitions

This Recommendation | International Standard is based on the concepts developed and makes use of the following terms defined in ITU-T Rec. X.200 | ISO/IEC 7498-1:

- a) Data link entity;
- b) Data Link Layer;
- c) Data Link Service;
- d) Data-link-service-access-point;
- e) Data-link-service-access-point-address;
- f) Data-link-service-data-unit;
- g) Reset.

3.2 Service Conventions definitions

This Recommendation | International Standard makes use of the following terms defined in ITU-T Rec. X.210 | ISO/IEC 10731, as they apply to the Data Link Layer:

- a) Data Link Service Users;
- b) Data Link Service Provider;
- c) Primitive;
- d) Request;
- e) Indication;
- f) Response;
- g) Confirm.

3.3 Data Link Service definitions

This Recommendation | International Standard makes use of the following terms:

a) data-link-connection

An association established by a Data Link Layer between two or more Data Link Service Users for the transfer of data, which provides explicit identification of a set of Data Link data transmissions and agreement concerning the Data Link data transmission services to be provided for the set.

NOTE This definition clarifies the definition given in ITU-T Rec. X.200 | ISO/IEC 7498-1.

b) data-link-connection-mode data transmission

The transmission of a Data-link-service-data-unit within the context of a Data-link-connection that has been previously established.

c) data-link-connectionless-mode data transmission

The transmission of a Data-link-service-data-unit not in the context of a Data-link-connection and not required to maintain any logical relationship among multiple invocations.

4 Abbreviations

For this purposes of this Recommendation | International Standard, the following abbreviations apply:

DL	Data Link
DLC	Data-link-connection
DLL	Data Link Layer
DLS	Data Link Service
DLSAP	Data-link-service-access-point
DLSDU	Data-link-service-data-unit
OSI	Open Systems Interconnection
QOS	Quality of Service

5 Conventions

5.1 General conventions

This Recommendation | International Standard uses the descriptive conventions given in ITU-T Rec. X.210 | ISO/IEC 10731.

The service model, service primitives, and time-sequence diagrams used are entirely abstract descriptions; they do not represent a specification for implementation.

5.2 Parameters

Service primitives, used to represent service user/service provider interactions (see ITU-T Rec. X.210 | ISO/IEC 10731), convey parameters which indicate information available in the user/provider interaction.

The parameters which apply to each group of Data Link Service primitives are set out in tables in clauses 12 to 14 and 19. Each “X” in the tables indicates that the primitive labelling the column in which it falls may carry the parameter labelling the row in which it falls.