

INTERNATIONAL STANDARD

ISO/IEC
9548-1

First edition
1996-08-01

Information technology — Open Systems Interconnection — Connectionless Session protocol: Protocol specification

*Technologies de l'information — Interconnexion de systèmes ouverts
(OSI) — Protocole de session en mode sans connexion: Spécification du
protocole*



Reference number
ISO/IEC 9548-1:1996(E)



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Printed in Switzerland

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 9548-1 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 21, *Open systems interconnection, data management and open distributed processing*, in collaboration with ITU-T. The identical text is published as ITU-T Recommendation X.235.

ISO/IEC 9548 consists of the following parts, under the general title *Information technology — Open Systems Interconnection — Connectionless Session protocol*:

- *Part 1: Protocol specification*
- *Part 2: Protocol Implementation Conformance Statement (PICS) proforma*

Annex A forms an integral part of this part of ISO/IEC 9548.

Introduction

The connectionless session protocol specification is one of a set of Recommendations | International Standards produced to facilitate the interconnection of computer systems. The set of standards covers the services and protocols required to achieve such interconnection.

The connectionless session protocol specification is positioned with respect to other related standards by the layers defined in the Reference Model for Open Systems Interconnection (see ITU-T Rec. X.200 | ISO/IEC 7498-1). In particular, it is a protocol of the Session Layer. It is most closely related to the Session Service Definition (see ITU-T Rec. X.215 | ISO/IEC 8326) and the Transport Service Definition (see ITU-T Rec. X.214 | ISO/IEC 8072). The interrelationship of these standards is depicted in Figure.

The structure of this Recommendation | International Standard is similar to the structure of the connection mode Session Protocol Specification (see ITU-T Rec. X.225 | ISO/IEC 8327-1) in order to facilitate cross reference between the two standards.

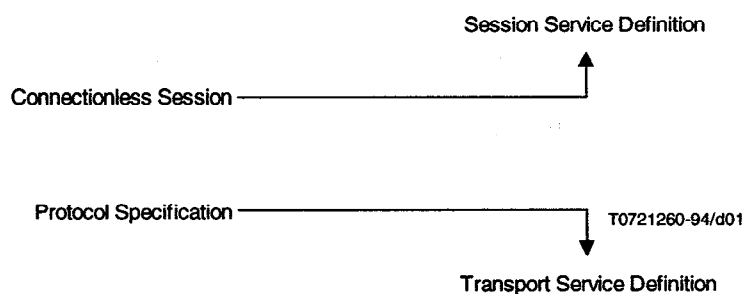


Figure Intro.1 – Relationship between the connectionless session protocol and adjacent services

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ITU-T RECOMMENDATION

**INFORMATION TECHNOLOGY – OPEN SYSTEMS INTERCONNECTION –
CONNECTIONLESS SESSION PROTOCOL: PROTOCOL SPECIFICATION**

SECTION 1 – GENERAL

1 Scope

This Recommendation | International Standard specifies:

- a) procedures for the connectionless transmission of data and protocol control information from one session entity to a peer session entity;
- b) the encoding of the session protocol data units used for the transmission of data and control information;
- c) procedures for the correct interpretation of session protocol control information; and
- d) the functional requirements for implementations claiming conformance to this Recommendation | International Standard.

The procedures are defined in terms of:

- e) the interactions among peer session entities through the exchange of session protocol data units;
- f) the interactions between a session entity and a session service user through the exchange of session service primitives; and
- g) the interactions between a session entity and a transport provider through the exchange of transport service primitives.

This Recommendation | International Standard specifies a connectionless session protocol. A connection-oriented session protocol is specified in ITU-T Rec. X.225 | ISO/IEC 8327-1.

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 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 ISO and IEC maintain registers of currently valid International Standards. The Telecommunication Standardization Bureau of the ITU 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*.
- ITU-T Recommendation X.214 (1993) | ISO/IEC 8072:1994, *Information technology – Open Systems Interconnection – Transport service definition*.

- ITU-T Recommendation X.215 (1994) | ISO/IEC 8326:....¹⁾, *Information technology – Open Systems Interconnection – Session service definition.*
- ITU-T Recommendation X.225 (1994) | ISO/IEC 8327-1:....¹⁾, *Information technology – Open Systems Interconnection – Connection-oriented Session Protocol: Protocol specification.*

3 Definitions

3.1 Reference model definitions

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

- a) Transport Layer;
- b) Session Layer;
- c) session service access point;
- d) session service access point address;
- e) session entity;
- f) protocol;
- g) service.

3.2 Additional definitions

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

3.2.1 calling session address: Identifies the session service user that acts as the source of data during a particular instance of session connectionless mode transmission.

3.2.2 called session address: Identifies the session service user that acts as the sink of data during a particular instance of session connectionless mode transmission.

4 Abbreviations

4.1 Data Units

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

SPDU	Session Protocol Data Unit
SDU	Service Data Unit
TSDU	Transport Service Data Unit

4.2 Session protocol data units

UD SPDU	Unit Data SPDU
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4.3 SPDU fields

SI	SPDU Identifier
LI	Length Indicator
PI	Parameter Indicator
PV	Parameter Value

¹⁾ To be published.

4.4 Parameters

- calling session selector;
- called session selector.

4.5 Miscellaneous

SPM	Session Protocol Machine
SS	Session Service
SS-user	Session Service User
SSAP	Session Service Access Point
TSAP	Transport Service Access Point

5 Overview of the connectionless session protocol

5.1 Service provided by the session layer

The service provided by the protocol described in this Recommendation | International Standard is a connectionless session service. The connectionless session service is described in ITU-T Rec. X.215 | ISO/IEC 8326. The session service primitives provided are summarized in Table 1.

Table 1 – Connectionless session service primitives

Primitive	Parameters
S-UNIT-DATA request	Calling session address Called session address Quality of Service SS-User-Data
S-UNIT-DATA indication	Calling session address Called session address SS-User-Data

5.2 Service assumed from the transport layer

The session protocol described in this Recommendation | International Standard can operate only over the connectionless transport service defined in ITU-T Rec. X.214 | ISO/IEC 8072. When operating over that service, the service primitives summarized in Table 2 are used.

Table 2 – Connectionless transport service primitives

Primitive	Parameters
T-UNIT-DATA request	Source address Destination address Quality of Service TS-User-Data
T-UNIT-DATA indication	Source address Destination address TS-User-Data
NOTE – Only those parameters pertinent to this session protocol are included in the above tables.	

5.3 Functions of the session layer

The functions of the session layer are:

- a) to map session addresses onto transport addresses;
- b) to select transport Quality of Service parameters needed;
- c) to transfer session selectors; and
- d) to transfer an SSDU.

5.4 Model of the session layer

A session protocol entity is comprised of one or more session protocol machines (SPMs). A SPM may be connection oriented or connectionless. The connectionless session protocol machine communicates with the SS-user through one or more SSAPs by means of the connectionless session service primitives (defined in ITU-T Rec. X.215 | ISO/IEC 8326). These session service primitives cause or result from the exchange of SPDUs between peer session entities engaged in connectionless mode transmission. These protocol exchanges are effected by making use of the services of the transport layer, as defined in the transport service definition.

The model of session connectionless mode transmission is presented in 6.2 of the session service definition covering connectionless mode transmission. The model of the session layer is illustrated in Figure 1.

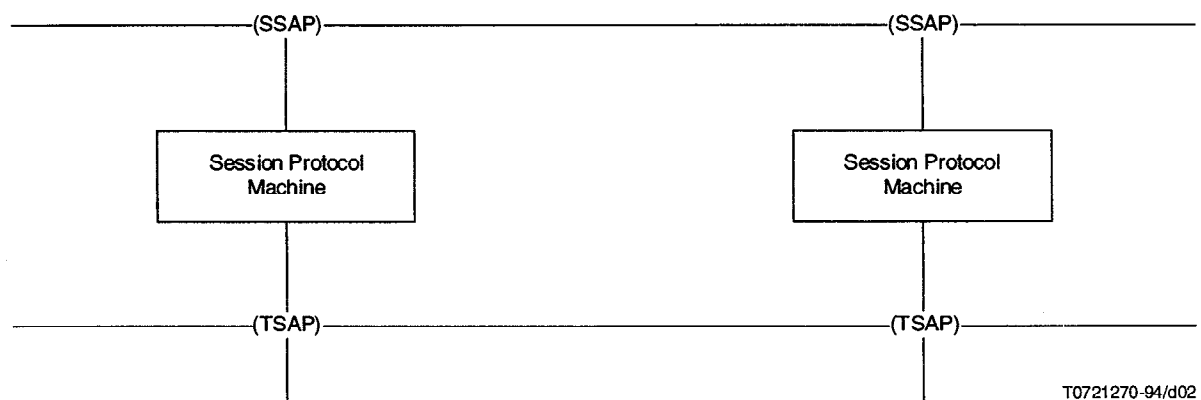


Figure 1 – Model of the connectionless session layer

SECTION 2 – CONNECTIONLESS SESSION PROTOCOL SPECIFICATION

6 Protocol mechanisms

The protocol mechanisms described below are those used for the connectionless session protocol.

6.1 Session protocol data unit (SPDU) transfer

6.1.1 Purpose

To convey session protocol data units in user data fields of transport service primitives.