

Open Systems Interconnection: Transport Service Definition (incorporating Connectionless-mode Transmission)

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Information Systems Technology Standards Policy Committee (IST/-) to Technical Committee IST/6, upon which the following bodies were represented:

Association for Payment Clearing Services
British Computer Society
British Telecommunications plc
Business Equipment and Information Technology Association
Department of Trade and Industry (Information Technology Division)
Department of Trade and Industry (National Physical Laboratory)
Electricity Supply Industry in England and Wales
Electronic Engineering Association
HM Treasury (Central Computer and Telecommunications Agency)
Information Technology Users Standards Association
Inter-universities Computing Committee
Joint Network Team
LAMSAC
National Computing Centre Ltd.
National Health Services
OFTEL (Office of Telecommunications)
Post Office
Telecommunication Engineering and Manufacturing Association
Telecommunications Managers' Association
User Standards Forum for Information Technology (Institute of Data Processing Management)

This British Standard, having been prepared under the direction of the Information Systems Technology Standards Policy Committee, was published under the authority of the Board of BSI and comes into effect on 30 November 1990

© BSI 1990

The following BSI references relate to the work on this standard:
Committee reference IST/6
Draft for comment DD/115

ISBN 0 580 18238 X

Amendments issued since publication

Amd. No.	Date	Text affected

Implementation of Technical Corrigendum 1
published and effective from 15 July 1992
to BS 7218 : 1990 (ISO 8072 : 1986)

Open Systems Interconnection:
Transport Service Definition (incorporating
Connectionless-mode Transmission)

AMD 7187
ISO 8072 : 1986/
Cor. 1 : 1991

AMD 7187
July 1992

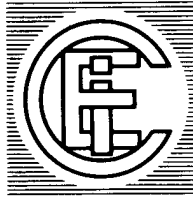
National foreword

In line 4 after 'transmission)' insert ', including Technical Corrigendum 1'.

AMD 7187
July 1992

ISO text

Insert the attached as appropriate.



INTERNATIONAL STANDARD ISO 8072 : 1986
TECHNICAL CORRIGENDUM 1

Published 1991-07-15

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION
INTERNATIONAL ELECTROTECHNICAL COMMISSION • МЕЖДУНАРОДНАЯ ЭЛЕКТРОТЕХНИЧЕСКАЯ КОМИССИЯ • COMMISSION ELECTROTECHNIQUE INTERNATIONALE

Information processing systems — Open Systems Interconnection — Transport definition

TECHNICAL CORRIGENDUM 1

Systèmes de traitement de l'information — Interconnexion de systèmes ouverts — Service de transport en mode connexion
ECTIFICATIF TECHNIQUE 1

Technical corrigendum 1 to International Standard ISO 8072: 1986 was prepared by ISO/IEC JTC 1, *Information technology*.

age 5

able 1

the elements of table 1 where: object Y is the "Connect object", object X is either "Octets of normal data" or "Expedited TSDU";
place "—" with "no".

National foreword

This British Standard, prepared under the direction of the Information Systems Technology Standards Policy Committee, is identical with ISO 8072 : 1986 'Information processing systems — Open Systems Interconnection — Transport service definition (incorporating connectionless-mode transmission)' published by the International Organization for Standardization (ISO). It supersedes DD 115 which is withdrawn.

Cross-references

International standard	Corresponding British Standard
ISO 7498 incorporating Add. 1	BS 6568 Reference model of open systems interconnection Part 1 : 1988 Basic reference model (incorporating connectionless-mode transmissions) (Identical)
ISO 8327	BS 6961 : 1988 : Open Systems Interconnection : basic connection-oriented session protocol specification (Identical)
ISO 8348	BS 7220 : 1990 Information processing systems : Data communications : Network service definition
ISO/TR 8509	DD 108 : 1988 Open Systems Interconnection service conventions (ISO/TR 8509) (Identical)

The Technical Committee has reviewed the provisions of ISO 8073, to which reference is made in the text, and has decided that they are acceptable for use in conjunction with this standard.

A related British Standard to ISO 8073 is DD 116 : 1985 Open Systems Interconnection: transport protocol specification (ISO/DIS 8073 and DAD1).

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Information processing systems — Open Systems Interconnection — Transport service definition

0 Introduction

This International Standard is one of a set of International Standards produced to facilitate the interconnection of computer systems. It is related to other International Standards in the set as defined by the Reference Model for Open Systems Interconnection. The Reference Model subdivides the area of standardization for interconnection into a series of layers of specification, each of manageable size.

The purpose of this International Standard is to define the service provided to the Session Layer at the boundary between the Session and Transport Layers of the Reference Model. The Transport Service is provided by the Transport Protocol making use of the services available from the Network Layer. This International Standard also defines the Transport Service characteristics which the Session Protocol may exploit. The relationship between the International Standards for Transport Service, Transport Protocol, Network Service, and Session Protocol is illustrated in figure 1.

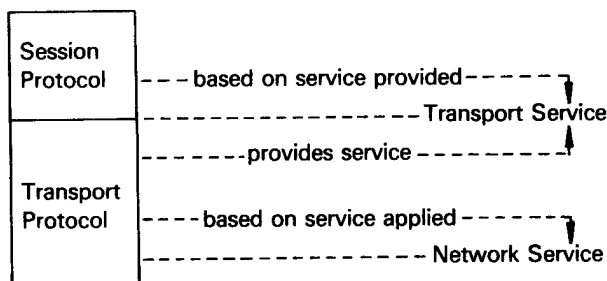


Figure 1 — Relationship of this International Standard to other OSI standards

It is recognized that with respect to Transport Quality of Service, described in clause 10 of this International Standard, work is still in progress to provide an integrated treatment of Quality of Service across all layers of the OSI Basic Reference Model and to ensure that the individual treatments in each layer service satisfy overall Quality of Service objectives in a consistent manner. As a consequence an addendum may be added to this International Standard at a later time which reflects further Quality of Service development and integration.

1 Scope and field of application

This International Standard defines in an abstract way the externally visible service provided by the OSI Transport Layer in terms of

- a) the primitive actions and events of the service;
- b) the parameter data associated with each primitive action and event;
- c) the relationship between, and the valid sequences of the actions and events.

The service defined in this International Standard is that which is provided by all OSI Transport Protocols (in conjunction with the Network Service) and which may be used by any OSI Session Protocol.

This International Standard does not specify individual implementations or products, nor does it constrain the implementation of entities and interfaces within a computer system. There is, therefore no conformance to this International Standard.

2 References

ISO 7498, *Information processing systems — Open Systems Interconnection — Basic Reference Model*.

ISO 8073, *Information processing systems — Open Systems Interconnection — Connection oriented transport protocol specification*.

ISO 8327, *Information processing systems — Open Systems Interconnection — Basic connection oriented session protocol specification*.¹⁾

ISO 8348, *Information processing systems — Data communications — Network service definition*

ISO/TR 8509, *Information processing systems — Open Systems Interconnection — Service conventions*.¹⁾

1) At present at the stage of draft.

Section one : General

3 Definitions

3.1 Reference model definitions

This International Standard is based on the concepts developed in the Basic Reference Model for Open Systems Interconnection (OSI), ISO 7498, and makes use of the following terms defined therein :

- a) Expedited transport-service-data-unit;
- b) Transport-Connection;
- c) Transport-Connection Endpoint;
- d) Transport Layer;
- e) Transport Service;
- f) Transport-Service-Access-Point;
- g) Transport-Service-Access-Point address;
- h) Transport-Service-Data-Unit;
- i) Network Layer;
- j) Network Service;
- k) Network-Connection;
- l) Interface flow control.

3.2 Service convention definitions

This International Standard also makes use of the following terms defined in ISO/TR 8509 as they apply to the Transport Layer :

- a) service-user;
- b) service-provider;
- c) primitive;
- d) request;
- e) indication;
- f) response;
- g) confirm.

3.3 Transport service definitions

For the purpose of this International Standard, the following definitions also apply :

3.3.1 calling TS user : A Transport Service user that initiates a transport-connection establishment request.

3.3.2 called TS user : A Transport Service user with whom a calling TS user wishes to establish a transport-connection.

NOTE — Calling TS users and called TS users are defined with respect to a single connection. A Transport Service user can be both a calling and a called TS user simultaneously.

3.3.3 sending TS user : A Transport Service user that acts as a source of data during the data transfer phase of a transport-connection.

3.3.4 receiving TS user : A Transport Service user that acts as a sink of data during the data transfer phase of a transport-connection.

NOTE — A Transport Service user can be both a sending and a receiving TS user simultaneously.

4 Abbreviations

TS :	Transport Service
TC :	Transport-Connection
TSAP :	Transport-Service-Access-Point
TSDU :	Transport-Service-Data-Unit
QOS :	Quality of Service

5 Conventions

5.1 General conventions

This International Standard uses the descriptive conventions given in ISO/TR 8509.

5.2 Parameters

The available parameters for each group of primitives are set out in tables 5, 6, 7 and 8. Each "X" in the tables indicates that the primitive labelling the column in which it falls shall carry the parameter labelling the row in which it falls, unless further qualified [see a) below].

Some entries are further qualified by items in brackets. These may be

a) indications that the parameter is optional in some way :
(U) indicates that the inclusion of the parameter is a choice made by the user.

b) specific constraints of a parameter :
(=) indicating that the value supplied in an indication or confirm primitive is always identical to that supplied in the previous request or response primitive issued at the peer service access point.

6 Overview and general characteristics

The Transport Service provides transparent transfer of data between TS users. It relieves these TS users from any concern about the detailed way in which supporting communications media are utilized to achieve this transfer.

The Transport Service provides for the following :

a) Quality of service selection :

The Transport Layer is required to optimize the use of available communications resources to provide the QOS required by communicating TS users at minimum cost. QOS is specified through the selection of values for QOS parameters representing characteristics such as throughput, transit delay, residual error rate and failure probability.

b) Independence of underlying communication resources :

The Transport Service hides from TS users the difference in the QOS provided by the Network Service. This difference in QOS arises from the use of a variety of communications media by the Network Layer to provide the Network Service.

c) End-to-end significance :

The Transport Service provides for the transfer of data between two TS users in end systems.

d) Transparency of transferred information :

The Transport Service provides for the transparent transfer of octet-aligned TS user-data and/or control information. It does not restrict the content, format, or coding of the information, nor does it ever need to interpret its structure or meaning.

e) TS user addressing :

The Transport Service utilizes a system of addressing which is mapped into the addressing scheme of the supporting Network Service. Transport-addresses can be used by TS users to refer unambiguously to TSAPs.

7 Features of the Transport Service

The Transport Service offers the following features to a TS user :

- a) The means to establish a TC with another TS user for the purpose of exchanging TSDUs. More than one TC may exist between the same pair of TS users.

- b) Associated with each TC at its time of establishment, the opportunity to request, negotiate, and have agreed by the TS provider a certain QOS as specified by means of QOS parameters.

- c) The means of transferring TSDUs on a TC. The transfer of TSDUs which consist of an integral number of octets is transparent, in that the boundaries of TSDUs and the contents of TSDUs are preserved unchanged by the TS provider and there are no constraints on the TSDU content imposed by the TS provider.

- d) The means by which the receiving TS user may control the rate at which the sending TS user may send octets of data.

- e) The means of transferring separate expedited TSDUs when agreed to by both TS users. Expedited TSDUs transfer is subject to a different flow control from normal data across the TSAP.

- f) The unconditional and therefore possibly destructive release of a TC.

8 Classes of Transport Service

No distinct classes of Transport Service are defined.

9 Model of the Transport Service

9.1 Model of the Transport Service

This International Standard uses the abstract model for a layer service defined in ISO/TR 8509. The model defines the interactions between the TS users and the TS provider which take place at the two TSAPs. Information is passed between a TS user and the TS provider by service primitives, which may convey parameters.

The primitives are abstract representations of TSAP interactions. They are solely descriptive and do not represent a specification for implementation.

9.2 Model of a Transport Connection

The operation of a TC is modelled in an abstract way by a pair of queues linking the two TSAPs. There is one queue for each direction of information flow (see figure 2). Each TC is modelled by a separate pair of queues.

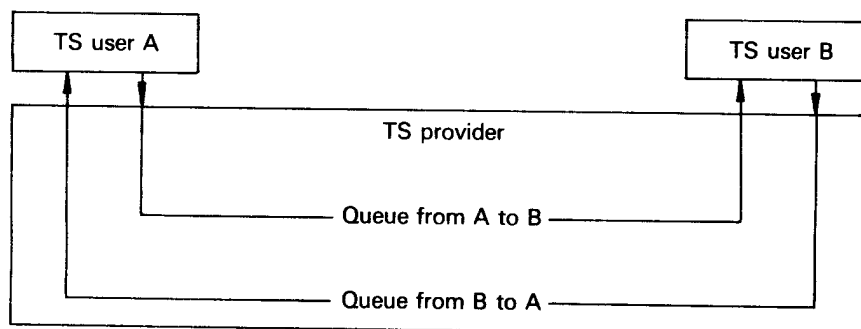


Figure 2 — Abstract model of a Transport Connection