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Information processing systems — Open Systems Interconnection — Service conventions

Systèmes de traitement de l'information — Interconnexion de systèmes ouverts — Conventions de service

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The reasons which led to the decision to publish this document in the form of a technical report type 2 are explained in the Introduction.

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0 Introduction

This Technical Report has been published as interim guidance to users and definers of service standards. The objective is to provide a common definition of terms and time sequence diagrams for reference by service standards, particularly those for the Network, Transport and Session Layers.

Although the original intention was for ISO to publish an International Standard for service conventions, it has become accepted that considerably more work is required to produce a completely satisfactory and comprehensive treatment of the subject.

The advanced state of development of the Network, Transport and Session service definitions is such that a common reference to their use of service conventions is required. This Technical Report is designed to meet that need, but not the complete needs of all service standards derived from the Basic Reference Model. Even then it has not been possible to ensure full alignment between these three standards and this Technical Report. Almost all divergences are not technically significant, insofar as they generally involve slightly different ways of presenting the same type of information.

Rather than seek perfect alignment, and hence introduce delays in the publication of those standards, a more practical but less elegant solution has been adopted. This Technical Report defines the general conventions used, but also identifies where a particular service standard uses significantly different conventions.

1 Scope and field of application

This Technical Report establishes definitions of terms and conventions for reference by standards defining the connection-oriented or connectionless-mode (N)-services provided by the Reference Model for Open Systems Interconnection (ISO 7498). In particular, it is concerned with conventions relating to a point-to-point connection, or instance of a point-to-point communication within a layer of the Reference Model.

NOTE — The scope of this Technical Report has been restricted to meet a specific urgent need for the Network, Transport and Session Layers. Where appropriate it can be applied to other layers.

Conventions for the other types of (N)-service, and wider issues of the underlying semantic model for (N)-services are the subject of further study.

2 References

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

ISO 8072, *Information processing systems — Open Systems Interconnection — Transport service definition.*

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ISO 8326, *Information processing systems — Open Systems Interconnection — Basic connection oriented session service definition.*

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

3 Definitions

3.1 This Technical Report builds on the concepts developed in ISO 7498 and makes use of the following terms defined in it :

a) (N)-layer;

b) (N)-service;

c) (N)-entity;

d) (N)-service-access-point;

e) (N)-service-access-point-address.

NOTES

1 The use of the term "service" in both this Technical Report and the Network, Transport and Session service definitions is not always consistent with the definition in ISO 7498. In many cases it is used to indicate a distinct part or element of the total (N)-layer service. In general the particular usage is clear from either the naming convention used or the context.

2 The term "service-access-point" is used when describing the relationship between primitives associated with a single connection. Further study is required to include the concept of connection-endpoints in this description. However, reference is already made to connection-endpoints in both the existing network and transport service definitions (ISO 8348 and ISO 8072).

3.2 For the purpose of this Technical Report the following definitions also apply :

3.2.1 service-user: An entity in a single open system that makes use of a service through service-access-points.

3.2.2 service-provider: An abstract of the totality of those entities which provide a service to peer service-users.

NOTE — The behaviour of a service-provider is often described in terms of an abstract machine.

3.2.3 service primitive; primitive: An abstract, implementation-independent representation of an interaction between the service-user and the service-provider.

NOTE — Since a service-user is usually a (N)-entity (except at the Application Layer), and since the decomposition of a service-provider usually yields (N)-entities and a lower layer service (except at the Physical Layer), a service primitive is also an abstract, implementation-independent representation of an interaction between two adjacent (N)-entities.

3.2.4 request (primitive): A representation of an interaction in which a service-user invokes some procedure.

3.2.5 indication (primitive): A representation of an interaction in which a service-provider either

a) indicates that it has, on its own initiative, invoked some procedure; or

b) indicates that a procedure has been invoked by the service-user at the peer service-access-point.

3.2.6 response (primitive): A representation of an interaction in which a service-user indicates that it has completed some procedure previously invoked by an interaction represented by an indication primitive.

3.2.7 confirm (primitive): A representation of an interaction in which a service-provider indicates, at a particular service-access-point, completion of some procedure previously invoked, at that service-access-point, by an interaction represented by a request primitive.

3.2.8 (N)-mandatory-service: A distinct part of the total (N)-service which is always included in a realization of that (N)-service.

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