

Implementation of
ISO 10162:1993

Information and documentation — Open Systems Interconnection — Search and Retrieve Application Service Definition

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- London and South Eastern Library Region (laser)
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- British Computer Society
- Joint Network Team
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- The Janet User Group for Libraries

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National foreword

This British Standard reproduces verbatim ISO 10162:1993 and implements it as the UK national standard.

This British Standard is published under the direction of the Information and Documentation Standards Policy Committee whose Technical Committee DOT/7 has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international committee any enquiries on interpretation, or proposals for change, and keep UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the ISO 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.

INTERNATIONAL STANDARD

**ISO
10162**

First edition
1993-02-15

Information and documentation — Open Systems Interconnection — Search and Retrieve Application Service Definition

*Information et documentation — Interconnexion de systèmes ouverts
(OSI) — Définition du service d'application pour la recherche
documentaire*



Reference number
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Foreword

ISO (the International Organization for Standardization) is a world-wide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 10162 was prepared by Technical Committee ISO/TC 46, *Information and documentation*.

Annex A and Annex B of this International Standard are for information only.

Introduction

The purpose of the Search and Retrieve (SR) standard is to provide a set of Application Layer communication-related services which can be used to perform search activities in an Open Systems Interconnection (OSI) environment, as defined by ISO 7498.

The goal of Open Systems Interconnection is to allow with a minimum of technical agreement outside the interconnection standards, the interconnection of information processing systems:

- from different manufacturers;
- under different managements;
- of different levels of complexity; and
- of different technologies.

The SR service provides capabilities for an application process to search a database in another open system for records and receive a result set of records in response.

The purpose of the service definition is to define the communications aspects of SR processing in terms of a set of services provided to a user-process by an application-service-element (ASE).

The focus of SR activity is the database record, which represents, for example in the case of a bibliographic database, a book, periodical, journal article, microform, graphic, map, music, sound recording, computer file, etc. The SR application is concerned with procedures relating to the search and retrieval of these records between database applications.

The approach taken in this standard is to set the requirements that all open systems must support to the minimum level. Additional optional features are defined which allow implementors to achieve a greater degree of functionality if it is desired.

This International Standard is one of a number of related standards supporting the interconnection of library systems. These standards can be used by themselves or in a cooperative manner to support library applications requiring a mixture of communications services. For example, ISO 10160 and ISO 10161 which support interlibrary loan could be used in conjunction with the SR protocol to obtain the loan of items. The control and management of interactions among such applications are local matters that are outside the scope of this International Standard. The application layer architecture for such combined use of several application-service-elements (or ASEs) is defined in the Application Layer Structure (ISO 9545).

Security, accounting, update, access control, resource control, and end-user assistance (explain and help) issues as they relate to SR operations will be studied further. The agenda for future standardization activities is set forth in more detail in Annex A of this International Standard.

1 Scope

This International Standard is an Application Layer standard within the Open Systems Interconnection frame-work defined by ISO 7498. This International Standard defines the services for Search and Retrieve. These services are provided by the use of the SR protocol in conjunction with the supporting communications services of the connection-oriented Association Control and Presentation services (ISO 8649 and ISO 8822).

This International Standard does not specify individual implementations or products, nor does it constrain the implementation of entities and interfaces within a computer system. Computer systems may range from stand-alone workstations to mainframes.

This International Standard is primarily intended for use by systems supporting information retrieval services for organizations such as libraries, information utilities, and union catalogue centres.

There is no requirement for conformance to this service definition. Conformance is required only for the SR protocol specification.

This International Standard does not cover issues of security, accounting, update, access control, resource control, or end-user assistance (explain and help). Annex A provides information on planned future activities.

2 Normative references

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

ISO 7948:1984, *Information processing systems — Open Systems Interconnection — Basic Reference Model*.

ISO/TR 8509:1987, *Information processing systems — Open Systems Interconnection — Service conventions*.

ISO 8649:1989, *Information processing systems — Open Systems Interconnection — Service definition for Association Control Service Element*.

ISO 8777:—, *Documentation — Commands for interactive text searching*¹⁾.

ISO 8822:1990, *Information processing systems — Open Systems Interconnection — Connection oriented presentation service definition*.

ISO/IEC 9545:1989, *Information processing systems — Open Systems Interconnection — Application Layer structure*.

ISO 10163-1:1993, *Information and documentation — Open Systems Interconnection — Search and Retrieve Application Protocol Specification — Part 1: Protocol specification*.

3 Definitions

3.1 Reference Model Definitions

This International Standard makes use of the following terms defined in ISO 7498.

application-entity

the aspects of an application-process pertinent to OSI

application-process

an element within a real open system which performs the information processing for a particular application

application-protocol-data-unit

a unit of data specified in an application-protocol and consisting of application-protocol-information and possibly application-user-data

N-layer

a subdivision of the OSI architecture, constituted by subsystems of the same rank (N)

presentation-service

a capability of the Presentation Layer and the layers beneath it, which is provided to application-entities at the boundary between the Presentation and the Application Layer

real-open-system

a real system which complies with the requirements of OSI standards in its communication with other real systems

3.2 Application Layer Structure Definitions

This International Standard makes use of the following terms defined in ISO/IEC 9545.

application-association, association

a cooperative relationship between two application-entity-invocations for the purpose communication of information and coordination of their joint operation. This relationship is formed by the exchange of application-protocol-control-information using the Presentation-Service

application-context

a set of rules shared in common by two application-entity-invocations in order to enable their cooperative operation

application-context-definition

the description of an application-context

application-service-element

a set of application-functions that provides a capability for the interworking of application-entity-invocations for a specific purpose

3.3 Service Conventions Definitions

This International Standard makes use of the following terms defined in ISO/TR 8509.

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

confirmed-service

a distinct part of the total SR-service which results in an explicit confirmation from the service-provider to the initiating service-user

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.

non-confirmed-service

a distinct part of the total SR-service which does not result in an explicit confirmation from the service-provider to the initiating service-user

¹⁾ To be published.