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**Information and documentation — Open  
Systems Interconnection — Interlibrary  
Loan Application Protocol Specification —  
Part 1:  
Protocol specification**

*Information et documentation — Interconnexion de systèmes ouverts  
(OSI) — Spécification du protocole d'application pour les prêts entre  
bibliothèques —*

*Partie 1: Spécification du protocole*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide 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 10161-1 was prepared by Technical Committee ISO/TC 46, *Information and Documentation*, Subcommittee SC 4, *Computer applications in information and documentation*.

This second edition cancels and replaces the first edition (ISO 10161-1:1993), which has been technically revised. It includes amendments specified in ISO 10161, DAM 1 and the corrections specified in Defect Reports 1-23.

ISO 10161 consists of the following parts, under the general title *Information and documentation — Open Systems Interconnection — Interlibrary Loan Application Protocol Specification*:

- *Part 1: Protocol specification*
- *Part 2: Protocol implementation conformance statement (PICS) proforma*

Annexes A to D form an integral part of this part of ISO 10161. Annexes E to H are for information only.

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## Introduction

This part of ISO 10161 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 (ISO 7498). The Reference Model subdivides the area of standardization for interconnection into a series of layers of specification, each of manageable size.

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

- a. from different manufacturers,
- b. under different managements,
- c. of different levels of complexity,
- d. of different ages.

This part of ISO 10161 provides a protocol specification for Interlibrary Loan (ILL) communication. The ILL protocol operates in the Application Layer and allows the parties involved in an ILL-transaction to progress through the ILL-transaction in an orderly and defined way.

The ILL protocol has been designed to support the ILL services defined in ISO 10160, the ILL Application Service Definition, which generally requires invocation of external delivery services to fulfill an ILL request. The ILL protocol carries information that permits both automatic and operator-mediated invocation of external delivery services.

This part of ISO 10161 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 23950, which supports remote access to bibliographic databases, could be used in conjunction with the ILL protocol to obtain item identification information. The control and management of interactions among such bibliographic applications are local matters that are outside the scope of this International Standard.

Security and accounting issues as they relate to ILL operations are for further study.

The specification technique used in this part of ISO 10161 is consistent with techniques used in defining other OSI protocols. Within most of this document, the technique is self-explanatory. The Abstract Syntax of the ILL Application Protocol Data Units (APDUs) is defined by means of the ASN.1 specification technique specified in ISO/IEC 8824.

This part of ISO 10161 contains eight annexes. Annexes A to D are normative. Annex A specifies the the state tables for the ILL protocol. Annex B specifies the encoding rules for generating a transfer syntax compatible with EDIFACT as defined in ISO 9735. Annex C specifies the object identifiers assigned in this part of ISO 10161 and registration requirements. Annex D defines the registration procedures for ILL EXTERNAL data type definitions. Annex E is an example of an ILL EXTERNAL data type registry entry. Annex F describes the possible mappings of this protocol onto supporting services. Annex G describes possible methods of using a document delivery protocol in conjunction with the ILL protocol. Annex H is a bibliography.

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# Information and documentation — Open Systems Interconnection — Interlibrary Loan Application Protocol Specification — Part 1: Protocol specification

## 1 Scope

This part of ISO 10161 defines the protocol for an ILL application-service-element (ASE). It specifies the behaviour which must be exhibited by a system in order to take part in the provision of the ISO interlibrary loan service.

It provides a formal statement of the rules of behaviour of each of the two or more entities participating in an ILL transaction. It specifies:

- a. the actions to be taken on receiving request service primitives issued by an ILL service-user;
- b. the actions to be taken on receiving application-protocol-data-units (APDUs);
- c. the actions to be taken as a result of events within the local system.

It provides a specification (in clause 9) of the abstract syntax required to convey the ILL protocol APDUs.

It states the conformance requirements to be met by implementors of this protocol (in clause 10).

The scope of the ILL protocol is restricted to the interconnection of systems; it does not specify or restrict the possible implementation of interfaces within a computer system. Computer systems may range from stand-alone workstations to mainframes.

This part of ISO 10161 is intended for use by libraries, information utilities such as union catalogue centres, and any other system which processes bibliographic information. These systems may participate in an interlibrary loan transaction in the role of requester (i.e. an initiator of ILL requests), responder (i.e. a provider of bibliographic material or information) and/or intermediary (i.e. an agent that acts on behalf of a requester to find suitable responders).

Various interworking topologies are supported, ranging from simple two-party interactions, to multi-party interactions.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 10161. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 10161 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/IEC 646:1991, *Information technology - ISO 7-bit coded character set for information interchange.*  
NOTE - ISO/IEC 646:1991 supersedes ISO 646:1983. However, when this part of ISO 10161 was under development, the previous edition was valid and this part of ISO 10161 is therefore based on this edition, which is given below.
- ISO 646:1983, *Information Processing Systems - ISO 7-bit coded character set for information interchange.*
- ISO 2108:1992, *Information and documentation - International standard book numbering (ISBN).*  
NOTE - ISO 2108:1992 supersedes ISO 2108:1978. However, when this part of ISO 10161 was under development, the previous edition was valid and this part of ISO 10161 is therefore based on this edition, which is given below.
- ISO 2108:1978, *Documentation - International standard book numbering (ISBN).*
- ISO 2709:1996, *Information and documentation - Format for Information Exchange.*  
NOTE - ISO 2709:1996 supersedes ISO 2709:1981. However, when this part of ISO 10161 was under development, the previous edition was valid and this part of ISO 10161 is therefore based on this edition, which is given below.
- ISO 2709:1981, *Documentation - Format for bibliographic information interchange on magnetic tape.*
- ISO 3297:1986, *Documentation - International standard serial numbering (ISSN).*

- ISO 4217:1995, *Codes for the representation of currencies and funds.*  
NOTE - ISO 4217:1995 supersedes ISO 4217:1981. However, when this part of ISO 10161 was under development, the previous edition was valid and this part of ISO 10161 is therefore based on this edition, which is given below.
- ISO 4217:1981, *Codes for the representation of currencies and funds.*
- ISO/IEC 7498-1:1994, *Information technology - Open Systems Interconnection - Basic Reference Model: The Basic Model.*
- ISO 7498-2:1989, *Information processing systems - Open Systems Interconnection - Basic Reference Model - Part 2: Security Architecture.*
- ISO 7498-3:1989, *Information processing systems - Open Systems Interconnection - Basic Reference Model - Part 3: Naming and addressing.*
- ISO/IEC 7498-4:1989, *Information processing systems - Open Systems Interconnection - Basic Reference Model - Part 4: Management framework.*  
NOTE - ISO/IEC 7498-1, ISO 7498-2, ISO 7498-3 and ISO/IEC 7498-4 supersede ISO 7498:1984. However, when this part of ISO 10161 was under development, the previous edition was valid and this part of ISO 10161 is therefore based on this edition, which is given below.
- ISO 7498:1984, *Information processing systems - Open Systems Interconnection - Basic Reference Model.*
- ISO 8601:1988, *Data elements and interchange formats - Information interchange - Representation of dates and times.*
- ISO/IEC 8822:1994, *Information technology - Open Systems Interconnection - Presentation service definition.*  
NOTE - ISO/IEC 8822:1994 supersedes ISO 8822:1988. However, when this part of ISO 10161 was under development, the previous edition was valid and this part of ISO 10161 is therefore based on this edition, which is given below.
- ISO 8822:1988, *Information processing systems - Open Systems Interconnection - Connection Oriented Presentation Service Definition.*
- ISO/IEC 8824:1990, *Information technology - Open Systems Interconnection - Specification of Abstract Syntax Notation One (ASN.1).*
- ISO/IEC 8825:1990, *Information technology - Open Systems Interconnection - Specification of Basic Encoding Rules for Abstract Syntax Notation One (ASN.1).*
- ISO 9735:1988, *Electronic data interchange for administration, commerce and transport (EDIFACT) - Application Level Syntax Rules.*
- ISO/IEC 9834-1:1993, *Information technology - Open Systems Interconnection - Procedures for the operation of OSI Registration Authorities - Part 1: General procedures.*
- ISO/IEC 9834-2:1993, *Information technology - Open Systems Interconnection - Procedures for the operation of OSI Registration Authorities - Part 2: Registration procedures for OSI document types.*
- ISO/IEC 10021-4:1990, *Information Technology - Text Communication - Message-Oriented Text Interchange Systems (MOTIS) - Part 4: Message Transfer System: Abstract Service Definition and Procedures.*
- ISO 10160:1997, *Information and documentation - Open Systems Interconnection - Interlibrary Loan Application Service Definition.*

### 3 Definitions

For the purposes of this part of ISO 10161, the following definitions apply.

#### 3.1 Reference Model Definitions

This part of ISO 10161 is based on the concepts developed in ISO 7498:1984 and makes use of the following terms found in it. These terms are replicated here as a convenience to the reader.

- 3.1.1 Application Layer:** The seventh and highest layer in the Reference Model for Open Systems Interconnection (OSI); it serves as the window between correspondent application-processes which are using the OSI to exchange meaningful information.
- 3.1.2 application-entity:** The aspects of an application-process pertinent to OSI.
- 3.1.3 application-process:** An element within a real open system which performs the information processing for a particular application.
- 3.1.4 application-protocol-data-unit:** A unit of data specified in an application-protocol and consisting of application-protocol-information and possibly application-user-data.
- 3.1.5 application-service-element:** That part of an application-entity which provides an OSI environment capability, using underlying services when appropriate.



**3.1.6 (N)-service:** A capability of the (N)-layer and the layers beneath it, which is provided to (N+1)-entities at the boundary between the (N)-layer and the (N+1)-layer.

NOTE — An application-service does not provide a capability to higher layer entities, but rather to application-processes.

**3.1.7 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.

**3.1.8 transfer syntax:** The concrete syntax used in the transfer of data between open systems.

### 3.2 Abstract Syntax Notation One Definitions

This part of ISO 10161 makes use of the following terms defined in ISO/IEC 8824:1990.

**3.2.1 data type; type:** A named set of values.

**3.2.2 simple type:** A type defined by directly specifying the set of its values.

**3.2.3 structured type:** A type defined by reference to one or more other types.

**3.2.4 component type:** One of the types referenced when defining a structured type.

**3.2.5 value:** A distinguished member of a set of values.

### 3.3 Presentation Service Definition

This part of ISO 10161 makes use of the following term defined in ISO 8822:1988.

**3.3.1 abstract syntax:** Those aspects of the rules used in the formal specification of data which are independent of the encoding technique to represent the data.

### 3.4 Application Layer Structure Definitions

This part of ISO 10161 makes use of the following terms defined in ISO/IEC 9545:1989.

**3.4.1 application-association:** A cooperative relationship between two application-entity-invocations for the purpose of 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.

**3.4.2 application-context:** A set of rules shared in common by two application-entity-invocations governing their behavior in order to enable their cooperative operation.

NOTE — An application-context is a shared conceptual schema for the universe of discourse for communication.

**3.4.3 application-context-definition:** The description of an application-context.

**3.4.4 application-entity-invocation:** A specific utilization of part or all of the capabilities of a given application-entity in support of the communications requirements of an application-process-invocation.

**3.4.5 application-process-invocation:** A specific utilization of part or all of the capabilities of a given application-process in support of a specific occasion of information processing.

### 3.5 Service Convention Definitions

This part of ISO 10161 makes use of the following terms defined in ISO/TR 8509:1987.

**3.5.1 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.

**3.5.2 non-confirmed service:** A distinct part of the total (N)-service which does not result in an explicit confirmation from the service-provider to the initiating service-user.

**3.5.3 provider-initiated service:** A distinct part of the total (N)-service which is initiated by the service-provider rather than the service-user.

**3.5.4 request primitive:** A representation of an interaction in which a service-user invokes some procedure.

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

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

**3.5.7 service-user:** An entity in a single open system that makes use of a service.

### 3.6 ILL Definitions

For the purposes of this part of ISO 10161, the following definitions apply to the ASN.1 value reference names and values which are associated with simple data types, as specified in clause 9. Of these definitions, the following are repetitions of those found in ISO 8459-1:1988:

author  
 call number  
 client identifier  
 client-status  
 country  
 edition  
 place-of-publication  
 post-office-box  
 postal-code  
 publisher  
 sponsoring body  
 street-and-number  
 title  
 transportation-mode  
 volume-issue

NOTE — volume-issue is defined here, but volume and issue are defined separately in ISO 8459-1:1988.

- 3.6.1 account-number:** The number of an account to which a credit or debit is made. A requester typically has been assigned a separate account for each responder. (Variation of ISO 8459-1)
- 3.6.2 additional-no-letters:** (additional-numbers-letters) A number or code identifying an item.
- 3.6.3 already-forwarded:** Responder indication that an ILL request has already been forwarded.
- 3.6.4 already-tried-list:** List of institutions which have been approached but were unable to supply requested item.
- 3.6.5 answer:** A code representing a yes or no response.
- 3.6.6 at-bindery:** Title is owned but the requested item is at the bindery.
- 3.6.7 author:** Name of the person or corporate body responsible for the intellectual or artistic content of an item, including composers, creators or originators of an item.
- 3.6.8 author-of-article:** Author of an item which is a component part of another item.
- 3.6.9 badly-structured-APDU:** The structure of a received APDU does not conform to the standard notation and encoding defined in ISO 8824 and 8825, or to the EDIFACT encoding defined in ISO 9735 and Annex B of this International Standard. For example, a received APDU does not match its stated length.
- 3.6.10 being-processed-for-supply:** Item is being retrieved, copied, and/or packaged for delivery.
- 3.6.11 call-number:** Notation assigned to an item indicating its physical location in the owner institution.
- 3.6.12 can-send-CHECKED-IN:** An indication by the responder that it is capable of supplying the CHECKED-IN APDU.
- 3.6.13 can-send-RECEIVED:** An indication by the requester that it is capable of supplying the RECEIVED APDU.
- 3.6.14 can-send-RETURNED:** An indication by the requester that it is capable of supplying the RETURNED APDU.
- 3.6.15 can-send-SHIPPED:** An indication by the responder that it is capable of supplying the SHIPPED APDU.
- 3.6.16 cannot-send-onward:** An intermediary is unable to send on a request due to communication problems.
- 3.6.17 chargeable-units:** The number of units supplied for which there is a charge.
- 3.6.18 charges:** The responder's charges for the provision of the requested service.
- 3.6.19 city:** A phrase used to identify a city, town or village. (Variation of ISO 8459-1)
- 3.6.20 client-identifier:** Number or code used to identify the client uniquely.
- 3.6.21 client-name:** Name of the person or institution for which the item has been requested. (Variation of ISO 8459-1)
- 3.6.22 client-signature-required:** Responder's stipulation that the client must sign the signature sheet enclosed with the item.
- 3.6.23 client-status:** Professional level or position of the client.
- 3.6.24 conditions:** A code used to indicate the conditions under which an item may be borrowed.
- 3.6.25 copyright-compliance:** Requester notation indicating the applicable copyright regulations or laws to which the requester is adhering.
- 3.6.26 correlation-information:** Information that is used to correlate an error report with the service request to which the report relates.
- 3.6.27 cost:** The amount asked, taken or billed by the responder for the service supplied.
- 3.6.28 cost-estimate:** Estimate of the cost to provide the service requested.

- 3.6.29 cost-exceeds-limit:** Responder indication that the minimum cost to supply the request is greater than the amount authorized.
- 3.6.30 country:** A phrase used to identify a country.
- 3.6.31 currency-code:** A code identifying the currency of an amount, according to ISO 4217:1981.
- 3.6.32 current-state:** A code identifying the state of the ILL-transaction.
- 3.6.33 date-checked-in:** The date on which a loaned item is received back by the responder.
- 3.6.34 date-due:** The date by which the loaned item should be returned to the responder. Note that this should reflect the latest date-due.
- 3.6.35 date-for-reply:** The date by which a reply should be returned to the responder.
- 3.6.36 date-of-last-transition:** The date on which the last state transition occurred.
- 3.6.37 date-of-most-recent-service:** The date when the most recent service event occurred at the system providing the status report. This is either a service invoked by the system providing the status report or a service reflected in a received APDU.
- 3.6.38 date-of-service:** The date on which a service concerning an ILL-transaction is invoked.
- 3.6.39 date-received:** The date when the item is received by the requester.
- 3.6.40 date-requested:** The date the ILL request was initiated by the requester.
- 3.6.41 date-returned:** The date when the item was returned to the responder.
- 3.6.42 date-shipped:** The date when the item was shipped to the requester.
- 3.6.43 delivery-service:** The delivery service or method used in transporting a requested item. Either physical or electronic delivery may be used.
- 3.6.44 desired-due-date:** The proposed due date for the renewed loan.
- 3.6.45 duplicate-transaction-id:** The transaction-id value of an ILL-REQUEST APDU is an illegal duplicate, i.e. the value is identical to one for an existing ILL-REQUEST received from the same requester.
- 3.6.46 edition:** All the copies of an item produced from one master copy or substantially the same type image, having the same contents, and, in the case of non-book materials, issued by a particular publishing agency or group of such agencies.
- 3.6.47 electronic-delivery:** Delivery of an electronic representation of a document via a telecommunications-based data transfer mechanism. Delivery via transfer of a tangible magnetic or optical medium is excluded.
- 3.6.48 estimated-date-available:** Date when an item placed on hold is expected to become available.
- 3.6.49 expiry-date:** The date on which an ILL-transaction expires automatically.
- 3.6.50 expiry-flag:** An indication of whether an expiry date has been set for an ILL-transaction, and if so, whether that date is the "need-before-date", or some other date.
- 3.6.51 extended-postal-delivery-address:** Additional information in the postal address necessary to identify the exact point of delivery, e.g. room and floor number in a large building.
- 3.6.52 final-responder:** Institution which supplies a requested item. This term is used when it is necessary to distinguish between the responder of an ILL-transaction and the responder of an ILL-sub-transaction.
- 3.6.53 forward-flag:** An indication whether a received ILL-REQUEST has been forwarded from an intermediary.
- 3.6.54 forward-note:** Note added to the ILL-REQUEST by the responder when it is forwarded to a new responder.
- 3.6.55 general-problem:** Code indicating a general problem with a received APDU detected by the ILL service-provider that is not related to either the transaction-id or permissible state transitions.
- 3.6.56 ILL-APDU-type:** Code identifying the type of APDU received.
- 3.6.57 ILL-service-type:** A code for the type of ILL service requested. These can be listed in a preferred order.
- 3.6.58 ILL-transaction:** A single complete instance of the whole ILL cycle, including all of the actions, service primitives, and messages involved from the initial ILL-Request until the cycle is concluded, as with the return of the requested material.
- 3.6.59 in-process:** Item has been received but is not yet ready for use.
- 3.6.60 in-use/on-loan:** Item is owned but is currently being used by a client or is on loan to another institution.
- 3.6.61 initial-requester:** Person or institution which initiates an ILL-transaction; this term is used when it is necessary to distinguish between the requester of an ILL-transaction and the requester of an ILL sub-transaction.
- 3.6.62 initial-requester-address:** Information identifying the telecommunications service and address by which the initial-requester can be reached.
- 3.6.63 initiator-of-most-recent service:** Identification information of the requester or responder who initiated the most recent service.
- 3.6.64 institution-symbol:** Number(s), letter(s) or a code serving to identify unambiguously and in an abbreviated format a library, institution or corporation that is participating in an ILL-transaction, e.g. institution's national union catalogue symbol.
- 3.6.65 insured-for:** Notation of the amount of insurance purchased against loss or damage of items.

- 3.6.66 intermediary-id:** Identification information of an ILL-transaction intermediary.
- 3.6.67 intermediary-problem:** Code indicating that the intermediary has a problem in processing the request.
- 3.6.68 invalid-transaction-id:** The transaction-id value of an ILL-REQUEST is invalid, e.g. the value violates the assignment rules of this part of ISO 10161, or an unknown person-or-institution symbol or person-or-institution-name is encountered.
- 3.6.69 ISBN:** The International Standard Book Number assigned to a monograph as prescribed by ISO 3297:1986.
- 3.6.70 ISSN:** The International Standard Serial Number assigned to a serial title as prescribed by ISO 2108:1978.
- 3.6.71 item-type:** A code identifying the bibliographic form in which the item has been produced.
- 3.6.72 lacking:** The title is owned but not the component part or pages requested.
- 3.6.73 lacks-copyright-compliance:** Compliance with applicable copyright regulations or laws must be indicated before copying can be done.
- 3.6.74 level-of-service:** A code that indicates the level of search detail required or the duration of time within which a response is required. Note that this code reflects regional or national conventions.
- 3.6.75 library-use-only:** Responder indication that the item may not be removed from the requesting institution.
- 3.6.76 location-address:** Information identifying the telecommunication service and address or the postal address by which the institution that owns the item can be reached.
- 3.6.77 location-id:** The symbol or name of the institution that owns the requested item.
- 3.6.78 location-note:** Additional information that supplements or corrects the bibliographic data provided in the ILL-REQUEST or that clarifies the location provided.
- 3.6.79 locations-not-found:** No potential responder has been identified.
- 3.6.80 lost:** Item declared missing and/or withdrawn from the collection.
- 3.6.81 mandatory-messaging-not-supported:** The responder does not provide the SHIPPED and/or CHECKED-IN message(s).
- 3.6.82 maximum-cost:** Maximum amount that will be paid to obtain an ILL service. (Variation of ISO 8459-1).
- 3.6.83 medium-characteristics:** Technical specifications of the physical form in which the requested item is to be supplied.
- 3.6.84 medium-type:** A code identifying the medium in which the item has been produced. (Variation of ISO 8459-1)
- 3.6.85 mistyped-APDU:** The structure of the APDU does not conform to the structure defined in this part of ISO 10161. For example, it contains a data type not defined for that version of the protocol.
- 3.6.86 monetary-value:** The value of an amount. [SIST ISO 10161-1:2005](#)
- 3.6.87 most-recent-service:** A code identifying the last service event occurring at the system providing the status report. This is either a service invoked by the system providing the status report or a service reflected in a received APDU. A status report sent in response to a status query will not indicate STATUS-QUERY as the most-recent-service because this would not be informative.
- 3.6.88 most-recent-service-note:** The contents of the note parameter from the most recent service primitive.
- 3.6.89 name-of-institution:** A word, phrase or abbreviation which identifies a library, institution or corporation. (Variation of ISO 8459-1)
- 3.6.90 name-of-person:** A word or combination of words and/or initials by which an individual is regularly known or designated and which identifies the person participating in the ILL-transaction.
- 3.6.91 national-bibliography-no:** Information identifying the national bibliography and the corresponding record number for the desired item, e.g. Library of Congress Card Number (LCCN).
- 3.6.92 need-before-date:** The date by which the item or a reply is needed.
- 3.6.93 no-of-units-per-medium:** The number of physical pieces shipped per supplied medium.
- 3.6.94 no-reproduction:** Item may not be photocopied or mechanically reproduced in whole or in part.
- 3.6.95 non-circulating:** Item is held but is not available for loan.
- 3.6.96 not-available:** Due to some technical problem the service-user is temporarily unable to process the service request.
- 3.6.97 not-found-as-cited:** The item identification information is believed by the responder to be either incomplete or incorrect.
- 3.6.98 not-on-shelf:** Item is owned by the institution but is not charged out and is not on shelf.
- 3.6.99 not-owned:** Title is not owned by the responder.
- 3.6.100 note:** Additional information which is not covered by any other data elements.
- 3.6.101 notification note:** Note added to the FORWARD-NOTIFICATION by the responder.
- 3.6.102 on-hold:** Item has been requested by another institution or person and will be supplied to that institution or person as soon as it becomes available.
- 3.6.103 on-order:** Item has been ordered but has not been received by the responder.

- 3.6.104 on-reserve:** Item is owned but set aside for restricted use.
- 3.6.105 pagination:** The numbering of the pages of an item or a component part of an item. (Variation of ISO 8459-1)
- 3.6.106 payment-provided:** Requester statement that payment of responder charges has been authorized, is being sent, or will be enclosed with the returned material.
- 3.6.107 permission-to-chain:** An indication granting permission to the responder to initiate a chained sub-transaction with another responder.
- 3.6.108 permission-to-change-send-to-list:** An indication granting permission to the responder to alter the contents of the send-to-list. The nature of the permitted changes depends on the value of the type "preference".
- 3.6.109 permission-to-forward:** An indication granting permission to the responder to forward the request to another responder.
- 3.6.110 permission-to-partition:** An indication granting permission to the responder to initiate a partitioned sub-transaction with another responder.
- 3.6.111 person-symbol:** Number(s), letter(s) or code serving to identify unambiguously and in an abbreviated format a person who is participating in an ILL-transaction.
- 3.6.112 physical-medium:** See medium-type.
- 3.6.113 place-of-publication:** Geographical location of the publisher, or failing this, of the printer, distributor or manufacturer.
- 3.6.114 place-on-hold:** A request that a hold be placed on the item which is to be supplied as soon as it becomes available.
- 3.6.115 policy-problem:** Responder indication that there is no policy in place to permit the completion of the request.
- 3.6.116 poor-condition:** Item is owned but its physical condition prohibits lending or reproduction.
- 3.6.117 post-office-box:** A box number assigned by the post office.
- 3.6.118 postal-code:** A code which identifies a given area within a city or other geographical area.
- 3.6.119 preference:** An indication of whether the institutions listed in the send-to-list are to be approached in the order of the list or in any order.
- 3.6.120 prepayment-required:** Responder indication that prepayment is required prior to the processing of the ILL-transaction.
- 3.6.121 protocol-version-not-supported:** An APDU has been received with a protocol-version-number component identifying an unsupported version of the [protocol 10161-1:2005](https://standards.iteh.ai/catalog/standards/sist/8458-44d0-be54-6b9c7ba30c4d/sist-iso-10161-1-2005).
- 3.6.122 protocol-version-num:** A number identifying the protocol version in use.
- 3.6.123 publication-date:** The date of issue of a work as designated by the publisher of the work.
- 3.6.124 publication-date-of-components:** The publication date assigned by the publisher to identify the unique bibliographic components of a work.
- 3.6.125 publisher:** Person(s) or organization(s) responsible for the publication of an item.
- 3.6.126 reason-locs-provided:** A code used to indicate the reason why locations are provided in response to an ILL request.
- 3.6.127 reason-no-report:** A code used to indicate the reason why no report can be provided in response to a STATUS-QUERY.
- 3.6.128 reason-not-available:** A code used to indicate the reason for item unavailability.
- 3.6.129 reason-unfilled:** A code used to indicate the reason for not filling an ILL request.
- 3.6.130 reciprocal-agreement:** Requester indication of a prior agreement regarding what may be supplied and under what conditions.
- 3.6.131 region:** A phrase used to identify a province, state, region or locale.
- 3.6.132 renewable:** An indication of whether the supplied item is renewable or not.
- 3.6.133 report-source:** Code indicating whether the initiating source of the error report is the service-user or the service-provider.
- 3.6.134 report-type:** An indication of whether a report is available and if so, whether it is a status report, error report or both.
- 3.6.135 requester-id:** Identification information of the ILL-transaction requester.
- 3.6.136 requester-note:** Note provided by the ILL-transaction requester.
- 3.6.137 requester-optional-messages:** An indication of whether the requester is capable of supplying the RECEIVED and RETURNED optional messages and whether the SHIPPED and/or CHECKED-IN optional messages are required or desired from the responder.
- 3.6.138 requester-CHECKED-IN:** An indication by the requester as to whether or not it requires or desires to receive the CHECKED-IN APDU.

- 3.6.139 requester-SHIPPED:** An indication by the requester as to whether or not it requires or desires the SHIPPED APDU.
- 3.6.140 resource-limitation:** The service-user is unable to perform the requested service due to resource limitations.
- 3.6.141 responder-address:** Information identifying the telecommunications service and address by which the responder can be reached.
- 3.6.142 responder-id:** Identification information of the ILL-transaction responder.
- 3.6.143 responder-note:** Note provided by the ILL-transaction responder.
- 3.6.144 responder-optional-messages:** Indication of whether the responder is capable of sending the SHIPPED and/or CHECKED optional messages (for diagnostic purposes) and whether the RECEIVED and/or RETURNED messages are required or desired from the requester.
- 3.6.145 responder-RECEIVED:** An indication by the responder as to whether or not it requires or desires to receive the RECEIVED APDU.
- 3.6.146 responder-RETURNED:** An indication by the responder as to whether or not it requires or desires to receive the RETURNED APDU.
- 3.6.147 responder-specific-result:** A reason provided in response to an ILL request which is specific to the responder, i.e. not specified in this part of ISO 10161.
- 3.6.148 responder-specific-service:** A service provided by a responder which is specific to the responder, i.e. not specified in this part of ISO 10161.
- 3.6.149 retry-date:** The date after which a request may be retried.
- 3.6.150 retry-flag:** Requester indication that the ILL-transaction is or is not a retry of a previous one.
- 3.6.151 return-insurance-required:** Amount of insurance against loss or damage required by the responder for the return of a loaned item.
- 3.6.152 returned-via:** Requester's method of shipment used to return the item.
- 3.6.153 security-problem:** An indication that the recipient has encountered a security problem that prevents it from processing the service request. The possible reasons are outside the scope of this part of ISO 10161.
- 3.6.154 series-title-number:** Name given to a number of separate publications related to one another by the fact that each bears a collective title applying to the group or subgroup as a whole as well as its own title, and its number within that group. (Variation of ISO 8459-1)
- 3.6.155 send-to-list:** List of potential responders for forwarded, chained or partitioned ILL-transactions.
- 3.6.156 shipped-conditions:** Conditions under which an item may be used.
- 3.6.157 shipped-service-type:** A code for the type of ILL service provided.
- 3.6.158 shipped-via:** Lender's method of shipment used to send the item.
- 3.6.159 special-collections-supervision-required:** Indication by the responder that the item must be used within the special collections department or archives of the requester.
- 3.6.160 sponsoring-body:** The corporate body or organization that issued the item or that is associated with its authorship.
- 3.6.161 street-and-number:** A number and/or phrase used to identify the location of a building within a city or a rural area.
- 3.6.162 supplemental-item-description:** Additional item description information that may be represented in a machine-readable format, e.g. MARC record.
- 3.6.163 supplier-id:** Identification information of the supplier of the requested item when the supplier is different from the responder.
- 3.6.164 supply-medium-type:** A code identifying the medium in which the item is required. This can be listed in preferred order.
- 3.6.165 system-no:** A number providing system specific identification of a bibliographic record for a requested item.
- 3.6.166 telecom-service-address:** Unique number or code assigned to an electronic mailbox or service or to a participant in a communications network.
- 3.6.167 telecom-service-identifier:** Unique name or code of the telecommunication service used for the ILL-transaction.
- 3.6.168 time-of-service:** Time at which a service is invoked.
- 3.6.169 title:** Name of an item consisting of a word or group of words intended to identify it.
- 3.6.170 title-of-article:** Title of an item which is a component part of another item.
- 3.6.171 transaction-group-qualifier:** An alphanumeric string uniquely identifying a set of related ILL-transactions, e.g. a series of referrals or an ILL request and its subsequent retry. This qualifier is unique within the scope of the original ILL-transaction requester's system. In combination with the requester's id, this provides a universally unique identifier for the ILL-transaction group.

- 3.6.172 transaction-id-problem:** Code indicating a problem with the transaction-id in a received APDU.
- 3.6.173 transaction-qualifier:** An alphanumeric string identifying all services and messages associated with a single ILL-transaction. Note that this is a unique string assigned by the initial requester of the ILL-transaction and applied by the ILL partners to all subsequent services and messages associated with the ILL-transaction. In combination with the requester's id and the transaction-group-qualifier this provides a universally unique identification for the ILL-transaction.
- 3.6.174 transaction-type:** A code that identifies the type of ILL-transaction.
- 3.6.175 transportation-mode:** A physical or non-electronic means of transporting the requested item when represented or stored on a tangible medium.
- 3.6.176 unable-to-perform:** Code indicating the reason why the service-user is unable to perform the requested service.
- 3.6.177 unknown-transaction-id:** There is no ILL-transaction corresponding to the transaction-id value of a received APDU.
- 3.6.178 unrecognized-APDU:** The type of the received APDU is not one of the APDUs defined in this part of ISO 10161.
- 3.6.179 verification-reference-source:** An authoritative source of bibliographic information used to identify or locate an item / any source used to identify or locate an item. (Variation of ISO 8459-1).
- 3.6.180 volume-issue:** Identifier of a physical unit of a serial or multi-volume monograph / number, letter or word identifying a unit of an item which is, or the volumes of which are, published in parts.
- 3.6.181 volume/issue-not-yet-available:** Title is owned but the requested component part has not yet been received.
- 3.6.182 will-pay-fee:** Requester notation indicating that the requester agrees to pay the applicable fee.
- 3.6.183 will-supply-results:** Code for identifying additional information associated with the "will-supply" result in the response to an ILL request.

#### 4 Abbreviations

ACSE	association control service element
APDU	application-protocol-data-unit
ASE	application-service-element
ASN.1	abstract syntax notation one
ASO	application service object
EDIFACT	Electronic Data Interchange For Administration, Commerce and Transport
ILL	interlibrary loan
ILLPM	ILL protocol machine
MHS	Message Handling System
MOTIS	Message Oriented Text Interchange System
MTS	Message Transfer System
OSI	open systems interconnection

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