

This is a preview of "ISO 10160:2015". [Click here to purchase the full version from the ANSI store.](#)

Third edition
2015-05-01

Information and documentation — Open Systems Interconnection — Interlibrary Loan Application Service Definition

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



Reference number
ISO 10160:2015(E)

© ISO 2015



COPYRIGHT PROTECTED DOCUMENT

© ISO 2015

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

This is a preview of "ISO 10160:2015". Click [here](#) to purchase the full version from the ANSI store.

Contents

Page

Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
3.1 Reference model definitions.....	1
3.2 Application Layer structure definitions.....	2
3.3 Service conventions definitions.....	3
3.4 ILL definitions.....	3
4 Abbreviations	5
5 Conventions	5
6 Service model	5
6.1 Service-user and service-provider.....	5
6.1.1 Roles of the service-user.....	6
6.2 ILL-transaction.....	6
6.3 ILL-transaction types and topologies.....	7
6.3.1 Simple ILL-transaction.....	7
6.3.2 Chained ILL-transaction.....	7
6.3.3 Partitioned ILL-transaction.....	8
6.3.4 Distinct ILL-transactions.....	10
6.3.5 Forwarding.....	11
6.3.6 Referrals.....	11
6.3.7 Retries.....	11
6.4 ILL-transaction state.....	13
6.4.1 Requester-state.....	14
6.4.2 Responder state.....	15
6.4.3 Terminal states.....	15
6.4.4 Intermediary states.....	16
6.4.5 ILL-transaction phases.....	16
7 Definition of services	17
7.1 Service features.....	17
7.1.1 General.....	17
7.1.2 ILL Requests.....	17
7.1.3 Request Forwarding.....	17
7.1.4 Forwarding Notification.....	18
7.1.5 Shipment.....	18
7.1.6 ILL Answer.....	18
7.1.7 Conditional Reply.....	18
7.1.8 Cancellation.....	18
7.1.9 Cancellation Reply.....	19
7.1.10 Receipt.....	19
7.1.11 Recall.....	19
7.1.12 Return.....	19
7.1.13 Check-in.....	19
7.1.14 Overdue.....	19
7.1.15 Renewal.....	19
7.1.16 Renew Answer.....	19
7.1.17 Lost Notification.....	19
7.1.18 Damaged Notification.....	19
7.1.19 Message.....	19
7.1.20 Status Query.....	20
7.1.21 Status-or-Error Report.....	20

This is a preview of "ISO 10160:2015". [Click here to purchase the full version from the ANSI store.](#)

7.1.22	Expiry	20
7.2	Specification method and notation	20
7.3	ILL services	21
7.3.1	ILL-REQUEST service	22
7.3.2	FORWARD Service	28
7.3.3	FORWARD-NOTIFICATION Service	29
7.3.4	SHIPPED Service	31
7.3.5	ILL-ANSWER Service	33
7.3.6	CONDITIONAL-REPLY Service	36
7.3.7	CANCEL Service	37
7.3.8	CANCEL-REPLY Service	38
7.3.9	RECEIVED Service	39
7.3.10	RECALL Service	40
7.3.11	RETURNED Service	41
7.3.12	CHECKED-IN Service	42
7.3.13	OVERDUE Service	43
7.3.14	RENEW Service	44
7.3.15	RENEW-ANSWER Service	45
7.3.16	LOST Service	46
7.3.17	DAMAGED Service	47
7.3.18	MESSAGE Service	48
7.3.19	STATUS-QUERY Service	48
7.3.20	STATUS-OR-ERROR-REPORT Service	49
7.3.21	EXPIRY Service	52
8	Sequences of Primitives	53
8.1	Resilience to Lost and Out-of-Sequence Messages	53
8.1.1	Lost Messages	53
8.1.2	Out-of-Sequence Messages	53
8.2	State Transitions	53
8.3	Additional Sequencing Rules	63
Annex A (informative)	Time sequence diagrams	66
Annex B (informative)	ILL service and document delivery	73
Bibliography		75

This is a preview of "ISO 10160:2015". Click here to purchase the full version from the ANSI store.

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword — Supplementary information](#).

The committee responsible for this document is ISO/TC 46, *Information and documentation*, Subcommittee SC 4, *Technical interoperability*.

This third edition cancels and replaces the second edition (ISO 10160:1997) of which it constitutes a minor revision.

It also incorporates the Amendment ISO 10160:1997/Amd 1:2002.

Introduction

The purpose of the Interlibrary Loan (ILL) standard is to provide a set of Application Layer services which can be used by libraries to perform loan-related activities in an Open Systems Interconnection (OSI) environment, as defined by ISO 7498.

The goal of Opens 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 ILL service provides capabilities to request the loan of returnable bibliographic items, such as books, or to request non-returnable items, such as photocopies of journal articles. Related procedures, such as loan renewal, item recall, overdue notification, etc. are also supported by this service.

The purpose of the service definition is to define the communications aspects of ILL processing in terms of a set of services provided to a user by an application-service-element (ASE). Performing an ILL-transaction involves a user invoking the services in the prescribed order.

The focus of ILL activity is the bibliographic item, which may be a book, periodical, journal article, microform, etc. The ILL application is concerned with procedures relating to the loan of these items between libraries or to the interchange of copies thereof.

This service definition strives to satisfy a number of objectives, including:

- Control of ILL-transactions. The services must provide a means of controlling the ILL-transaction in terms of constraining allowable actions, exchanging information, tracking a borrowed item, and synchronizing the activity of the two or more sites involved in the ILL-transaction.
- Interworking of various systems. The ILL activity will continue to be performed using a combination of manual and automated systems. The ILL service and protocol must recognize this fact and allow systems with varying degrees of automation to be able to interwork, i.e. communicate with each other in a meaningful way.
- Minimizing the costs of ILL-transactions. The costs associated with an ILL-transaction include both operator costs and communications costs. An ILL protocol should attempt to minimize the costs incurred by implementations conforming to the protocol. This can be done by minimizing the operator intervention required by the protocol implementation, and by minimizing the number of messages sent between the sites involved in an ILL-transaction.
- Reflection of current ILL practices. The purpose of defining a protocol is not to introduce a new method for performing an ILL-transaction, but rather to formalize current practices in a way that allows existing systems to communicate with each other in a standardized way, as well as to allow newer automated systems to take full advantage of the protocol's potential. However, it is recognized that this International Standard may not be universally applicable to all existing ILL systems without some modification, due to the wide variation in their capabilities.

There is an inherent trade off in any attempt to reconcile these divergent objectives. For example, minimizing ILL-transaction costs may result in some loss of control over the ILL-transaction. Reducing the number of messages sent lowers the telecommunications cost and also lowers the operator costs as there is less need for the operator to initiate and control the communications operations. However, by reducing the total number of messages, some level of information regarding the ILL-transaction is lost as is the co-ordination between the requesting and responding libraries. By reducing the total number of stages through which an ILL-transaction must go (i.e. states), the operator interface of an automated system can be made simpler, with an associated reduction in requisite demands on the operator.

This is a preview of "ISO 10160:2015". [Click here to purchase the full version from the ANSI store.](#)

The approach taken in this International Standard is to set the mandatory requirements that all open systems must support in order to achieve an acceptable degree of coordination between automated parties to an ILL-transaction. Additional optional features are defined which allow implementors to achieve a greater degree of control if it is desired.

NOTE The mandatory requirements of this International Standard might however exceed the capabilities and/or needs of some existing manual or semi-automated ILL systems.

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 10163, 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 outside the scope of this International Standard.

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