

**OCLC ILL**  
**Annex A to the**  
**IPIG Profile for the ISO ILL**  
**Protocol**

2000 August 2

The most current versions of the IPIG Profile and related documents in the IPIG Profile suite are available on the Interlibrary Loan Application Standards Maintenance Agency web site at:

<http://www.nlc-bnc.ca/iso/ill/ipigprfl.htm>

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## 1 Introduction to Annex A. IPIG Profile Conformance Statement Requirements List for OCLC ILL

This IPIG Profile Conformance Statement Requirements List describes the elements of the International Organization for Standardization (ISO) 10161 protocol required by the IPIG profile and the way that OCLC ILL implements the ISO 10161 protocol.

Many of the "see" references in this Annex refer to sections of the IPIG Profile that are outside the portion that implementors are supposed to re-publish.

### 1.1 Extensions sent by OCLC ILL

OCLC ILL uses several external definitions that are registered with the ISO 10161 maintenance agency, and one object registered with the Z39.50 maintenance agency. OCLC ILL sends the extensions named in table 1.

**Table 1, Externals Used by OCLC ILL**

Extension Name	Object ID	Notes
ILL-APDU-Delivery-Info	1.0.10161.13.3	
Intermediary-Control	1.0.10161.13.1000.2.7	
IPIG-Additional-User-Error-Information	1.0.10161.13.6	Note 1
OCLC-ILL-Error	1.0.10161.13.1000.2.2	Note 1
OCLC-ILL-Request-Extension	1.0.10161.13.2	
OCLC-Shipped-Extension	1.0.10161.13.1000.2.6	
OCLCSpecificResults	1.0.10161.8.1000.2.1	
Suppliers-Reference	1.0.10161.13.7	
System-no. CanSystemNo	1.2.124.10161.2	Note 2
System-no. IPIG-System-Number	1.0.10161.6.1	Note 2

Notes:

- 1 OCLC ILL currently uses the OCLC-ILL-Error external as an extension to the status-or-error-report APDU. OCLC will use the IPIG-Additional-User-Error-Information external sometime in the future.
- 2 OCLC ILL can accept either the CanSystemNo syntax or the IPIG-System-Number syntax in the system-no parameter, but currently sends only the CanSystemNo syntax. OCLC ILL will send the IPIG-System-Number syntax in the system-no parameter sometime in the future.

The Interlibrary Loan Application Standards Maintenance Agency (the National Library of Canada) publishes the ASN.1 definitions of these externals at: <http://www.nlc-bnc.ca/iso/ill/>. The Z39.50 Standard Maintenance Agency (the Library of Congress) publishes the definition of the last external at <http://lcweb.loc.gov/z3950/agency/agency.html>.

## 1.2 Requirements for working with OCLC ILL

In order to work with OCLC ILL, a system must comply with the IPIG Profile with these exceptions:

- Send and receive requests in ASN.1/BER using connectionless TCP/IP on port 1611.

The APDUs that a system must support to work with OCLC ILL are summarized in table 2.

**Table 2, Summary of Required APDUs**

APDU	Send	Act on receipt
ILL-Request	✓	✓
Forward		
Forward-Notification		
Shipped	✓	✓
ILL-Answer	✓	✓
Conditional-Reply	✓	✓
Cancel		✓
Cancel-Reply	✓	✓
Received	✓	✓
Recall		✓
Returned	✓	✓
Checked-In		
Overdue	✓	✓
Renew		✓
Renew-Answer	✓	✓
Lost	✓	✓
Damaged		
Message		
Status-Query		✓
Status-Or-Error-Report	✓	✓
Expiry		✓

- Include at least the following elements in a request:
  - the Title
  - an OCLC symbol in the person-or-institution-symbol element of requester-id or in the alias element of the ILL-APDU-Delivery-Info Extension.
  - an OCLC symbol in the person-or-institution-symbol element of responder-id.
- Support the externals marked as required in tables 3 and 4.

**Table 3, OCLC ILL Requirements for Externals  
Used in Extensions**

Extension Name & Object ID	Purpose	Requirement	
		Send	Act on receipt
ILL-APDU-Delivery-Info 1.0.10161.13.3	System addresses for different formats to let an intermediary communicate in EDIFACT, BER-in-MIME, or BER.	Required	Required
ILL-Supplemental-Client-Info 1.0.10161.13.4	Extended identification and address of the patron	Optional	N/A
Intermediary-Control 1.0.10161.13.1000.2.7	Reports the "lender string" for the intermediary to step through.	Optional (Highly desirable)	Optional (Highly desirable)
IPIG-Additional-User-Error-Information 1.0.10161.13.6	Will be used in the future to report error conditions like "element truncated" that are currently in the OCLC-ILL-Error	Not yet used	Not yet used
OCLC-ILL-Error 1.0.10161.13.1000.2.2	Reports error conditions like "missing-required-field" and "invalid-institution-symbol" that are not in the regular 10161 error codes.	Not recommended	Optional
OCLC-ILL-Request-Extension 1.0.10161.13.2	Contains department, payment method, and separate fields for volume and issue that are not part of regular 10161 request	Optional	Optional
OCLC-Shipped-Extension 1.0.10161.13.1000.2.6	Flag for lender's acceptance of IFM	Optional	Optional
Pick-List 1.0.10161.13.1000.2.8	Contains patron department and the borrowing institution's control number for the picklist.	N/A	N/A
Suppliers-Reference 1.0.10161.13.7	Contains the supplier's private number for the transaction. OCLC will put the ILL request number here.	N/A	Optional
Z39-50-accessControl prompt-1 (Response only) 1.2.840.10003.8.1	Username and password.	Required	N/A

**Table 4, OCLC ILL Requirements for Externals  
Used in APDUs**

External Name & Object ID	Purpose	Requirement	
		Send	Act on receipt
System-no. CanSystemNo 1.2.124.10161.2	An ID number that unambiguously identifies the system.	Optional	Optional
System-no. IPIG- System-Number 1.0.10161.6.1	An ID number that unambiguously identifies the system. OCLC ILL can receive and interpret this number now, but cannot send it.	Optional	Not yet sent
OCLCILLService 1.0.10161.4.1000.2.1	Specifies the type of processing that OCLC ILL should perform.	Optional	N/A
OCLCSpecificResults 1.0.10161.8.1000.2.1	Specifies the results of the processing on OCLC ILL and additional reasons for some results.	N/A	Optional

The Interlibrary Loan Application Standards Maintenance Agency (the National Library of Canada) publishes the ASN.1 definitions of all these externals at: <http://www.nlc-bnc.ca/iso/ill/>

### 1.3 Interworking Tests

A system that meets the preceding requirements can arrange to test interworking with OCLC ILL. OCLC maintains a test system and a test script to determine satisfactory exchange of data.

### 1.4 How to Read the IPIG Profile Conformance Statement Requirements List

The remainder of this document is the IPIG Profile Conformance Statement Requirements List template filled in according to IPIG instructions. The conformance statement identifies the elements that OCLC ILL sends, with an occasional note about what elements OCLC ILL requires on receipt.

### 1.5 Revision to this IPIG Profile Conformance Statement Requirements List

1999 November 28 -- Version 1

All new

2000 January 24 -- Version 1.01

OCLC ILL can now accept the IPIG-System-Number external, but will still send the CanSystemNo.

OCLC ILL now uses copyright compliance codes that include a domain identifier.

2000 August 2

Added a clarification to the description of Send-to List (A.6.1, Ref. 21.7). There was no change to the programs or the version number.

## Annex A. IPIG Profile Conformance Statement Requirements List

(Normative)

This Annex forms an integral part of the *IPIG Profile for the ISO Protocol*. It provides a series of tables indicating the requirements, parameter by parameter, for compliance with the IPIG Profile for the ISO ILL Protocol. Implementors wishing to assert conformance to this Profile **SHALL**:

- Complete a copy of this Annex, the IPIG Profile Conformance Statement Requirements List, indicating the capabilities supported by their implementations, as a statement of static conformance to this Profile;
- Make a completed Requirements List network-accessible via a URL;
- Inform the ILL ASMA of the URL for listing in the central registry of completed Conformance Statement Requirements Lists.

The ILL ASMA maintains a central registry of completed Conformance Statement Requirements Lists.

### A.1. Notations Used in the IPIG Profile Conformance Statement Requirements List

#### A.1.1. Notation for Column Headings

**IPIG** Defined in the IPIG Profile. This column indicates the level of support required for conformance to this Profile.

**Impl** Implementation Indicator. This column is to be completed by the implementor to indicate the level at which the implementation supports each service or parameter.

#### A.1.2. Notation used in the IPIG Column

**M** Mandatory: Mandatory support of an ILL service implies that the implementation **SHALL** be capable of invoking the specified service, including the initiation and receipt of the APDU(s) associated with the service, as appropriate to the user role (Requester, Responder, or Intermediary).

Mandatory support of a parameter implies that an implementation **SHALL** be capable of transmitting data values for that parameter in APDUs according to the protocol specifications in ISO 10161-1:1997. If data are available, having been explicitly supplied or able to be generated by a user application, that data **SHALL** be carried in the APDU.

Mandatory support of a data type within a parameter implies that an implementation **SHALL** be capable of transmitting values for that specific data type if the parent parameter is transmitted. For example, if the optional **maximum-cost** parameter is supported, it is mandatory that values for **currency-code** and **monetary-value** data types are included.

**O** Optional: Optional support of an ILL service or parameter implies that it is permitted but not mandatory for the IPIG Profile. However, if this feature is implemented, it **SHALL** conform to the specifications and restrictions contained in the IPIG Profile.

**C** Conditional: Support of this ILL service or parameter depends on certain conditions identified for the feature in the **Reference, Usage or Range of Values** column, or elsewhere in this IPIG Profile.

**X** Out-of-scope: Support of this ILL service or parameter is not addressed in the IPIG Profile.

-- Not applicable.

### A.1.3. Notation used in the Impl Column

This notation is to be supplied by the implementor when stating the conformance of an ILL implementation to the IPIG Profile.

**Y** Yes, this ILL service or parameter has been implemented.

**N** No, this ILL service or parameter has not been implemented.

Non-support of a service implies that an implementation does not have the capability to transmit the APDUs associated with the service, and has no support for the service beyond the capability to receive the associated APDUs without failure.

### A.1.4. Numbering

In the tables of Annex A, each row that requires implementation details to be supplied is numbered at the left-hand edge of the row. This numbering is included as a means of uniquely identifying all possible implementation details within the Requirements List.

### A.1.5. Completion by the Implementor

The implementor, when stating conformance with the IPIG Profile for the ISO ILL Protocol, **SHALL** complete all "[ ]"marked entries in the **Impl** column of the IPIG Profile Conformance Statement Requirements List and all other appropriate sections in the IPIG Profile. Implementors may remove the contents of the "References, Usage or Range of Values" column and add details specific to their implementation. However, they should not make any other changes to this established proforma when preparing a Conformance Statement. Where the response exceeds the space available, references may be made to additional annexes where complete descriptions are provided.

## A.2. Implementation Details

### A.2.1. Date of Statement

Date of Statement (YYYY-MM-DD)	2000-01-24
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### A.2.2. Identification of the Implementation

1	Implementation Supplier (i.e., Company name)	OCLC Online Computer Library Center, Inc.
2	Implementation Name	OCLC ILL
3	Implementation Version Number	1.01
4	Implementation Contact Information	User & Network Support 6565 Frantz Rd. Dublin, OH 43017-3395

**A.2.3. Statement of Conformance**

Ref.		Impl	Comments
1	All mandatory features of version 1.0 of the <i>IPIG Profile for the ISO ILL Protocol</i> have been implemented.	[ N ]	
1.1	All static constraints identified in Clause 6 of version 1.0 of the <i>IPIG Profile for the ISO ILL Protocol</i> have been implemented.	[ N ]	[ All have been implemented except 6.9.4 and 6.10.2. ]
1.2	The implementation exhibits behaviour consistent with dynamic constraints as specified in Clause 7 of version 1.0 of the <i>IPIG Profile for the ISO ILL Protocol</i> .	[ N ]	[ All are consistent except 7.3, and 7.9.1. ]

**A.3. General Details****A.3.1. ISO 10161 Details**

1	Protocol Version Number	2
2	Other Version Number(s) supported	
3	Defect Report Number(s) implemented	
4	Amendment(s) implemented	1

**A.3.2. Roles Supported**

See Clause 6.1 for details on the dynamic constraints imposed by the IPIG Profile concerning support of the ILL-Service-User roles.

Ref.		IPIG	Impl
1	Requester	O	[ Y ]
2	Responder	O	[ Y ]
3	Intermediary	O	[ Y ]

**A.3.3. Transaction Types Supported**

See Clause 6.2 for details on the static constraints imposed by the IPIG Profile concerning support of Transaction Types.

Ref.	Transaction Type	Requester		Responder		Intermediary	
		IPIG	Impl	IPIG	Impl	IPIG	Impl
1	Simple	M	[ Y ]	M	[ Y ]	--	[ ]
2	Chained	O	[ N ]	O	[ N ]	C	[ Y ]
3	Partitioned	O	[ N ]	O	[ N ]	C	[ N ]

**A.3.4. ILL Service Types Supported**

See 7.4 for details on the dynamic constraints imposed by the IPIG Profile concerning support for **ILL-REQUEST.iLL-service-type**.

Ref.	Service Type	Requester		Responder		Intermediary	
		IPIG	Impl	IPIG	Impl	IPIG	Impl
1	Loan	O	[ Y ]	O	[ Y ]	O	[ Y ]

2	Copy/Non-returnable	O	[ Y ]	O	[ Y ]	O	[ Y ]
3	Locations	O	[ N ]	O	[ N ]	O	[ N ]
4	Estimate	O	[ N ]	O	[ N ]	O	[ N ]
5	Responder-specific	O	[ Y ]	O	[ Y ]	O	[ Y ]

### A.3.5. Maximum Field Lengths: System-Id and Transaction-Id

See 6.5 for details on the static constraints imposed by the IPIG Profile on the maximum lengths of specific data parameters.

Ref No.	Parameter	IPIG	Impl
1	System-Id	Total of 175 characters	175
1.2	- person-or-institution-symbol	25 characters	25
1.3	- name-of-person-or-institution	150 characters	150
2	Transaction-Id	Total of 250 characters	250
2.1	- initial-requester-id	175 characters	175
2.1.1	-- person-or-institution-symbol	25 characters	25
2.1.2	-- name-of-person-or-institution	150 characters	150
2.2	- transaction-group-qualifier	25 characters	25
2.3	- transaction-qualifier	25 characters	25
2.4	- sub-transaction-qualifier	25 characters	25

### A.3.6. Transfer Syntax

See 6.10.1 *Transfer Syntax* for a more detailed discussion of the Transfer Syntax requirements for implementations conforming to the IPIG Profile.

Ref.		IPIG	Impl
1	ASN.1BER	M	[ Y ]
2	EDIFACT	X	--

### A.3.7. Transport Services

See 6.10.2 *Communication Services*, 6.10.3 *Using Internet Mail*, and 6.10.4 *Using Direct Transfer over TCP* for more detailed discussions of the Transport Services requirements for implementations conforming to the IPIG Profile.

Ref.		IPIG	Impl
1	Internet mail	M	[ N ]
1.1	- MIME encoding	M	[ N ]
2	Direct Transfer over TCP	O	[ Y ]
2.1	- Listen on port 1611	M	[ Y ]
2.2	- Connect to port 1611	M	[ Y ]
2.3	- Listen on port 499	O	[ N ]
2.4	- Connect to port 499	O	[ N ]

### A.3.8. Character Sets Support

See 6.11 *Character Sets* for a more detailed discussion of the requirements for the handling of character sets by implementations conforming to the IPIG Profile.

Ref.		IPIG	Impl
1	Supports ISO Latin-1	M	[ Y ]
2	Recognizes escape sequences for other sets	M	[ Y ]
3	Supports Unicode UTF-8	O	[ N ]
4	Supports additional character sets, as specified	O	[ N ]
4.1	- character set 1	O	[ ]
4.2	- character set 2	O	[ ]
4.3	- etc.	O	[ ]

Note to implementors: Add additional rows in 4 as required to specify the character set escape sequences supported.

## A.4. Syntaxes

This section identifies requirements for support of the various possible syntaxes associated with the ILL Protocol. Support of a particular syntax implies that an implementation can generate and receive information defined by that syntax.

Indicate in the table below the implementation's degree of support for each abstract syntax listed.

The tables of A.7 indicate the degree of support of specific data parameters defined for use in the external objects associated with each abstract syntax listed below.

The tables of A.6 specify which external objects are defined for use in specific parameters within each APDU.

Ref.	Object Class	Abstract Syntax Name	OID	IPIG	Impl
1	system-no (6)	IPIG-System-Number	1 0 10161 6 1	O	[ N ]
2	supplemental-item-description (7)	SICI	1 0 10161 7 1	O	[ N ]
3	supplemental-item-description (7)	Item-Language-Translation	1 0 10161 7 2	O	[ N ]
4	supplemental-item-description (7)	[all MARC record syntaxes registered by Z39.50 MA]	1 2 840 10003 5 +	O	[ N ]
5	e-delivery-mode (9)	Internet Delivery Service	1 0 10161 9 1	O	[ N ]
6	e-delivery-mode (9)	- SMTP	1 0 10161 9 1 1	O	[ N ]
6.1	e-delivery-mode (9)	- FTP	1 0 10161 9 1 2	O	[ N ]
6.2	e-delivery-mode (9)	Fax Delivery Service	1 0 10161 9 2	O	[ N ]
7	e-delivery-parameters	JEDDS ILL Electronic Delivery Parameters	1 0 10161 10 1000 7 1	O	[ N ]
8	extension (13)	OCLC ILL Request Extension	1 0 10161 13 2	O	[ Y ]
9	extension (13)	APDU-Delivery-Info	1 0 10161 13 3	M	[ Y ]
10	extension (13)	ILL-Supplemental-Client-Info	1 0 10161 13 4	O	[ Y ]
11	extension (13)	IPIG-Additional-User-Error Information	1 0 10161 13 6	M	[ N ]

12	extension (13)	Internal-Reference-Number	1 0 10161 13 7	O	[ Y ]
13	Access Control Format (Z39.50)	Prompt-1	1 2 840 10003 8 1	M	[ Y ]

**Note to implementors:** The abstract syntax specification (ASN.1) for each external object listed in the above table is available in the online Register of the Maintenance Agency responsible for it.

OIDs beginning with the number sequence "1 0 10161" describe objects registered by the Interlibrary Loan Application Standards Maintenance Agency. Copies of the specifications are accessible through the *Register for the ILL Application Standards (ISO 10160 and ISO 10161-1)*.

If an OID contains "1000" within the number sequence (such as {1 0 10161 10 1000 7 1} **JEDDS ILL Electronic Delivery Parameters**), it is a "local" object, listed in the *Register of Local Object Identifiers* <URL: <http://www.nlc-bnc.ca/iso/ill/regiloid.htm> >.

All other OID beginning with "1 0 10161" represent "public" objects, listed in the *Register of Public Object Identifiers* <URL: <http://www.nlc-bnc.ca/iso/ill/regipoid.htm> >.

OIDs beginning with the number sequence "1 2 840" describe objects registered by the Z39.50 Maintenance Agency. Copies of the specifications are accessible through the *Registry of Z39.50 Object Identifiers* <URL: <http://lcweb.loc.gov/z3950/agency/defns/oids.html> >.

## A.5. Interlibrary Loan Application Services

This section describes ILL services rather than APDUs. Invocation of an ILL application service requires the transmission of the APDUs associated with the service.

Indicate in the table below the implementation's degree of support for each ILL Service listed.

Use the tables of A.6 to indicate the degree of support of specific data parameters defined for use in the APDUs associated with each service.

### A.5.1. Support of Services

Ref.		Requester		Responder		Intermediary		References, Usage or Range of Values
		IPIG	Impl	IPIG	Impl	IPIG	Impl	
1	ILL-REQUEST	M	[ Y ]	M	[ Y ]	M	[ Y ]	
2	FORWARD	--	--	X	[ N ]	X	[ N ]	Service out-of-scope for the IPIG Profile.
3	FORWARD-NOTIFICATION	X	[ N ]	X	[ N ]	X	[ N ]	Service out-of-scope for the IPIG Profile.
4	SHIPPED	M	[ Y ]	M	[ Y ]	M	[ Y ]	
5	ILL-ANSWER	M	[ Y ]	M	[ Y ]	M	[ Y ]	
6	CONDITIONAL-REPLY	M	[ Y ]	C	[ Y ]	M	[ Y ]	Responder implementations supporting <b>transaction-results</b> with the value " <i>conditional</i> " <b>SHALL</b> also support the CONDITIONAL-REPLY service; otherwise it is not applicable.
7	CANCEL	O	[ Y ]	M	[ Y ]	M	[ Y ]	
8	CANCEL-REPLY	C	[ Y ]	M	[ Y ]	M	[ Y ]	Requester implementations supporting the <b>CANCEL</b> service <b>SHALL</b> also support the <b>CANCEL-</b>

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Ref.		Requester		Responder		Intermediary		References, Usage or Range of Values
		IPIG	Impl	IPIG	Impl	IPIG	Impl	
								REPLY service; otherwise it is not applicable.
9	RECEIVED	M	[ Y ]	M	[ Y ]	M	[ Y ]	
10	RECALL	C	[ Y ]	C	[ Y ]	C	[ Y ]	Implementations supporting the "loan" service type <b>SHALL</b> also support the <b>RECALL</b> service; otherwise it is not applicable.
11	RETURNED	C	[ Y ]	C	[ Y ]	C	[ Y ]	Implementations supporting the "loan" service type <b>SHALL</b> also support the <b>RETURNED</b> service; otherwise it is not applicable.
12	CHECKED-IN	C	[ Y ]	C	[ Y ]	C	[ Y ]	Implementations supporting the "loan" service type <b>SHALL</b> also support the <b>CHECKED-IN</b> service; otherwise it is not applicable.
13	OVERDUE	C	[ Y ]	C	[ Y ]	C	[ Y ]	Implementations supporting the "loan" service type <b>SHALL</b> also support the <b>OVERDUE</b> service; otherwise it is not applicable.
14	RENEW	O	[ Y ]	C	[ Y ]	C	[ Y ]	This service is applicable only for implementations that also support the "loan" service type.  Implementations functioning as Responder or Intermediary <b>SHALL</b> support the <b>RENEW</b> service.  However, if functioning only as a Requester, it is optional to support the <b>RENEW</b> service.
15	RENEW-ANSWER	C	[ Y ]	C	[ Y ]	C	[ Y ]	This service is applicable only for implementations that support the "loan" service type.  Implementations, functioning as Responder and Intermediary, <b>SHALL</b> support the <b>RENEW-ANSWER</b> service.  Requester implementations that support the <b>RENEW</b> service <b>SHALL</b> also support the <b>RENEW-ANSWER</b> service.
16	LOST	M	[ Y ]	M	[ Y ]	M	[ Y ]	
17	DAMAGED	O	[ N ]	O	[ N ]	M	[ Y ]	
18	MESSAGE	O	[ Y ]	O	[ Y ]	M	[ Y ]	
19	STATUS-QUERY	O	[ Y ]	O	[ Y ]	M	[ Y ]	
20	STATUS-OR-ERROR-REPORT	M	[ Y ]	M	[ Y ]	M	[ Y ]	
21	EXPIRY	M	[ Y ]	M	[ Y ]	M	[ Y ]	Requester and Intermediary implementations <b>SHALL</b> have the capability to accept an <b>EXPIRY</b> APDU.  Responder and Intermediary implementations <b>SHALL</b> maintain

Ref.	Requester		Responder		Intermediary		References, Usage or Range of Values
	IPIG	Impl	IPIG	Impl	IPIG	Impl	
							an expiry-timer.

## A.6. Support of APDU Parameters

In ISO 10161-1:1997, an implementation capable of receiving an APDU **SHALL** be capable of accepting data for all parameters defined for the APDU. This section is used to identify the capability of an IPIG implementation conforming to the IPIG Profile to transmit specific data parameters within each APDU.

Indicate in the tables below the degree of support of the data parameters defined in clause 9 of ISO 10161-1:1997. If the implementation supports different values (or has different constraints) for different roles, this **SHALL** be indicated.

Use the table in A.5 to indicate the degree of support for associated ILL Services.

**NOTE:** In the tables following in A.6., the first occurrence of a data parameter is expanded to include its component data types. In all subsequent instances where identical expansions of data types occur, table and row number references point back to these expansions.

### A.6.1. ILL-Request APDU

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	protocol-version-num	M	[ Y ]	Implementations conforming to IPIG Profile <b>SHALL</b> support the value "2". See 6.6 for a discussion of the requirements for this data parameter.
2	transaction-id	M	[ Y ]	
2.1	- initial-requester-id	M	[ Y ]	See 6.4.2 for a discussion on the maximum length set for this data parameter.
2.1.1	-- person-or-institution-symbol	O	[ Y ]	Maximum length: 25 characters. See 6.5.2 and 6.5.3 for a discussion on the maximum length set for this data parameter. <i>Format:</i> <identifier of name authority>:<symbol> <i>Examples:</i> NLC-BNC:UK0013 OCLC:BRI RLG:UKBW For details on formatting this parameter, see 7.1.
2.1.1.1	--- person-symbol	O	[ Y ]	
2.1.1.2	--- institution-symbol	O	[ Y ]	
2.1.2	-- name-of-person-or-institution	O	[ N ]	Maximum length: 150 characters. See 6.5.2 and 6.5.3 for a discussion on the maximum length set for this data parameter.
2.1.2.1	--- name-of-person	O	[ N ]	
2.1.2.2	--- name-of-institution	O	[ N ]	
2.2	- transaction-group-qualifier	M	[ Y ]	Maximum length: 25 characters. See 6.5.3 for a discussion on the maximum length set

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Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
				for this data parameter.
2.3	- transaction-qualifier	M	[ Y ]	Maximum length: 25 characters. See 6.5.3 for a discussion on the maximum length set for this data parameter.
2.4	- sub-transaction-qualifier	C	[ Y ]	Maximum length: 25 characters. See 6.5.3 for a discussion on the maximum length set for this data parameter.  Intermediaries <b>SHALL</b> have the ability to provide values for the <b>sub-transaction-qualifier</b> .
3	service-date-time	M	[ Y ]	
3.1	- date-time-of-this-service	M	[ Y ]	
3.1.1	-- date	M	[ Y ]	
3.1.2	-- time	M	[ Y ]	Implementations conforming to the IPIG Profile <b>SHALL</b> express time values as UTC, rather than as local time. For details on formatting this parameter, see 6.7.1.
3.2	- date-time-of original-service	O	[ Y ]	
3.2.1	-- date	M	[ Y ]	
3.2.2	-- time	M	[ Y ]	See A.6.1, Ref. 3.1.2.
4	requester-id	M	[ Y ]	See 6.4.1 for a discussion of the requirements for <b>requester-id</b> and <b>responder-id</b> . At least one element <b>SHALL</b> be present.
4.1	- person-or-institution-symbol	O	[ Y ]	See A.6.1, Ref. 2.1.1. For details on formatting this parameter, see 7.1.
4.2	- name-of-person-or-institution	O	[ Y ]	See A.6.1, Ref. 2.1.2.
5	responder-id	M	[ Y ]	See 6.4.1 for a discussion of the requirements for <b>requester-id</b> and <b>responder-id</b> . At least one element <b>SHALL</b> be present.
5.1	- person-or-institution-symbol	O	[ Y ]	See A.6.1, Ref. 2.1.1. For details on formatting this parameter, see 7.1.
5.2	- name-of-person-or-institution	O	[ Y ]	See A.6.1, Ref. 2.1.2.
6	transaction-type	C	[ Y ]	ISO 10161-1:1997 specifies the default value for the <b>transaction-type</b> parameter as (1) " <i>simple</i> ". Implementations that support chaining or partitioning <b>SHALL</b> support values (2) " <i>chained</i> " and (3) " <i>partitioned</i> " for this parameter. DEFAULT: <i>simple</i> (1)
7	delivery-address	O	[ Y ]	
7.1	- postal-address	O	[ Y ]	
7.1.1	-- name-of-person-or-institution	O	[ N ]	See A.6.1, Ref. 2.1.2  [ OCLC ILL can accept data in this parameter, but sends this data in parameter 7.1.2, "extended-postal-delivery-address". ]
7.1.2	-- extended-postal-delivery-address	O	[ Y ]	[ OCLC ILL puts the entire delivery address into this parameter. ]
7.1.3	-- street-and-number	O	[ N ]	[ OCLC ILL can accept data in this parameter, but

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Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
				sends this data in parameter 7.1.2, "extended-postal-delivery-address". ]
7.1.4	-- post-office-box	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 7.1.2, "extended-postal-delivery-address". ]
7.1.5	-- city	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 7.1.2, "extended-postal-delivery-address". ]
7.1.6	-- region	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 7.1.2, "extended-postal-delivery-address". ]
7.1.7	-- country	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 7.1.2, "extended-postal-delivery-address". ]
7.1.8	-- postal-code	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 7.1.2, "extended-postal-delivery-address". ]
7.2	- electronic-address	O	[ N ]	To specify a <b>System-Address</b> for electronic delivery, use of <b>Delivery-Service.e-delivery-address electronic-delivery.e-delivery-details</b> is required. If <b>III-Request.delivery-address.electronic-address</b> is also present in an APDU, it <b>SHALL</b> be ignored. See also A.6.1, Ref. 8.2.4.1. For details on formatting this parameter, see 7.2. See also 7.3 for a discussion of the data parameters to be used for electronic delivery addresses. [OCLC ILL can receive this parameter.]
7.2.1	-- telecom-service-identifier	O	[ N ]	For details on formatting this parameter, see 7.2.1.
7.2.2	-- telecom-service-address	O	[ N ]	For details on formatting this parameter, see 7.2.2.
8	delivery-service	O	[ Y ]	See 7.3 for a discussion of the data parameters to be used for electronic delivery addresses.
8.1	- physical-delivery	O	[ Y ]	
8.2	- electronic-delivery	O	[ N ]	
8.2.1	-- e-delivery-service	O	[ N ]	
8.2.1.1	--- e-delivery-mode	O O	[ N ] [ N ]	For details on the use of this parameter, see 6.9.3. The following external objects have been defined for use in this parameter: {1 0 10161 9 1} <b>Internet Delivery Service</b> {1 0 10161 9 2} <b>Fax Delivery Service</b>
8.2.1.2	--- e-delivery-parameters	O	[ N ]	For details on the use of this parameter, see 6.9.3. The following external object has been defined for use in this parameter: {1 0 10161 10 1000 7 1} <b>JEDDS ILL Electronic Delivery Parameters</b>
8.2.2	-- document-type	O	[ N ]	
8.2.2.1	--- document-type-id	O	[ N ]	The following external object has been defined for use in this parameter: {1 0 10161 11 1} <b>IANA Media Type</b> See 2.1.2.4 for URL for IANA's directory of Media

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Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
				Types assignments.
8.2.2.2	- - - document-type-parameters			If the object identifier of <b>document-type-id</b> is {1 0 10161 11 1} <b>IANA Media Type</b> , the content of this parameter is a SEQUENCE OF Visible-String.
8.2.3	- - e-delivery-description	O	[ N ]	
8.2.4	- - e-delivery-details	O	[ N ]	
8.2.4.1	- - - e-delivery-address	O	[ N ]	Use this parameter to provide a <b>System-Address</b> for electronic delivery, If this parameter is present in an <b>ILL-REQUEST</b> , then Implementations <b>SHALL</b> ignore the presence of <b>delivery-address.electronic-address</b> (See A.6.1, Ref. 7.2) in the same transaction. For details on formatting this parameter, see 7.2. See also 7.3 for a more detailed discussion of the data parameters to be used for electronic delivery addresses.
8.2.4.2	- - - e-delivery-id	O	[ N ]	See A.6.1, Ref. 2.1.1 and 2.1.2 for the expansion of component data types for <b>System-Id</b> and details on its use. See A.6.1, Ref. 7.1
8.2.5	- - name-or-code	O	[ N ]	
8.2.6	- - delivery-time	O	[ N ]	See A.6.1, Ref. 3.1.2.
9	billing-address	O	[ Y ]	
9.1	- postal-address	O	[ Y ]	
9.1.1	- - name-of-person-or-institution	O	[ N ]	See A.6.1, Ref. 2.1.2 [ OCLC ILL can accept data in this parameter, but sends this data in parameter 9.1.2, "extended-postal-delivery-address". ]
9.1.2	- - extended-postal-delivery-address	O	[ Y ]	[ OCLC ILL puts the entire billing address into this parameter. ]
9.1.3	- - street-and-number	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 9.1.2, "extended-postal-delivery-address". ]
9.1.4	- - post-office-box	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 9.1.2, "extended-postal-delivery-address". ]
9.1.5	- - city	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 9.1.2, "extended-postal-delivery-address". ]
9.1.6	- - region	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 9.1.2, "extended-postal-delivery-address". ]
9.1.7	- - country	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 9.1.2, "extended-postal-delivery-address". ]
9.1.8	- - postal-code	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 9.1.2, "extended-postal-delivery-address". ]
9.2	- electronic-address	O	[ N ]	See A.6.1, Ref. 7.2.

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Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
				[ OCLC ILL can receive; will not send. ]
9.2.1	- telecom-service-identifier	O	[ N ]	For details on formatting this parameter, see 7.2.1. [ OCLC ILL can receive; will not send. ]
9.2.2	- telecom-service-address	O	[ N ]	For details on formatting this parameter, see 7.2.2. [ OCLC ILL can receive; will not send. ]
10	ill-service-type	M	[ Y ]	See 7.4 for details on the use of this data parameter. Use the table at A.3.4 to specify the use of <b>ill-service-type</b> parameter in more detail. [ OCLC ILL requires both LOAN and COPY on incoming APDUs. ]
11	responder-specific-service	O	[ Y ]	No OIDs are registered for this external object. [ OCLC ILL will send OCLCILLService in this parameter. OCLCILLService is registered as a local OID. ]
12	requester-optional-messages	M	[ Y ]	See 7.5 and <i>IPIG Guidelines</i> 8 for discussion of treatment of optional APDUs.
12.1	- can-send-RECEIVED	M	[ Y ]	
12.2	- can-send-RETURNED	M	[ Y ]	
12.3	- requester-SHIPPED	M	[ Y ]	
12.4	- requester-CHECKED-IN	M	[ Y ]	
13	search-type	O	[ Y ]	
13.1	- level-of-service	O	[ N ]	See 7.6 for a discussion of abstract levels of service defined for use by IPIG implementors.
13.2	- need-before-date	O	[ Y ]	
13.3	- expiry-flag	O	[ Y ]	DEFAULT: "no-expiry" (3)
13.4	- expiry-date	O	[ Y ]	
14	supply-medium-info-type	O	[ N ]	
14.1	- supply-medium-type	M	[ N ]	
14.2	- medium-characteristics	O	[ N ]	
15	place-on-hold	O	[ N ]	DEFAULT: "according-to-responder-policy" (3)
16	client-id	O	[ Y ]	
16.1	- client-name	O	[ Y ]	
16.2	- client-status	O	[ Y ]	
16.3	- client-identifier	O	[ Y ]	
17	item-id	M	[ Y ]	Although all parameters within the item-id are optional, the <b>item-id</b> SHALL contain sufficient information to identify the requested item. This need be no more than a system number that the responder application can use to identify the item in its database. The ILL-REQUEST may also carry a <b>Supplemental-Item-Description</b> that might contain additional information, e.g., a bibliographic record.
17.1	- item-type	O	[ N ]	
17.2	- held-medium-type	O	[ N ]	

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Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
17.3	- call number	O	[ Y ]	
17.4	- author	O	[ Y ]	
17.5	- title	O	[ Y ]	[ OCLC ILL includes the subtitle in this parameter. ]
17.6	- sub-title	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 17.5, "title". ]
17.7	- sponsoring-body	O	[ N ]	
17.8	- place-of-publication	O	[ Y ]	[ OCLC ILL includes the publisher and date in this parameter. ]
17.9	- publisher	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 17.8, "place-of-publication". ]
17.10	- series-title-number	O	[ Y ]	
17.11	- volume-issue	O	[ Y ]	
17.12	- edition	O	[ Y ]	
17.13	- publication-date	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 17.8, "place-of-publication". ]
17.14	- publication-date-of-component	O	[ Y ]	
17.15	- author-of-article	O	[ Y ]	
17.16	- title-of-article	O	[ Y ]	
17.17	- pagination	O	[ Y ]	
17.18	- national-bibliography-no	O	[ N ]	Use <b>IPIG-System-Number</b> {1 0 10161 6 1}. Several commonly used system numbers are defined within the data structure of the external object, <b>IPIG-System-Number</b> {1 0 10161 6 1}. If a national bibliography number is not enumerated in this object, use the "other" data type and enter the database identification <b>database-ID</b> and <b>number</b> as ILL-Strings.
17.19	- ISBN	O	[ Y ]	
17.20	- ISSN	O	[ Y ]	
17.21	- system-no	O	[ Y ]	Use <b>IPIG-System-Number</b> {1 0 10161 6 1}. Several commonly used system numbers are defined within the data structure of the external object, <b>IPIG-System-Number</b> {1 0 10161 6 1}. If a system number is not enumerated in this object, use the "other" data type and enter the database identification <b>database-ID</b> and <b>number</b> as ILL-Strings.
17.22	- additional-no-letters	O	[ N ]	
17.23	- verification-reference-source	O	[ Y ]	
18	supplemental-item-description	O O	[ N ] [ N ]	The following external objects have been defined for use in this parameter: {1 0 10161 7 1} <b>SICI</b> {1 0 10161 7 2} <b>Item-Language-Translation</b>  In addition, the Record Syntax for MARC record formats as registered with Z39.50 Maintenance

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Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
		O O O O	[ N ] [ N ] [ N ] [ N ]	Agency (values 1-99) may be used in this parameter. For example: {1 2 840 10003 5 10} <b>USMARC</b> {1 2 840 10003 5 11} <b>UK MARC</b> {1 2 840 10003 5 10} <b>CANMARC</b> {1 2 840 10003 5 20} <b>AUSMARC</b> See 2.2.2.2 for URL of <i>Registry of Z39.50 Object Identifiers</i> .
19	cost-info-type	O	[ Y ]	See <i>IPIG Guidelines</i> 6.2.4 for "Scenarios for Handling Cost-Info-Type."
19.1	- account-number	O	[ Y ]	
19.2	- maximum-cost	O	[ Y ]	
19.2.1	- - currency-code	M	[ Y ]	See 6.4.3 for a discussion of the requirements for this data parameter.
19.2.2	- - monetary-value	M	[ Y ]	
19.3	- reciprocal-agreement	O	[ N ]	DEFAULT: "false"
19.4	- will-pay-fee	O	[ N ]	DEFAULT: "false"
19.5	- payment-provided	O	[ N ]	DEFAULT: "false"
20	copyright-compliance	C	[ Y ]	Because copyright compliance information is country-specific, implementations conforming to the IPIG Profile <b>SHALL</b> support the <b>copyright compliance</b> types of those countries in which their systems are used, or as appropriate for the institutions to which requests are sent.  For details on formatting this parameter, see 7.7.  See <i>IPIG Guidelines</i> 6.2.1 for a discussion of the use of the <b>copyright-compliance</b> parameter.
21	third-party-info-type	C	[ N ]	Implementations that permit or support chaining or partitioning <b>SHALL</b> have the ability to transmit values for the <b>third-party-info-type</b> parameter.  See <i>IPIG Guidelines</i> 6.2.10 for a discussion of the various <b>third-party-info-type</b> permissions.
21.1	- permission-to-forward	X	--	DEFAULT: "false"  NOTE: The <b>Forward</b> Service is out of scope for the IPIG Profile.
21.2	- permission-to-chain	O	[ N ]	DEFAULT: "false"
21.3	- permission-to-partition	O	[ N ]	DEFAULT: "false"
21.4	- permission-to-change-send-to-list	O	[ N ]	DEFAULT: "false"
21.5	- initial-requester-address	C	[ N ]	Intermediaries that support partitioning <b>SHALL</b> have the ability to transmit values for the <b>initial-requester-address</b> parameter.
21.5.1	- -telecom-service-identifier	O	[ N ]	For details on formatting this parameter, see 7.2.1.
21.5.2	- -telecom-service-address	O	[ N ]	For details on formatting this parameter, see 7.2.2.
21.6	- preference	O	[ N ]	DEFAULT: "unordered" (2)
21.7	- send-to-list	O	[ N ]	<b>ILL-REQUESTs</b> generated by implementations conforming to the IPIG Profile <b>SHALL</b> contain no more than 5 entries in the <b>send-to-list</b> . Individual entries in

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Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
				the <b>send-to-list</b> SHALL NOT be truncated. [ OCLC ILL will accept data in this parameter and will transfer the data to the lender string of the ILL record if the responder-id element contains "OCLC:ILL@OCLC". Any other value in the responder-id element will cause OCLC ILL to ignore the contents of the send-to list. ]
21.7.1	-- system-id	M	[ N ]	
21.7.1.1	--- person-or-institution-symbol	O	[ N ]	See A.6.1, Ref. 2.1.1. For details on formatting this parameter, see 7.1.
21.7.1.2	--- name-of-person-or-institution	O	[ N ]	See A.6.1, Ref. 2.1.2.
21.7.2	-- account-number	O	[ N ]	
21.7.3	-- system-address	O	[ N ]	
21.7.3.1	--- telecom-service-identifier	O	[ N ]	For details on formatting this parameter, see 7.2.1.
21.7.3.2	--- telecom-service-address	O	[ N ]	For details on formatting this parameter, see 7.2.2.
21.8	- already-tried-list	C	[ N ]	Intermediaries <b>SHALL</b> be able to transmit values for the <b>already-tried-list</b> .  ILL-REQUESTs generated by implementations conforming to the IPIG Profile <b>SHALL</b> contain no more than 25 entries in the <b>already-tried-list</b> . Individual entries in the <b>already-tried-list</b> <b>SHALL NOT</b> be truncated.
21.8.1	-- person-or-institution-symbol	O	[ N ]	See A.6.1, Ref. 2.1.1. For details on formatting this parameter, see 7.1.
21.8.2	-- name-of-person-or-institution	O	[ N ]	See A.6.1, Ref. 2.1.2.
22	retry-flag	O	[ Y ]	DEFAULT: <i>"false"</i>
23	forward-flag	X	--	DEFAULT: <i>"false"</i>  NOTE: The Forward Service is out of scope for the IPIG Profile.
24	requester-note	O	[ Y ]	
25	forward-note	X	--	NOTE: The Forward Service is out of scope for the IPIG Profile.
26	iLL-request-extensions	O M O O C	[ Y ] [ Y ] [ N ] [ N ] [ N ]	The following external objects have been defined for use in this parameter:  {1 0 10161 13 2} <b>OCLC-ILL-Request-Extension</b> {1 0 10161 13 3} <b>APDU-Delivery-Info</b> {1 0 10161 13 4} <b>ILL-Supplemental-Client-Info</b> {1 0 10161 13 7} <b>Internal-Reference-Number</b> {1 2 840 10003 8 1} <b>Prompt-1</b> Mandatory if user authentication is required by the recipient of the APDU.
26.1	- identifier	M	[ Y ]	Implementations conforming to the IPIG Profile <b>SHALL</b> support the value "1", as defined in ISO 10161-1:1997 AM 1.
26.2	- critical	O	[ Y ]	DEFAULT: <i>"false"</i>

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
26.3	- item	M	[ Y ]	

### A.6.2. Forward-Notification APDU

Service not supported by IPIG Profile.

### A.6.3. Shipped APDU

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	protocol-version-num	M	[ Y ]	Implementations conforming to IPIG Profile <b>SHALL</b> support the value "2".
2	transaction-id	M	[ Y ]	See A.6.1, Ref. 2.
3	service-date-time	M	[ Y ]	See A.6.1, Ref. 3.
4	requester-id	M	[ Y ]	See A.6.1, Ref. 4.
5	responder-id	M	[ Y ]	See A.6.1, Ref. 5.
6	responder-address	C	[ N ]	See A.6.1, Ref. 7.2. Implementation supporting partitioning or chaining <b>SHALL</b> be able to supply the <b>responder-address</b> , <b>intermediary-id</b> , and <b>transaction-type</b> parameters.
6.1	- telecom-service-identifier	O	[ N ]	For details on formatting this parameter, see 7.2.1.
6.2	- telecom-service-address	O	[ N ]	For details on formatting this parameter, see 7.2.2.
7	intermediary-id	C	[ N ]	Implementation supporting partitioning or chaining <b>SHALL</b> be able to supply the <b>responder-address</b> , <b>intermediary-id</b> , and <b>transaction-type</b> parameters.
7.1	- person-or-institution-symbol	O	[ N ]	See A.6.1, Ref. 2.1.1. For details on formatting this parameter, see 7.1.
7.2	- name-of-person-or-institution	O	[ N ]	See A.6.1, Ref. 2.1.2.
8	supplier-id	C	[ N ]	If an implementation permits the supplier of the item to be different from the final responder, that is, if an implementation supports acting as the agent for other, possibly non-automated, suppliers, then the <b>supplier-id</b> parameter <b>SHALL</b> be transmitted.
8.1	- person-or-institution-symbol	O	[ N ]	See A.6.1, Ref. 2.1.1. For details on formatting this parameter, see 7.1.
8.2	- name-of-person-or-institution	O	[ N ]	See A.6.1, Ref. 2.1.2.
9	client-id	C	[ Y ]	If <b>client-id</b> data were supplied on the initial <b>ILL-REQUEST</b> , implementations conforming to the IPIG Profile <b>SHALL</b> transmit data for this parameter in the <b>SHIPPED APDU</b> . Otherwise, it is optional. See ISO 10160:1997 Clause 7.3.4.1. See A.6.1, Ref. 16 for the expansion of component data types for <b>client-id</b> .
10	transaction-type	C	[ Y ]	DEFAULT: "simple" (1) Implementations supporting partitioning or chaining <b>SHALL</b> be able to supply the <b>responder-address</b> , <b>intermediary-id</b> , and <b>transaction-type</b> parameters.
11	supplemental-item-description	O	[ N ]	See A.6.1, Ref. 18.
12	shipped-service-type	M	[ Y ]	Values for this parameter (a subset of <b>ILL-service-type</b> ) are limited to (1) "loan" and (2) "copy/non-

IPIG Profile for the ISO ILL Protocol

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
				<i>returnable</i> . See 7.4.2 for guidelines on the use of this parameter.
13	responder-optional-messages	M	[ Y ]	See 7.5 and <i>IPIG Guidelines</i> 8 for discussion of the treatment of Optional APDUs.
13.1	- can-send-SHIPPED	M	[ Y ]	
13.2	- can-send-CHECKED-IN	M	[ Y ]	
13.3	- responder-RECEIVED	M	[ Y ]	
13.4	- responder-RETURNED	M	[ Y ]	
14	supply-details	M	[ Y ]	At least one of the component types of <b>supply-details</b> <b>SHALL</b> be present.
14.1	- date-shipped	O	[ Y ]	
14.2	- date-due	C	[ Y ]	If the " <i>loan</i> " service type is supported, then the implementation must be able to transmit values for the <b>date-due</b> parameter.
14.2.1	- - date-due-field	O	[ Y ]	
14.2.2	- - renewable	O	[ Y ]	DEFAULT: " <i>true</i> "
14.3	- chargeable units	O	[ Y ]	
14.4	- cost	O	[ Y ]	
14.4.1	- - currency-code	M	[ Y ]	See 6.4.3 for a discussion of the requirements for this data parameter.
14.4.2	- - monetary-value	M	[ Y ]	
14.5	- shipped-conditions	O	[ N ]	
14.6	- shipped-via	O	[ N ]	
14.6.1	- - physical-delivery	O	[ N ]	
14.6.2	- - electronic-delivery	O	[ N ]	See A.6.1, Ref. 8.2.
14.7	- insured-for	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 16, "responder-note". ]
14.7.1	- - currency-code	M	[ N ]	See 6.4.3 for a discussion on the requirements for this data parameter.
14.7.2	- - monetary-value	M	[ N ]	
14.8	- return-insurance-required	O	[ N ]	
14.8.1	- - currency-code	M	[ N ]	See 6.4.3 for a discussion on the requirements for this data parameter.
14.8.2	- - monetary-value	M	[ N ]	
14.9	- no-of-units-per-medium	O	[ Y ]	
14.9.1	- - medium	M	[ Y ]	
14.9.2	- - no-of-units	M	[ Y ]	
15	return-to-address	O	[ Y ]	
15.1	- name-of-person-or-institution	O	[ N ]	See A.6.1, Ref. 2.1.2. [ OCLC ILL can accept data in this parameter, but sends this data in parameter 15.2, "extended-postal-delivery-address". ]

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Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
15.2	- extended-postal-delivery-address	O	[ Y ]	[ OCLC ILL puts the entire return-to address into this parameter. ]
15.3	- street-and-number	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 15.2, "extended-postal-delivery-address". ]
15.4	- post-office-box	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 15.2, "extended-postal-delivery-address". ]
15.5	- city	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 15.2, "extended-postal-delivery-address". ]
15.6	- region	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 15.2, "extended-postal-delivery-address". ]
15.7	- country	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 15.2, "extended-postal-delivery-address". ]
15.8	- postal-code	O	[ N ]	[ OCLC ILL can accept data in this parameter, but sends this data in parameter 15.2, "extended-postal-delivery-address". ]
16	responder-note	O	[ Y ]	
17	shipped-extensions	M O O C	[ Y ] [ N ] [ Y ] [ Y ]	See A.6.1, Ref. 26 for data types included in any "extensions" parameter.  The following external objects have been defined for use in this parameter:  {1 0 10161 13 3} <b>APDU-Delivery-Info</b> {1 0 10161 13 4} <b>ILL-Supplemental-Client-Info</b> {1 0 10161 13 7} <b>Internal-Reference-Number</b> {1 2 840 10003 8 1} <b>Prompt-1</b> Mandatory if user authentication is required by the recipient of the APDU.

**A.6.4. ILL-Answer APDU**

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	protocol-version-num	M	[ Y ]	Implementations conforming to IPIG Profile <b>SHALL</b> support the value "2".
2	transaction-id	M	[ Y ]	See A.6.1, Ref. 2.
3	service-date-time	M	[ Y ]	See A.6.1, Ref. 3.
4	requester-id	M	[ Y ]	See A.6.1, Ref. 4.
5	responder-id	M	[ Y ]	See A.6.1, Ref. 5.
6	transaction-results	M	[ Y ]	See 7.4.3 for a discussion on the use of this parameter.
7	results-explanation	C	[ Y ]	If the value of <b>transaction-results</b> is " <i>conditional</i> ", " <i>locations-provided</i> ", or " <i>estimate</i> ", the <b>results-explanation</b> parameter <b>SHALL</b> be present.
7.1	- conditional-results	C	[ Y ]	Mandatory if the value of <b>transaction-results</b> is " <i>conditional</i> ".  See <i>IPIG Guidelines</i> 6.5.1 for recommendations on

IPIG Profile for the ISO ILL Protocol

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
				handling multiple conditions.
7.1.1	-- conditions	M	[ Y ]	
7.1.2	-- date-for-reply	O	[ Y ]	
7.1.3	-- locations	O	[ N ]	
7.1.3.1	--- location-id	M	[ N ]	
7.1.3.1.1	---- person-or-institution-symbol	O	[ N ]	See A.6.1, Ref. 2.1.1. For details on formatting this parameter, see 7.1.
7.1.3.1.2	---- name-of-person-or-institution	O	[ N ]	See A.6.1, Ref. 2.1.2.
7.1.3.2	--- location-address	O	[ N ]	See A.6.1, Ref. 7.2.
7.1.3.3	--- location-note	O	[ N ]	
7.1.4	-- proposed-delivery-service	O	[ N ]	See A.6.1, Ref. 8.
7.2	- retry-results	O	[ Y ]	See <i>IPIG Guidelines</i> 6.2.8 for an example of the use of <b>retry</b> .
7.2.1	-- reason-not-available	O	[ Y ]	
7.2.2	-- retry-date	O	[ Y ]	
7.2.3	-- locations	O	[ N ]	See A.6.4, Ref. 7.1.3.
7.3	- unfilled-results	O	[ Y ]	See 6.8 for a discussion of the use of this <b>results-explanation</b> if an unrecognized or unsupported critical extension occurs in an ILL-REQUEST APDU.
7.3.1	-- reason-unfilled	M	[ Y ]	
7.3.2	-- locations	O	[ N ]	See A.6.4, Ref. 7.1.3.
7.4	- locations-results	C	[ N ]	Mandatory if the value of <b>transaction-results</b> is <i>"locations-provided"</i> .
7.4.1	-- reason-locs-provided	O	[ N ]	
7.4.2	-- locations	M	[ N ]	See A.6.4, Ref. 7.1.3.
7.5	- will-supply-results	O	[ N ]	
7.5.1	-- reason-will-supply	M	[ N ]	
7.5.2	-- supply-date	O	[ N ]	
7.5.3	-- return-to-address	O	[ N ]	See A.6.1, Ref. 7.1 for the expansion of component data types for <b>postal-address</b> .
7.5.4	-- locations	O	[ N ]	See A.6.4, Ref. 7.1.3.
7.5.5	-- electronic-delivery-service	O	[ N ]	See A.6.1, Ref. 8.2.
7.6	- hold-placed-results	O	[ N ]	
7.6.1	-- estimated-date-available	M	[ N ]	
7.6.2	-- hold-placed-medium-type	O	[ N ]	
7.6.3	-- locations	O	[ N ]	See A.6.4, Ref. 7.1.3.
7.7	- estimate-results	C	[ N ]	Mandatory if the value of <b>transaction-results</b> is <i>"estimate"</i> .
7.7.1	-- cost-estimate	M	[ N ]	
7.7.2	-- locations	O	[ N ]	See A.6.4, Ref. 7.1.3.

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
8	responder-specific-results	O	[ Y ]	No OIDs are registered for this external object. [ OCLC ILL will send OCLCSpecificResults in this parameter. OCLCSpecificResults is registered as a local OID. ]
9	supplemental-item-description	O	[ N ]	See A.6.1, Ref. 18.
10	send-to-list	O	[ N ]	See A.6.1, Ref. 21.7.
11	already-tried-list	O	[ N ]	See A.6.1, Ref. 21.8.
12	responder-optional-messages	M	[ Y ]	See A.6.3, Ref. 13. See 7.5 and <i>IPIG Guidelines</i> 8 for discussion of treatment of optional APDUs.
13	responder-note	O	[ Y ]	
14	iLL-answer-extensions	M O C	[ Y ] [ Y ] [ Y ]	See A.6.1, Ref. 26 for data types included in any "extensions" parameter. The following external objects have been defined for use in this parameter: {1 0 10161 13 3} <b>APDU-Delivery-Info</b> {1 0 10161 13 7} <b>Internal-Reference-Number</b> {1 2 840 10003 8 1} <b>Prompt-1</b> Mandatory if user authentication is required by the recipient of the APDU.

**A.6.5. Conditional-Reply APDU**

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	protocol-version-num	M	[ Y ]	Implementations conforming to IPIG Profile <b>SHALL</b> support the value "2".
2	transaction-id	M	[ Y ]	See A.6.1, Ref. 2.
3	service-date-time	M	[ Y ]	See A.6.1, Ref. 3.
4	requester-id	M	[ Y ]	See A.6.1, Ref. 4.
5	responder-id	M	[ Y ]	See A.6.1, Ref. 5.
6	answer	M	[ Y ]	
7	requester-note	O	[ Y ]	
8	conditional-reply-extensions	M O C	[ Y ] [ Y ] [ Y ]	See A.6.1, Ref. 26 for data types included in any "extensions" parameter. The following external objects have been defined for use in this parameter: {1 0 10161 13 3} <b>APDU-Delivery-Info</b> {1 0 10161 13 7} <b>Internal-Reference-Number</b> {1 2 840 10003 8 1} <b>Prompt-1</b> Mandatory if user authentication is required by the recipient of the APDU.

**A.6.6. Cancel APDU**

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	protocol-version-num	M	[ Y ]	Implementations conforming to IPIG Profile <b>SHALL</b> support the value "2".
2	transaction-id	M	[ Y ]	See A.6.1, Ref. 2.
3	service-date-time	M	[ Y ]	See A.6.1, Ref. 3.
4	requester-id	M	[ Y ]	See A.6.1, Ref. 4.
5	responder-id	M	[ Y ]	See A.6.1, Ref. 5.
6	requester-note	O	[ Y ]	
7	cancel-extensions	M O C	[ Y ] [ Y ] [ Y ]	See A.6.1, Ref. 26 for data types included in any "extensions" parameter.  The following external objects have been defined for use in this parameter:  {1 0 10161 13 3} <b>APDU-Delivery-Info</b> {1 0 10161 13 7} <b>Internal-Reference-Number</b> {1 2 840 10003 8 1} <b>Prompt-1</b>  Mandatory if user authentication is required by the recipient of the APDU.

**A.6.7. Cancel-Reply APDU**

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	protocol-version-num	M	[ Y ]	Implementations conforming to IPIG Profile <b>SHALL</b> support the value "2".
2	transaction-id	M	[ Y ]	See A.6.1, Ref. 2.
3	service-date-time	M	[ Y ]	See A.6.1, Ref. 3.
4	requester-id	M	[ Y ]	See A.6.1, Ref. 4.
5	responder-id	M	[ Y ]	See A.6.1, Ref. 5.
6	answer	M	[ Y ]	
7	responder-note	O	[ Y ]	
8	cancel-reply-extensions	M O C	[ Y ] [ Y ] [ Y ]	See A.6.1, Ref. 26 for data types included in any "extensions" parameter.  The following external objects have been defined for use in this parameter:  {1 0 10161 13 3} <b>APDU-Delivery-Info</b> {1 0 10161 13 7} <b>Internal-Reference-Number</b> {1 2 840 10003 8 1} <b>Prompt-1</b>  Mandatory if user authentication is required by the recipient of the APDU.

**A.6.8. Received APDU**

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	protocol-version-num	M	[ Y ]	Implementations conforming to IPIG Profile <b>SHALL</b> support the value "2".
2	transaction-id	M	[ Y ]	See A.6.1, Ref. 2.
3	service-date-time	M	[ Y ]	See A.6.1, Ref. 3.
4	requester-id	M	[ Y ]	See A.6.1, Ref. 4.
5	responder-id	M	[ Y ]	See A.6.1, Ref. 5.
6	supplier-id	C	[ N ]	Support of this parameter is required only when a responder is acting as an agent for the actual supplier of the item (and so the <b>supplier-id</b> will differ from the <b>responder-id</b> ), or if a value for the <b>system-id</b> has been transmitted as a parameter in the <b>SHIPPED APDU</b> .
7	supplemental-item-description	O	[ N ]	See A.6.1, Ref. 18.
8	date-received	M	[ Y ]	
9	shipped-service-type	M	[ Y ]	Values for this parameter (a subset of <b>ILL-service-type</b> ) are limited to (1) "loan" and (2) "copy/non-returnable".
10	requester-note	O	[ Y ]	
11	received-extensions	M O C	[ Y ] [ Y ] [ Y ]	See A.6.1, Ref. 26 for data types included in any "extensions" parameter.  The following external objects have been defined for use in this parameter:  {1 0 10161 13 3} <b>APDU-Delivery-Info</b> {1 0 10161 13 7} <b>Internal-Reference-Number</b> {1 2 840 10003 8 1} <b>Prompt-1</b>  Mandatory if user authentication is required by the recipient of the APDU.

**A.6.9. Recall APDU**

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	protocol-version-num	M	[ Y ]	Implementations conforming to IPIG Profile <b>SHALL</b> support the value "2".
2	transaction-id	M	[ Y ]	See A.6.1, Ref. 2.
3	service-date-time	M	[ Y ]	See A.6.1, Ref. 3.
4	requester-id	M	[ Y ]	See A.6.1, Ref. 4.
5	responder-id	M	[ Y ]	See A.6.1, Ref. 5.
6	responder-note	O	[ Y ]	
7	recall-extensions	M O C	[ Y ] [ Y ] [ Y ]	See A.6.1, Ref. 26 for data types included in any "extensions" parameter.  The following external objects have been defined for use in this parameter:  {1 0 10161 13 3} <b>APDU-Delivery-Info</b> {1 0 10161 13 7} <b>Internal-Reference-Number</b> {1 2 840 10003 8 1} <b>Prompt-1</b>

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
				Mandatory if user authentication is required by the recipient of the APDU.

**A.6.10. Returned APDU**

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	protocol-version-num	M	[ Y ]	Implementations conforming to IPIG Profile <b>SHALL</b> support the value "2".
2	transaction-id	M	[ Y ]	See A.6.1, Ref. 2.
3	service-date-time	M	[ Y ]	See A.6.1, Ref. 3.
4	requester-id	M	[ Y ]	See A.6.1, Ref. 4.
5	responder-id	M	[ Y ]	See A.6.1, Ref. 5.
6	supplemental-item-description	O	[ N ]	See A.6.1, Ref. 18.
7	date-returned	M	[ Y ]	
8	returned-via	O	[ Y ]	
9	insured-for	O	[ N ]	
9.1	- currency-code	M	[ N ]	See 6.4.3 for a discussion of the requirements for this data parameter.
9.2	- monetary-value	M	[ N ]	
10	requester-note	O	[ Y ]	
11	returned-extensions	M O C	[ Y ] [ Y ] [ Y ]	See A.6.1, Ref. 26 for data types included in any "extensions" parameter.  The following external objects have been defined for use in this parameter:  {1 0 10161 13 3} <b>APDU-Delivery-Info</b> {1 0 10161 13 7} <b>Internal-Reference-Number</b> {1 2 840 10003 8 1} <b>Prompt-1</b>  Mandatory if user authentication is required by the recipient of the APDU.

**A.6.11. Checked-in APDU**

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	protocol-version-num	M	[ Y ]	Implementations conforming to IPIG Profile <b>SHALL</b> support the value "2".
2	transaction-id	M	[ Y ]	See A.6.1, Ref. 2.
3	service-date-time	M	[ Y ]	See A.6.1, Ref. 3.
4	requester-id	M	[ Y ]	See A.6.1, Ref. 4.
5	responder-id	M	[ Y ]	See A.6.1, Ref. 5.
6	date-checked-in	M	[ Y ]	
7	responder-note	O	[ Y ]	
8	checked-in-extensions			See A.6.1, Ref. 26 for data types included in any "extensions" parameter.  The following external objects have been defined for use in this parameter:

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
		M O C	[ Y ] [ Y ] [ Y ]	{1 0 10161 13 3} <b>APDU-Delivery-Info</b> {1 0 10161 13 7} <b>Internal-Reference-Number</b> {1 2 840 10003 8 1} <b>Prompt-1</b>  Mandatory if user authentication is required by the recipient of the APDU.

**A.6.12. Overdue APDU**

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	protocol-version-num	M	[ Y ]	Implementations conforming to IPIG Profile <b>SHALL</b> support the value "2".
2	transaction-id	M	[ Y ]	See A.6.1, Ref. 2.
3	service-date-time	M	[ Y ]	See A.6.1, Ref. 3.
4	requester-id	M	[ Y ]	See A.6.1, Ref. 4.
5	responder-id	M	[ Y ]	See A.6.1, Ref. 5.
6	date-due	M	[ Y ]	See A.6.3, Ref. 14.2 for an expansion of the component data types of <b>date-due</b> .
7	responder-note	O	[ Y ]	
8	overdue-extensions	M O C	[ Y ] [ Y ] [ Y ]	See A.6.1, Ref. 26 for data types included in any "extensions" parameter.  The following external objects have been defined for use in this parameter:  {1 0 10161 13 3} <b>APDU-Delivery-Info</b> {1 0 10161 13 7} <b>Internal-Reference-Number</b> {1 2 840 10003 8 1} <b>Prompt-1</b>  Mandatory if user authentication is required by the recipient of the APDU.

**A.6.13. Renew APDU**

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	protocol-version-num	M	[ Y ]	Implementations conforming to IPIG Profile <b>SHALL</b> support the value "2".
2	transaction-id	M	[ Y ]	See A.6.1, Ref. 2.
3	service-date-time	M	[ Y ]	See A.6.1, Ref. 3.
4	requester-id	M	[ Y ]	See A.6.1, Ref. 4.
5	responder-id	M	[ Y ]	See A.6.1, Ref. 5.
6	desired-due-date	O	[ Y ]	
7	requester-note	O	[ Y ]	
8	renew-extensions	M O C	[ Y ] [ Y ] [ Y ]	See A.6.1, Ref. 26 for data types included in any "extensions" parameter.  The following external objects have been defined for use in this parameter:  {1 0 10161 13 3} <b>APDU-Delivery-Info</b> {1 0 10161 13 7} <b>Internal-Reference-Number</b> {1 2 840 10003 8 1} <b>Prompt-1</b>

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
				Mandatory if user authentication is required by the recipient of the APDU.

**A.6.14. Renew-Answer APDU**

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	protocol-version-num	M	[ Y ]	Implementations conforming to IPIG Profile <b>SHALL</b> support the value "2".
2	transaction-id	M	[ Y ]	See A.6.1, Ref. 2.
3	service-date-time	M	[ Y ]	See A.6.1, Ref. 3.
4	requester-id	M	[ Y ]	See A.6.1, Ref. 4.
5	responder-id	M	[ Y ]	See A.6.1, Ref. 5.
6	answer	M	[ Y ]	
7	date-due	C	[ Y ]	If the value of the <b>answer</b> parameter is "true", then a new value for the <b>date-due</b> parameter <b>SHALL</b> be sent as part of this APDU.  See A.6.3, Ref. 14.2 for an expansion of the component data types of <b>date-due</b> .
8	responder-note	O	[ Y ]	
9	renew-answer-extensions	M O C	[ Y ] [ Y ] [ Y ]	See A.6.1, Ref. 26 for data types included in any "extensions" parameter.  The following external objects have been defined for use in this parameter:  {1 0 10161 13 3} <b>APDU-Delivery-Info</b> {1 0 10161 13 7} <b>Internal-Reference-Number</b> {1 2 840 10003 8 1} <b>Prompt-1</b>  Mandatory if user authentication is required by the recipient of the APDU.

**A.6.15. Lost APDU**

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	protocol-version-num	M	[ Y ]	Implementations conforming to IPIG Profile <b>SHALL</b> support the value "2".
2	transaction-id	M	[ Y ]	See A.6.1, Ref. 2.
3	service-date-time	M	[ Y ]	See A.6.1, Ref. 3.
4	requester-id	M	[ Y ]	See A.6.1, Ref. 4.
5	responder-id	M	[ Y ]	See A.6.1, Ref. 5.
6	note	O	[ Y ]	
7	lost-extensions	M O C	[ Y ] [ Y ] [ Y ]	See A.6.1, Ref. 26 for data types included in any "extensions" parameter.  The following external objects have been defined for use in this parameter:  {1 0 10161 13 3} <b>APDU-Delivery-Info</b> {1 0 10161 13 7} <b>Internal-Reference-Number</b> {1 2 840 10003 8 1} <b>Prompt-1</b>

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
				Mandatory if user authentication is required by the recipient of the APDU.

### A.6.16. Damaged APDU

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	protocol-version-num	M	[ Y ]	Implementations conforming to IPIG Profile <b>SHALL</b> support the value "2".
2	transaction-id	M	[ Y ]	See A.6.1, Ref. 2.
3	service-date-time	M	[ Y ]	See A.6.1, Ref. 3.
4	requester-id	M	[ Y ]	See A.6.1, Ref. 4.
5	responder-id	M	[ Y ]	See A.6.1, Ref. 5.
6	damaged-details	O	[ Y ]	
6.1	- document-type-id	O	[ Y ]	The following external object has been defined for use in this parameter: {1 0 10161 11 1} <b>IANA Document Type</b>
6.2	- damaged-portion	M	[ Y ]	
7	note	O	[ Y ]	
8	damaged-extensions	M O C	[ Y ] [ Y ] [ Y ]	See A.6.1, Ref. 26 for data types included in any "extensions" parameter.  The following external objects have been defined for use in this parameter:  {1 0 10161 13 3} <b>APDU-Delivery-Info</b> {1 0 10161 13 7} <b>Internal-Reference-Number</b> {1 2 840 10003 8 1} <b>Prompt-1</b> Mandatory if user authentication is required by the recipient of the APDU.

### A.6.17. Message APDU

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	protocol-version-num	M	[ Y ]	Implementations conforming to IPIG Profile <b>SHALL</b> support the value "2".
2	transaction-id	M	[ Y ]	See A.6.1, Ref. 2.
3	service-date-time	M	[ Y ]	See A.6.1, Ref. 3.
4	requester-id	M	[ Y ]	See A.6.1, Ref. 4.
5	responder-id	M	[ Y ]	See A.6.1, Ref. 5.
6	note	M	[ Y ]	
7	message-extensions	M O C	[ Y ] [ Y ] [ Y ]	See A.6.1, Ref. 26 for data types included in any "extensions" parameter.  The following external objects have been defined for use in this parameter:  {1 0 10161 13 3} <b>APDU-Delivery-Info</b> {1 0 10161 13 7} <b>Internal-Reference-Number</b> {1 2 840 10003 8 1} <b>Prompt-1</b> Mandatory if user authentication is required by the recipient of the

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
				APDU.

### A.6.18. Status-Query APDU

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	protocol-version-num	M	[ Y ]	Implementations conforming to IPIG Profile <b>SHALL</b> support the value "2".
2	transaction-id	M	[ Y ]	See A.6.1, Ref. 2.
3	service-date-time	M	[ Y ]	See A.6.1, Ref. 3.
4	requester-id	M	[ Y ]	See A.6.1, Ref. 4.
5	responder-id	M	[ Y ]	See A.6.1, Ref. 5.
6	note	O	[ Y ]	
7	status-query-extensions	M O C	[ Y ] [ Y ] [ Y ]	See A.6.1, Ref. 26 for data types included in any "extensions" parameter.  The following external objects have been defined for use in this parameter:  {1 0 10161 13 3} <b>APDU-Delivery-Info</b> {1 0 10161 13 7} <b>Internal-Reference-Number</b> {1 2 840 10003 8 1} <b>Prompt-1</b> Mandatory if user authentication is required by the recipient of the APDU.

### A.6.19. Status-or-Error-Report APDU

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	protocol-version-num	M	[ Y ]	Implementations conforming to IPIG Profile <b>SHALL</b> support the value "2".
2	transaction-id	M	[ Y ]	See A.6.1, Ref. 2.
3	service-date-time	M	[ Y ]	See A.6.1, Ref. 3.
4	requester-id	M	[ Y ]	See A.6.1, Ref. 4.
5	responder-id	M	[ Y ]	See A.6.1, Ref. 5.
6	reason-no-report	C	[ Y ]	Responders capable of sending an APDU in which neither the <b>status-report</b> nor the <b>error-report</b> parameter is present <b>SHALL</b> support this parameter; otherwise it is not applicable.  The circumstances in which no report might be sent are not specified either in the base standard or in the IPIG Profile.
7	status-report	O	[ Y ]	
7.1	- user-status-report	M	[ Y ]	
7.1.1	-- date-requested	O	[ Y ]	
7.1.2	-- author	O	[ Y ]	
7.1.3	-- title	O	[ Y ]	
7.1.4	-- author-of-article	O	[ Y ]	
7.1.5	-- title-of-article	O	[ Y ]	
7.1.6	-- date-of-last-transition	M	[ Y ]	

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Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
7.1.7	-- most-recent-service	M	[ Y ]	Implementations <b>SHALL</b> be capable of sending all values consistent with the <b>INTERLIBRARY LOAN APPLICATION SERVICES</b> (see A.5) and <b>ILL-service-types</b> (see A.3.4) supported.
7.1.8	-- date-of-most-recent-service	M	[ Y ]	
7.1.9	-- initiator-of-most-recent-service	M	[ Y ]	
7.1.9.1	--- person-or-institution-symbol	M	[ Y ]	For details on formatting this parameter, see 7.1.
7.1.9.2	--- name-of-person-or-institution	O	[ Y ]	See A.6.1, Ref. 2.1.2.
7.1.10	-- shipped-service-type	C	[ Y ]	If this information has been transmitted in an earlier <b>SHIPPED</b> or <b>RECEIVED</b> APDU, then an implementation conforming to the IPIG Profile <b>SHALL</b> supply the most current information as a value for this parameter. See A.3.4.
7.1.11	-- transaction-results	C	[ Y ]	If this information has been transmitted in an <b>ILL-ANSWER</b> APDU, then an implementation conforming to the IPIG Profile <b>SHALL</b> supply it as a value for this parameter.
7.1.12	-- most-recent-service-note	C	[ Y ]	If a note has been supplied in the most recent service APDU received or the most recent service request invoked, then an implementation conforming to the IPIG Profile <b>SHALL</b> supply it as a value for this parameter.
7.2	- provider-status-report	M	[ Y ]	Implementations <b>SHALL</b> be capable of sending all values consistent with the <b>INTERLIBRARY LOAN APPLICATION SERVICES</b> (see A.5) and <b>ILL-service-types</b> (see A.3.4) supported.
8	error-report	O	[ Y ]	
8.1	- correlation-information	M	[ Y ]	This parameter includes Information that permits correlation of the error-report with the ILL service to which it applies.
8.2	- report-source	M	[ Y ]	
8.3	- user-error-report	C	[ Y ]	If the value of <b>report-source</b> is " <i>user</i> ", then the <b>user-error-report</b> parameter <b>SHALL</b> be present. Otherwise it is not applicable.
8.3.1	-- already-forwarded	X	--	The Forward Service is out of scope for the IPIG Profile.
8.3.1.1	--- responder-id	M	[ Y ]	See A.6.1, Ref. 5.
8.3.1.2	--- responder-address	O	[ Y ]	See A.6.3, Ref. 6.
8.3.2	-- intermediary-problem	O	[ Y ]	
8.3.3	-- security-problem	O	[ Y ]	
8.3.4	-- unable-to-perform	O	[ Y ]	
8.4	- provider-error-report	C	[ Y ]	If the value of <b>report-source</b> is " <i>provider</i> ", then the <b>provider-error-report</b> parameter <b>SHALL</b> be present. Otherwise it is not applicable.
8.4.1	-- general-problem	O	[ Y ]	
8.4.2	-- transaction-id-problem	O	[ Y ]	

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
8.4.3	-- state-transition-prohibited	O	[ Y ]	
8.4.3.1	--- aPDU-type	M	[ Y ]	For a list of possible values, see A.5.
8.4.3.2	---- current-state	M	[ Y ]	
9	note	O	[ Y ]	
10	status-or-error-report-extensions	M C  O C	[ Y ] [ N ]  [ Y ] [ Y ]	See A.6.1, Ref. 26 for data types included in any "extensions" parameter.  The following external objects have been defined for use in this parameter:  {1 0 10161 13 3} <b>APDU-Delivery-Info</b> {1 0 10161 13 6} <b>IPIG Additional User Error Information</b> Mandatory if an implementation supports truncation of data. {1 0 10161 13 7} <b>Internal-Reference-Number</b> {1 2 840 10003 8 1} <b>Prompt-1</b> Mandatory if user authentication is required by the recipient of the APDU.

### A.6.20. Expired APDU

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	protocol-version-num	M	[ Y ]	Implementations conforming to IPIG Profile <b>SHALL</b> support the value "2".
2	transaction-id	M	[ Y ]	See A.6.1, Ref. 2.
3	service-date-time	M	[ Y ]	See A.6.1, Ref. 3.
4	requester-id	M	[ Y ]	See A.6.1, Ref. 4.
5	responder-id	M	[ Y ]	See A.6.1, Ref. 5.
6	expired-extensions	M O C	[ Y ] [ Y ] [ Y ]	See A.6.1, Ref. 26 for data types included in any "extensions" parameter.  The following external objects have been defined for use in this parameter:  {1 0 10161 13 3} <b>APDU-Delivery-Info</b> {1 0 10161 13 7} <b>Internal-Reference-Number</b> {1 2 840 10003 8 1} <b>Prompt-1</b> Mandatory if user authentication is required by the recipient of the APDU.

## A.7. External Objects

The table in A.4 indicates the degree of support for the associated abstract syntaxes for which these external objects have been defined.

The tables in A.6 specify which external objects are defined for use in specific parameters within each APDU.

Indicate in the tables below the degree of support of the data parameters defined for use in the external objects to be used by implementations conforming to the IPIG Profile. If the implementation supports different values (or has different constraints) for different roles, this **SHALL** be indicated.

**Note to implementors:** The abstract syntax specification (ASN.1) for each external object listed in the above table is available in the online Register of the Maintenance Agency responsible for it.

See the *Note to implementors* following A.4 for guidance on how to identify the Maintenance Agency with which each of the following external objects is registered.

system-no (6)

**A.7.1. {1 0 10161 6 1} IPIG-System-Number**

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	type	M	[ N ]	
1.1	- well-known-system	O	[ N ]	
1.2	- system-id	O	[ N ]	
2	database-ID	O	[ N ]	
3	number	M	[ N ]	

supplementary-item-description (7)

**A.7.2. {1 0 10161 7 1} SICI**

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	SICI	M	[ N ]	

**A.7.3. {1 0 10161 7 2} Item-Language-Translation**

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	Item-Language-Requirement	M	[ N ]	
1.1	- translation-option	M	[ N ]	
1.2	- language-code	O	[ N ]	Values defined in ISO 639-2:1998

**A.7.4. {1 2 840 10003 5} Record Syntaxes,**

The official and complete Z39.50 MA register of record syntaxes is available online at <<http://lcweb.loc.gov/z3950/agency/defns/oids.html#5>>

Note to Implementors: This list of record syntaxes provides only a selection of formats registered by the Z39.50 Maintenance Agency. Add additional rows as required to the table below to specify additional MARC record syntax from the list in the Z39.50 register, which are supported by the implementation.

Ref. no.	OID	Record Syntax	IPIG	Impl	References, Usage or Range of Values
1	1.2.840.10003.5.1	Unimarc	O	[ N ]	
2	1.2.840.10003.5.10	Usmarc	O	[ N ]	
3	1.2.840.10003.5.11	Ukmarc	O	[ N ]	
4	1.2.840.10003.5.17	Canmarc	O	[ N ]	
5	1.2.840.10003.5.20	Ausmarc	O	[ N ]	
6	1.2.840.10003.5.24	Jpmarc	O	[ N ]	

Ref. no.	OID	Record Syntax	IPIG	Impl	References, Usage or Range of Values
7	1.2.840.10003.5.25	SWEMarc	O	[ N ]	
		other (please specify)			

## e-delivery-mode (9) &amp; e-delivery-parameters (10)

**A.7.5. Internet and Fax Delivery Services**

The use of **e-delivery parameters** is contingent on specifications in the external objects defined for **e-delivery-mode**. The external objects currently defined for **e-delivery mode** (Internet Delivery Services (SMTP and FTP) and Fax Delivery Service) require that **any e-delivery-parameters** are also external objects.

Ref. no.	OID	Object Subclass	IPIG	Impl	References, Usage or Range of Values
1	1.0.10161.9.1	Internet Delivery Service	O	[ N ]	
1.1	1.0.10161.9.1.1	- SMTP	O	[ N ]	
1.1.1	1 0 10161 10 1000 7 1	- - JEDDS-ILL-Edelivery-Parameters	O	[ N ]	Values include "GEDI" and "Ariel MIME".
1.2	1.0.10161.9.1.2	- FTP	O	[ N ]	
1.2.1	1 0 10161 10 1000 7 1	- - JEDDS-ILL-Edelivery-Parameters	O	[ N ]	Values include "GEDI" and "Ariel FTP".
2	1.0.10161.9.2	Fax Delivery Service	O	[ N ]	
2.1	1 0 10161 10 1000 7 1	- JEDDS-ILL-Edelivery-Parameters	O	[ N ]	Defined value: "FAX".

## extension

**A.7.6. {1 0 10161 13 2} OCLC ILL Request Extension**

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	client-department	O	[ Y ]	
2	payment-method	O	[ Y ]	
3	uniform-title	O	[ Y ]	
4	dissertation	O	[ Y ]	
5	issue-number	O	[ Y ]	
6	volume	O	[ Y ]	
7	affiliations	O	[ Y ]	
8	source	O	[ Y ]	

**A.7.7. {1 0 10161 13 3} APDU-Delivery-Info**

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	sender-info	M	[ Y ]	
1.1	- encoding	M	[ Y ]	Implementations conforming to the IPIG Profile SHALL support the following values: (2) "bER-In-MIME" (3) "bER"
1.2	- transport	M	[ Y ]	

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1.3	- aliases	O	[ Y ]	
2	recipient-info	M	[ Y ]	See A7.7, Ref. 1
3	transponder-info	O	[ Y ]	See A7.7, Ref. 1

#### A.7.8. {1 0 10161 13 4} ILL-Supplemental-Client-Info

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	Client-Info-Type	M	[ Y ]	
1.1	- standard	O	[ Y ]	
1.2	- local	O	[ Y ]	
2	Client-Info-Content	M	[ Y ]	
2.1	- string-content	O	[ Y ]	
2.2	- postal-address	O	[ Y ]	
2.3	- name-or-id	O	[ Y ]	
2.4	- status-code	O	[ Y ]	
2.5	- defined-number	O	[ Y ]	
2.6	- nested	O	[ Y ]	
2.7	- amount	O	[ Y ]	

#### A.7.9. {1 0 10161 13 6} IPIG-Additional-User-Error-Information

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	element-truncated	O	[ N ]	
1.1	- element	M	[ N ]	
1.2	- truncated-value	M	[ N ]	
2	missing-required-element	O	[ N ]	
3	unsupported-field-length	O	[ N ]	
3.1	- element	M	[ N ]	
3.2	- min-length	O	[ N ]	
3.3	- max-length	O	[ N ]	
4.	unrecognized-data	O	[ N ]	
4.1	- element	M	[ N ]	
4.2	- data	O	[ N ]	
4.3	- expected-format	O	[ N ]	
4.4	- supported-values	O	[ N ]	
5	inconsistent-data	O	[ N ]	
6	other	O	[ N ]	

#### A.7.10. {1 0 10161 13 7} Internal-Reference-Number

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	requester-internal-reference	O	[ Y ]	Implementors <b>SHALL</b> supply either one of <b>requester-internal-reference</b> and/or <b>responder-internal-reference</b> when using this object.

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1.1	- reference-authority	M	[ Y ]	
1.2	- internal-reference	M	[ Y ]	
2	responder-internal-reference	O	[ Y ]	Implementors <b>SHALL</b> supply either <b>requester-internal-reference</b> and/or <b>responder-internal-reference</b> when using this object.
2.1	- reference-authority	M	[ Y ]	
2.2	- internal-reference	M	[ Y ]	

## Access Control

### A.7.11. {1 2 840 10003 8 1} Prompt-1

This object is registered as an Access Control Format in the *Registry of Z39.50 Object Identifiers*, available online at <http://lcweb.loc.gov/z39.50/agency/defns/oids.html#8>

The full ASN.1 definition of the Access Control Format Prompt-1 is found in *ANSI/NISO Z39.50-1995, Annex 7*.

Ref. no.	Parameter	IPIG	Impl	References, Usage or Range of Values
1	challenge	X	--	
2	response	M	[ Y ]	
2.1	- prompt-id	M	[ Y ]	
2.1.1	-- enumerated-prompt	M	[ Y ]	
2.1.1.1	--- type	M	[ Y ]	Support required for (0) "group-id", (1) "user-id" and (2) "password". Support for other defined values is optional.
2.1.1.2	--- suggested-string	O	[ Y ]	
2.1.2	-- non-enumerated-prompt	X	--	
2.2	- prompt-response	M	[ Y ]	[1] "String" is the only choice relevant for IPIG implementations.