

PROFILE FOR THE USE OF PARAMETERS FROM THE ILL-REQUEST  
APDU IN Z39.50 ITEM ORDER.

(Z39.50/ILL PROFILE 2)

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## 1. Purpose

This profile describes the use in the Z39.50 Item Order extended service of parameters from the ISO ILL-Request APDU in item ordering environments other than those in which both parties have implementations of the ILL protocol as specified in the International Standard ISO 10161.

There is general consensus within the Z39.50 implementor community that the parameters in the ISO ILL-Request APDU are appropriate to support the document ordering facilities of Z39.50 servers. To avoid duplication of development effort and to encourage integration of ILL and Information Retrieval systems, implementors have agreed that the ILL-Request APDU should form the basis of the external ItemRequest data type in an Item Order request.

The problem this profile addresses is that of transferring a syntactically correct EXTERNAL APDU based on the ILL-Request APDU without having to supply all the parameters which are mandatory in that APDU because the same information is already present elsewhere in the ExtendedServiceRequest or is already known to the server.

Short name: Z39.50/ILL profile 2.

## 2. Scope

The Z39.50 Extended Services allow servers to offer services in addition to those defined in the base Z39.50 standard. These services are often carried out in a timeframe that extends beyond that of a Z39.50 session, or are used to carry information that is transferred to a server function distinct from the information retrieval services directly related to Z39.50. A number of extended services are defined in Appendix EXT of Z39.50-1995.

One of the extended services defined is Item Order, which allows a client to submit a request for the supply of a document to be delivered using a communications service different from Z39.50. The service allows a client to identify the item being ordered by reference to a position in a result set, or it allows the client to supply the identification information in an externally defined data structure.

This profile specifies the use of parameters from the ILL-Request APDU as specified in the ILL protocol specification, ISO 10161, to carry item order information in the External portion of an Item Order Request. ILL APDUs are used to convey information from a "Requester", the person or organization placing the order, to a "Responder", the organization that undertakes to supply or arrange the supply of the document, or *vice versa*. They contain parameters to identify the item requested, the requester and responder, and a third-party "client" for whom the requester is an agent. They also contain parameters allowing information about the transaction to be maintained, possibly over a long period of time, and parameters allowing all messages relating to the transaction to be correlated with the original request and other messages.

The use of a distinct object by this profile permits it to be distinguished from the use of Z39.50 Item Order to transport ILL APDUs as described in "Profile for the use of Z39.50 Item Order Extended Services to Transport ILL Protocol APDUs" (short name Z39.50/ILL Profile 1).

A full description of the ILL service model is given in ISO 10160, the ILL Service Definition.

## 3. Model

This profile does not assume that either party to a Z39.50 Item Order is an implementor of the ILL protocol. The information contained in the Item Order request is assumed to be passed by the target to a separate order fulfillment application. How this order fulfillment application functions is outside the scope of this profile, although it should be noted that it may (but need not) be an application implementing an ILL requester as specified by the ILL protocol. Similarly, whether and how the Z39.50 client and server applications maintain transaction information about the Item Order is outside the scope of this profile (although, again, it may but need not involve the use of an ILL application).

This profile permits only parameters of the ILL-Request APDU to be carried in the ItemRequest parameter of the Item Order ExtendedServices-Request APDU. Because some parameters of the ILL-Request APDU are declared to be

mandatory, but are redundant when used with ItemOrder, this profile defines a distinct information object — an ItemRequest object — that reproduces the ILL-Request data, but with no mandatory parameters. This object imports from the ILL protocol all the data types used in the ILL-Request APDU.

Examples of the use of this profile include: use in student workstations to communicate ILL requests to a library-based ILL office; and use by libraries and researchers to communicate document delivery requests to a commercial document supplier. Figure 1 below illustrates the logical components and some of the messages implicit in the use of this profile.

#### 4. Definitions

This profile makes use of the following terms as defined in the ILL Service Definition, ISO 10160:

Intermediary

Requester

Responder

#### 5. References

ISO 10160 : Information and Documentation - Open Systems Interconnection - Interlibrary Loan Service Definition  
1993

ISO 10161 : Information and Documentation - Open Systems Interconnection - Interlibrary Loan Protocol Specification  
1993

ANSI Z39.50 - 1995 Information Retrieval: Application Service Definition and Protocol Specification

ISO 8825 : Information Technology - Open Systems Interconnection - Basic Encoding Rules for Abstract Syntax Notation 1  
1992

#### 6. Abbreviations

APDU Application Protocol Data Unit

ASN.1 Abstract Syntax Notation 1

BER Basic Encoding Rules for ASN.1

ILL Interlibrary Loan

#### 7. Profile Requirements

##### 7.1 Encoding

The ILL protocol permits two forms of encoding for its APDUs: encoding using the Basic Encoding Rules (BER) for ASN.1 as specified in ISO 8825; or encoding using the UN EDIFACT encoding specified in Annex B of the ILL protocol standard.

This profile requires that parameters from the

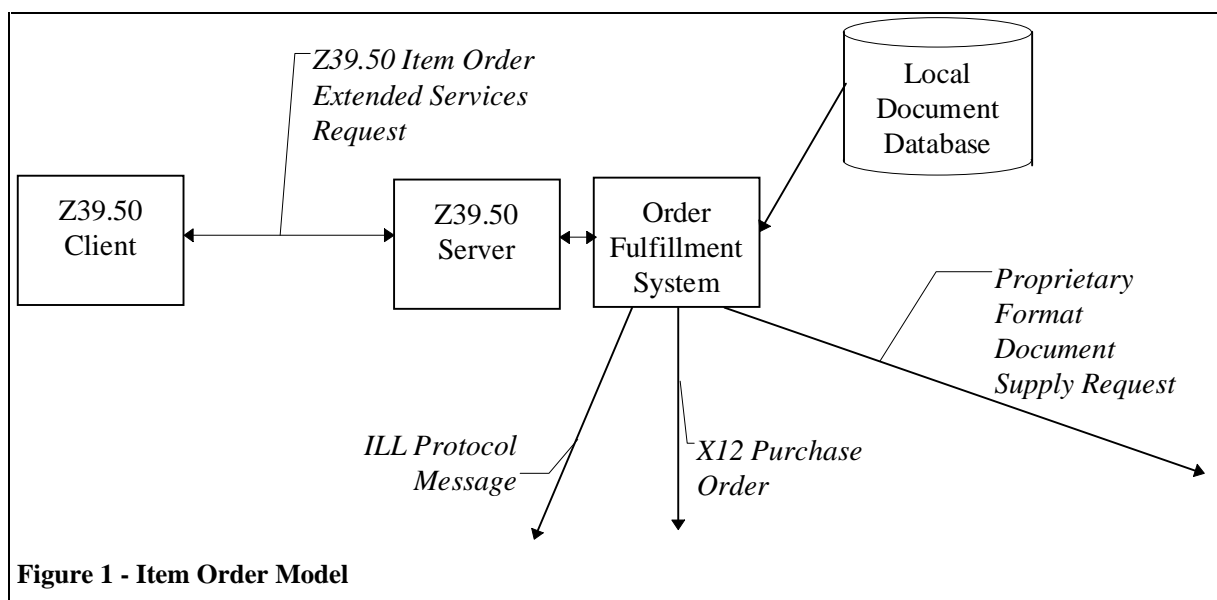


Figure 1 - Item Order Model

ItemRequest object used in Item Order requests and task packages are encoded using the Basic Encoding Rules. EDIFACT encoding is not supported by this profile.

## 7.2 External Objects Required to be Supported

A Z39.50 target conforming to this profile must accept a Z39-50-extendedServices ItemOrder ItemRequest external data type as defined in Appendix A to this profile. This data type contains parameters from the ILL-request APDU from the ISO ILL protocol.

## 7.3 ES APDU parameters

The ES APDU need contain no parameters other than “function”, “packageType” and “taskSpecificParameters”and “waitAction”. Other parameters, if present, are used only for control information in the ES database. Information from these parameters is NOT passed to any ordering or requesting application. Note that modifying the task package or deleting it in a subsequent APDU cannot be assumed to modify or cancel the Item Order request.

## 7.4 Origin Parameters

### 7.4.1 ExtendedServicesRequest APDU parameters

| Parameter              | Requirement   |
|------------------------|---|
| referenceId            | Optional  |
| function               | Mandatory. Only Create need be supported. It is assumed that an item order, once created, moves beyond the control of the target and that any modification or deletion will have no effect on the item order itself.  |
| packageType            | Mandatory. Value must be {Z39-50-extendedService Item Order} ({1 2 840 10003 9 4})  |
| packageName            | Optional.   |
| userId                 | Optional  |
| retentionTime          | Optional. Target may ignore.  |
| permissions            | Optional  |
| description            | Optional. Target may ignore.  |
| taskSpecificParameters | Mandatory. Must contain an ESFormat-ItemOrder object. See 7.4.2.  |
| waitAction             | Mandatory. Target need only support 'waitIfPossible' and 'dontWait'. Targets supporting the values “wait” and “waitIfPossible” undertake only to wait until the request has been passed to the order fulfillment service, although they may wait until a status has been received from the order fulfillment service. |
| elements               | Optional for the origin. Target may ignore.   |
| otherInfo              | Excluded from this profile.   |

### 7.4.2 ESFormat-ItemOrder parameters

| Parameter   | Requirement          |
|-------------|----------------------|
| esRequest   | Mandatory            |
| toKeep      | Optional. See 7.4.3  |
| notToKeep   | Mandatory. See 7.4.4 |
| taskPackage | Not sent by origin   |
| originPart  | -                    |
| targetPart  | -                    |

**7.4.3 OriginPartToKeep parameters**

| Parameter         | Requirement  |
|-------------------|--|
| supplDescription  | Optional.  |
| contact           | Optional. Target may ignore.   |
| name              | Optional   |
| phone             | Optional   |
| email             | Optional   |
| addlBilling       | Optional. Should only be sent if origin knows that the target requires this information. A target may invoke access control using prompt-1 to obtain additional billing information if required. |
| paymentMethod     | Optional   |
| customerReference | Optional   |
| customerPONumber  | Optional   |

**7.4.4 OriginPartNotToKeep parameters**

| Parameter     | Requirement  |
|---------------|--|
| resultSetItem | Optional, but at least one of these parameters must be present and both may be present. If the item identification in the ItemRequest conflicts with the item identification implied by resultSetItem, the identification in resultSetItem takes precedence. |
| itemRequest   | Optional, at least one of these parameters must be present and both may be present. If present must contain an Z39-50-extendedService ItemOrder ItemRequest object   |

**7.5 Target parameters****7.5.1 ExtendedServicesResponse APDU parameters**

| Parameter       | Requirement                               |
|-----------------|---|
| referenceId     | Mandatory if request contained one.       |
| operationStatus | Mandatory                                 |
| diagnostics     | Mandatory if operationStatus = "failure". |
| taskPackage     | Optional                                  |
| otherInfo       | Excluded from this profile.               |

**7.5.2 Task Package parameters**

| Parameter       | Requirement  |
|-----------------|--|
| packageType     | Mandatory. Value must be {Z39-50-extendedService Item Order} ({1 2 840 10003 9 4}).  |
| packageName     | Optional.  |
| userId          | Optional   |
| retentionTime   | Optional. If present indicates how long the task package record will be maintained in the ES database. Must not be used to indicate how long a supplied item may be retained by the requester. |
| permissions     | Optional   |
| description     | Optional   |
| targetReference | Optional. Target must supply a targetReference if it intends to deliver further status information relating to the Item Order via the extended   |

| Parameter              | Requirement  |
|------------------------|--|
|                        | services database.   |
| creationDateTime       | Optional   |
| taskStatus             | Mandatory. Values are to be interpreted as follows: <ul style="list-style-type: none"> <li>“pending” - Item Order has not yet been processed by ILL system</li> <li>“active” - Item Order has been processed by order fulfillment system and transaction has not reached a terminal state</li> <li>“complete” - transaction has reached a terminal state</li> <li>“aborted” - an error has occurred such that the item order cannot be created, or has been forced into a terminal state.</li> </ul> |
| packageDiagnostics     | Optional   |
| taskSpecificParameters | Mandatory. Must contain an ESFormat-ItemOrder object. See 7.5.3.   |

### 7.5.3 ESFormat-ItemOrder parameters

| Parameter   | Requirement   |
|-------------|---|
| esRequest   | Not sent by target  |
| toKeep      | -   |
| notToKeep   | -   |
| taskPackage | Mandatory   |
| originPart  | Optional  |
| targetPart  | Mandatory. Must contain either an itemRequest or statusOrErrorReport or both. |

### 7.5.4 TargetPart parameters

| Parameter           | Requirement   |
|---------------------|---|
| itemRequest         | Optional. If present must contain an Z39-50-extendedService ItemOrder ItemRequest |
| statusOrErrorReport | Optional. Z39-50-extendedService ItemOrder ItemRequest.                           |
| auxiliaryStatus     | Optional.   |

### 7.6 ItemRequest Parameters

| Parameter                   | Requirement   |
|-----------------------------|---|
| protocol-version-num        | Optional. Default value is "2". Value "1" implies the Electronic-Delivery-Service data type is not supported. |
| transaction-id              | Optional. Target may ignore.  |
| service-date-time           | Optional. Target may ignore.  |
| requester-id                | Optional  |
| responder-id                | Optional  |
| transaction-type            | Optional. Default value is "simple". Target may ignore.   |
| delivery-address            | Optional  |
| delivery-service            | Optional  |
| billing-address             | Optional  |
| iLL-service-type            | Optional. Target need only support "copy-non-returnable". Other values may be ignored.                        |
| responder-specific-service  | Excluded from this profile  |
| requester-optional-messages | Optional. Target may ignore.  |
| search-type                 | Optional. No values are defined for level-of-service.   |

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|                               |  |
|-------------------------------|--|
| supply-medium-info-type       | Optional. No values are defined for medium-characteristics.  |
| place-on-hold                 | Optional. Default value is "according to supplier policy". Target may ignore   |
| client-id                     | Optional.  |
| item-id                       | Optional. If data in this parameter conflicts with data in resultSetItem, data in the latter take precedence.  |
| supplemental-item-description | Optional. May contain a MARC record encoded using an object identifier as specified in Z39.50 Appendix OID or may contain an eSpec-1 object as specified in Z39.50 Appendix ESP. No other object may be present. If data in this parameter conflicts with data in resultSetItem or supplDescription, data in the latter take precedence. |
| cost-info-type                | Optional   |
| copyright-compliance          | Optional   |
| third-party-info-type         | Optional. Target may ignore  |
| retry-flag                    | Optional. Default is false. Target may ignore  |
| forward-flag                  | Optional. Default is false. Target may ignore  |
| requester-note                | Optional. Target may ignore  |
| forward-note                  | Optional. Target may ignore  |
| iLL-Request-extensions        | Excluded from this profile   |

## APPENDIX A

{Z39-50-extendedService ItemOrder ItemRequest (1)} DEFINITIONS ::=

BEGIN

IMPORTS

-- All non built-in data types referenced from the ILL-Request data type are imported.  
-- An origin need not be able to generate all of these data types; a target must be prepared to  
-- receive any of them.  
-- Note that any parameters of these data types that are mandatory in the ILL definition  
-- remain mandatory here.

Account-Number,

Amount,

AmountString,

Client-Id,

Cost-Type-Info,

Delivery-Address,

Delivery-Service

EDIFACTString,

Electronic-Delivery-Service,

Extension,

ILL-Service-Type,

ILL-String,

ISO-Date,

ISO-Time,

Item-Id,

Medium-Type,

Name-Of-Person-Or-Institution,

Person-Or-Institution-Symbol,

Place-On-Hold\_Type,

Postal-Address,

Requester-Optional-Messages-Type,

Search-Type,

Send-To-List-Type,

Service-Date-Time,

Supplemental-Item-Description,

Supply-Medium-Info-Type,

```

Supply-Medium-Type,
System-Address,
System-Id,
Third-Party-Info-Type,
Transaction-Id,
Transaction-Type,
Transportation-Mode
FROM
ISO-10161-ILL-1;
-- ItemRequest is identical to the ILL-Request data type with all elements of the sequence made optional
-- or with a default supplied
ItemRequest ::= SEQUENCE {
    protocol-version-num          [0]    IMPLICIT INTEGER {
                                        version-1 (1),
                                        version-2 (2)
                                        } DEFAULT 2,
-- the data types to support version 2 of the protocol (incorporating the Electronic Delivery amendment)
-- are referenced
    transaction-id                [1]    IMPLICIT Transaction-Id OPTIONAL,
    service-date-time             [2]    IMPLICIT Service-Date-Time OPTIONAL,
    requester-id                  [3]    IMPLICIT System-Id OPTIONAL,
    responder-id                   [4]    IMPLICIT System-Id OPTIONAL,
    transaction-type               [5]    IMPLICIT Transaction-Type DEFAULT 1,
    delivery-address               [6]    IMPLICIT Delivery-Address OPTIONAL,
    delivery-service               Delivery-Service OPTIONAL,
    billing-address                [8]    IMPLICIT Delivery-Address OPTIONAL,
    iLL-service-type               [9]    IMPLICIT SEQUENCE SIZE (1..5) OF
                                        ILL-Service-Type OPTIONAL,
        -- this sequence is a list, in order of preference
    responder-specific-service     [10]   EXTERNAL OPTIONAL,
        -- use direct reference style
    requester-optional-messages   [11]   IMPLICIT Requester-Optional-Messages-Type OPTIONAL,
    search-type                    [12]   IMPLICIT Search-Type OPTIONAL,
    supply-medium-info-type        [13]   IMPLICIT SEQUENCE SIZE (1..7) OF
                                        Supply-Medium-Info-Type OPTIONAL,
        -- this sequence is a list, in order of preference with a maximum number of 7 entries

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```
place-on-hold          [14]  IMPLICIT Place-On-Hold-Type DEFAULT 3,  
client-id              [15]  IMPLICIT Client-Id OPTIONAL,  
item-id                [16]  IMPLICIT Item-Id OPTIONAL,  
supplemental-item-description [17]  IMPLICIT Supplemental-Item-Description OPTIONAL,  
cost-info-type         [18]  IMPLICIT Cost-Info-Type OPTIONAL,  
copyright-compliance  [19]  ILL-String OPTIONAL,  
third-party-info-type [20]  IMPLICIT Third-Party-Info-Type OPTIONAL,  
retry-flag             [21]  IMPLICIT BOOLEAN DEFAULT FALSE,  
forward-flag           [22]  IMPLICIT BOOLEAN DEFAULT FALSE,  
requester-note         [46]  ILL-String OPTIONAL,  
forward-note           [47]  ILL-String OPTIONAL,  
iLL-request-extensions [49]  IMPLICIT SEQUENCE OF Extension OPTIONAL  
}  
END
```