

**Integrating the Healthcare Enterprise**



5

**IHE IT Infrastructure  
Technical Framework Supplement**

10

**Cross-Community Document Reliable  
Interchange  
(XCDR)**

15

**Trial Implementation**

20 Date: August 31, 2015  
Author: IHE ITI Technical Committee  
Email: iti@ihe.net

25

**Please verify you have the most recent version of this document. See [here](#) for Trial Implementation and Final Text versions and [here](#) for Public Comment versions.**

## Foreword

30 This is a supplement to the IHE IT Infrastructure Technical Framework V11.0. Each supplement undergoes a process of public comment and trial implementation before being incorporated into the volumes of the Technical Frameworks.

This supplement is published on August 31, 2015 for trial implementation and may be available for testing at subsequent IHE Connectathons. The supplement may be amended based on the results of testing. Following successful testing it will be incorporated into the IT Infrastructure Technical Framework. Comments are invited and may be submitted at  
35 [http://www.ihe.net/ITI Public Comments](http://www.ihe.net/ITI_Public_Comments). This supplement describes changes to the existing technical framework documents.

“Boxed” instructions like the sample below indicate to the Volume Editor how to integrate the relevant section(s) into the relevant Technical Framework volume.

<i>Amend Section X.X by the following:</i>
--

40 Where the amendment adds text, make the added text bold underline. Where the amendment removes text, make the removed text bold strikethrough. When entire new sections are added, introduce with editor’s instructions to “add new text” or similar, which for readability are not bolded or underlined.

45 General information about IHE can be found at: <http://www.ihe.net>.

Information about the IHE IT Infrastructure domain can be found at:  
[http://www.ihe.net/IHE Domains](http://www.ihe.net/IHE_Domains).

Information about the structure of IHE Technical Frameworks and Supplements can be found at:  
[http://www.ihe.net/IHE Process](http://www.ihe.net/IHE_Process) and <http://www.ihe.net/Profiles>.

50 The current version of the IHE Technical Framework can be found at:  
[http://www.ihe.net/Technical Frameworks](http://www.ihe.net/Technical_Frameworks).

## CONTENTS

55	Introduction to this Supplement.....	5
	Open Issues and Questions .....	5
	Closed Issues .....	6
	General Introduction .....	7
60	Appendix B - Transaction Summary Definitions .....	7
	Glossary .....	7
	Volume 1.....	8
40	Cross-Community Document Reliable Interchange (XCDR) Profile .....	8
	40.1 XCDR Actors, Transactions, and Content Modules .....	8
65	40.1.1 Actor Descriptions and Actor Profile Requirements.....	10
	40.2 XCDR Actor Options.....	10
	40.2.1 Basic Patient Privacy Enforcement .....	10
	40.3 XCDR Required Actor Groupings .....	10
	40.4 XCDR Overview .....	11
70	40.4.1 Concepts .....	11
	40.4.2 XCDR Use Cases .....	12
	40.4.2.1 XCDR Source Community with XDR .....	13
	40.4.2.1.1 XCDR Source Community with XDR Use Case Description.....	13
	40.4.2.1.2 XCDR Source Community with XDR Process Flow .....	14
75	40.4.2.2 XCDR Responding Community with XDR .....	14
	40.4.2.2.1 XCDR Responding Community with XDR Use Case Description.....	14
	40.4.2.2.2 XCDR Remote Community with XDR Process Flow.....	15
	40.4.2.3 XCDR Federated Communities with XCA .....	15
	40.4.2.3.1 XCDR Federated Communities with XCA Use Case Description.....	15
80	40.4.2.3.2 XCDR Federated Communities with XCA Process Flow .....	17
	40.4.2.4 XCDR in Cross-Community XDW Workflow .....	17
	40.4.2.4.1 XCDR Updating XDW Workflow Document Use Case Description .....	17
	40.4.2.4.2 XCDR Updating XDW Workflow Document Process Flow .....	19
	40.5 XCDR Security Considerations .....	19
85	40.6 XCDR Cross-Profile Considerations .....	20
	40.6.1 Grouping with the Initiating Gateway - XDR .....	20
	40.6.2 Grouping with the Responding Gateway - XDS .....	21
	40.6.3 Grouping with the Responding Gateway - XDR .....	21
	15.2 XDR Integration Profile Options .....	22
90	15.2.4 Transmit Home Community ID Option .....	22
	Volume 2 – Transactions .....	23
	3.41.1 Scope .....	23
	3.41.4.1.3.2 Transmit Home Community Id Option.....	23
	3.80 Cross-Gateway Document Provide [ITI-80].....	24
95	3.80.1 Scope .....	24
	3.80.2 Actor Roles.....	25
	3.80.3 Reference Standards .....	25
	3.80.4 Interaction Diagrams .....	25

	3.80.4.1 Cross-Gateway Document Provide Request .....	25
100	3.80.4.1.1 Trigger Events .....	26
	3.80.4.1.2 Message Semantics .....	26
	3.80.4.1.3 Expected Actions .....	26
	3.80.4.1.3.1 Basic Patient Privacy Enforcement.....	27
	3.80.4.2 Cross-Gateway Document Provide Response .....	27
105	3.80.4.2.1 Trigger Events .....	27
	3.80.4.2.2 Message Semantics .....	28
	3.80.4.2.3 Expected Actions .....	28
	3.80.5 Protocol Requirements .....	28
	3.80.5.1 Sample SOAP Messages .....	29
110	3.80.5.1.1 Sample Cross Gateway Document Provide SOAP Request.....	29
	3.80.5.1.1.1 Synchronous Web Services Exchange.....	29
	3.80.5.1.1.2 Asynchronous Web Services Exchange.....	31
	3.80.5.1.2 Sample ... Document SOAP Response .....	32
	3.80.5.1.2.1 Synchronous Web Services Exchange.....	32
115	3.80.5.1.2.2 Asynchronous Web Services Exchange.....	32
	3.80.6 Security Considerations.....	32
	3.80.7 Audit Record Considerations .....	32
	3.80.7.1 Initiating Gateway audit message:.....	33
	3.80.7.2 Responding Gateway audit message: .....	35
120		

## Introduction to this Supplement

This supplement contains the Cross-Community Document Reliable Interchange Profile (XCDR) and a number of extensions to the existing Cross-Enterprise Document Reliable Interchange Profile (XDR) to support the combined use of XCDR and XDR.

125 XCDR introduces the capability to send documents from a source Community with sufficient information to direct the documents through gateways to a designated target Community.

The XCDR Profile:

- has similar deployment characteristics to the Cross-Community Access Profile (XCA) and is easily combined and deployed in an environment that is already using XCA.
- 130 • fully specifies the combined use with XDR, enabling an XDR Document Source and Document Recipient Actors in separate communities to become connected. The XDR Document Source receives acknowledgment only when the Document Recipient in a remote community has received the document. End-to-end acknowledgement is assured.
- 135 • Extends the deployment of a community organized around an XDS Document Registry and Repository(s) by allowing both Document Source Actors within this XDS based community, and also in different communities to act as a source of documents.

XCDR can be:

- used as a stand-alone Profile to enable an Initiating Gateway in a source Community to provide a set of documents to the Responding Gateway of a remote Community.
- 140 • used in conjunction with the XDR Profile to enable a Document Source in one Community to provide a set of document to a Document Recipient in a remote Community.
- used in conjunction with the XCA Profile to enable two way communication between Communities.
- 145 • used in conjunction with the XDW Profile to enable the exchange of Workflow Documents in cross-community environments.

This supplement includes two major parts that are interrelated.

1. The first part introduces the XCDR Profile
- 150 2. The second part extends the Cross-Enterprise Document Reliable Interchange Profile (XDR) with one new option, enabling Document Sources to convey a target homeCommunityId.

## Open Issues and Questions

1. None

## Closed Issues

- 155 1. In XCA, the Initiating Gateway is responsible for Patient ID reconciliation before  
initiating the query or retrieve (i.e., the Initiating Gateway must query with the Patient ID  
as it is known in the responding community (w/ responding community's assigning  
authority)). This could be done using XCPD or some other method. How shall the Patient  
ID be reconciled in XCDR? Must it be the Patient ID as the patient is known in the target  
160 community? Resolution: The transaction reflects that the sending side is required to send  
enough information so that the receiving side can associate the data with a local patient.  
How this is done will vary by deployment but is expected to include either a patient ID  
known to the receiver or enough demographics to support a match. Although XDR does  
not have any text regarding reconciliation of the patient, the approach taken here should  
165 be considered for addition to XDR because it is flexible and minimal.
2. Is this profile necessary with its separate transaction or can the capabilities be put in place  
through a new option on XDR and chaining of combination of XDR actors? It was felt  
that creating a new Profile was a better approach because it follows the pattern used for  
XCA. This allows it to be easily combined and deployed in an environment that is  
170 already using XCA.
3. How, if at all, should SubmissionSet.intendedRecipient be used for document routing?  
CLOSED: The need to specify SubmissionSet.intendedRecipient is to be optional and a  
recommendation only.
4. Should the document Recipient support the Document Replacement Option? CLOSED:  
175 This is normal (expected) behavior in the XDR Document Recipient, and need not be  
made more explicit, nor specified differently in the XCDR Responding Gateway.
5. Should there be a Home Community Id Option on the XDR Document Recipient?  
CLOSED: This option should be only on the XDR Document Source. The Document  
Recipient will not have a Home Community Id Option, thus the design assumes that the  
180 Document Recipient may or may not use Home Community Id, and if it uses it, it may be  
in a way that suits their implementation.
6. How shall BPPC and Privacy Enforcement be incorporated, if at all? CLOSED:  
Enforcement follows the same approach as is used for XDS and XDR.

185 **General Introduction**

*Update the following Appendices to the General Introduction as indicated below. Note that these are not appendices to Volume 1.*

**Appendix B - Transaction Summary Definitions**

190 *Add the following transactions to the IHE Technical Frameworks General Introduction list of Transactions:*

<b>Transaction</b>	<b>Definition</b>
Cross-Gateway Document Provide [ITI-80]	This Transaction allows an Initiating Gateway in a Community to provide a set of Documents to the Responding Gateway of a remote Community

**Glossary**

*Add the following glossary terms to the IHE Technical Frameworks General Introduction Glossary:*

195 None

200

205

210

# Volume 1

215 *Add the following profile to IHE ITI Technical Framework Volume 1*

## 40 Cross-Community Document Reliable Interchange (XCDR) Profile

220 The Cross-Community Document Reliable Interchange (XCDR) Profile provides the capability to send a set of documents in a Cross-Community environment. The XCDR Profile specifies the transaction to push documents from an Initiating Gateway of a source Community to the Responding Gateway of a target Community.

The XCDR Profile:

- 225 • has similar deployment characteristics to the IHE Cross-Community Access (XCA) Profile and is easily combined and deployed in an environment that is already using XCA.
- 230 • fully specifies the combined use with the IHE Cross-Enterprise Document Reliable Interchange (XDR) Profile, enabling XDR Document Source and Document Recipient Actors in separate communities to become connected. End-to-end acknowledgement is assured. A Document Source receives acknowledgment only when the Document Recipient in a remote community has received the document.
- extends the deployment of a community organized around an XDS Document Registry and Repository(s) by allowing both Document Sources Actors within this XDS based community, and also those in different communities to act as a source of documents.

235 XCDR supports the exchange of documents within a Cross-Community environment with Web-Services as transport. The routing of the document set relies on an Initiating Gateway in the source community and Responding Gateway(s) in one or more remote communities.

XCDR is document-format agnostic. Document content is described in IHE Document Content Profiles; examples include XDS-MS, XD-LAB, XPHR, and XDS-SD.

240 XCDR uses metadata defined in ITI TF-3: 4 - Metadata used in IHE Document Sharing Profiles; it defines no new metadata.

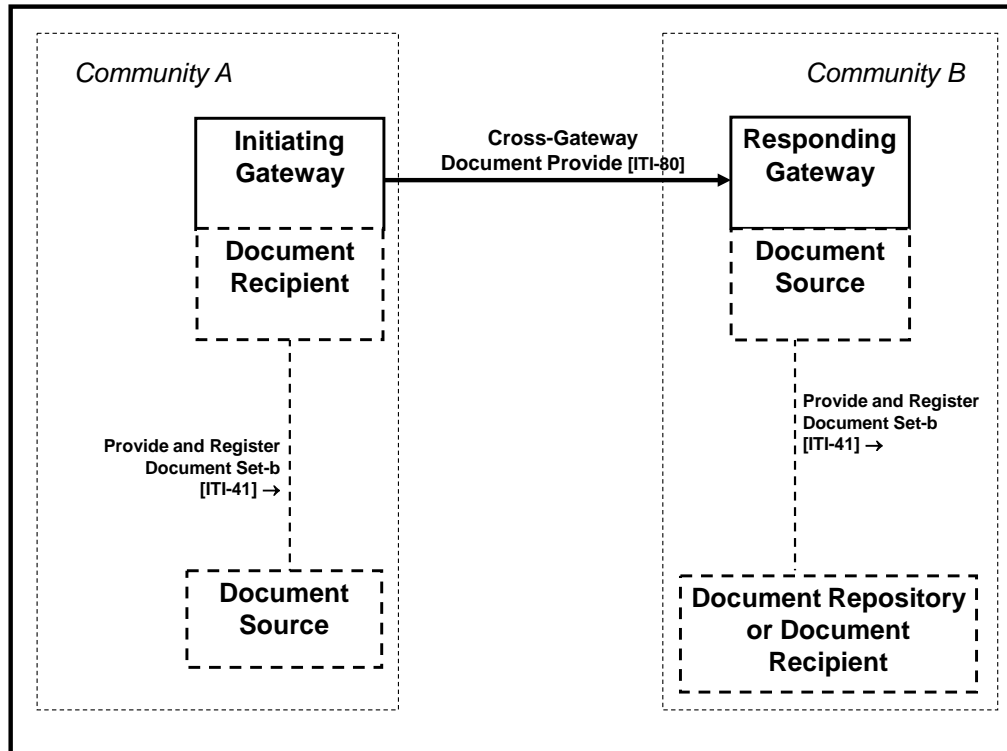
### 40.1 XCDR Actors, Transactions, and Content Modules

This section defines the actors, transactions, and/or content modules in this profile. General definitions of actors are given in the Technical Frameworks General Introduction Appendix A at [http://ihe.net/Technical\\_Frameworks/](http://ihe.net/Technical_Frameworks/).

245 Figure 40.1-1 shows the actors directly involved in the XCDR Profile and the relevant transactions between them. If needed for context, other actors that may be indirectly involved due to their participation in other related profiles are shown in dotted lines. Actors which have a mandatory grouping are shown in conjoined boxes.



- 250
- An XDR Document Recipient may be grouped with the XCDR Initiating Gateway. See ITI TF-1: 40.6.1.
  - An XDS or XDR Document Source may be grouped with the XCDR Responding Gateway. See ITI TF-1: 40.6.2 and 40.6.3.
  - Other actors that may be indirectly involved due to their participation in XCA, XDS, PIX or XUA are not shown.



255

**Figure 40.1-1: XCDR Actor Diagram**

260 Table 40.1-1 lists the transactions for each actor directly involved in the XCDR Profile. To claim compliance with this Profile, an actor shall support all required transactions (labeled “R”) and may support the optional transactions (labeled “O”).

**Table 40.1-1: XCDR Integration Profile - Actors and Transactions**

Actors	Transactions	Optionality	Section in Vol. 2
Initiating Gateway	Cross-Gateway Document Provide [ITI-80]	R	ITI TF-2c: 3.80
Responding Gateway	Cross-Gateway Document Provide [ITI-80]	R	ITI TF-2c: 3.80

### 40.1.1 Actor Descriptions and Actor Profile Requirements

265 Most requirements are documented in Transactions (Volume 2) and Content Modules (Volume 3). This section documents any additional requirements on profile's actors.

### 40.2 XCDR Actor Options

Options that may be selected for each actor in this profile, if any, are listed in Table 40.2-1. Dependencies between options when applicable are specified in notes.

270

**Table 40.2-1: XCDR - Actors and Options**

Actor	Options	Reference
Initiating Gateway	Basic Patient Privacy Enforcement	ITI TF-1: 40.2.1 ITI TF-2c: 3.80.4.1.3.1
Responding Gateway	Basic Patient Privacy Enforcement	ITI TF-1: 40.2.1 ITI TF-2c: 3.80.4.1.3.1

#### 40.2.1 Basic Patient Privacy Enforcement

275 An Initiating Gateway shall be able to be configured with the Patient Privacy Policies, Patient Privacy Policy Identifiers (OIDs) and associated information necessary to understand and enforce the community Policy where the XCDR Initiating and Responding Gateways operate. See ITI TF-2c: 3.80.4.1.3.1.

### 40.3 XCDR Required Actor Groupings

280 An actor from this profile (Column 1) shall implement all of the required transactions and/or content modules in this profile in addition to all of the transactions required for the grouped actor (Column 2).

Section 40.5 describes some optional groupings that may be of interest for security considerations and Section 40.6 describes some optional groupings in other related profiles.

285

**Table 40.3-1: XCDR - Required Actor Groupings**

XCDR Actor	Actor to be grouped with	Reference	Content Bindings Reference
Initiating Gateway	ATNA Secure Node or Secure Application	ITI TF-1: 9	--
Responding Gateway	ATNA Secure Node or Secure Application	ITI TF-1: 9	--

## 40.4 XCDR Overview

The Cross-Community Document Reliable Interchange (XCDR) Profile provides the capability to store a set of documents in a Cross-Community environment.

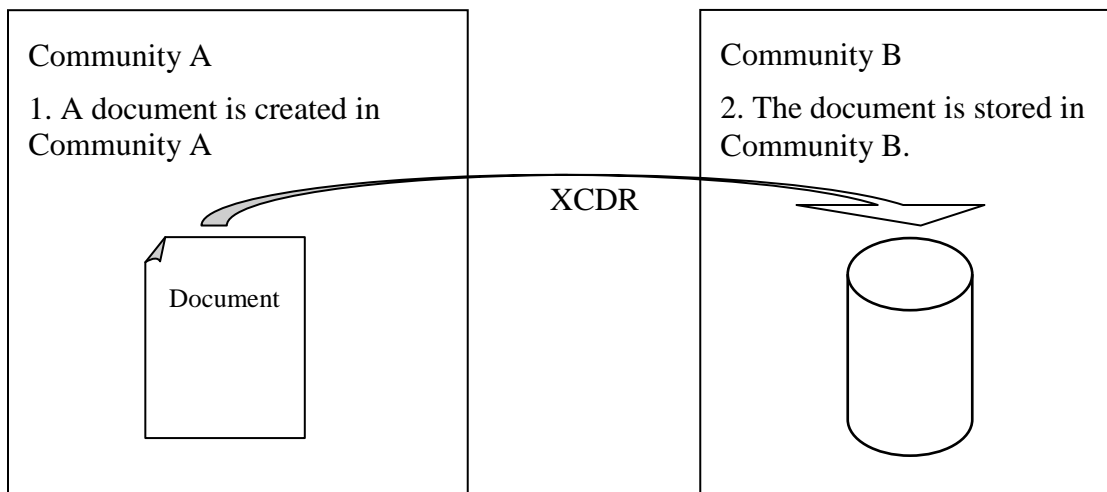
### 290 40.4.1 Concepts

XCDR describes the exchange of a set of documents between healthcare providers or organizations. The scope of the XCDR Profile is to specify the transaction to push these documents from the Initiating Gateway of a source Community to the Responding Gateway of a target Community. The set of documents belongs to the same patient and contains metadata that  
295 allows the Responding Gateway to process the documents. The type of processing will vary by community, for example, routing them on the basis of content in the metadata.

Figure 40.4.1-1 depicts a base example of the XCDR Use Case.

1. A document exists in Community A (source community)
2. The document is stored in Community B (target community)

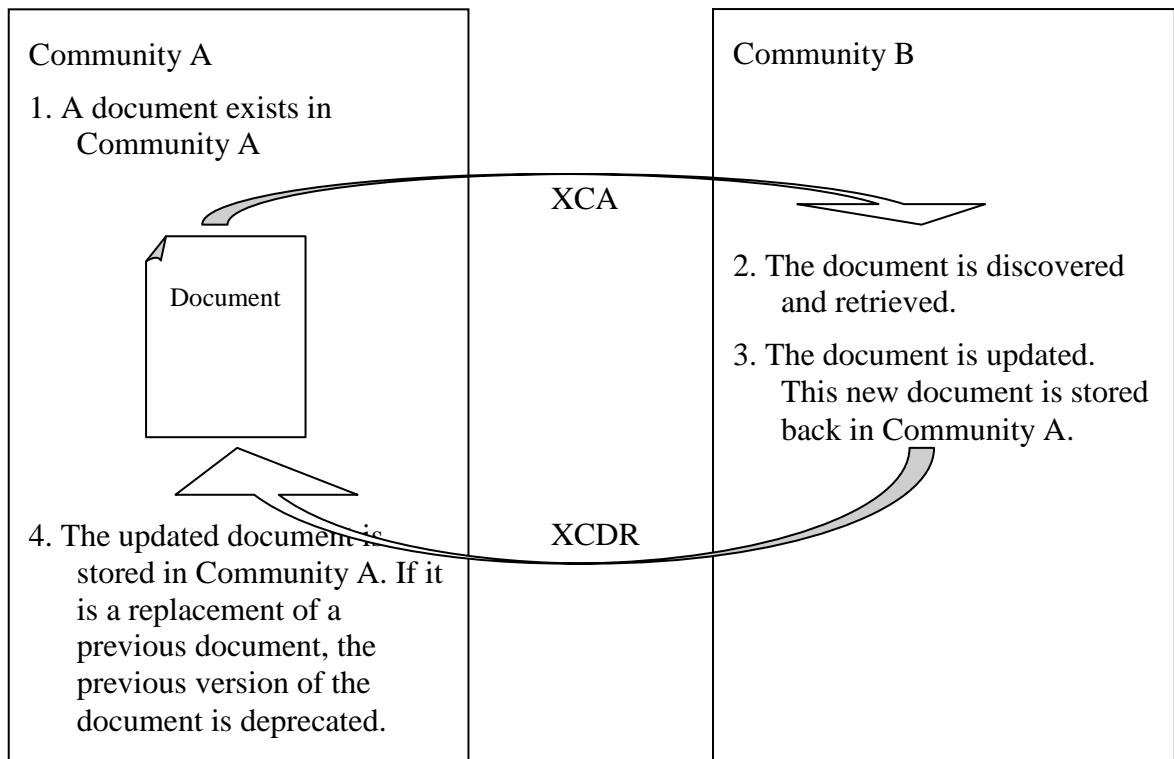
300



**Figure 40.4.1-1: XCDR between a source and a target community**

305 Figure 40.4.1-2 depicts an example of cross-community exchange, where XCDR is used in conjunction with XCA:

1. A document is created and stored within Community A
2. The document is discovered and pulled into Community B. This is typically supported by the query and retrieve transactions in the XCA Profile.
3. The document is updated within Community B and then pushed it back into Community  
310 A using the XCDR Profile.
4. The updated document now exists within Community A (as a new document, or as a replacement document).



315

**Figure 40.4.1-2: XCDR with XCA Example**

#### 40.4.2 XCDR Use Cases

The XCDR Profile may be used on its own. It may also be combined with a number of other IHE Profiles to extend its application in configurations such as:

- 320 1. XCDR Source Community with XDR: The XDR Document Source is the source of a set of documents and uses the XDR Profile to send these documents to an XDR Document Recipient grouped with the XCDR Initiating Gateway. The XCDR Initiating Gateway will forward the set of documents to an XCDR Responding Gateway serving a target community.
- 325 The above XDR Document Source may also be playing the role of an XDS Document Source in an unrelated XDS Affinity Domain. This does not affect the above behavior.
2. XCDR Remote community with XDR: In the target Community, the Responding Gateway may be grouped with the XDR Document Source to be able to forward the document set to one or more XDR Document Recipients within the target Community.
- 330 3. XCDR Remote community with XDS: This use cases uses XDR in a source community and XDS in a target community. In a source community, an XDR Document Source uses the XDR Profile to send a set of document to an XDR Document Recipient grouped with

335 the XCDR Initiating Gateway of the source community. The set of documents is received  
by an XCDR Responding Gateway serving the remote community and grouped with an  
XDS Document Source that uses the document metadata to select the appropriate XDS  
Document Repository in the target community. Through use of its XCA Responding  
Gateway, the remote community may support access to the exchanged document by any  
other community with an XCA Initiating Gateway.

340 4. XCDR in Cross-Community XDW Workflow: XCDR may also be used to bridge  
Communities for a variety of workflows. (See ITI TF-1: E.11.4 – Two Deployment  
Models for XDW used in an XCA Environment). One of the environments where XCDR  
is used is the cross-enterprise workflow management across federated communities as  
specified by the IHE Cross-Enterprise Document Workflow (XDW) Profile. In particular,  
345 XCDR enables the update of one or more workflow documents. For example when a  
workflow has been initiated in a remote non-XDS community and updates to the  
workflow need to be recorded in the community where the workflow was initiated.

#### **40.4.2.1 XCDR Source Community with XDR**

##### **40.4.2.1.1 XCDR Source Community with XDR Use Case Description**

Pre-conditions: A Document Source needs to send a set of documents to a remote community

350 Post-conditions: Documents are under the control of the XCDR Responding Gateway and the  
Document Source receives the acknowledgement that the document set has been received in the  
remote community.

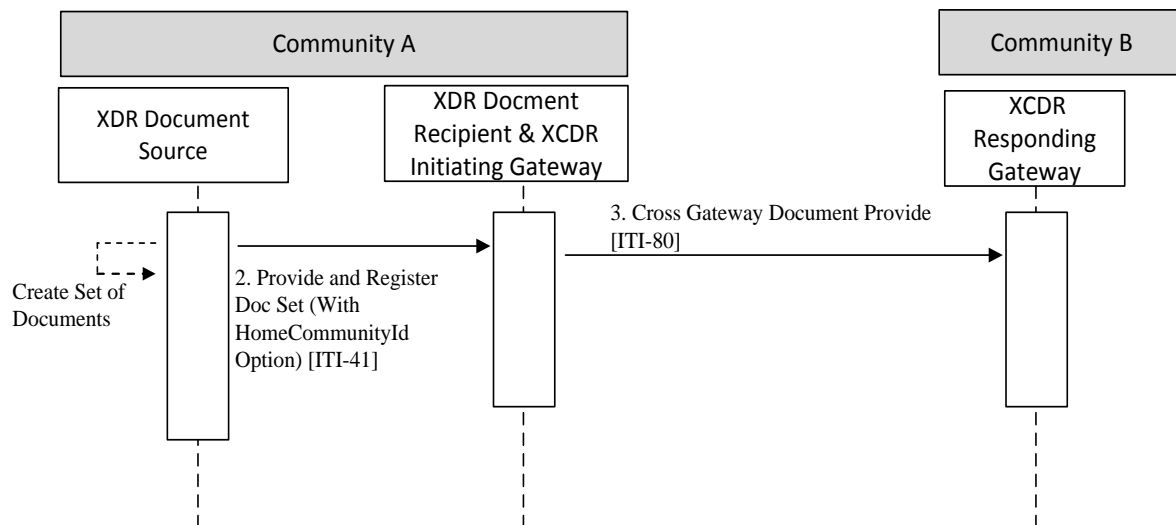
Actors:

- XDR Document Source with the Home Community ID Option
- 355 • XDR Document Recipient grouped with XCDR Initiating Gateway
- XCDR Responding Gateway.

Process flow:

1. In the source Community, the XDR Document Source creates a set of documents
2. In the source Community, the XDR Document Source sends the documents to an XDR  
360 Document Recipient grouped with the XCDR Initiating Gateway.
3. The Initiating Gateway uses the homeCommunityId to identify the target remote  
community and sends the document set to the XCDR Responding Gateway in that  
community. The Initiating Gateway awaits acknowledgement of the transaction from the  
Responding Gateway.
- 365 4. The XCDR Responding Gateway sends acknowledgement to the XCDR Initiating  
Gateway
5. In the source community, the XCDR Initiating Gateway grouped with the XDR  
Document Recipient forwards the acknowledgement to the original XDR Document  
Source.

370 **40.4.2.1.2 XCDR Source Community with XDR Process Flow**



**Figure 40.4.2.1.2-1: XCDR Source with XDR Process Diagram**

**40.4.2.2 XCDR Responding Community with XDR**

375 **40.4.2.2.1 XCDR Responding Community with XDR Use Case Description**

Pre-conditions: A Source Community needs to send a set of documents to a Document Recipient in a remote community

Post-conditions: Initiating Gateway receives the acknowledgement that the document set has been received by the intended recipient (if specified) or the Document Recipient (if intended recipient not specified)

380

Actors:

- XCDR Initiating Gateway
- XCDR Responding Gateway grouped with XDR Document Source,
- XDR Document Recipient in remote community

385

Process flow:

1. In the source Community, an XCDR Initiating Gateway creates the set of documents
2. The Initiating Gateway inserts the homeCommunityId of the remote Community and sends the documents to an XCDR Responding Gateway grouped with an XDR Document Source. The XCDR Initiating Gateway awaits acknowledgment of receipt in the remote community.

390

3. The XCDR Responding Gateway, grouped with the XDR Document Source, forwards the document set to an XDR Document Recipient within the remote Community and receives acknowledgement.
4. The Responding Gateway then acknowledges the XCDR Cross-Gateway Document Provide transaction to the XCDR Initiating Gateway

395

#### 40.4.2.2.2 XCDR Remote Community with XDR Process Flow

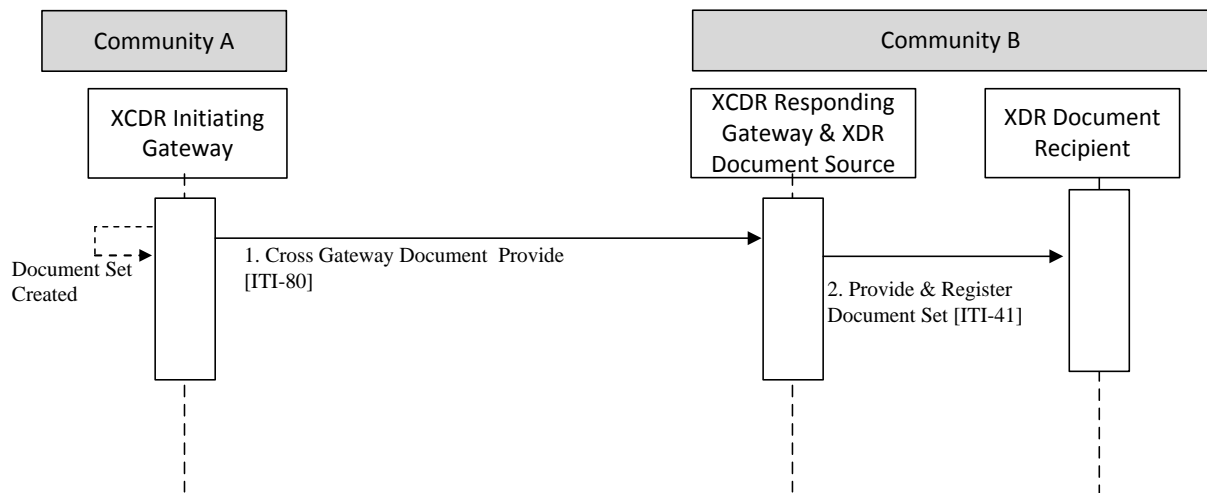


Figure 40.4.2.2.2-1: Remote Community with XDR Process Diagram

400

#### 40.4.2.3 XCDR Federated Communities with XCA

##### 40.4.2.3.1 XCDR Federated Communities with XCA Use Case Description

Pre-conditions: A Document Source needs to send a set of documents to remote community which saves incoming documents into an XDS Document Repository and enables access to those documents through XCA.

405

Post-conditions: Document Source receives the acknowledgement that the document set has been received by the intended recipient(s) and the documents are available through XCA.

Community Roles:

- Community A: source Community
- Community B: remote Community
- Community C: Community that wishes to query and retrieve the document.

410

Actors:

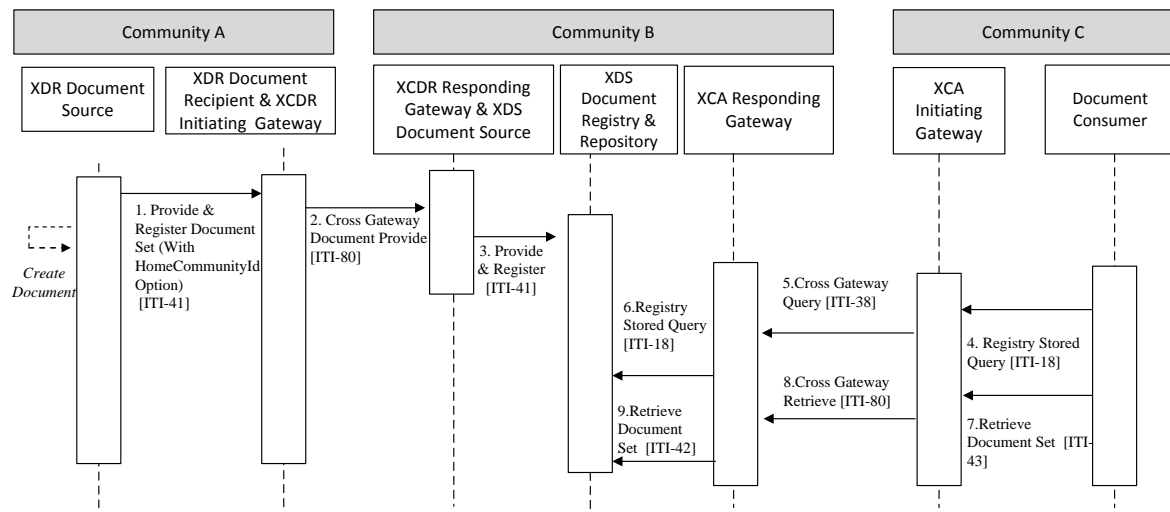
- XDR Document Source in the source community (Community A) that wants to submit a document
- 415 • XDR Document Recipient grouped with an XCDR Initiating Gateway representing Community A
- XDS Document Source grouped with XCDR Responding Gateway in the remote community (Community B)
- XDS Registry/Repository to store the document within Community B
- 420 • XCA Responding Gateway implementing the XDS Affinity Domain Option in Community B.
- XDS Document Consumer in Community C wanting access to the source community's document
- XCA Initiating Gateway representing Community C

425 Process Flow:

1. In the source Community A, the XDR Document Source with the Home Community Id Option sends the document to an XDR Document Recipient grouped with the XCDR Initiating Gateway
- 430 2. The XCDR Initiating Gateway uses the homeCommunityId to identify the target Community B and sends the documents to the XCDR Responding Gateway in that community. The Initiating Gateway awaits acknowledgement of the transaction from the Responding Gateway
- 435 3. The XCDR Responding Gateway in B, grouped with an XDS Document Source, stores the document set to an XDS Document Repository it selects within its Community(ies). The document set is registered by the XDS Document Registry. When the Provide and Register transaction is acknowledged, the grouped XDS Document Source and XCDR Responding Gateway sends its acknowledgement back to the XCDR Initiating Gateway in source Community A.
- 440 4. A Document Consumer within another community (C) wishes to update the document and Queries the XCA Initiating Gateway for the location of the document
5. The XCA Initiating Gateway in Community C queries the XCA Responding Gateway in Community B
6. The XCA Responding Gateway queries the XDS Registry/Repository and responds
- 445 7. The Document Consumer in Community C retrieves the document via the XCA Initiating Gateway
8. The XCA Initiating Gateway retrieves the document from the XCA Responding Gateway
9. The XCA Responding Gateway retrieves the document from the XDS Document Repository in Community B.



### 40.4.2.3.2 XCDR Federated Communities with XCA Process Flow



450

40.4.2.3.1-1 XCDR Federated Communities with XCA Process Flow Diagram

### 40.4.2.4 XCDR in Cross-Community XDW Workflow

#### 40.4.2.4.1 XCDR Updating XDW Workflow Document Use Case Description

455 One of the environments where XCDR is recommended is the Cross-enterprise workflow management as specified by the XDW Profile, but federated across communities using XCDR. In particular, XCDR enables the update of one or more workflow documents, when such workflows have been initiated in a remote XDS community and updates to the workflow need to be recorded in the community where the workflow was initiated. (See IHE ITI TF-1: E.11.4 –  
460 Two Deployment Models for XDW used in an XCA Environment).

Community Roles:

- Community A: XDS source Community
- Community B: remote Community

465 Pre-conditions: Document Consumer in a remote Community B needs to retrieve and update an XDW Workflow Document

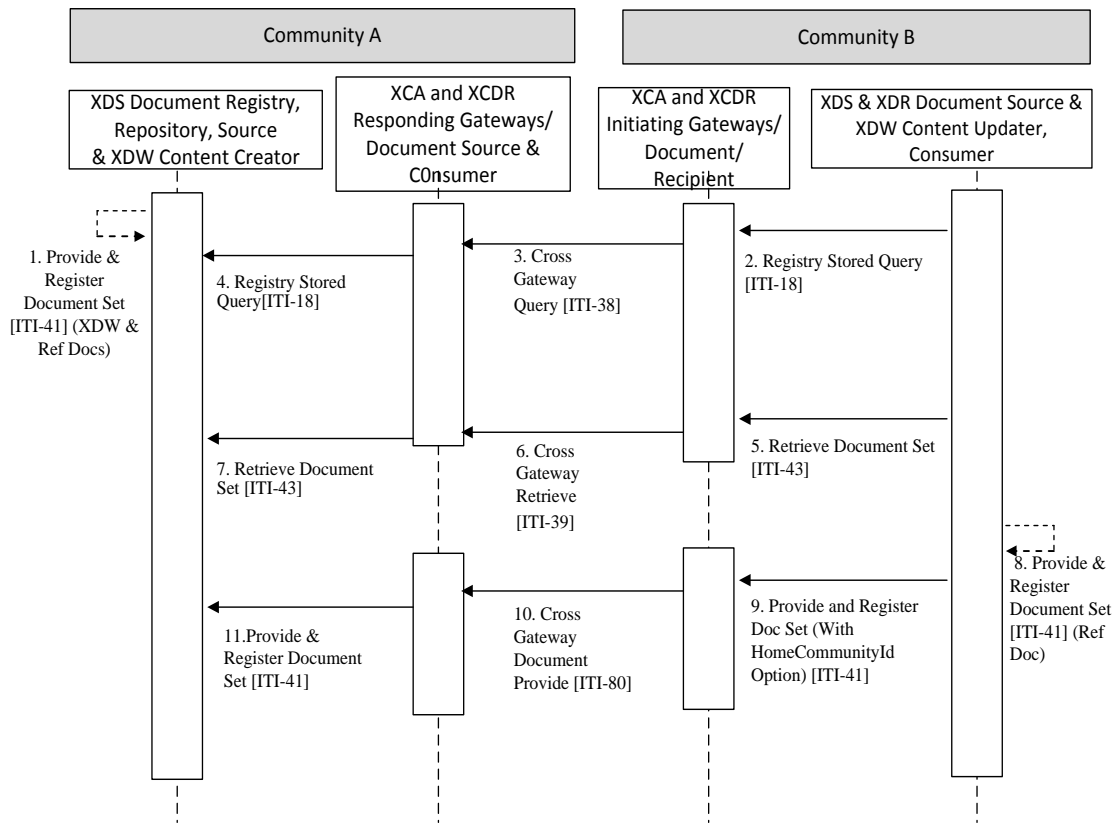
Post-conditions: Updated XDW Workflow Document resides in originating source Community A

Process Flow:

- 470
1. The XDW Content Creator/Source creates a Workflow Document and stores it in its local Document Repository in Community A
  2. An XDW Updater/Consumer in Community B queries for the Workflow Document

3. The Community B's XCA Initiating Gateway forwards the query to the Community A's XCA Responding Gateway
- 475 4. The XCA Responding Gateway grouped with a Document Consumer forwards the query to the XDS Registry in Community A
5. The XDW Content Updater/Consumer in Community B receives the response from the Responding Gateway and requests to retrieve the Workflow Document from Community A
- 480 6. The Request is forwarded from Community B's Initiating Gateway to the Responding Gateway in Community A
7. XCA Responding Gateway grouped with a Document Consumer retrieves the document from its local Repository and returns it (via its XCA Responding Gateway) to the XDW Content Updater/Consumer in Community A (via its Initiating Gateway)
8. The XDW Updater/Consumer in Community B updates the Workflow Document,
- 485 9. The XDW Updater/Consumer then sends the document via XDR to its XCDR Initiating Gateway.
10. The XCDR Responding Gateway in Community A processes the Cross-Gateway Document Provide transaction.
- 490 11. The XCDR Responding Gateway grouped with an XDS Document Source updates (RPLC) in Community A the document in the XDS Repository within Community A.

#### 40.4.2.4.2 XCDR Updating XDW Workflow Document Process Flow



40.4.2.4.2-1 XCDR Updating XDW Workflow Document Process Flow

#### 495 40.5 XCDR Security Considerations

The XCDR Profile assumes that the health organizations using Initiating Gateways and Responding Gateways have an agreement defining when they can interchange PHI. This may require an explicit patient consent (depending on policy and regulation) and an agreement on how to manage potential inconsistencies between the security policies. The main aspects that should be covered by this agreement are similar to XDS – See ITI TF-2x: Appendix L. In the case of XCDR, the Gateway to Gateway communication is between two independent security domains. This means there must be an agreement to cover all aspects of security and privacy for exchanges. In addition, the following aspects should be covered:

- 505 • Manage patient identification in order to perform patient reconciliation correctly upon import of documents into its community. The patient identification domain in the receiving community may not be the same as in the source community so the patient ID must be reconciled by either the sending or the receiving Actors.
- XCDR Initiating Gateway and Responding Gateway Actors shall be grouped with an ATNA Secure Node or Secure Application.

- 510       • The Initiating Gateway, based on its community and the cross-community policies, is expected to use the confidentialityCode in the document metadata with the list of values that identify the sensitivity classifications that apply to the associated document. The confidentiality codes for different communities may need mapping.
- 515       • The Initiating Gateway is expected to use Privacy Policy Identifiers (OIDs) and associated information necessary to understand and enforce the community and cross-community Policy where the XCDR Initiating and Responding Gateways operate.
- 520       • The Responding Gateway is expected to be configured with the Patient Privacy Policies, Patient Privacy Policy Identifiers (OIDs) and associated information necessary based on its community and the cross-community policies. The detail of how this is done is product specific and not specified by IHE.
- 525       • Management of audit record tracking and exchange for operational, security management, regulatory purposes must be covered. Especially see Section A.11 within the IHE IT Infrastructure Technical Committee White Paper: Template for XDS Affinity Domain Deployment Planning.

## 525       **40.6 XCDR Cross-Profile Considerations**

The following are required rules that shall be implemented when the associated grouping is being implemented.

### **40.6.1 Grouping with the Initiating Gateway - XDR**

530       The Initiating Gateway of the XCDR Profile may be grouped with the Document Recipient of the XDR Profile (see Section 40.2.1).

When the Initiating Gateway is grouped with an XDR Document Recipient:

- 535       • If the Document Recipient/Initiating Gateway does not receive a homeCommunityId from the XDR Document Source in [ITI-41], the Document Recipient shall return an error.
- 540       • The Initiating Gateway shall use the homeCommunityId specified by the XDR Document Source to target the correct Responding Gateway. The Initiating Gateway shall copy the homeCommunityId value received from the XDR Document Source in [ITI-41] into the XCDR Cross-Gateway Document Provide [ITI-80] transaction it sends to the Responding Gateway. The Initiating Gateway shall copy the sourceId attribute from the SubmissionSet received from Document Source in [ITI-41] into the sourceId attribute of the SubmissionSet it sends to the Responding Gateway in [ITI-80].
- 545       • The Document Recipient/Initiating Gateway that receives XDR Provide and Register Document Set-b [ITI-41] shall send the acknowledgement to the XDR Document Source only after it receives the acknowledgement of the XDCR Cross Gateway Document Provide [ITI-80] from the Responding Gateway.

#### 40.6.2 Grouping with the Responding Gateway - XDS

When the Responding Gateway is grouped with an XDS Document Source:

- 550 • The Responding Gateway/Document Source shall copy the sourceId attribute from the SubmissionSet received from the Initiating Gateway in [ITI-80] into the sourceId attribute of the SubmissionSet in the Provide and Register Document Set-b [ITI-41] issued to a local Document Repository.
- 555 • The Responding Gateway/XDS Document Source chooses the local Document Repository on the basis of local routing rules, supplemented by the SubmissionSet.intendedRecipient metadata attribute (see ITI TF-3: 4.2.3.3.7), if applicable. The intendedRecipient may contain organization level information. In this case, a mapping table could be locally configured.
- 560 • The Responding Gateway/Document Source shall acknowledge the XDCR Cross Gateway Document Set Provide [ITI-80] received from the Initiating Gateway, only after it receives the acknowledgement of the XDS Provide and Register Document Set [ITI-41] from the local Document Repository.

#### 40.6.3 Grouping with the Responding Gateway - XDR

When the Responding Gateway is grouped with an XDR Document Source:

- 565 • The Responding Gateway shall copy the sourceId attribute of the received SubmissionSet into the SourceId attribute of the SubmissionSet provided in the Provide and Register Document Set-b Transaction issued within the responding Community.
- 570 • XDR Document Recipient chooses the grouped actor XCDR Responding Gateway/XDR Document Source on the basis of local routing rules supplemented by the SubmissionSet.intendedRecipient metadata element (See ITI TF-3: 4.2.3.3.7), if applicable. The intendedRecipient may contain organization level information and may be handled with a locally configured mapping table. It may also contain personal level information but would require additional complexity in maintaining the routing table.
- 575 • XCDR Provide Document Set transaction request received by the Responding Gateway shall be acknowledged only when the XDR Provide and Register Document Set Transaction acknowledgement is received.

*The following update applies to the Final Text ITI Technical Framework Volume 1: In IHE ITI TF-1: 15 - XDR Integration Profile*

*Update Section 15.2: XDR Integration Profile Option as follows:*

## 15.2 XDR Integration Profile Options

580 Options that may be selected for this Integration Profile are listed in Table 15.2-1 along with the Actors to which they apply. Dependencies between options when applicable are specified in notes.

**Table 15.2-1: XDR - Actors and Options**

Actor	Options	Vol. & Section
Document Source	Basic Patient Privacy Enforcement	ITI-TF-2b: 3.41.4.1.3.1
	Transmit Home Community ID	ITI TF-1: 15.2.4
Metadata-Limited Document Source	Basic Patient Privacy Enforcement	ITI TF-2b: 3.41.4.1.3.1
Document Recipient	Basic Patient Privacy Enforcement	ITI-TF-2b: 3.41.4.1.3.1
	Accepts Limited Metadata	ITI TF-1: 15.2.3

585

*Insert the following new Section into ITI TF-1, immediately following ITI TF-1: 15.2.3.*

### 15.2.4 Transmit Home Community ID Option

590 When the Document Source supports the Transmit Home Community Id Option, it shall have the ability to include in the Provide & Register Document Set-b [ITI-41] Transaction a value for homeCommunityId. (See ITI TF-1: 3.41.4.1.3.2).

## Volume 2 – Transactions

*Update ITI TF-2b: 3.41.1 as follows:*

### 3.41.1 Scope

595 The Provide and Register Document Set-b transaction passes a Repository Submission Request  
(see ITI TF-3: 4.1.3.1) from a Document Source to a Document Repository or Document  
Recipient.

A Provide and Register Document Set-b transaction shall carry:

- Metadata describing zero or more documents
- 600 • Within metadata, one XDSDocumentEntry object per document
- An optional homeCommunityId
- XDS SubmissionSet definition along with the linkage to new documents and references  
to existing documents
- Zero or more XDS Folder definitions along with linkage to new or existing documents
- 605 • Zero or more documents

*Update ITI-TF-2b, by creating a new Section 3.41.4.1.3.2 Transmit Home Community Id Option:*

### 3.41.4.1.3.2 Transmit Home Community Id Option

610 The Document Source that supports the Transmit Home Community Id Option shall be able to  
populate both the homeCommunityId Slot and the addressing block in the SOAP header with a  
target homeCommunityId value that identifies the Community for which the document set is  
intended. This attribute may be used by the XDR Document Recipient to further route the  
document set when the Document Recipient serves multiple Communities (e.g., is grouped with  
an XCDR Initiating Gateway). If the metadata attribute “intendedRecipient” is coded, the  
615 homeCommunityId should point to a Community which is able to understand the value within  
the intendedRecipient.

1. The homeCommunityId in the addressing block shall contain the value of the target  
homeCommunity in order to support content encryption, if needed. It shall be encoded  
within the Addressing Block as an ihe:homeCommunityBlock with the code  
620 “urn:ihe.net:iti:xdr:2014”.
2. The homeCommunityId Slot within the SubmitObjectRequest element shall contain the  
value of the target homeCommunityId.

An example of the homeCommunityId Slot and the addressing block in the SOAP header is  
shown below:

625

```
630 <?xml version="1.0" encoding="UTF-8"?>
    <soapenv:Envelope xmlns:soapenv="http://www.w3.org/2003/05/soap-envelope"
        xmlns:wsa="http://www.w3.org/2005/08/addressing">
        <soapenv:Header>
        <wsa:To>http://localhost:4040/axis2/services/test11966a</wsa:To>
        <wsa:MessageID>urn:uuid:76A2C3D9BCD3AECFF31217932910053</wsa:MessageID>
        <ihe:homeCommunityBlock xmlns:ihe="urn:ihe.net:iti:xdr:2014"
            xmlns:env="http://www.w3.org/2003/05/soap-envelope"
            env:role="urn:ihe.net:iti:xd:id" env:relay="true">
635 <ihe:homeCommunityId>urn:oid:1.2.3.4.5.6.2333.23</ihe:homeCommunityId>
            </ihe:homeCommunityBlock>
            <wsa:Action
                soapenv:mustUnderstand="1">urn:ihe:iti:2015:CrossCommunityDocumentProvide</ws
                a:Action>
640 </soapenv:Header>
            <soapenv:Body>
                <xdsb:ProvideAndRegisterDocumentSetRequest xmlns:xdsb="urn:ihe:iti:xds-
                    b:2007" xmlns:rim="urn:oasis:names:tc:ebxml-regrep:xsd:rim:3.0">
645 <lcm:SubmitObjectsRequest xmlns:lcm="urn:oasis:names:tc:ebxml-
                    regrep:xsd:lcm:3.0">
                        <rim:RequestSlotList>
                            <rim:Slot name="homeCommunityId">
                                <rim:ValueList>
650 <rim:Value>urn:oid:1.2.3.4.5.6.2333.23</rim:Value>
                                </rim:ValueList>
                            </rim:Slot>
                        </rim:RequestSlotList>
                        <ihe:homeCommunityBlock xmlns:ihe="urn:ihe.net:iti:xdr:2014"
                            xmlns:env="http://www.w3.org/2003/05/soap-envelope"
655 env:role="urn:ihe.net:iti:xd:id" env:relay="true">
                            <ihe:homeCommunityId>urn:oid:1.2.3.4.5.6.2333.23</ihe:homeCommunityId>
                            </ihe:homeCommunityBlock>
                            <rim:RegistryObjectList xmlns:rim="urn:oasis:names:tc:ebxml-
                                regrep:xsd:rim:3.0"></rim:RegistryObjectList>
660 </lcm:SubmitObjectsRequest>
                        </xdsb:ProvideAndRegisterDocumentSetRequest>
                    </soapenv:Body>
                </soapenv:Envelope>
665
```

*Update ITI TF-2c, by adding a new Section 3.80:*

## **3.80 Cross-Gateway Document Provide [ITI-80]**

### **3.80.1 Scope**

The scope of this transaction is based on Provide and Register Document Set.b [ITI-41].

670 The differences between the [ITI-41] and the [ITI-80] transactions are:

- the Document Source in ITI-41 is replaced by the Initiating Gateway in ITI-80 and



- the Document Recipient in ITI-41 is replaced by a Responding Gateway in ITI-80.
- ITI-41 has a Transmit Home Community Option. ITI-80 does not have the option because the capabilities associated with that option are required.

675 **3.80.2 Actor Roles**

Actor:	Initiating Gateway
Role:	Sends documents and associated metadata to a Responding Gateway
Actor:	Responding Gateway
Role:	Receives a set of documents and, if required, forwards them to the intended recipient or a registry/repository in its local community.

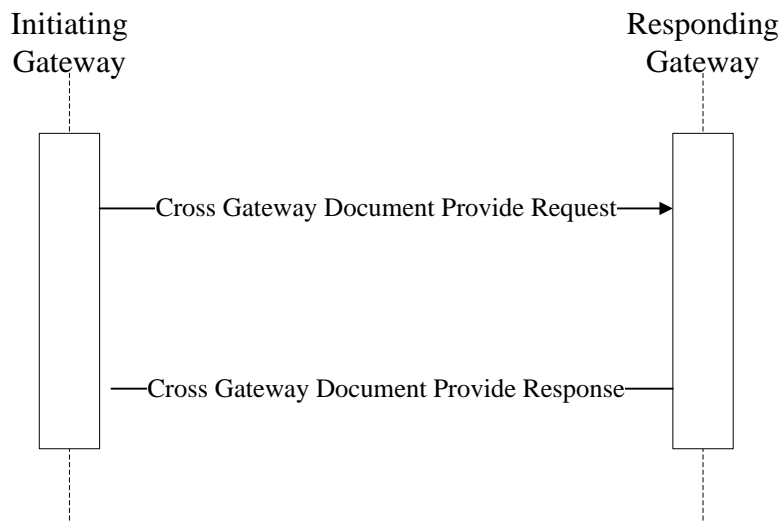
**3.80.3 Reference Standards**

Implementers of this transaction shall comply with all requirements described in: ITI TF-2x: Appendix V: Web Services for IHE Transactions.

ebRIM	OASIS/ebXML Registry Information Model v3.0
ebRS	OASIS/ebXML Registry Services Specifications v3.0
ebMS	OASIS/ebXML Messaging Services Specifications v3.0

680

**3.80.4 Interaction Diagrams**



**3.80.4.1 Cross-Gateway Document Provide Request**

685 An Initiating Gateway sends documents and associated metadata to a Responding Gateway. The Responding Gateway may then forward the documents to the intended recipient or repository.

### 3.80.4.1.1 Trigger Events

The Initiating Gateway wants to submit a set of zero or more documents to the Responding Gateway of another community.

690 The Initiating Gateway shall provide enough information about the patient to ensure that the Responding Gateway can process the documents. The definition of enough will vary by deployment. In some cases this might be by providing a patient ID that is known by the Responding Gateway. In other cases it might include specification of enough demographics that the Responding Gateway will be confident of the association of the submission to a local patient. To accommodate the variety of policies which might apply, the Initiating Gateway shall be able  
695 to be configured to provide in the metadata at least: (1) a patient ID known to the Responding Gateway, and (2) demographics for the patient including first name, last name, birth date and gender.

### 3.80.4.1.2 Message Semantics

700 Message semantics for the Cross-Gateway Document Provide adhere to the Message Semantics for Provide and Register Document Set-b [ITI-41] in ITI TF-2b: 3.41.4.1.2.

The Cross Gateway Document Provide Request message shall include the metadata attributes as defined in ITI TF-3: 4.3.1.2.1. Optionality for these attributes is the same as for XDR Document Source (XDR DS) in ITI TF-3: Table 4.3.1.1-3.

### 3.80.4.1.3 Expected Actions

705 A Responding Gateway receives the metadata and the associated document(s). It shall be able to interpret the submission without any context (e.g., a prior submission). The Responding Gateway may validate the metadata as described in ITI TF-3: Table 4.3.1.1-3.

The Responding Gateway uses the patient ID and/or patient demographics in order to associate the submission to a local patient.

710 The Initiating Gateway may include Folders in metadata. If the Responding Gateway is not able to process the Folder-specific content, it shall return a PartialFolderContentNotProcessed warning which includes a textual description identifying that Folder Content was not processed. In this case the Responding Gateway shall process the rest of the submission successfully.

715 In the case where the Initiating Gateway submits a replacement set of documents, if the Responding Gateway is not able to process the replacement semantics in the submission, it shall return a PartialReplaceContentNotProcessed warning which includes a textual description identifying that the replacement semantics were not processed. In this case the Responding Gateway shall process the rest of the submission successfully. The document replacement semantics required for the Responding Gateway are consistent with those defined in ITI TF-3:  
720 4.2.2.2.3, which requires that Responding Gateways shall:

1. persist documents and associated metadata
2. persist a replacement document if the replaced document is known, then deprecate the replaced document

725 3. if the replaced document does not exist at the Responding Gateways, the submission shall fail with an appropriate error (See ITI-TF-3: 4.2.4 Table 4.2.4.1-1)

If the Responding Gateway detects a failure, it shall return an error message to the Initiating Gateway thus terminating this transaction. The conditions of failure and possible error messages are the same as those for [ITI-41] in ITI TF-3: 4.2.4 Error Reporting.

#### **3.80.4.1.3.1 Basic Patient Privacy Enforcement**

730 If the Basic Patient Privacy Enforcement Option is implemented:

1. The Initiating Gateway shall populate the confidentialityCode in the document metadata with the list of values that identify the sensitivity classifications that apply to the associated document. The confidentiality codes for different documents in the same submission may be different for different Communities.
- 735 2. The Initiating Gateway shall be able to be configured with the Patient Privacy Policies, Patient Privacy Policy Identifiers (OIDs) and associated information necessary to understand and enforce the Policy in the community where the XCDR Initiating and Responding Gateways operate. The details of this are product-specific and not specified by IHE.
- 740 3. The Initiating Gateway may have business rule capabilities to determine the appropriate confidentiality codes for each document. The details of this are product-specific and not specified by IHE. However, the information about how confidentiality codes are assigned must be part of the published in the community where the XCDR Initiating and Responding Gateways operate.
- 745 4. The Responding Gateway shall be able to be configured with the Patient Privacy Policies, Patient Privacy Policy Identifiers (OIDs) and associated information necessary to understand and enforce the Policies in the community where the XCDR Initiating and Responding Gateways operate. The meanings of the codes on the media must be provided out of band, e.g., by telephone, fax, or email. The details of this are product-specific and not specified by IHE. If the documents are transferred internally within the organization or to other members of the Community served by the Responding Gateway, appropriate internal confidentiality codes shall be applied.
- 750

#### **3.80.4.2 Cross-Gateway Document Provide Response**

755 The Responding Gateway shall send a Cross-Gateway Document Provide Response message when the processing of a Cross-Gateway Document Provide Request message is complete.

##### **3.80.4.2.1 Trigger Events**

The following events can trigger this message:

- Documents were successfully received and processed by the Responding Gateway
- Documents were not successfully received by the Responding Gateway

760 **3.80.4.2.2 Message Semantics**

The Cross-Gateway Document Provide Response message shall carry the status of the requested operation and an error message if the requested operation failed. The conditions of failure and possible error messages are given in the ebRS standard and are the same as those for [ITI-41] in ITI TF-3: 4.2.4 Error Reporting.

765 **3.80.4.2.3 Expected Actions**

The Initiating Gateway now knows that the transaction succeeded/failed and can continue. The document(s) received by the Responding Gateway shall be available for further processing according to the capabilities of the system. These capabilities are not specified by IHE except when the Initiating Gateway is grouped with an actor identified in ITI TF-1: 40.6.

770 **3.80.5 Protocol Requirements**

Implementers of this transaction shall comply with all requirements described in ITI TF-2x: Appendix V: Web Services for IHE Transactions.

The Cross-Gateway Document Provide transaction shall use SOAP12 and MTOM with XOP encoding (labeled MTOM/XOP in this specification). See ITI TF-2x: Appendix V for details.

775

**WSDL Namespace Definitions**

ihe	urn:ihe:iti:xds-b:2007
rs	urn:oasis:names:tc:ebxml-regrep:xsd:rs:3.0
lcm	urn:oasis:names:tc:ebxml-regrep:xsd:lcm:3.0
query	urn:oasis:names:tc:ebxml-regrep:xsd:query:3.0

A full XML Schema Document for the XDS types is available online on the IHE FTP site, see ITI TF-2x: Appendix W.

780 Responding Gateway: These are the requirements for the Cross-Gateway Document Provide transaction presented in the order in which they would appear in the Responding Gateway WSDL definition:

- The following types shall be imported (xsd:import) in the /definitions/types section:
  - namespace="urn:oasis:names:tc:ebxml-regrep:xsd:rs:3.0", schema="rs.xsd"
  - namespace="urn:ihe:iti:xds-b:2007", schemaLocation="IHEXDS.xsd"
- The /definitions/message/part/@element attribute of the Cross-Gateway Document Provide Request message shall be defined as “ihe:ProvideAndRegisterDocumentSetRequest”
- The /definitions/message/part/@element attribute of the Cross-Gateway Document Provide Response message shall be defined as “rs:RegistryResponse”
- Refer to Table 3.80.5-1 below for additional attribute requirements

785

790

795 These are the requirements that affect the wire format of the SOAP message. The other WSDL  
 properties are only used within the WSDL definition and do not affect interoperability. Full  
 sample request and response messages are in ITI TF-2c: 3.80.5.1 Sample SOAP Messages. For  
 informative WSDL for the Responding Gateway see ITI TF-2x: Appendix W. The  
 <ihe:ProvideAndRegisterDocumentSetRequest /> element is defined as:

- One <icm:SubmitObjectsRequest/> element that contains the submission set metadata
- Zero or more <ihe:Document/> elements that contain document content being submitted  
 800 to the Responding Gateway. The <ihe:Document/> element also includes the document  
 id attribute (ihe:Document/@id) of type xsd:anyURI to match the document  
 ExtrinsicObject id in the metadata and providing the necessary linkage

The use of MTOM/XOP is governed by the following rules:

- The Responding Gateway shall accept documents in a Cross Gateway Document Provide  
 transaction in MTOM/XOP format. The response message shall use MTOM/XOP format.
- 805 • The Initiating Gateway shall generate Cross Gateway Document Provide transactions in  
 MTOM/XOP format. It shall accept the response message in MTOM/XOP format.

**Table 3.80.5-1: Additional Attribute Requirements**

Attribute	Value
/definitions/portType/operation @name	DocumentRepository_CrossGatewayDocumentProvide
/definitions/portType/operation/input/@wsaw:A ction	urn:ihe:iti:2015:CrossGatewayDocumentProvide
/definitions/portType/operation/output/@wsaw: Action	urn:ihe:iti:2015:CrossGatewayDocumentProvideResponse
/definitions/binding/operation/soap12:operation/ @soapAction	urn:ihe:iti:2015:CrossGatewayDocumentProvide

### 810 3.80.5.1 Sample SOAP Messages

The samples in the following two sections show a typical SOAP request and its relative SOAP  
 response. The sample messages also show the WS-Addressing headers <Action/>, MessageID/>,  
 <ReplyTo/>...; these WS-Addressing headers are populated according to the ITI TF-2x:  
 Appendix V: Web Services for IHE Transactions. The body of the SOAP message is omitted for  
 815 brevity; in a real scenario the empty element will be populated with the appropriate metadata.

Samples presented in this section are also available online on the IHE FTP site, see ITI TF-2x:  
 Appendix W.

#### 3.80.5.1.1 Sample Cross Gateway Document Provide SOAP Request

##### 3.80.5.1.1.1 Synchronous Web Services Exchange

820 POST /axis2/services/repository HTTP/1.1

```
Content-Type: multipart/related;
boundary=MIMEBoundaryurn_uuid_76A2C3D9BCD3AECFF31217932910180;
type="application/xop+xml";
825 start="<0.urn:uuid76A2C3D9BCD3AECFF31217932910181@apache.org>"; start-
info="application/soap+xml";
action="urn:ihe:iti:2015:CrossCommunityDocumentProvide"
User-Agent: Axis2
Host: localhost:4040
Content-Length: 4567
830
--MIMEBoundaryurn_uuid_76A2C3D9BCD3AECFF31217932910180
Content-Type: application/xop+xml; charset=UTF-8; type="application/soap+xml"
Content-Transfer-Encoding: binary
Content-ID: <0.urn:uuid:76A2C3D9BCD3AECFF31217932910181@apache.org>
835
<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope xmlns:soapenv="http://www.w3.org/2003/05/soap-envelope"
xmlns:wsa="http://www.w3.org/2005/08/addressing">
  <soapenv:Header>
840   <wsa:To>http://localhost:4040/axis2/services/test11966a</wsa:To>
   <wsa:MessageID>urn:uuid:76A2C3D9BCD3AECFF31217932910053</wsa:MessageID>
   <ihe:homeCommunityBlock xmlns:ihe="urn:ihe.net:iti:xdr:2014"
xmlns:env="http://www.w3.org/2003/05/soap-envelope"
845   env:role="urn:ihe.net:iti:xd:id" env:relay="true">
     <ihe:homeCommunityId>urn:oid:1.2.3.4.5.6.2333.23</ihe:homeCommunityId>
     </ihe:homeCommunityBlock>
     <wsa:Action
soapenv:mustUnderstand="1">urn:ihe:iti:2015:CrossCommunityDocumentProvide
850   </wsa:Action>
   </soapenv:Header>
   <soapenv:Body>
     <xdsb:ProvideAndRegisterDocumentSetRequest xmlns:xdsb="urn:ihe:iti:xds-
b:2007">
855       <lcm:SubmitObjectsRequest xmlns:lcm="urn:oasis:names:tc:ebxml-
regrep:xsd:lcm:3.0">
         <rim:RequestSlotList xmlns:rim="urn:oasis:names:tc:ebxml-
regrep:xsd:rim:3.0">
860           <rim:Slot name="homeCommunityId">
             <rim:ValueList>
               <rim:Value>urn:oid:1.2.3.4.5.6.2333.23</rim:Value>
             </rim:ValueList>
           </rim:Slot>
         </rim:RequestSlotList>
         <rim:RegistryObjectList xmlns:rim="urn:oasis:names:tc:ebxml-
865 regrep:xsd:rim:3.0">
           <!-- Registry Metadata goes here -->
         </rim:RegistryObjectList>
         </lcm:SubmitObjectsRequest>
         <xdsb:Document id="Document01">
870       <xop:Include xmlns:xop="http://www.w3.org/2004/08/xop/include"
href="cid:1.urn:uuid:76A2C3D9BCD3AECFF3121793290229@apache.org"/>
       </xdsb:Document>
```

```
875 </xdsb:ProvideAndRegisterDocumentSetRequest>
    </soapenv:Body>
</soapenv:Envelope>

--MIMEBoundaryurn_uuid_76A2C3D9BCD3AECFF31217932910180
Content-Type: text/plain
Content-Transfer-Encoding: binary
880 Content-ID: <1.urn:uuid:76A2C3D9BCD3AECFF31217932910229@apache.org>

Ceci est mon Document.
Il est très bien!

885 --MIMEBoundaryurn_uuid_76A2C3D9BCD3AECFF31217932910180--
```

### 3.80.5.1.1.2 Asynchronous Web Services Exchange

```
<?xml version="1.0" encoding="UTF-8"?>
<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
890 xmlns:a="http://www.w3.org/2005/08/addressing">
  <s:Header>
    <a:Action
s:mustUnderstand="1">urn:ihe:iti:2015:CrossGatewayDocumentProvide</a:Action>
    <a:MessageID>urn:uuid:6d296e90-e5dc-43d0-b455-7c1f3eb35d83</a:MessageID>
    <a:ReplyTo>
895 <a:Address>http://192.168.2.4:9080/XdsService/DocumentSourceReceiver.svc</a:Address>
    <ihe:homeCommunityBlock xmlns:ihe="urn:ihe.net:iti:xdr:2014"
xmlns:env="http://www.w3.org/2003/05/soap-envelope"
900 env:role="urn:ihe.net:iti:xd:id" env:relay="true">
    <ihe:homeCommunityId>urn:oid:1.2.3.4.5.6.2333.23</ihe:homeCommunityId>
    </ihe:homeCommunityBlock>
    </a:ReplyTo>
    <a:To
905 s:mustUnderstand="1">http://localhost:2647/XdsService/DocumentRepositoryReceiver.svc</a:To>
  </s:Header>
  <s:Body>
    <ProvideAndRegisterDocumentSetRequest xmlns="urn:ihe:iti:xds-b:2007"
910 xmlns:lcm="urn:oasis:names:tc:ebxml-regrep:xsd:lcm:3.0"
xmlns:rsm="urn:oasis:names:tc:ebxml-regrep:xsd:rsm:3.0"
xmlns:rs="urn:oasis:names:tc:ebxml-regrep:xsd:rs:3.0">
    <lcm:SubmitObjectsRequest>
    <!--Rest of SubmitObjectsRequest message goes here -->
915 </lcm:SubmitObjectsRequest>
    <Document
id="Document01">UjBsR09EbGhjz0dTQUxNQUFUUNBRU1tQ1p0dU1GUXhEUzhi</Document>
    </ProvideAndRegisterDocumentSetRequest>
    </s:Body>
920 </s:Envelope>
```

### 3.80.5.1.2 Sample ... Document SOAP Response

#### 3.80.5.1.2.1 Synchronous Web Services Exchange

```
925 <?xml version="1.0" encoding="UTF-8"?>
    <s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
    xmlns:a="http://www.w3.org/2005/08/addressing">
      <s:Header>
        <a:Action
s:mustUnderstand="1">urn:ihe:iti:2007:CrossGatewayDocumentProvideResponse</a:
Action>
930 <a:RelatesTo>urn:uuid:6d296e90-e5dc-43d0-b455-7c1f3eb35d83</a:RelatesTo>
      </s:Header>
      <s:Body>
        <rs:RegistryResponse xmlns:rs="urn:oasis:names:tc:ebxml-regrep:xsd:rs:3.0"
status="urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:Success"/>
935 </s:Body>
    </s:Envelope>
```

#### 3.80.5.1.2.2 Asynchronous Web Services Exchange

```
940 <?xml version="1.0" encoding="UTF-8"?>
    <s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
    xmlns:a="http://www.w3.org/2005/08/addressing">
      <s:Header>
        <a:Action
s:mustUnderstand="1">urn:ihe:iti:2007:CrossGatewayDocumentProvideResponse</a:
Action>
945 <a:MessageID>urn:uuid:D6C21225-8E7B-454E-9750-21622C099DB</a:MessageID>
        <a:RelatesTo>urn:uuid:6d296e90-e5dc-43d0-b455-7c1f3eb35d83</a:RelatesTo>
        <a:To
s:mustUnderstand="1">http://localhost:2647/XdsService/DocumentSourceReceiver.
svc</a:To>
950 </s:Header>
      <s:Body>
        <rs:RegistryResponse xmlns:rs="urn:oasis:names:tc:ebxml-regrep:xsd:rs:3.0"
status="urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:Success"/>
955 </s:Body>
    </s:Envelope>
```

### 3.80.6 Security Considerations

This transaction assumes that the communities that are using Initiating Gateways and Responding Gateways have an agreement defining when they can interchange PHI.

### 3.80.7 Audit Record Considerations

960 The Cross Community Document Provide Transaction is either a PHI-Import event or a PHI-Export event, depending on actor, as defined in ITI TF-2a: Table 3.20.6-1, with the following exceptions.

These audit messages are identical to [ITI-41] with the exception of the EventTypeCode and the inclusion of homeCommunityId.



965 **3.80.7.1 Initiating Gateway audit message:**

	Field Name	Opt	Value Constraints
<b>Event</b> AuditMessage/ EventIdentification	EventID	M	EV(110106, DCM, “Export”)
	EventActionCode	M	“R” (Read)
	<i>EventDateTime</i>	<i>M</i>	<i>not specialized</i>
	<i>EventOutcomeIndicator</i>	<i>M</i>	<i>not specialized</i>
	EventTypeCode	M	EV(“ITI-80”, “IHE Transactions”, “CrossGatewayDocumentProvide”)
Source (Document Source) (1)			
Human Requestor (0..n)			
Destination (Document Repository) (1)			
Audit Source (Document Source) (1)			
Patient (1)			
SubmissionSet (1)			

**Where:**

<b>Source</b> AuditMessage/ ActiveParticipant	UserID	M	If Asynchronous Web Services Exchange is being used, the content of the <wsa:ReplyTo/> element. Otherwise, not specialized.
	AlternativeUserID	M	the process ID as used within the local operating system in the local system logs.
	<i>UserName</i>	<i>U</i>	<i>not specialized</i>
	<i>UserIsRequestor</i>	<i>U</i>	<i>not specialized</i>
	RoleIDCode	M	EV(110153, DCM, “Source”)
	NetworkAccessPointTypeCode	M	“1” for machine (DNS) name, “2” for IP address
	NetworkAccessPointID	M	The machine name or IP address

970

<b>Human Requestor (if known)</b> AuditMessage/ ActiveParticipant	UserID	M	Identity of the human that initiated the transaction.
	<i>AlternativeUserID</i>	<i>U</i>	<i>not specialized</i>
	<i>UserName</i>	<i>U</i>	<i>not specialized</i>
	<i>UserIsRequestor</i>	<i>U</i>	<i>not specialized</i>
	RoleIDCode	U	Access Control role(s) the user holds that allows this transaction.
	NetworkAccessPointTypeCode	NA	
	NetworkAccessPointID	NA	

975

<b>Destination</b> AuditMessage/ ActiveParticipant	UserID	M	SOAP endpoint URI.
	<i>AlternativeUserID</i>	<i>U</i>	<i>not specialized</i>
	<i>UserName</i>	<i>U</i>	<i>not specialized</i>
	UserIsRequestor	M	“false”
	RoleIDCode	M	EV(110152, DCM, “Destination”)
	NetworkAccessPointTypeCode	M	“1” for machine (DNS) name, “2” for IP address
	NetworkAccessPointID	M	The machine name or IP address
	HomeCommunityID	M	The homeCommunityId of the destination intended recipient

<b>Audit Source</b> AuditMessage/ AuditSourceIdentification	<i>AuditSourceID</i>	<i>U</i>	<i>not specialized</i>
	<i>AuditEnterpriseSiteID</i>	<i>U</i>	<i>not specialized</i>
	<i>AuditSourceTypeCode</i>	<i>U</i>	<i>not specialized</i>

<b>Patient</b> (AuditMessage/ ParticipantObjectIdentification)	ParticipantObjectTypeCode	M	“1” (Person)
	ParticipantObjectTypeCodeRole	M	“1” (Patient)
	<i>ParticipantObjectDataLifeCycle</i>	<i>U</i>	<i>not specialized</i>
	<i>ParticipantObjectIDTypeCode</i>	<i>M</i>	<i>not specialized</i>

	<i>ParticipantObjectSensitivity</i>	<i>U</i>	<i>not specialized</i>
	ParticipantObjectID	<b>M</b>	The patient ID in HL7 CX format.
	<i>ParticipantObjectName</i>	<i>U</i>	<i>not specialized</i>
	<i>ParticipantObjectQuery</i>	<i>U</i>	<i>not specialized</i>
	<i>ParticipantObjectDetail</i>	<i>U</i>	<i>not specialized</i>

<b>Submission Set</b> (AuditMessage/ ParticipantObjectIdentification)	ParticipantObjectTypeCode	<b>M</b>	“2” (System)
	ParticipantObjectTypeCodeRole	<b>M</b>	“20” (job)
	<i>ParticipantObjectDataLifeCycle</i>	<i>U</i>	<i>not specialized</i>
	ParticipantObjectIDTypeCode	<b>M</b>	EV(“urn:uuid:a54d6aa5-d40d-43f9-88c5-b4633d873bdd”, “IHE XDS Metadata”, “submission set classificationNode”)
	<i>ParticipantObjectSensitivity</i>	<i>U</i>	<i>not specialized</i>
	ParticipantObjectID	<b>M</b>	The submissionSet unique ID
	<i>ParticipantObjectName</i>	<i>U</i>	<i>not specialized</i>
	<i>ParticipantObjectQuery</i>	<i>U</i>	<i>not specialized</i>
	<i>ParticipantObjectDetail</i>	<i>U</i>	<i>not specialized</i>

980 **3.80.7.2 Responding Gateway audit message:**

	<b>Field Name</b>	<b>Opt</b>	<b>Value Constraints</b>
<b>Event</b> AuditMessage/ EventIdentification	EventID	<b>M</b>	EV(110107, DCM, “Import”)
	EventActionCode	<b>M</b>	“C” (Create)
	<i>EventDateTime</i>	<i>M</i>	<i>not specialized</i>
	<i>EventOutcomeIndicator</i>	<i>M</i>	<i>not specialized</i>
	EventTypeCode	<b>M</b>	EV(“ITI-80”, “IHE Transactions”, “CrossGatewayDocumentProvide”)
Source (Document Source) (1)			
Destination (Document Repository or Document Recipient) (1)			
Audit Source (Document Repository or Document Recipient) (1)			
Patient (1)			
SubmissionSet (1)			

**Where:**

<b>Source</b> AuditMessage/ ActiveParticipant	UserID	M	If Asynchronous Web Services Exchange is being used, the content of the <wsa:ReplyTo/> element. Otherwise, not specialized.
	<i>AlternativeUserID</i>	<i>U</i>	<i>not specialized</i>
	<i>UserName</i>	<i>U</i>	<i>not specialized</i>
	<i>UserIsRequestor</i>	<i>U</i>	<i>not specialized</i>
	RoleIDCode	M	EV(110153, DCM, “Source”)
	NetworkAccessPointTypeCode	M	“1” for machine (DNS) name, “2” for IP address
	NetworkAccessPointID	M	The machine name or IP address

<b>Destination</b> AuditMessage/ ActiveParticipant	UserID	M	SOAP endpoint URI
	AlternativeUserID	M	the process ID as used within the local operating system in the local system logs.
	<i>UserName</i>	<i>U</i>	<i>not specialized</i>
	UserIsRequestor	M	“false”
	RoleIDCode	M	EV(110152, DCM, “Destination”)
	NetworkAccessPointTypeCode	M	“1” for machine (DNS) name, “2” for IP address
	NetworkAccessPointID	M	The machine name or IP address
	HomeCommunityID	M	The homeCommunityId of the destination intended recipient

<b>Audit Source</b> AuditMessage/AuditSourceIdentification	<i>AuditSourceID</i>	<i>U</i>	<i>not specialized</i>
	<i>AuditEnterpriseSiteId</i>	<i>U</i>	<i>not specialized</i>
	<i>AuditSourceTypeCode</i>	<i>U</i>	<i>not specialized</i>

<b>Patient</b> (AuditMessage/ ParticipantObjectIdentification)	ParticipantObjectTypeCode	M	“1” (Person)
	ParticipantObjectTypeCodeRole	M	“1” (Patient)
	<i>ParticipantObjectDataLifeCycle</i>	<i>U</i>	<i>not specialized</i>
	<i>ParticipantObjectIDTypeCode</i>	<i>M</i>	<i>not specialized</i>

	<i>ParticipantObjectSensitivity</i>	<i>U</i>	<i>not specialized</i>
	ParticipantObjectID	M	The patient ID in HL7 CX format.
	<i>ParticipantObjectName</i>	<i>U</i>	<i>not specialized</i>
	<i>ParticipantObjectQuery</i>	<i>U</i>	<i>not specialized</i>
	<i>ParticipantObjectDetail</i>	<i>U</i>	<i>not specialized</i>

985

<b>Submission Set</b> (AuditMessage/ ParticipantObjectIdentification)	ParticipantObjectTypeCode	M	“2” (System)
	ParticipantObjectTypeCodeRole	M	“20” (job)
	<i>ParticipantObjectDataLifeCycle</i>	<i>U</i>	<i>not specialized</i>
	ParticipantObjectIDTypeCode	M	EV(“urn:uuid:a54d6aa5-d40d-43f9-88c5-b4633d873bdd”, “IHE XDS Metadata”, “submission set classificationNode”)
	<i>ParticipantObjectSensitivity</i>	<i>U</i>	<i>not specialized</i>
	ParticipantObjectID	M	The submissionSet unique ID
	<i>ParticipantObjectName</i>	<i>U</i>	<i>not specialized</i>
	<i>ParticipantObjectQuery</i>	<i>U</i>	<i>not specialized</i>
	<i>ParticipantObjectDetail</i>	<i>U</i>	<i>not specialized</i>