IHE Change Proposal

Tracking information

IHE Domain:	IT Infrastructure
Change Proposal ID:	CP-ITI-1322
Change Proposal Status:	Final Text
Date of last update:	July 18, 2025
Person assigned:	Alessia Favero

Change Proposal Summary Information

XCA federation of MHDS community	
Submitter's Name(s) and email address(es):	Alessia Favero - afavero@consorzioarsenal.it
Submission Date:	01-05-2025
Profile(s) affected:	Cross-Community Access (XCA), Cross-Community Patient Discovery (XCPD), Mobile Health Document Sharing (MHDS)
Actor(s) affected:	Responding Gateway
IHE Technical Framework or Supplement modified:	IHE IT Infrastructure (ITI) Technical Framework, Revision 20.0, August 4, 2023
Volume(s) and Section(s) affected:	Volume 1, Section 18.2.3, Section 18.2.3.2, Section 18.2.3.3, Section 27.2, Section 27.2.3, Section 1.50, Section 3.38.4.1.3.3

Detailed Rationale for Change:

In the introduction at Section 18 of the Cross-Community Access Profile is explicit that:

> The Cross-Community Access Profile supports the means to query and retrieve patient relevant medical data held by other communities. [...]. Such communities may be XDS Affinity Domains which define document sharing using the XDS Profile or any other communities, no matter what their internal sharing structure.

Also, in the introduction at Section 27 of the Cross-Community Patient Discovery is explicit that:

> The Cross-Community Patient Discovery (XCPD) Profile supports the means to locate communities that hold patient relevant health data and the translation of patient identifiers across communities holding the same patient's data. [...]. Such communities may be XDS Affinity Domains which define document sharing using the XDS Profile or any other communities, no matter what their internal sharing structure.

Given that such other communities could be MHDS communities, it would therefore be useful to consider the coupling of the Responding Gateway with an MHD Document Consumer in order to make it able to perform MHD queries, thus allowing an MHDS community to federate. Also, it would be useful to consider the coupling of the Responding Gateway with a Patient Demographics Consumer in order to make it able to respond to XCPD queries.

Proposed Change(s)

Update Section 18.2.3 Grouping Rules by the following:

18.2.3 Grouping Rules

Grouping with a Document Consumer is used in situations where an Initiating Gateway and/or Responding Gateway are supporting an XDS Affinity Domain.

When an Initiating Gateway is supporting an XDS Affinity Domain, it can choose to query and retrieve from local actors in addition to remote communities. This is accomplished by grouping the Initiating Gateway with a Document Consumer Actor. This grouping allows Document Consumers such as EHR/PHR/etc. systems to query the Initiating Gateway to retrieve document information and content from both the local XDS Affinity Domain as well as remote communities. For details see Section 18.2.3.1. An Initiating Gateway that is not grouped with a Document Consumer is only able to return results from remote communities, so local EHR/PHR/etc. systems (Document Consumer Actors) must direct separate query and document retrieve transactions internally and externally.

When a Responding Gateway is supporting an XDS Affinity Domain, it may resolve Cross Gateway Query and Cross Gateway Retrieve Transactions by grouping with a Document Consumer and using the Registry Stored Query and Retrieve Document Set transactions. For details see Section 18.2.3.2

Grouping with a MHD Document Consumer is used in situations where a Responding Gateway belongs to a community with an MHD Document Responder.

When a Responding Gateway belongs to an MHDS community, it may resolve Cross Gateway Query and Cross Gateway Retrieve transactions by grouping with an MHD Document Consumer and using the Find Document Lists, Find Document References and Retrieve Document transactions. For details see Section 18.2.3.3

A Responding Gateway MAY use non-IHE interactions to collect local information in response to a Cross Gateway Query or Cross Gateway Retrieve. These proprietary interactions are not further described within any IHE profile.

Update Section 18.2.3.2 Responding Gateway grouped with XDS Document Consumer with the following:

18.2.3.2 Responding Gateway grouped with XDS Document Consumer

Responding Gateways that are grouped with a Document Consumer:

- shall initiate a Registry Stored Query [ITI-18] transaction to a local Document Registry to query local information in response to a received Cross Gateway Query [ITI-38]. The Document Registry response must be augmented with the homeCommunityId of the Responding Gateway's community prior to returning in the response to the Cross Gateway Query.
- shall initiate a Retrieve Document Set [ITI-43] transaction to a local Document Repository to retrieve local information in response to a Cross Gateway Retrieve [ITI-39].

~~**When a Responding Gateway is not grouped with a Document Consumer it is expected to be using non-IHE specified interactions to collect local information in response to a Cross Gateway Query or Cross Gateway Retrieve. These proprietary interactions are not further described within any IHE profile.**~~

Add Section 18.2.3.3 Responding Gateway grouped with MHD Document Consumer with the following:

18.2.3.3 Responding Gateway grouped with MHD Document Consumer

Responding Gateways that are grouped with an MHD Document Consumer:

- **shall initiate a Find Document Lists [ITI-66] or Find Document References [ITI-67] transaction to a local MHD Document Responder to query local information in response to a received Cross Gateway Query [ITI-38] according to Table 18.2.3.3-1**
- **shall initiate a Retrieve Document [ITI-68] transaction to a local MHD Document Responder to retrieve local information in response to a Cross Gateway Retrieve [ITI-39]**
- **in some cases, it will be necessary to invoke the MHD Document Consumer multiple times and combine multiple response messages to form the response**

Table 18.2.3.3-1: XDS query mapping to MHD transactions

XDS Query	MHD Transaction
FindDocuments	Find Document References
FindSubmissionSets	Find Document Lists
FindFolders	Find Document Lists
GetAll	Find Document References Find Document Lists
GetDocuments	Find Document References
GetFolders	Find Document Lists
GetAssociations	Find Document References Find Document Lists
GetDocumentsAndAssociations	Find Document References
GetSubmissionSets	Find Document Lists
GetSubmissionSetAndContents	Find Document References Find Document Lists

GetFolderAndContents	**Find Document References** **Find Document Lists**
GetFoldersForDocument	**Find Document Lists**
GetRelatedDocuments	**Find Document References**
FindDocumentsByReferenceId	**Find Document References**

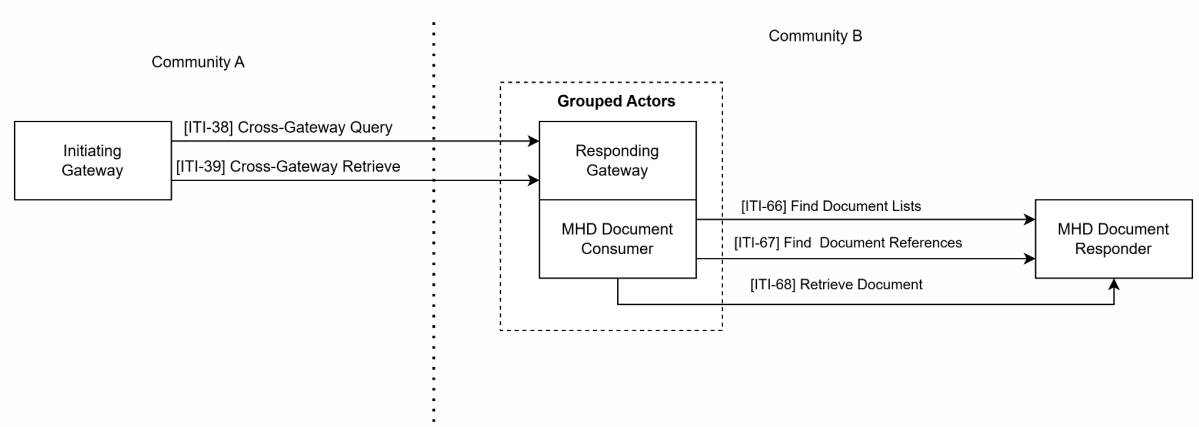

Figure 18.2.3.3-1: Responding Gateway grouped with MHD Document Consumer

Update Section 27.2 XCPD Actor Options with the following:

27.2 XCPD Actor Options

Options that may be selected for this Integration Profile are listed in Table 27.2-1 along with the actors to which they apply. Dependencies between options when applicable are specified in notes.

Table 27.2-1: XCPD - Actors and Options

Actor	Options	Vol. & Section
Initiating Gateway	Asynchronous Web Services Exchange	ITI TF-1: 27.2.1
	Deferred Response	ITI TF-1: 27.2.2
Responding Gateway	Deferred Response	ITI TF-1: 27.2.2
	MHDS Federation Option	**ITI TF-1: 27.2.3**

Add Section 27.2.3 MHDS Federation Option with the following:

27.2.3 MHDS Federation Option

Grouping with a Patient Demographics Consumer is used in situations where a Responding Gateway belongs to a MHDS community which defines document sharing using the MHD Profile.

When a Responding Gateway belongs to an MHDS community, it may resolve Cross Gateway Patient Discovery transactions by grouping with a Patient Demographics Consumer implementing either the Match Operation Option and using the Patient Demographics Match [ITI-119] transaction or implementing the Patient Search Option and using the Mobile Patient Demographics Query [ITI-78] transaction.

When a Responding Gateway is not grouped with a Patient Demographics Consumer it is expected to be using non-IHE specified interactions to collect local information in response to a Cross Gateway Patient Discovery. These proprietary interactions are not further described within any IHE profile.

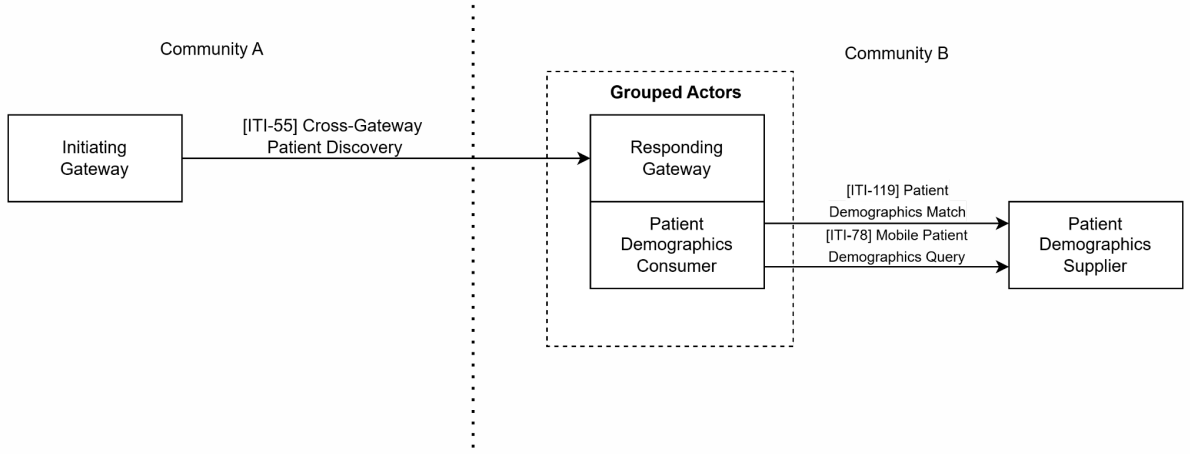

Figure 27.2.3-1: Responding Gateway grouped with Patient Demographics Consumer

Update Section 1:50. MHDS Volume 1 with the following:

1.50. MHDS Volume 1

The MHDS Profile specifies how a collection of IHE profiles can be used by communities for exchanging health information. These IHE profiles include support for patient identification, health document location and retrieval, provider directories, and the protection of privacy and security. MHDS shows how several IHE profiles work together to provide a standards-based, interoperable approach to community health information sharing.

The central HIE infrastructure defined in this profile might be a single FHIR Server implementing all the defined central service actors or may be virtual cloud of the systems implementing the defined profile actors. These deployment models allow for modularity where each service function could be provided by different vendors, leveraging as much as possible from a reference implementation of a FHIR Server, and also leverage as much as possible of modularity enabled by defined profiles.

Federation of MHDS communities can be performed via the grouping of a Responding Gateway with an MHD Document Consumer as described in XCA profile at Section 18.2.3.3 and via the grouping of a Responding Gateway with a Patient Demographics Consumer as described in XCPD profile at Section 27.2.3

Core business functions provided by MHDS Profile:

[...]

Add Section 3.38.4.1.3.3 MHD Grouping Considerations with the following:

3.38.4.1.3.3 MHD Grouping Considerations

When multiple codes are allowed in the FHIR Resource but the XDS metadata supports only a single code (E.g., DocumentReference.type mapped to DocumentEntry.typeCode), the Responding Gateway SHALL select one of the codes to use in XDS metadata. The Responding Gateway SHALL select a code that matches the inbound query. If multiple codes match the inbound query, or the inbound query did not specify the relevant parameter, then the Responding Gateway SHOULD select the code that is deemed to be the best representation according to its business rules.

The CodeableConcept FHIR datatype allows for the assignment of codes with similar meanings to accommodate systems with differing vocabularies. There is no equivalent in XDS metadata, so implementers should be aware that the equivalence of codes will be lost when converting to XDS.