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QHIN Conformance Testing Process: Transport Test Cases

For Candidate QHIN Conformance Testing

Version History

Version	Description of Change	Version Date
1.1	Initial Publication (derived from 1.0 document). This version of the Transport Test Cases aligns with QTF V1.1 and IAS SOP constraints. Please note change history for each test case defined within this document separately for a further summary of changes.	March 18, 2024
2.0	Initial Publication (derived from 1.1 documentation), This version of the Transport Test Cases aligns with QTF V2.0 and associated SOP constraints. Please note change history for each test case defined within this document separately for a further summary of changes.	March 25, 2025
2.1	Updated process for submitting audit messages and enabling IAS tests. Added clarifying language around SOAP Fault expectations and security policy exceptions.	July 3, 2025

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1. INTRODUCTION, SCOPE, ORGANIZATION

Please see the *QHIN Conformance Testing Process: Overview* for higher level information about the testing environment. That document includes a broad overview of the process, applications, and documentation for the QHIN Conformance Testing Process, a list of all QHIN test cases, documentation, and the conformity assessment checklists for the QHIN Conformance Testing Process.

This document, *QHIN Conformance Testing Process: Transport Test Cases*, describes tests under three broad categories defined by the QTF. These categories are:

- Patient Discovery (PD) Query
- Document Query (QD) and Retrieve (RD)
- Message Delivery (MD)

Tests for some of the other broad categories are defined in the *QHIN Conformance Testing Process: Security Test Cases* document. Both documents may touch on other requirements defined in the QTF. These test cases are currently in effect and are required for organizations wishing to onboard. For more details: <https://rce.sequoiaproject.org/tefca-and-rce-resources/>

Chapter 2 describes the test data referenced by this document and procedures for loading that data into the System Under Test (SUT). Chapter 3 is devoted to tests for a QHIN candidate when acting in the role as an Initiating Gateway. Chapter 4 describes the tests for a QHIN candidate when acting in the role of a Responding Gateway.

1.1 Terminology

TLS 1.3/1.2: Used in this document as a shorthand representation of the requirements specified in QTF-9

All connections using TLS MUST attempt to be negotiated as TLS 1.3 prior to falling back to TLS 1.2.

ATNA Syslog requirements: Used in this document to mean:

- Systems may store logging information in their preferred internal format,
- Systems are required to submit Syslog messages that conform to ATNA requirements as part of the testing process.

2. PATIENT DATA REQUIRED FOR TESTING

Test Data Load Set – The *QHIN Conformance Testing Process: Initialization Test Cases* document contains the required data and associated document files to execute the test cases within the QHIN Conformance Testing Process including patient demographics, document metadata, as well as the mapping of the documents to the patients. The data must be loaded into the SUT exactly as prescribed in the QTF Test Data load Set Spreadsheet.

3. TESTS FOR INITIATING QHIN CANDIDATE

As discussed in *QHIN Conformance Testing Process: Overview*, the QHIN candidate receives a Query Solicitation from a participant in its QHIN network triggering a QHIN query. Any internal communication and triggers related to this Query Solicitation are left to the QHIN candidate to implement and are outside the scope of QHIN candidate testing. The test procedures described in this document require the Initiating QHIN candidate to simulate those inputs that will trigger the QHIN query. Test cases are defined to simulate typical workflows a QHIN candidate might encounter, but do not represent all possible workflows.

3.1. Patient Discovery Query

The tests defined in this section use two test patients:

- QTF TEST QTFTEST-001
- QTF TEST QTFTEST-002

These two patients will also be used in the Message Delivery and Document Query/Retrieve tests. The Initiating Gateway will want to complete the tests in this section to determine the patient identifier used in those later tests.

IG 2.0 Patient Discovery Secured

Test Case ID:	IG 2.0 Patient Discovery Secured
Title:	Initiating Gateway performs Patient Discovery with all security provisions
IHE Profile:	Cross-community Patient Discovery (XCPD)
Flow:	Basic Success
Optionality:	Required
Test Tool	Gazelle Patient Manager

Purpose/Description

The system under test performs Patient Discovery queries with all security provisions. Those provisions include:

1. All required SAML assertions in the PD Request
2. Sending at least one request for each of the required values of Exchange Purpose listed below. The values refer to the uncoded Exchange Purpose and not the coded value included in transactions.
 - a. Treatment
 - b. Payment
 - c. Health Care Operations
 - d. Public Health
 - e. Individual Access Services
 - f. Government Benefits Determination
3. Appropriate TLS 1.3/1.2 communication with mutual authentication
4. Appropriate audit records generated

System under test is also demonstrating it can send a properly formatted IHE Cross Gateway Patient Discovery request with values for:

- LivingSubjectName
- LivingSubjectAdministrativeGender
- LivingSubjectBirthTime

NB: In production, the initiating system is required to send all known demographics as part of this query and not just the subset listed above.

Preconditions

Data Load Set: QTF Data Load Set

Test Case Patient Association: QTF TEST QTFTEST-002

Test Steps

1. The SUT sends separate PD Request messages with the properly coded value for each of the defined values of Exchange Purpose. Coded values for Exchange Purpose are defined in Table 1 of Standard Operating Procedure (SOP): Exchange Purposes (XPs), Version 2.0.
 - T-TRTMNT, 2.16.840.1.113883.3.7204.1.5.2.1
 - T-PYMNT, 2.16.840.1.113883.3.7204.1.5.2.1
 - T-HCO, 2.16.840.1.113883.3.7204.1.5.2.1
 - T-PH, 2.16.840.1.113883.3.7204.1.5.2.1
 - T-IAS, 2.16.840.1.113883.3.7204.1.5.2.1
 - T-GOVDTRM, 2.16.840.1.113883.3.7204.1.5.2.1
2. The SUT sends an immediate PD Request to the Testing Tool with the following parameters, with values taken from patient QTF TEST QTFTEST-002; additional demographic parameters that will narrow the query scope are allowed:
 - LivingSubjectName
 - LivingSubjectAdministrativeGender
 - LivingSubjectBirthTime
3. The SUT includes SAML assertions in the PD Request per the IHE XUA Integration Profile. The PD Request for this test will include:
 - Exchange Purpose: Coded value corresponding to one of the Exchange Purpose values listed in Test Step 1.
 - User Authentication: User information required; specific content depends on Initiating QHIN.
4. The SUT performs the PD Request using:
 - TLS 1.3/1.2 with appropriate parameters
 - Mutual authentication
 - The test certificate issued to the system under test
5. The Testing Tool returns a PD Response with a match for patient QTF TEST QTFTEST-002
6. QHIN candidates submit the relevant extract of the ATNA log entries for the six PD requests listed above (one for each Exchange Purpose). These audit messages must be validated using Gazelle EVS Client and the permanent links submitted by email to ghintesting@sequoiaproject.org.

Notes:

- 1) The T-IAS purpose requires the inclusion of an id token in the SAML assertions. Please see Exchange Purpose Implementation SOP: Individual Access Services, Version 2.1, April 25, 2025

Assessment

1. Verify that the SUT generates separate PD Request messages for each of the required values of Exchange Purpose:
 - Treatment (T-TRTMNT, 2.16.840.1.113883.3.7204.1.5.2.1)
 - Payment (T-PYMNT, 2.16.840.1.113883.3.7204.1.5.2.1)
 - Health Care Operations (T-HCO, 2.16.840.1.113883.3.7204.1.5.2.1)
 - Public Health (T-PH, 2.16.840.1.113883.3.7204.1.5.2.1)
 - Individual Access Services (T-IAS, 2.16.840.1.113883.3.7204.1.5.2.1)
 - i. (see Note 1 above)
 - Government Benefits Determination (T-GOVDTRM, 2.16.840.1.113883.3.7204.1.5.2.1)
2. Verify that each request contains user information in conformance with QTF-17, QTF-18, and QTF-19.
3. Verify that each request is fully compliant with all IHE XUA requirements.
4. Verify the SUT generates an audit message for each request and that:
 - Each audit message conforms to ATNA Syslog requirements for ITI-55.
 - Each audit message contains appropriate content for the ITI-55 transaction.
5. Examine the PD Request in the Test Tool. Verify the SUT conforms to the following:
 - QTF conformance statements QTF-24-QTF-27 and QTF-37.
 - PD Request contains correctly formatted SAML data that conveys user authentication information.
6. Verify that each request is made using an HTTPS transaction using TLS 1.3/1.2 and required TLS parameters.
7. Verify that each request is made using the test certificate that was assigned to the system under test.

Referenced Specifications

IHE XCPD Profile Specification	IHE Cross-Community Patient Discovery (XCPD) profile - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
IHE Audit Trail and Node Authentication (ATNA)	<i>IHE Audit Trail and Node Authentication (ATNA) profile</i> - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
Secure Use of Transport Layer Security (TLS)	<i>Recommendations for Secure Use of Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS)</i> (IETF BCP 195) - available at: https://tools.ietf.org/html/bcp195

Date	Changes
December 6, 2022	Initial Draft Version
May 31, 2023	Remove incorrect Purpose of Use. Augment list to include all required values for Purpose of Use.
March 18, 2024	Updated QTF assertion numbers per QTF 1.1 Add coded values for Exchange Purpose as defined in QTF 1.1 Enumerate the set of demographics required for patient identification
January 27, 2025	Updated QTF assertion numbers per QTF 2.0. Relabel for QTF 2.0
July 3, 2025	Updated process for submitting audit messages, and enabling IAS tests

IG 2.0 Optional Patient Discovery

Test Case ID:	IG 2.0 Optional Patient Discovery
Title:	Initiating Gateway Sends Optional Patient Discovery Transactions
IHE Profile:	Cross-community Patient Discovery (XCPD)

Test Case ID:	IG 2.0 Optional Patient Discovery
Flow:	Basic Success
Optionality:	Optional
Test Tool	Gazelle Patient Manager

Purpose/Description

These are a series of optional tests that are not to be submitted. They provide a mechanism to explore other paths through the Initiating Gateway, such as searching for a different test patient. The Test Manager will not evaluate results for these tests.

Preconditions

Data Load Set: QTF Data Load Set

Search for Test Patient QTF TEST QTFTEST-001

1. The SUT sends an immediate PD Request to the Testing Tool with at least the following parameters, with values taken from patient QTF TEST QTFTEST-001; additional demographic parameters that will narrow the query scope are allowed:
 - LivingSubjectName
 - LivingSubjectAdministrativeGender
 - LivingSubjectBirthTime
2. The Testing Tool returns a PD Response with a match for patient QTF TEST QTFTEST-001.
3. Review the PD Response from the simulator. Ensure that the response includes the demographic and patient identifier information for QTFTEST-001.

Patient Discovery with Exchange Purpose: T-TRTMNT

1. The SUT sends an immediate PD Request to the Testing Tool with the following parameters, with values taken from patient QTF TEST QTFTEST-001; additional demographic parameters that will narrow the query scope are allowed:
 - LivingSubjectName
 - LivingSubjectAdministrativeGender
 - LivingSubjectBirthTime
2. The SUT includes SAML assertions in the ITI-55 Transaction per the IHE XUA Integration Profile.

- Exchange Purpose: Treatment (T-TRTMNT, 2.16.840.1.113883.3.7204.1.5.2.1)
 - User Authentication: User information required; specific content depends on Initiating QHIN.
3. The Testing Tool returns a PD Response with a match for patient QTF TEST QTFTEST-001.
 4. Examine the PD Request in the Test Tool. Verify the SUT conforms to the following:
 - QTF conformance statements QTF-24-QTF-27 and QTF-37
 5. Examine the PD Request in the Test Tool. Verify the request contains:
 - Coded value for Exchange Purpose:
 - User information per QTF-17, QTF-18, QTF-19

Referenced Specifications

IHE XCPD Profile Specification	IHE Cross-Community Patient Discovery (XCPD) profile - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
IHE Audit Trail and Node Authentication (ATNA)	<i>IHE Audit Trail and Node Authentication (ATNA) profile</i> - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
Secure Use of Transport Layer Security (TLS)	<i>Recommendations for Secure Use of Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS)</i> (IETF BCP 195) - available at: https://tools.ietf.org/html/bcp195

Change History

Date	Changes
April 1, 2022	Initial Draft Version
December 6, 2022	Removed redundant examination of audit records
March 18, 2024	Relabel for QTF 1.1 Updated QTF assertion numbers per QTF 1.1
January 27, 2025	Relabel for QTF 2.0 Single optional test with different instructions for different test paths.

3.2. Document Query and Retrieve

All Document Query (QD) and Retrieve (RD) tests for the Initiating Gateway use patient QTF TEST QTFTEST-002.

The Testing Tool contains at least these document types for patient QTFTEST-002

Document Type	Minimum Count
Continuity of Care Document (CCD)	1
Discharge Summary	1
Progress Note	1
Unstructured Document	1

IG 2.0 Query Document Secured

Test Case ID:	IG 2.0 Query Document Secured
Title:	Initiating Gateway queries with all security provisions
IHE Profile:	Cross-community Access (XCA)
Flow:	Basic Success
Optionality:	Required
Test Tool	XDS Toolkit

Purpose/Description

SUT initiates synchronous QD Request transactions (FindDocuments, IHE ITF 2:3.18.4.1.2.3.7.1) to the Testing Tool. The QD Requests must contain at least the minimal set of parameters as defined by the IHE FindDocument query (IHE ITF 2:3.18.4.1.2.3.7.1), the ITI Cross Gateway Query (IHE ITF 2:3.38) and further requirements specified by the QTF including SAML assertions for Exchange Purpose. The Testing Tool responds with the matching documents' metadata. See step 1 below for the minimum set of query parameters.

When the user executes step 3, the Test Tool examines all QD Requests sent to the Test Tool simulators. If one or more requests are found that match the minimal criteria, the test is considered a success. Initiating Gateways are allowed to add more parameters to the query. The Test Tool simulators will generate the query response considering any extra parameters, but the evaluation software for this test will only examine the minimum set.

The SUT will send QD requests that satisfy these requirements:

1. All required SAML assertions in the QD Request
2. Sending at least one request for each of the required values of Exchange Purpose:
 - a. Treatment
 - b. Payment
 - c. Health Care Operations
 - d. Public Health
 - e. Individual Access Services
 - f. Government Benefits Determination
3. Appropriate TLS 1.3/1.2 communication with mutual authentication
4. Appropriate audit records generated

Notes:

- 1) The T-IAS purpose requires the inclusion of an id token in the SAML assertions. Please see Exchange Purpose Implementation SOP: Individual Access Services, Version 2.1, April 11, 2025.

Preconditions

Data Load Set

Test Case Patient Association: QTF TEST QTFTEST-002

Test Steps

1. The SUT sends separate QD Request messages with the properly coded value for each of the defined values of Exchange Purpose. Coded values for Exchange Purpose are defined in Table 1 of Standard Operating Procedure (SOP): Exchange Purposes (XPs), Version 2.0.
 - T-TRTMNT, 2.16.840.1.113883.3.7204.1.5.2.1
 - T-PYMNT, 2.16.840.1.113883.3.7204.1.5.2.1
 - T-HCO, 2.16.840.1.113883.3.7204.1.5.2.1
 - T-PH, 2.16.840.1.113883.3.7204.1.5.2.1
 - T-IAS, 2.16.840.1.113883.3.7204.1.5.2.1
 - T-GOVDTRM, 2.16.840.1.113883.3.7204.1.5.2.1
2. The SUT sends a synchronous Find Documents Request to the Testing Tool, using the following required parameters (QTF-54, QTF-55, QTF-061):
 - \$XDSDocumentEntryPatientID = [QTF TEST QTFTEST-002 PID]
 - \$XDSDocumentEntryStatus = Approved. May include Deprecated but must include Approved.

- returnType = LeafClass

NOTE: Recommendation is to send both Stable AND On-Demand Documents as the \$XDSDocumentEntryType default for all queries.

3. The SUT includes SAML assertions in the QD Request per the IHE XUA Integration Profile. The QD Request for this test will include:
 - Exchange Purpose: Coded value corresponding to one of the Exchange Purpose values listed in Test Step 1.
 - User Authentication: User information required; specific content depends on Initiating QHIN.
4. The Testing Tool successfully processes the Request and returns a QD Response to the SUT that contains all objects matching the filter criteria for this patient (see table at the front of Section 3.2).
5. Execute the following six tests in the Test Tool. All six tests in the test tool must complete successfully for this overall test to be considered a success.
 - IG.DocQuery1.T-TRTMNT-20
 - IG.DocQuery1.T-PYMNT-20
 - IG.DocQuery1.T-HCO-20
 - IG.DocQuery1.T-PH-20
 - IG.DocQuery1.T-IAS-20
 - IG.DocQuery1.T-GOVDTRM-20
6. QHIN candidates submit the relevant extract of the ATNA log entries for the six QD requests listed above (one for each Exchange Purpose). These audit messages must be validated using Gazelle EVS Client and the permanent links submitted by email to qhintesting@sequoiaproject.org.

Assessment

1. Verify that the SUT generates separate QD Request messages for each of the required values of Exchange Purpose. Verify that the six tests in the tooling environment listed in step 5 above complete successfully.
2. Verify that each request is fully compliant with all IHE XUA requirements.
3. Verify the SUT generates an audit message for each request and that
 - Each audit message conforms to ATNA Syslog requirements for ITI-38
 - Each audit message contains appropriate content for the ITI-38 transaction.
4. Manually check one QD Request in the Test Tool. Verify the SUT conforms to the following:
 - QTF conformance statements QTF-43 through QTF-64.

- QD Request contains correctly formatted SAML data that conveys user authentication information per QTF-17, QTF-18 and QTF-19.
5. Verify that each request is made using an HTTPS transaction using TLS 1.3/1.2 and required TLS parameters.
 6. Verify that each request is made using the test certificate that was assigned to the system.

Referenced Specifications

IHE XCA Profile Specification	IHE Cross-Community Access (XCA) profile - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
IHE Audit Trail and Node Authentication (ATNA)	<i>IHE Audit Trail and Node Authentication (ATNA) profile</i> - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
Secure Use of Transport Layer Security (TLS)	<i>Recommendations for Secure Use of Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS)</i> (IETF BCP 195) - available at: https://tools.ietf.org/html/bcp195

Change History

Date	Changes
December 6, 2022	Initial Draft Version
March 18, 2024	Relabel for QTF 1.1 Rewrite to be consistent with QTF 1.1 and provide more details than in the original version
January 27, 2025	Relabel for QTF 2.0 Consolidate the six separate tests written for QTF 1.1 to a single test for QTF 2.0. The amount of work is not changed. This reduces redundant documentation.
July 3, 2025	Updated process for submitting audit messages, and enabling IAS tests

IG 2.0 Optional Document Queries

Test Case ID:	IG 2.0 Optional Query Documents
Title:	Initiating Gateway Sends Optional Query Document Transactions
QTF Function / Technology:	Document Query and Retrieve
IHE Profile:	Cross-community Access (XCA)
Flow:	Basic Success
Optionality:	Optional
Test Tool	XDS Toolkit

Purpose/Description

These are a series of optional tests that are not to be submitted. They provide a mechanism to explore other paths through the Initiating Gateway. The Test Manager will not evaluate results for these tests.

Preconditions

Data Load Set: QTF Data Load Set

Test Case Patient Association: QTF TEST QTFTEST-002

IG 2.0 Query Stable Documents

Run this optional test to determine if any of the QD Requests sent by the Initiating Gateway include an explicit filter for stable documents.

See XDS Toolkit Conformance Tests: SUT as Initiating QHIN, RCE Document Query and Retrieve, IG-Query.StableDocuments-20.

1. The SUT sends a synchronous QD Request to the Testing Tool, using the following required parameters:
 - \$XDSDocumentEntryPatientID = [QTF TEST QTFTEST-002 PID]
 - \$XDSDocumentEntryStatus = Approved. Can also include Deprecated.
 - \$XDSDocumentEntryType = Stable. Filter is allowed to include On-Demand
 - returnType = LeafClass
2. The Testing Tool successfully processes the Request and returns a QD Response to the SUT that contains metadata for all objects matching the filter criteria for this patient (see table at the front of Section 3.2).
3. Execute XDS Toolkit Test: IG-Query.StableDocuments-20. That test will examine all QD Requests and list any that meet the criteria listed in step 1.

IG 2.0 Query On-Demand Documents

SUT initiates synchronous QD Request that includes a DocumentEntry.objectType filter to the Testing Tool. Testing Tool responds with the matching documents metadata. See XDS Toolkit Conformance Tests: SUT as Initiating QHIN, RCE Document Query and Retrieve, IG-Query.OnDemand-20.

1. The SUT sends a synchronous QD Request to the Testing Tool, using the following required parameters:
 - \$XDSDocumentEntryPatientID = [QTF TEST QTFTEST-002 PID]
 - \$XDSDocumentEntryStatus = Approved. Can also include Deprecated.
 - \$XDSDocumentEntryType = On-Demand Documents; filter is allowed to include Stable
 - returnType = LeafClass
 - returnComposedObjects = true
2. The Testing Tool successfully processes the Request and returns a QD Response to the SUT that contains metadata for all objects matching the filter criteria for this patient (see table at the front of Section 3.2).
3. Execute XDS Toolkit Test: IG-Query.OnDemand-20. That test will examine all QD Requests and list any that meet the criteria listed in step 1.

IG 2.0 Query Availability Status Multiple

This test allows the SUT to send QD requests with Document Entry filters for Availability Status and Object Type. The Test Tool will look for queries with various combinations for those two filters. Run the steps that are appropriate for your system.

See XDS Toolkit Conformance Tests: SUT as Initiating QHIN, RCE Document Query and Retrieve, IG-Query.AvailabilityStatus.Multiple-20.

1. The SUT sends one or synchronous QD Requests to the Testing Tool, using the following required parameters:
 - \$XDSDocumentEntryPatientID = [QTF TEST QTFTEST-002 PID]
 - returnType = LeafClass
2. QD Requests may include different combinations of:
 - \$XDSDocumentEntryStatus = Approved. Can also include Deprecated.
 - \$XDSDocumentEntryType = [Stable OR On-Demand Documents]
3. The Testing Tool successfully processes the Request and returns a QD Response to the SUT that contains metadata for all objects matching the filter criteria for this patient (see table at the front of Section 3.2).
4. Execute relevant steps of XDS Toolkit Test: IG-Query.AvailabilityStatus.Multiple-20. The step names should indicate the combinations that are tested. If you attempt to execute the entire test, the first step that fails will cause the entire test to stop.

IG 2.0 Query Return Type

SUT initiates synchronous QD Request that includes a DocumentEntry.returnType filter to the Testing Tool. Testing Tool responds with the matching documents metadata.

See XDS Toolkit Conformance Tests: SUT as Initiating QHIN, RCE Document Query and Retrieve, IG-Query.ReturnType-20.

1. The SUT sends one or more synchronous QD Requests to the Testing Tool, using the following required parameters:
 - \$XDSDocumentEntryPatientID = [QTF TEST QTFTEST-002 PID]
 - \$XDSDocumentEntryStatus = Approved. Can also include Deprecated.
2. QD requests should include this value for returnType:
 - LeafClass.
3. The Testing Tool successfully processes the Request and returns a QD Response to the SUT that contains metadata for all objects matching the filter criteria for this patient (see table at the front of Section 3.2).
4. Execute relevant steps of XDS Toolkit Test: IG-Query.AvailabilityStatus.Multiple-20. The step names should indicate the combinations that are tested. If you attempt to execute the entire test, the first step that fails will cause the entire test to stop.

Referenced Specifications

IHE XCA Profile Specification	IHE Cross-Community Access (XCA) profile - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
IHE Audit Trail and Node Authentication (ATNA)	<i>IHE Audit Trail and Node Authentication (ATNA) profile</i> - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
Secure Use of Transport Layer Security (TLS)	<i>Recommendations for Secure Use of Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS)</i> (IETF BCP 195) - available at: https://tools.ietf.org/html/bcp195

Change History

Date	Changes
December 6, 2022	Initial Draft Version
March 18, 2024	Relabel for QTF 1.1
January 27, 2025	Relabel for QTF 2.0 Consolidate the optional separate tests written for QTF 1.1 to a single test for QTF 2.0. The amount of work is not changed. This reduces redundant documentation.

IG 2.0 Retrieve Document Secured

Test Case ID:	IG 2.0 Retrieve Document Secured
Title:	Initiating Gateway retrieves with all security provisions
IHE Profile:	Cross-community Access (XCA)
Flow:	Basic Success
Optionality:	Required

Purpose/Description

The system under test submits RD Requests with all security provisions. Those provisions include:

1. All required SAML assertions in the QD Request
2. Sending at least one request for these coded values that express Exchange Purpose:
 - a. T-TRTMNT
 - b. T-IAS
3. Appropriate TLS 1.3/1.2 communication with mutual authentication
4. Appropriate audit records generated

Notes:

- 1) The T-IAS purpose requires the inclusion of an id token in the SAML assertions. Please see Exchange Purpose Implementation SOP: Individual Access Services, Version 2.1, April 11, 2025.

Test Steps

1. Send separate RD Request messages for each of these coded values of Exchange Purpose:
 - T-TRTMNT, 2.16.840.1.113883.3.7204.1.5.2.1
 - I-IAS, 2.16.840.1.113883.3.7204.1.5.2.1
2. The SUT sends a synchronous RD Request to the Testing Tool for one document, using the following required parameters:
 - RepositoryUniqueId: [Repository ID for QTF TEST QTFTEST-002 DOCUMENT 1]
 - DocumentUniqueId: [Document ID for QTF TEST QTFTEST-002 DOCUMENT 1]
 - homeCommunityId: [HCID for the Testing Tool]
3. The SUT includes SAML assertions in the RD Request per the IHE XUA Integration Profile. The RD Request for this test will include:
 - Exchange Purpose: One of the coded values listed in Test Step 1
 - User Authentication: User information required; specific content depends on Initiating QHIN.
4. The SUT performs the RD Request using:
 - TLS 1.3/1.2 with appropriate parameter
 - Mutual authentication
 - The test certificate issued to the system under test
5. The Testing Tool returns to the SUT an RD Response containing the requested document:
RegistryResponse/@status:Success
DocumentResponse: 1 document, QTF TEST QTFTEST-002 DOCUMENT 1

6. QHIN candidates submit the relevant extract of the ATNA log entries for each of the two Exchange Purposes listed above. These audit messages must be validated using Gazelle EVS Client and the permanent links submitted by email to ghintesting@sequoiaproject.org.

Assessment

1. Verify that the SUT generates separate RD Request messages for each of the required values of Exchange Purpose:
 - Treatment (T-TRTMNT, 2.16.840.1.113883.3.7204.1.5.2.1)
 - Individual Access Services (T-IAS), 2.16.840.1.113883.3.7204.1.5.2.1)
2. Verify that each request is fully compliant with all IHE XUA requirements.
3. Verify the SUT generates an audit message for each request and that:
 - Each audit message conforms to ATNA Syslog requirements for ITI-39
 - Each audit message contains appropriate content for the ITI-39 transaction.
4. Examine each RD Request in the Test Tool. Verify the SUT conforms to the following:
 - QTF conformance statements QTF-43 through QTF-64
 - RD Request contains correctly formatted SAML data that conveys user authentication information
5. Verify that each RD Request contains all required parameters listed in Test Step 2.
6. Verify that each request is made using an HTTPS transaction using TLS 1.3/1.2 and required TLS parameters.
7. Verify that each request is made using the test certificate that was assigned to the system under test.

Referenced Specifications

IHE XCA Profile Specification	IHE Cross-Community Access (XCA) profile - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
IHE Audit Trail and Node Authentication (ATNA)	<i>IHE Audit Trail and Node Authentication (ATNA) profile</i> - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
Secure Use of Transport Layer Security (TLS)	<i>Recommendations for Secure Use of Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS)</i> (IETF BCP 195) - available at: https://tools.ietf.org/html/bcp195

Change History

Date	Changes
December 6, 2022	Initial Draft Version
May 31, 2023	Remove incorrect Purpose of Use. Augment list to include all required values for Purpose of Use.
March 18, 2024	Relabel for QTF 1.1 Correct typos on the query type; these are RD requests Update coded values for QTF 1.1 Provide more detailed instructions
January 27, 2025	Relabel for QTF 2.0 Update QTF assertion numbers for QTF 2.0
July 3, 2025	Updated process for submitting audit messages, and enabling IAS tests

3.3. Message Delivery

This section contains one test case: IG 2.0 Deliver Document Exchange Purpose. The system under test will submit documents with proper metadata, security requirements and SAML assertions. You will pick one or more of these document types as you submit documents per the Message Delivery scenario:

- C-CDA 2.1 CCD
- C-CDA 2.1 Discharge Summary
- C-CDA 2.1 Progress Note
- C-CDA 2.1 Unstructured Document

All Message Delivery tests for the Initiating Gateway use patient QTF TEST QTFTEST-001.

IG 2.0 Deliver Document Secured

Test Case ID:	IG 2.0 Deliver Document Secured
Title:	Initiating Gateway delivers documents with all security provisions
IHE Profile:	Cross-Community Document Reliable Interchange (XCDR)
Flow:	Basic Success
Optionality:	Required
Test Tool	XDS Toolkit

Purpose/Description

The Initiating Gateway is required to submit one document using the Treatment Exchange Purpose (coded value T-TRTMNT, 2.16.840.1.113883.3.7204.1.5.2.1) and a second document using the IAS Exchange Purpose (coded value T-TRTMNT, 2.16.840.1.113883.3.7204.1.5.2.1). The user supporting the Initiating Gateway selects the document type or types to submit:

- C-CDA 2.1 CCD
- C-CDA 2.1 Discharge Summary
- C-CDA 2.1 Progress Note
- C-CDA 2.1 Unstructured Document

Metadata requirements for the four document types are described in *QHIN Conformance Testing Process: Overview*, Section 9: Document Types and Metadata Requirements for Initiating QHINs and repeated in section *IG 2.0 Message Delivery Metadata Requirements* in this document.

Preconditions

Test Steps: T-TRTMNT

1. Submit one or more of the C-CDA document types listed above to the Test Tool Responding Gateway simulator as described by the Message Delivery scenario.
 - The document metadata is required to meet the requirements described below in section IG 2.0 Message Delivery Metadata Requirements.
 - SAML assertions are also required.
 - i. For this test, you will submit a document for the Treatment exchange purpose using the coded value T-TRTMNT, 2.16.840.1.113883.3.7204.1.5.2.1.
 - ii. SAML assertions will also contain user information per QTF-17, QTF-18, and QTF-19
2. Successfully complete at least one of these tests using the Test Tool; the tool looks for Message Delivery transactions that meet the requirement based on document type and SAML requirements.
 - IG-Deliver.CCD.T-TRTMNT-20
 - IG-Deliver.DischargeSummary.T-TRTMNT-20
 - IG-Deliver.ProgressNote.T-TRTMNT-20
 - IG-Unstructured..T-TRTMNT-20
3. Submit the relevant extract of the ATNA log entries for the document types you have submitted for testing. These audit messages must be validated using Gazelle EVS Client and the permanent links submitted by email to qhintesting@sequoiaproject.org.
4. Inform the Test Manager which of these Message Delivery test cases should be included with this overall test.

Assessment: T-TRTMNT

1. Verify that the user completed at least one of the four tests in the Test Tool that are listed above. Each test is designed to require the T-TRTMNT coded value for Exchange Purpose.
 - Do not accept a substitute test for those listed.
2. Verify that each request is fully compliant with all IHE XUA requirements.
3. Verify the SUT generates an audit message for each request and that:
 - Each audit message conforms to ATNA Syslog requirements for ITI-80
 - Each audit message contains appropriate content for the ITI-80 transaction.
4. Examine each MD Request in the Test Tool. Verify the SUT conforms to the following:
 - QTF conformance statement QTF-65

- MD Request contains correctly formatted SAML data that conveys user authentication information per QTF-17, QTF-18, and QTF-19
- 5. Verify that each request is made using an HTTPS transaction using TLS 1.3/1.2 and required TLS parameters.
- 6. Verify that each request is made using the test certificate that was assigned to the system under test.

Test Steps: T-IAS

Notes:

- 1) The T-IAS purpose requires the inclusion of an id token in the SAML assertions. Please see Exchange Purpose Implementation SOP: Individual Access Services, Version 2.1, April 11, 2025.
1. Submit one or more of the C-CDA document types listed above to the Test Tool Responding Gateway simulator as described by the Message Delivery scenario.
 - The document metadata is required to meet the requirements described below in section *IG 2.0 Message Delivery Metadata Requirements*.
 - SAML assertions are also required.
 - i. For this test, you will submit a document for the Treatment exchange purpose using the coded value T-IAS, 2.16.840.1.113883.3.7204.1.5.2.1.
 - ii. SAML assertions will also contain user information per QTF-17, QTF-18, and QTF-19
2. Successfully complete at least one of these tests using the Test Tool; the tool looks for Message Delivery transactions that meet the requirement based on document type and SAML requirements.
 - IG-Deliver.CCD.T-IAS-20
 - IG-Deliver.DischargeSummary.T-IAS-20
 - IG-Deliver.ProgressNote.T-IAS-20
 - IG-Unstructured.T-IAS-20
3. Submit the relevant extract of the ATNA log entries for the document types you have submitted for testing. These audit messages must be validated using Gazelle EVS Client and the permanent links submitted by email to qhintesting@sequoiaproject.org.
4. Inform the Test Manager which of these Message Delivery test cases should be included with this overall test.

Assessment: T-IAS

1. Verify that the user completed at least one of the four tests in the Test Tool that are listed above. Each test is designed to require the T-IAS coded value for Exchange Purpose.
 - Do not accept a substitute test for those listed.
2. Verify that each request is fully compliant with all IHE XUA requirements.
3. Verify the SUT generates an audit message for each request and that:
 - Each audit message conforms to ATNA Syslog requirements for ITI-80
 - Each audit message contains appropriate content for the ITI-80 transaction.
4. Examine each MD Request in the Test Tool. Verify the SUT conforms to the following:
 - QTF conformance statement QTF-65
 - MD Request contains correctly formatted SAML data that conveys user authentication information per QTF-17, QTF-18 and QTF-19.
5. Verify that each request is made using an HTTPS transaction using TLS 1.3/1.2 and required TLS parameters.
6. Verify that each request is made using the test certificate that was assigned to the system under test.

Referenced Specifications

IHE XCDR Profile Specification	IHE Cross-Community Document Reliable Exchange (XCDR) profile - available as a supplement at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_Suppl_XCDR.pdf
IHE Audit Trail and Node Authentication (ATNA)	<i>IHE Audit Trail and Node Authentication (ATNA) profile</i> - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
Secure Use of Transport Layer Security (TLS)	<i>Recommendations for Secure Use of Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS)</i> (IETF BCP 195) - available at: https://tools.ietf.org/html/bcp195
HL7 C-CDA R2.1	<i>HL7 Consolidated CDA Release 2.1</i> available at http://www.hl7.org/implement/standards/product_brief.cfm?product_id=492

Change History

Date	Changes
March 18, 2024	Initial Draft Version
January 27, 2025	Relabel for QTF 2.0 Consolidate what were two separate tests in the 1.1 version to a single test in the 2.0 version. The work required is the same. This reduces redundancy.
July 3, 2025	Updated process for submitting audit messages, and enabling IAS tests

IG 2.0 Message Delivery Metadata Requirements

Purpose/Description

This section does not describe a test. It contains four tables with metadata requirements that are tested as part of the IG-Deliver.XXX-20 tests. These requirements are embodied in *testplan.xml* files that are used with the XDS Toolkit. They are repeated in tables in this section for readability.

C-CDA CCD Metadata Requirements

Level	Field	Value
SubmissionSet	patientId	PID-COMMUNITY1-QTFTEST-001^^^&1.3.6.1.4.1.21367.13.20.2000&ISO
SubmissionSet	sourceId	
DocumentEntry	classCode	34133-9, LOINC
DocumentEntry	formatCode	urn:hl7-org:sdwg:ccda-structuredBody:2.1
DocumentEntry	homeCommunityID	urn:oid:2.16.840.1.113883.3.7204.1.3.1.2.3.1
DocumentEntry	mimeType	text/xml
DocumentEntry	objectType	urn:uuid:7edca82f-054d-47f2-a032-9b2a5b5186c1
DocumentEntry	patientId	PID-COMMUNITY1-QTFTEST-001^^^&1.3.6.1.4.1.21367.13.20.2000&ISO
DocumentEntry	typeCode	34133-9, LOINC

C-CDA Discharge Summary Metadata Requirements

Level	Field	Value
SubmissionSet	patientId	PID-COMMUNITY1-QTFTEST-001^^^&1.3.6.1.4.1.21367.13.20.2000&ISO
SubmissionSet	sourceId	
DocumentEntry	classCode	18842-5, LOINC
DocumentEntry	formatCode	urn:hl7-org:sdwg:ccda-structuredBody:2.1
DocumentEntry	homeCommunityID	urn:oid:2.16.840.1.113883.3.7204.1.3.1.2.3.1
DocumentEntry	mimeType	text/xml
DocumentEntry	objectType	urn:uuid:7edca82f-054d-47f2-a032-9b2a5b5186c1
DocumentEntry	patientId	PID-COMMUNITY1-QTFTEST-001^^^&1.3.6.1.4.1.21367.13.20.2000&ISO
DocumentEntry	typeCode	The preferred LOINC document type code is 18842-5, Discharge Summary note, although systems may send more specific codes from the DischargeSummaryDocumentTypeCode value set urn:oid:2.16.840.1.113883.11.20.4.1.

C-CDA Progress Note Metadata Requirements

Level	Field	Value
SubmissionSet	patientId	PID-COMMUNITY1-QTFTEST-001^^^&1.3.6.1.4.1.21367.13.20.2000&ISO
SubmissionSet	sourceId	
DocumentEntry	classCode	11506-3, LOINC
DocumentEntry	formatCode	urn:hl7-org:sdwg:ccda-structuredBody:2.1
DocumentEntry	homeCommunityID	urn:oid:2.16.840.1.113883.3.7204.1.3.1.2.3.1
DocumentEntry	mimeType	text/xml
DocumentEntry	objectType	urn:uuid:7edca82f-054d-47f2-a032-9b2a5b5186c1
DocumentEntry	patientId	PID-COMMUNITY1-QTFTEST-001^^^&1.3.6.1.4.1.21367.13.20.2000&ISO
DocumentEntry	typeCode	The preferred LOINC document type code is 11506-3, Provider-unspecified Progress note, although systems may send more specific codes from the ProgressNoteDocumentTypeCode urn:oid:2.16.840.1.113883.11.20.8.1 value set.

C-CDA Unstructured Document Metadata Requirements

Level	Field	Value
SubmissionSet	patientId	PID-COMMUNITY1-QTFTEST-001^^^&1.3.6.1.4.1.21367.13.20.2000&ISO
SubmissionSet	sourceId	
DocumentEntry	formatCode	urn:hl7-org:sdwg:ccda-nonXMLBody:2.1
DocumentEntry	homeCommunityID	urn:oid:2.16.840.1.113883.3.7204.1.3.1.2.3.1
DocumentEntry	mimeType	text/xml
Document Entry	objectType	urn:uuid:7edca82f-054d-47f2-a032-9b2a5b5186c1
DocumentEntry	patientId	PID-COMMUNITY1-QTFTEST-001^^^&1.3.6.1.4.1.21367.13.20.2000&ISO

Change History

Date	Changes
March 18, 2024	Initial Draft Version
January 27, 2025	Relabel for 2.0 version Minor label change in the text for XDS Toolkit test names

3.4. ATNA Syslog Checklist for Initiating Gateway Systems

The Initiating Gateways tests listed above state requirements for sending ATNA Syslog messages to the testing team for evaluation. This section contains a table that can be used as a checklist.

Test Name	Syslog Messages
IG 2.0 Patient Discovery Secured	One syslog message for each ITI-55 / Exchange Purpose combination. There are 6 required Exchange Purpose values.
IG 2.0 Optional Patient Discovery	None
IG 2.0 Query Document Secured	One syslog message for each ITI-38 / Exchange Purpose combination. There are 6 required Exchange Purpose values.

Test Name	Syslog Messages
IG 2.0 Retrieve Document Secured	One syslog message for each ITI-39 / Exchange Purpose combination. There are two Exchange Purposes referenced: <ul style="list-style-type: none"> • Treatment • Individual Access Services
IG 2.0 Optional Document Queries	None
IG 2.0 Deliver Document Secured	One syslog message for each ITI-80 / Exchange Purpose combination. There are two Exchange Purposes referenced: <ul style="list-style-type: none"> • Treatment • Individual Access Services

Change History

Date	Changes
March 18, 2024	Initial Draft Version
January 27, 2025	Update for QTF 2.0 test names / cases

4. TESTS FOR RESPONDING QHIN CANDIDATE

As discussed in *QHIN Conformance Testing Process: Overview*, the Responding QHIN acts as a gateway to a collection of participants and communicates with those participants using protocols defined by the network and the QTF requirements. The Responding QHIN needs to provide a participant network of systems that will mimic the actual network and support the test cases defined in this document. The Responding QHIN will also be required to load data in advance of the testing process. If you find that the test cases and/or test data make assumptions that are not valid for your network, please discuss with the Test Manager. Responding QHIN candidates must support all requirements defined in the QTF documentation and are not allowed to opt out of any of the specifications.

4.1. Patient Discovery Query

The tests defined in this section use one test patient:

- QTF TEST QTFTEST-004

This patient will also be used in the Document Query/Retrieve tests.

RG 2.0 Discover Patient 004 Secured

Test Case ID:	RG 2.0 Discover Patient 004 Secured
Title:	Gateway responds to Patient Discovery for patient 004
IHE Profile:	Cross-community Patient Discovery (XCPD)
Flow:	Basic Success
Optionality:	Required
Test Tool	XDS Toolkit

Purpose/Description The system under test responds to PD Requests for patient 004 with all security provisions. Those provisions include:

1. Recognition and processing of valid requests with required values of Exchange Purpose:
 - a. T-TRTMNT, 2.16.840.1.113883.3.7204.1.5.2.1
 - b. T-PYMNT, 2.16.840.1.113883.3.7204.1.5.2.1
 - c. T-HCO, 2.16.840.1.113883.3.7204.1.5.2.1
 - d. T-PH, 2.16.840.1.113883.3.7204.1.5.2.1

- e. T-GOVDTRM, 2.16.840.1.113883.3.7204.1.5.2.1
2. Appropriate TLS 1.3/1.2 communication with mutual authentication
3. Appropriate audit records generated

Preconditions

Data Load Set: QTF Data Load Set

Test Case Patient Association: QTF TEST QTFTEST-004

Test Steps

1. Use the Testing Tool to execute these tests:
 - a. RG-PatientDiscovery1_secondpurposeofuse.T-TRTMNT-20
 - b. RG-PatientDiscovery1_secondpurposeofuse.T-PYMNT-20
 - c. RG-PatientDiscovery1_secondpurposeofuse.T-HCO-20
 - d. RG-PatientDiscovery1_secondpurposeofuse.T-PH-20
 - e. RG-PatientDiscovery1_secondpurposeofuse.T-GOVDTRM-20
2. For each test, the Testing Tool sends an immediate PD Request to the SUT with the following parameters, with values taken from patient QTF TEST QTFTEST-004:
 - LivingSubjectName
 - LivingSubjectAdministrativeGender
 - LivingSubjectBirthTime
 - PatientAddress

NOTE: LivingSubjectName contains 2 given names with middle name in the second <given> element

3. The SUT returns a PD Response with a match for patient QTF TEST QTFTEST-004
4. Submit the relevant extract of the ATNA log entries corresponding to the five PD requests sent by the testing tool to your Responding Gateway. These audit messages must be validated using Gazelle EVS Client and the permanent links submitted by email to qhintesting@sequoiaproject.org.
5. All Patient Discovery requests are for the patient QTFTEST-004. The table below lists each test and values supplied for Purpose of Use.

Toolkit Test Name	Purpose of Use Code	Code System
RG-PatientDiscovery1_ secondpurposeofuse. T-TRTMNT-20	T-TRTMNT	2.16.840.1.113883.3.720 4.1.5.2.1
RG-PatientDiscovery1_ secondpurposeofuse. T-PYMNT-20	T-PYMNT	2.16.840.1.113883.3.720 4.1.5.2.1
RG-PatientDiscovery1_ secondpurposeofuse. T-HCO-20	T-HCO	2.16.840.1.113883.3.720 4.1.5.2.1
RG-PatientDiscovery1_ secondpurposeofuse. T-PH-20	T-PH	2.16.840.1.113883.3.720 4.1.5.2.1
RG-PatientDiscovery1_ secondpurposeofuse.T-GOVDTRM-20	T-GOVDTRM	2.16.840.1.113883.3.720 4.1.5.2.1

Assessment

1. Verify that the RG-PatientDiscovery1...-20 tests with TLS 1.3/1.2 enabled run successfully.
2. Verify the SUT generates an audit message for each request and that:
 - Each audit message conforms to ATNA Syslog requirements for ITI-55
 - Each audit message contains appropriate content for the ITI-55 transaction.

Referenced Specifications

IHE XCPD Profile Specification	IHE Cross-Community Patient Discovery (XCPD) profile - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev_17-0_Vol1_FT_2020-07-20.pdf
IHE Audit Trail and Node Authentication (ATNA)	<i>IHE Audit Trail and Node Authentication (ATNA) profile</i> - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev_17-0_Vol1_FT_2020-07-20.pdf
Secure Use of Transport Layer Security (TLS)	<i>Recommendations for Secure Use of Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS)</i> (IETF BCP 195) - available at: https://tools.ietf.org/html/bcp195

Change History

Date	Changes
April 1, 2022	Initial Draft Version
December 6, 2022	Removed redundant examination of audit records
May 31, 2023	Removed LivingSubjectID and Patient Telecom from the Test Step 1 Parameter requirements
March 18, 2024	Relabel for QTF 1.1 Updates to be more specific about the codes that express the different values for Exchange Purpose.
January 27, 2025	Relabel for QTF 2.0 Fix one typo that referenced ITI-80
March 25, 2025	Move the IAS test out of this section and into the SOP section.
July 3, 2025	Updated process for submitting audit messages

RG 2.0 Discover Patient SOP Compliance

Test Case ID:	RG 2.0 Discover Patient SOP Compliance
Title:	Responding Gateway supports Patient Discovery in compliance with SOP Documents
IHE Profile:	Cross-community Patient Discovery (XCPD)
Flow:	Basic Success
Optionality:	Required
Test Tool	XDS Toolkit

Purpose/Description

This test will send Patient Discovery transactions with SAML attributes defined in these documents:

- Standard Operating Procedure (SOP): Exchange Purposes (XPs), Version 4.0, January 16, 2025
- Standard Operating Procedure (SOP): Delegation of Authority, Version 1.0, July 1, 2024

Responding Gateway systems are required to respond to the requests that contain these attributes. There are no ATNA Syslog requirements for this test.

Notes:

- 1) The T-IAS purpose requires the inclusion of an id token in the SAML assertions. Please see Exchange Purpose Implementation SOP: Individual Access Services, Version 2.1, April 11, 2025.

Preconditions

Data Load Set: QTF Data Load Set

Test Case Patient Association: QTF TEST QTFTEST-004

Test Steps

1. Use the Testing Tool to execute these tests:
 - RG-PatientDiscovery1_secondpurposeofuse.T-IAS-20
 - RG-PatientDiscovery1_secondpurposeofuse.T-TREAT-20
 - RG-PatientDiscovery1_secondpurposeofuse.T-HCO-CC-20
 - RG-PatientDiscovery1_secondpurposeofuse.T-HCO-HED-20
 - RG-PatientDiscovery1_secondpurposeofuse.T-HCO-QM-20
 - RG-PatientDiscovery1_secondpurposeofuse.T-PH-ECR-20
 - RG-PatientDiscovery1_secondpurposeofuse.T-PH-ELR-20
 - RG-PatientDiscovery1_secondpurposeofuse.DelAuthority1-20
 - RG-PatientDiscovery1_secondpurposeofuse.DelAuthority2-20
 2. For each test, the Testing Tool sends an immediate PD Request to the SUT with the following parameters, with values taken from patient QTF TEST QTFTEST-004:
 - LivingSubjectName
 - LivingSubjectAdministrativeGender
 - LivingSubjectBirthTime
 - PatientAddress
- NOTE: LivingSubjectName contains 2 given names with middle name in the second <given> element
3. The SUT returns a PD Response with a match for patient QTF TEST QTFTEST-004
 4. All Patient Discovery requests are for the patient QTFTEST-004.

The table below contains details on the coded value for the Purpose of Use and the inclusion of the SAML Attribute for Delegation of Authority. The Code System for all Purpose of Use coded values is 2.16.840.1.113883.3.7204.1.5.2.1 for each entry in the table.

Toolkit Test Name	Purpose of Use Code	Includes Delegation of Authority Attribute
RG-PatientDiscovery1_secondpurposeofuse.T-IAS-20 ¹	T-IAS	No
RG-PatientDiscovery1_secondpurposeofuse.T- TREAT-20	T-TREAT	No
RG-PatientDiscovery1_secondpurposeofuse.T- HCO-CC-20	T- HCO-CC	No

Toolkit Test Name	Purpose of Use Code	Includes Delegation of Authority Attribute
RG-PatientDiscovery1_secondpurposeofuse.T-HCO-HED-20	T-HCO-HED	No
RG-PatientDiscovery1_secondpurposeofuse.T-HCO-QM-20	T-HCO-QM	No
RG-PatientDiscovery1_secondpurposeofuse.T-PH-ECR-20	T-PH-ECR	No
RG-PatientDiscovery1_secondpurposeofuse.T-PH-ELR-20	T-PH-ELR	No
RG-PatientDiscovery1_secondpurposeofuse.DelAuthority1-20	T-TRTMNT	Yes
RG-PatientDiscovery1_secondpurposeofuse.DelAuthority2-20	T-TRTMNT	Yes

Notes:

1. Includes an id_token not found in SAML attributes in the other cases.

Assessment

1. Verify that the RG-PatientDiscovery1...-20 tests with TLS 1.3/1.2 enabled run successfully.
 - The Responding Gateway is required to provide a response and does not have to exhibit other behavior in response to the Purpose of Use codes or Delegation of Authority attribute.

Referenced Specifications

IHE XCPD Profile Specification	IHE Cross-Community Patient Discovery (XCPD) profile - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev_17-0_Vol1_FT_2020-07-20.pdf
IHE Audit Trail and Node Authentication (ATNA)	<i>IHE Audit Trail and Node Authentication (ATNA) profile</i> - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev_17-0_Vol1_FT_2020-07-20.pdf
Secure Use of Transport Layer Security (TLS)	<i>Recommendations for Secure Use of Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS)</i> (IETF BCP 195) - available at: https://tools.ietf.org/html/bcp195

Change History

Date	Changes
March 25, 2025	Initial Draft Version
July 3, 2025	Updated for enabling IAS tests

RG 2.0 Patient Discovery Exceptions

Test Case ID:	RG 2.0 Patient Discovery Exceptions
Title:	Responding Gateway supports Patient Discovery negative/exception cases
IHE Profile:	Cross-community Patient Discovery (XCPD)
Flow:	Negative Cases
Optionality:	Required
Test Tool	XDS Toolkit

Purpose/Description

This test covers negative/exception Patient Discovery cases that a Responding Gateway is required to support. The test tool will send Patient Discovery requests with improperly coded values for Exchange Purpose. The Responding Gateway is required to detect that the coded values are not part of the defined vocabulary and reject the queries.

The Responding System is expected to return a SOAP fault. Systems that do not return a SOAP fault due to local security policy are required to provide a consistent response for all exceptions and negative tests and shall document these cases/conditions as part of testing.

Toolkit Note: While the Responding Gateway is expected to return a SOAP fault, the XDS Toolkit will process the fault as an error condition and report that a specific test failed. In the case where local security policy requires the system return a normal empty response the test will show green. Please review the test logs in the test tool for each of the negative tests as part of manual evaluation (see Assessment). Do not assume that the Test Tool evaluation and output color (red, green) are accurate for the tests listed in step 1 below.

Notes:

- 1) The T-IAS purpose requires the inclusion of an id token in the SAML assertions. Please see Exchange Purpose Implementation SOP: Individual Access Services, Version 2.1, April 11, 2025.

Preconditions

Data Load Set: QTF Data Load Set

Test Case Patient Association: QTF TEST QTFTEST-004

Test Steps

1. Use the Testing Tool to execute these tests:
 - a. RG-PatientDiscovery2_secondpurposeofuse.LEGACYTREATMENT-20
 - b. RG-PatientDiscovery2_secondpurposeofuse.REASSURANCE-20
 - c. RG-PatientDiscovery2_secondpurposeofuse.T-TRTMNT-OID-20
 - d. RG-PatientDiscovery2_secondpurposeofuse.T-IAS-ATTRS-20
2. For each test, the Testing Tool sends an immediate PD Request to the SUT with the following parameters, with values taken from patient QTF TEST QTFTEST-004:
 - a. LivingSubjectName
 - b. LivingSubject AdministrativeGender
 - c. LivingSubjectBirthTime
 - d. PatientAddress
3. The SUT returns a response with no records for any patient.
4. Submit the relevant extract of the ATNA log entries corresponding to the four PD requests sent by the testing tool to your Responding Gateway. These audit messages must be validated using Gazelle EVS Client and the permanent links submitted by email to qhintesting@sequoiaproject.org.
5. All Patient Discovery requests are for the patient QTFTEST-004. The table below lists each test, values supplied for Purpose of Use, and other notes.

All Patient Discovery requests are for the patient QTFTEST-004. The table below lists each test, values supplied for Purpose of Use, and other notes.

Toolkit Test Name	Purpose of Use Code	Code System	Notes
RG-PatientDiscovery2_secondpurposeofuse.LEGACYTREATMENT-20	TREATMENT	2.16.840.1.113883.3.18.7.1	1, 2
RG-PatientDiscovery2_secondpurposeofuse.REASSURANCE-20	REASSURANCE	2.16.840.1.113883.3.7204.1.5.2.1	1, 3
RG-PatientDiscovery2_secondpurposeofuse.T-TRTMNT-OID-20	T-TRTMNT	2.16.840.1.113883.3.7204.1.5.2.199	1, 4
RG-PatientDiscovery2_secondpurposeofuse.T-IAS-ATTRS-20	T-IAS-ATTRS	2.16.840.1.113883.3.7204.1.5.2.1	1, 5

Notes:

- 1) Negative test. Responding Gateway should not return a matching patient record.
- 2) Code System is legacy NHIN.
- 3) Undefined code in RCE Code System.
- 4) Undefined Code System.
- 5) T-IAS code without id_token

Assessment

1. Verify that the RG-PatientDiscovery2...-20 tests with TLS 1.3/1.2 enabled are executed.
2. Manually review the Test Tool logs captured by these tests to evaluate the response from the Responding Gateway. The automated software is not likely to correctly evaluate the response for these exception cases.
3. Verify the SUT generates an audit message for each request and that:
 - Each audit message conforms to ATNA Syslog requirements for ITI-55
 - Each audit message contains appropriate content for the ITI-55 transaction

Referenced Specifications

IHE XCPD Profile Specification	IHE Cross-Community Patient Discovery (XCPD) profile - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
IHE Audit Trail and Node Authentication (ATNA)	<i>IHE Audit Trail and Node Authentication (ATNA) profile</i> - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
Secure Use of Transport Layer Security (TLS)	<i>Recommendations for Secure Use of Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS)</i> (IETF BCP 195) - available at: https://tools.ietf.org/html/bcp195

Change History

Date	Changes
December 6, 2022	Initial Draft Version
March 18, 2024	Relabel for QTF 1.1 Update some of the coded values for Exchange Purpose to reflect QTF 1.1
January 27, 2025	Relabel for QTF 2.0
July 3, 2025	Updated process for submitting audit messages and enabling IAS tests. Added clarifying language around SOAP Fault expectations and security policy exceptions

RG-2.0 Optional Patient Discovery

Test Case ID:	RG-2.0 Optional Patient Discovery
Title:	Responding Gateway responds to optional Patient Discovery Requests
IHE Profile:	Cross-community Patient Discovery (XCPD)
Flow:	Basic Success
Optionality:	Optional
Test Tool	Gazelle Patient Manager

Purpose/Description

Testing Tool sends different PD Requests with different combinations of query parameters to exercise advanced behavior of the Responding Gateway

Preconditions

Data Load Set: QTF Data Load Set

Test Case Patient Association: QTF TEST QTFTEST-004

Test Steps

1. The Test Manager will have a documented list of PD Requests that exercise different combinations of query values.
2. The Test Management will use the Testing Tool to send each PD Request to the SUT.
3. The SUT will respond to each PD Request with a PD Response that includes matching patient records, no patient records, or an error code as appropriate.

Assessment

The purpose of this optional test is to exercise advanced cases and expose Responding Gateways to PD Requests that might contain more items than the bare minimum. Record any PD Requests that are not handled by the Responding Gateway and compare these (privately) across all Responding Gateways.

Referenced Specifications

IHE XCPD Profile Specification	IHE Cross-Community Patient Discovery (XCPD) profile - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev_17-0_Vol1_FT_2020-07-20.pdf
IHE Audit Trail and Node Authentication (ATNA)	<i>IHE Audit Trail and Node Authentication (ATNA) profile</i> - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev_17-0_Vol1_FT_2020-07-20.pdf
Secure Use of Transport Layer Security (TLS)	<i>Recommendations for Secure Use of Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS)</i> (IETF BCP 195) - available at: https://tools.ietf.org/html/bcp195

Change History

Date	Changes
April 1, 2022	Initial Draft Version
March 18, 2024	Relabel for QTF 1.1
January 27, 2025	Relabel for QTF 2.0

4.2. Document Query and Retrieve

All Query and Retrieve tests for the Responding Gateway use patient QTF TEST QTFTEST-004. As described in the *QHIN Conformance Testing Process: Initialization Test Cases document*, you are required to:

- Configure your testing environment to include patient QTF TEST QTFTEST-004 with the stated demographics.
- Configure your testing environment to include C-CDA documents to satisfy these test cases.

The Testing Tool will query for and attempt to retrieve the document types listed in the table below. You will only return the relevant documents in your network.

Document Type
C-CDA 2.1 Continuity of Care Document (CCD)
C-CDA 2.1 Discharge Summary
C-CDA 2.1 Progress Note
C-CDA 2.1 Unstructured Document

Please see the *QHIN Conformance Testing Process: User Guide* document that describes how to use the Testing Tool and the section on testing a Responding Gateway. The document query and retrieve tests use patient QTFTEST-004 and rely on the patient identifier that your Responding Gateway supplies in the XDS Toolkit test.

RG 2.0 Query Document Secured

Test Case ID:	RG 2.0 Query Document Secured
Title:	Responding Gateway supports Document Query with all security provisions
IHE Profile:	Cross-community Access (XCA)
Flow:	Basic Success and Negative Cases
Optionality:	Required
Test Tool	XDS Toolkit

Purpose/Description

The system under test responds to QD Requests with all security provisions. Those provisions include:

1. Recognition and processing of valid requests with required values of Exchange Purpose:
 - a. T-TRTMNT, 2.16.840.1.113883.3.7204.1.5.2.1
 - b. T-PYMNT, 2.16.840.1.113883.3.7204.1.5.2.1
 - c. T-HCO, 2.16.840.1.113883.3.7204.1.5.2.1
 - d. T-PH, 2.16.840.1.113883.3.7204.1.5.2.1
 - e. T-GOVDTRM, 2.16.840.1.113883.3.7204.1.5.2.1
2. Appropriate TLS 1.3/1.2 communication with mutual authentication
3. Appropriate audit records generated

Preconditions

Data Load Set: QTF Data Load Set

Test Case Patient Association: QTF TEST QTFTEST-004

Test Steps

The Testing Tool is configured to use SAML and TLS 1.3/1.2 connections for all test steps.

1. Use the Testing Tool to execute these tests:
 - RG-DocQuery1_secondpurposeofuse.T-TRTMNT-20
 - RG-DocQuery1_secondpurposeofuse.T-PYMNT-20
 - RG-DocQuery1_secondpurposeofuse.T-HCO-20
 - RG-DocQuery1_secondpurposeofuse.T-PH-20
 - RG-DocQuery1_secondpurposeofuse.T-GOVDTRM-20
2. The SUT successfully processes each QD Request and returns a QD Response to the testing tool that contains:
 - Status = Success
 - At least one object per the request type
3. Submit the relevant extract of the ATNA log entries corresponding to the six QD requests sent by the testing tool to your Responding Gateway. These audit messages must be validated using Gazelle EVS Client and the permanent links submitted by email to qhintesting@sequoiaproject.org.

The table below lists each test, values supplied for Purpose of Use, and other notes.

All document query tests use the patient identifier recorded in the XDS Toolkit test RG-PatientDiscovery1_secondpurposeofuse.T-TRTMNT-20.

Toolkit Test Name	Purpose of Use Code	Code System
RG-DocQuery1_secondpurposeofuse.T-TRTMNT-20	T-TRTMNT	2.16.840.1.113883.3.7204.1.5.2.1
RG-DocQuery1_secondpurposeofuse.T-PYMNT-20	T-PYMNT	2.16.840.1.113883.3.7204.1.5.2.1
RG-DocQuery1_secondpurposeofuse.T-HCO-20	T-HCO	2.16.840.1.113883.3.7204.1.5.2.1
RG-DocQuery1_secondpurposeofuse.T-PH-20	T-PH	2.16.840.1.113883.3.7204.1.5.2.1
RG-DocQuery1_secondpurposeofuse.T-GOVDTRM-20	T-GOVDTRM	2.16.840.1.113883.3.7204.1.5.2.1

Assessment

1. Verify that the RG-DocQuery1...-20 tests with TLS enabled run successfully.
2. Verify the SUT generates an audit message for each request and that:
 - Each audit message conforms to ATNA Syslog requirements for ITI-38
 - Each audit message contains appropriate content for the ITI-38 transaction.

Referenced Specifications

IHE XCA Profile Specification	IHE Cross-Community Access (XCA) profile - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
IHE Audit Trail and Node Authentication (ATNA)	<i>IHE Audit Trail and Node Authentication (ATNA) profile</i> - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
Secure Use of Transport Layer Security (TLS)	<i>Recommendations for Secure Use of Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS)</i> (IETF BCP 195) - available at: https://tools.ietf.org/html/bcp195

Change History

Date	Changes
December 6, 2022	Initial Draft Version
March 18, 2024	Relabel for QTF 1.1 Update coded values for Exchange Purpose Provide more detailed instructions
January 27, 2025	Relabel for QTF 2.0
March 25, 2025	Move RG-DocQuery1_secondpurposeofuse.T-IAS-20 to another section.
July 3, 2025	Updated process for submitting audit messages.

RG 2.0 Query Document SOP Compliance

Test Case ID:	RG 2.0 Query Document SOP Compliance
Title:	Responding Gateway supports Document Query in compliance with SOP Documents
IHE Profile:	Cross-community Access (XCA)
Flow:	Basic Success
Optionality:	Required
Test Tool	XDS Toolkit

Purpose/Description

This test will send Document Query transactions with SAML attributes defined in these documents:

- Standard Operating Procedure (SOP): Exchange Purposes (XPs), Version 4.0, January 16, 2025
- Standard Operating Procedure (SOP): Delegation of Authority, Version 1.0, July 1, 2024

Responding Gateway systems are required to respond to the requests that contain these attributes. There are no ATNA Syslog requirements for this test.

Notes:

- 1) The T-IAS purpose requires the inclusion of an id token in the SAML assertions. Please see Exchange Purpose Implementation SOP: Individual Access Services, Version 2.1, April 11, 2025.

Preconditions

Data Load Set: QTF Data Load Set

Test Case Patient Association: QTF TEST QTFTEST-004

Completion of RG-DocQuery1_secondpurposeofuse.T-TRTMNT-20

Test Steps

The Testing Tool is configured to use SAML and TLS 1.3/1.2 connections for all test steps.

1. Use the Testing Tool to execute these tests:
 - RG-DocQuery1_secondpurposeofuse.T-IAS-20
 - RG-DocQuery1_secondpurposeofuse.T-TREAT-20
 - RG-DocQuery1_secondpurposeofuse.T-HCO-CC-20
 - RG-DocQuery1_secondpurposeofuse.T-HCO-HED-20
 - RG-DocQuery1_secondpurposeofuse.T-HCO-QM-20
 - RG-DocQuery1_secondpurposeofuse.T-PH-ECR-20
 - RG-DocQuery1_secondpurposeofuse.T-PH-ELR-20
 - RG-DocQuery1_secondpurposeofuse.DelAuthority1-20
 - RG-DocQuery1_secondpurposeofuse.DelAuthority2-20
2. The SUT successfully processes each QD Request and returns a QD Response to the testing tool that contains:
 - Status = Success
 - At least one object per the request type

All document query tests use the patient identifier recorded in the XDS Toolkit test RG-PatientDiscovery1_secondpurposeofuse.T-TRTMNT-20.

The table below contains details on the coded value for the Purpose of Use and the inclusion of the SAML Attribute for Delegation of Authority. The Code System for all Purpose of Use coded values is 2.16.840.1.113883.3.7204.1.5.2.1 for each entry in the table.

Toolkit Test Name	Purpose of Use Code	Includes Delegation of Authority Attribute
RG-DocQuery1_secondpurposeofuse.T-IAS-20 ¹	T-IAS	No
RG- DocQuery1_ secondpurposeofuse.T- TREAT-20	T-TREAT	No
RG- DocQuery1_ secondpurposeofuse.T- HCO-CC-20	T- HCO-CC	No
RG- DocQuery1_ secondpurposeofuse.T-HCO-HED-20	T-HCO-HED	No
RG- DocQuery1_ secondpurposeofuse.T-HCO-QM-20	T-HCO-QM	No
RG- DocQuery1_ secondpurposeofuse.T-PH-ECR-20	T-PH-ECR	No
RG- DocQuery1_ secondpurposeofuse.T-PH-ELR-20	T-PH-ELR	No
RG- DocQuery1_ secondpurposeofuse.DelAuthority1-20	T-TRTMNT	Yes
RG- DocQuery1_ secondpurposeofuse.DelAuthority2-20	T-TRTMNT	Yes

Notes:

- 1) Includes an id_token not found in SAML attributes in the other cases.

Assessment

1. Verify that the RG-DocQuery1...-20 tests with TLS enabled run successfully.

Referenced Specifications

IHE XCA Profile Specification	IHE Cross-Community Access (XCA) profile - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
IHE Audit Trail and Node Authentication (ATNA)	<i>IHE Audit Trail and Node Authentication (ATNA) profile</i> - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
Secure Use of Transport Layer Security (TLS)	<i>Recommendations for Secure Use of Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS)</i> (IETF BCP 195) - available at: https://tools.ietf.org/html/bcp195

Change History

Date	Changes
March 25, 2025	Initial Draft Version
July 3, 2025	Updated for enabling IAS tests

RG 2.0 Query Document Exceptions

Test Case ID:	RG 2.0 Query Document Exceptions
Title:	Responding Gateway supports Document Query negative/exception tests
IHE Profile:	Cross-community Access (XCA)
Flow:	Basic Success and Negative Cases
Optionality:	Required
Test Tool	XDS Toolkit

Purpose/Description

This test covers negative/exception Document Query cases that a Responding Gateway is required to support. The test tool will send Document Query requests with improperly coded values for Exchange Purpose. The Responding Gateway is required to detect that the coded values are not part of the defined vocabulary and reject the queries.

The Responding System is expected to return a SOAP fault. Systems that do not return a SOAP fault due to local security policy are required to provide a consistent response for all exceptions and negative tests and shall document these cases/conditions as part of testing.

Toolkit Note: While the Responding Gateway is expected to return a SOAP fault, the XDS Toolkit will process the fault as an error condition and report that a specific test failed. In the case where local security policy requires the system return a normal empty response the test will show green. Please review the test logs in the test tool for each of the negative tests as part of manual evaluation (see Assessment). Do not assume that the Test Tool evaluation and output color (red, green) are accurate for the tests listed in step 1 below.

Notes:

- 1) The T-IAS purpose requires the inclusion of an id token in the SAML assertions. Please see Exchange Purpose Implementation SOP: Individual Access Services, Version 2.1, April 11, 2025.

Preconditions

Data Load Set: QTF Data Load Set

Test Case Patient Association: QTF TEST QTFTEST-004

Successful completion of test RG-PatientDiscovery1_secondpurposeofuse.T-TRTMNT-20 in the Testing Tool.

Test Steps

1. Use the Testing Tool to execute these tests:
 - a. RG-DocQuery2_secondpurposeofuse.LEGACYTREATMENT-20
 - b. RG-DocQuery2_secondpurposeofuse.REASSURANCE-20
 - c. RG-DocQuery2_secondpurposeofuse.T-TRTMNT-OID-20
 - d. RG-DocQuery2_secondpurposeofuse.T-IAS-ATTRS-20
2. The SUT returns a response with no records.
3. Submit the relevant extract of the ATNA log entries corresponding to the four QD requests sent by the testing tool to your Responding Gateway. These audit messages must be validated using Gazelle EVS Client and the permanent links submitted by email to qhintesting@sequoiaproject.org.
4. The table below lists each test, values supplied for Purpose of Use, and other notes.

Toolkit Test Name	Purpose of Use Code	Code System	Notes
RG-DocQuery2_secondpurposeofuse.LEGACYTREATMENT-20	TREATMENT	2.16.840.1.113883.3.18.7.1	1, 2
RG-DocQuery2_secondpurposeofuse.REASSURANCE-20	REASSURANCE	2.16.840.1.113883.3.7204.1.5.2.1	1, 3
RG-DocQuery2_secondpurposeofuse.T-TRTMNT-OID-20	T-TRTMNT	.16.840.1.113883.3.7204.1.5.2.199	1, 4
RG-DocQuery2_secondpurposeofuse.T-IAS-ATTRS-20	T-IAS-ATTRS	2.16.840.1.113883.3.7204.1.5.2.1	1, 5

Notes:

- 1) Negative test. Responding Gateway should not return any document objects.
- 2) Code System is legacy NHIN.
- 3) Undefined code in RCE Code System.
- 4) Undefined Code System.
- 5) T-IAS code without id_token.

Assessment

1. Verify that the RG-DocQuery2...-20 tests with TLS enabled are executed.
2. Manually review the logs captured by these tests to evaluate the response from the Responding Gateway. The automated software is not likely to correctly evaluate the response for these exception cases.
3. Verify the SUT generates an audit message for each request and that:
 - Each audit message conforms to ATNA Syslog requirements for ITI-38
 - Each audit message contains appropriate content for the ITI-38 transaction

Referenced Specifications

IHE XCA Profile Specification	IHE Cross-Community Access (XCA) profile - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
IHE Audit Trail and Node Authentication (ATNA)	<i>IHE Audit Trail and Node Authentication (ATNA) profile</i> - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
Secure Use of Transport Layer Security (TLS)	<i>Recommendations for Secure Use of Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS)</i> (IETF BCP 195) - available at: https://tools.ietf.org/html/bcp195

Change History

Date	Changes
December 6, 2022	Initial Draft Version
March 18, 2024	Relabel for QTF 1.1 Update coded values for Exchange Purpose Provide more detailed instructions
January 27, 2025	Relabel for QTF 2.0
July 3, 2025	Updated process for submitting audit messages, and enabling IAS tests. Added clarifying language around SOAP Faults and security policy exceptions

RG 2.0 Query 2.1 C-CDA

Test Case ID:	RG 2.0 Query 2.1 C-CDA
Title:	Responding Gateway supports Document Query for at least one R2.1 C-CDA
IHE Profile:	Cross-community Access (XCA)
Flow:	Basic Success
Optionality:	Required
Test Tool	XDS Toolkit

Purpose/Description

This test contains separate sections for these C-CDA R2.1 document types:

- CCD
- Discharge Summary
- Progress Note
- Unstructured Document

The Responding Gateway is required to complete each section that corresponds to a document type supported in their system. The Responding Gateway is required to support at least one of the four document types and is required to complete at least one section in this test.

Preconditions

Data Load Set: QTF Data Load Set

Test Case Patient Association: QTF TEST QTFTEST-004

Successful completion of test RG-PatientDiscovery1_secondpurposeofuse.T-TRTMNT-20 in the Testing Tool.

Section: CCD

Testing Tool initiates QD Request to the SUT with a DocumentEntry.classCode filter that uses a LOINC code to request C-CDA R2.1 CCD documents. This test is executed by Responding QHINs that include C-CDA R2.1 CCDs in their network and will respond to QD and RD requests for those documents.

Test Steps: CCD

1. Use the Testing Tool to execute the test RG-Query_secondpurposeofuse.CCD-20. The tool will send one QD Request with the following parameters.
 - The patient identifier has been previously record by the RG-PatientDiscovery1_secondpurposeofuse.T-TRTMNT-20 test.
 - DocumentEntry.status == urn:oasis:names:tc:ebxml-regrep:StatusType:Approved
 - DocumentEntry.classCode == 34133-9^^2.16.840.1.113883.6.1
 - returnType == LeafClass
2. The SUT successfully processes the QD Request and returns a QD Response to the testing tool that contains:
 - Status = Success
 - At least one object per the request type

Assessment: CCD

1. Verify that the RG-Query_secondpurposeofuse.CCD-20 test runs successfully.
2. Examine the QD Responses in the Testing Tool. Verify the SUT conforms to the following:
 - TF conformance statements QTF-43 through QTF-64
3. Audit messages will be examined in the test *RG-2.0 Query Document Secured*.

Section: Discharge Summary

Testing Tool initiates QD Request to the SUT with a DocumentEntry.classCode filter that uses a LOINC code to request C-CDA R2.1 Discharge Summary documents. This test is executed by Responding QHINs that include C-CDA R2.1 Discharge Summary documents in their network and will respond to QD and RD requests for those documents.

Test Steps: Discharge Summary

1. Use the Testing Tool to execute the test RG-Query_secondpurposeofuse.DischargeSummary-20. The patient identifier has been previously record by the RG-PatientDiscovery1_secondpurposeofuse.T-TRTMNT-20 test.
 - DocumentEntry.status == urn:oasis:names:tc:ebxml-regrep:StatusType:Approved
 - DocumentEntry.classCode == 18842-5^^2.16.840.1.113883.6.1
 - returnType == LeafClass
2. The SUT successfully processes the QD Request and returns a QD Response to the testing tool that contains:

- Status = Success
- At least one object per the request type

Assessment: Discharge Summary

1. Verify that the RG-Query_secondpurposeofuse.DischargeSummary-20 test runs successfully.
2. Examine the QD Responses in the Testing Tool. Verify the SUT conforms to the following:
 - TF conformance statements QTF-43 through QTF-64
3. Audit messages will be examined in the test *RG-2.0 Query Document Secured*.

Section: Progress Note

Testing Tool initiates QD Request to the SUT with a DocumentEntry.classCode filter that uses a LOINC code to request C-CDA R2.1 Progress Note documents. This test is executed by Responding QHINs that include C-CDA R2.1 Progress Note documents in their network and will respond to QD and RD requests for those documents.

Test Steps: Progress Note

1. Use the Testing Tool to execute the test RG-Query_secondpurposeofuse.ProgressNote-20. The tool will send one QD Request with the following parameters.
 - The patient identifier has been previously record by the RG-PatientDiscovery1_secondpurposeofuse.T-TRTMNT-20.
 - DocumentEntry.status == urn:oasis:names:tc:ebxml-regrep:StatusType:Approved
 - DocumentEntry.classCode == 11506-3^^2.16.840.1.113883.6.1
 - returnType == LeafClass
2. The SUT successfully processes the QD Request and returns a QD Response to the testing tool that contains:
 - Status = Success
 - At least one object per the request type

Assessment: Progress Note

1. Verify that the RG-Query_secondpurposeofuse.ProgressNote-20 test runs successfully.
2. Examine the QD Responses in the Testing Tool. Verify the SUT conforms to the following:
 - TF conformance statements QTF-43 through QTF-64

- Audit messages will be examined in the test *RG-2.0 Query Document Secured*.

Section: Unstructured Document

Testing Tool initiates QD Request to the SUT with a `DocumentEntry.formatCode` filter to request unstructured documents. This test is executed by Responding QHINs that include C-CDA R2.1 Unstructured Documents in their network and will respond to QD and RD requests for those documents.

Test Steps: Unstructured Document

- Use the Testing Tool to execute the test *RG-Query_secondpurposeofuse.Unstructured-20*. The tool will send one QD Request with the following parameters.
 - The patient identifier has been previously record by the *RG-PatientDiscovery1_secondpurposeofuse.T-TRTMNT-20* test.
 - `DocumentEntry.status == urn:oasis:names:tc:ebxml-regrep:StatusType:Approved`
 - `DocumentEntry.formatCode == urn:hl7-org:sdwg:ccda-nonXMLBody:2.1^^1.3.6.1.4.1.19376.1.2.3`
 - `returnType == LeafClass`
- The SUT successfully processes the QD Request and returns a QD Response to the testing tool that contains:
 - Status = Success
 - At least one object per the request type

Assessment: Unstructured Document

- Verify that the *RG-Query_secondpurposeofuse.Unstructured-20* test runs successfully.
- Examine the QD Responses in the Testing Tool. Verify the SUT conforms to the following:
 - TF conformance statements QTF-43 through QTF-64
- Audit messages will be examined in the test *RG-2.0 Query Document Secured*.

Referenced Specifications

IHE XCA Profile Specification	IHE Cross-Community Access (XCA) profile - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_FT_Rev_17-0_Vol1_FT_2020-07-20.pdf
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IHE Audit Trail and Node Authentication (ATNA)	<i>IHE Audit Trail and Node Authentication (ATNA) profile</i> - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev_17-0_Vol1_FT_2020-07-20.pdf
Secure Use of Transport Layer Security (TLS)	<i>Recommendations for Secure Use of Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS) (IETF BCP 195)</i> - available at: https://tools.ietf.org/html/bcp195

Change History

Date	Changes
December 6, 2022	Initial Draft Version
March 18, 2024	Relabel for QTF 1.1
January 27, 2025	Relabel for QTF 2.0 Consolidate four conditional tests into a single test that is required. Newly minted test has four sections. Responding Gateways must complete at least one section.

RG 2.0 Optional Transactions

Test Case ID:	RG 2.0 Optional Transactions
Title:	Responding Gateway responds to optional transactions
IHE Profile:	Cross-community Access (XCA)
Flow:	Basic Success and Negative Test Cases
Optionality:	Optional
Test Tool	XDS Toolkit

Purpose/Description

Testing Tool offers different Document Query and Retrieve transactions with combinations of SAML assertions to further exercise a Responding Gateway.

Preconditions

Data Load Set: QTF Data Load Set

Test Case Patient Association: QTF TEST QTFTEST-004

Successful completion of test RG-PatientDiscovery1_secondpurposeofuse.T-TRTMNT-20 in the Testing Tool.

Test Steps

The tests listed in the Optional tab for the Responding Gateway are run by owner of the system under test or by the Test Manager on an as needed basis. As with other tabs, the user can execute tests individually or by using the Run All button.

Assessment

No formal assessment is provided by the Test Manager. The Test Manager will consult and help interpret the results as needed.

Referenced Specifications

IHE XCA Profile Specification	IHE Cross-Community Access (XCA) profile - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
IHE Audit Trail and Node Authentication (ATNA)	<i>IHE Audit Trail and Node Authentication (ATNA) profile</i> - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
Secure Use of Transport Layer Security (TLS)	<i>Recommendations for Secure Use of Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS)</i> (IETF BCP 195) - available at: https://tools.ietf.org/html/bcp195

Change History

Date	Changes
December 6, 2022	Initial Draft Version
March 18, 2024	Relabel for QTF 1.1
January 27, 2025	Relabel for QTF 2.0

RG 2.0 Retrieve Document Secured

Test Case ID:	RG 2.0 Retrieve Document Secured
Title:	Responding Gateway supports document retrieve with all security provisions
IHE Profile:	Cross-community Access (XCA)
Flow:	Basic Success
Optionality:	Required
Test Tool	XDS Toolkit

Purpose/Description

The system under test responds to RD Requests with all security provisions. Those provisions include:

1. Recognition and processing of valid requests with required values of Exchange Purpose:
 - T-TRTMNT, 2.16.840.1.113883.3.7204.1.5.2.1
 - T-PYMNT, 2.16.840.1.113883.3.7204.1.5.2.1
 - T-HCO, 2.16.840.1.113883.3.7204.1.5.2.1
 - T-PH, 2.16.840.1.113883.3.7204.1.5.2.1
 - T-IAS, 2.16.840.1.113883.3.7204.1.5.2.1
 - T-GOVDTRM, 2.16.840.1.113883.3.7204.1.5.2.1
2. Appropriate TLS 1.3/1.2 communication with mutual authentication
3. Appropriate audit records generated

Notes:

- 1) The T-IAS purpose requires the inclusion of an id token in the SAML assertions. Please see Exchange Purpose Implementation SOP: Individual Access Services, Version 2.1, April 11, 2025.

Preconditions

Data Load Set: QTF Data Load Set

Test Case Patient Association: QTF TEST QTFTEST-004

Successful completion of test RG-DocQuery1_secondpurposeofuse.T-TRTMNT-20 in the Testing Tool.

Test Steps

The Testing Tool is configured to use SAML and TLS 1.3/1.2 connections for all test steps.

1. Use the Testing Tool to execute these tests:
 - RG-DocRetrieve1_secondpurposeofuse.T-TRTMNT-20
 - RG-DocRetrieve1_secondpurposeofuse.T-PYMNT-20
 - RG-DocRetrieve1_secondpurposeofuse.T-HCO-20
 - RG-DocRetrieve1_secondpurposeofuse.T-PH-20
 - RG-DocRetrieve1_secondpurposeofuse.T-IAS-20
 - RG-DocRetrieve1_secondpurposeofuse.T-GOVDTRM-20
2. The Testing Tool sends a synchronous RD Request for one document to the SUT, using the following required parameters:
 - RepositoryUniqueId: [Extracted from RG-DocQuery1_secondpurposeofuse.T-TRTMNT-20 log]
 - DocumentUniqueId: [Extracted from RG-DocQuery1_secondpurposeofuse.T-TRTMNT-20 log]
 - homeCommunityId: [HCID for the SUT]
3. The System returns to the Testing Tool an RD Response containing the requested document.
RegistryResponse/@status:Success
DocumentResponse: 1 present
RepositoryUniqueId: [Matches value returned in RG-DocQuery1_secondpurposeofuse.T-TRTMNT-20]
DocumentUniqueId: [Matches value returned in RG-DocQuery1_secondpurposeofuse.T-TRTMNT-20]
homeCommunityId: [HCID for the System]
4. Submit the relevant extract of the ATNA log entries corresponding to the six RD requests sent by the Testing Tool to your Responding Gateway. These audit messages must be validated using Gazelle EVS Client and the permanent links submitted by email to qhintesting@sequoiaproject.org.

Assessment

1. Verify that the RG-DocRetrieve1...-20 tests with TLS enabled are run successfully.
2. Verify the SUT generates an audit message for each request and that:
 - Each audit message conforms to ATNA Syslog requirements for ITI-39
 - Each audit message contains appropriate content for the ITI-39 transaction

Referenced Specifications

IHE XCA Profile Specification	IHE Cross-Community Access (XCA) profile - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev_17-0_Vol1_FT_2020-07-20.pdf
IHE Audit Trail and Node Authentication (ATNA)	<i>IHE Audit Trail and Node Authentication (ATNA) profile</i> - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev_17-0_Vol1_FT_2020-07-20.pdf
Secure Use of Transport Layer Security (TLS)	<i>Recommendations for Secure Use of Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS) (IETF BCP 195)</i> - available at: https://tools.ietf.org/html/bcp195

Change History

Date	Changes
December 6, 2022	Initial Draft Version
March 18, 2024	Relabel for QTF 1.1 Update coded values for Exchange Purpose Provide better instruction details
January 27, 2025	Relabel for QTF 2.0 Repair typos
July 3, 2025	Updated process for submitting audit messages, and enabling IAS tests

RG 2.0 Retrieve 2.1 C-CDA

Test Case ID:	RG 2.0 Retrieve 2.1 C-CDA
Title:	Responding Gateway supports Document Rretrieve request for at least one C-CDA 2.1
IHE Profile:	Cross-community Access (XCA)
Flow:	Basic Success
Optionality:	Required
Test Tool	XDS Toolkit

Purpose/Description

This test contains separate sections for these C-CDA R2.1 document types:

- CCD
- Discharge Summary
- Progress Note
- Unstructured Document

The Responding Gateway is required to complete each section that corresponds to a document type supported in their system. The Responding Gateway is required to support at least one of the four document types and is required to complete at least one section in this test.

Preconditions

Data Load Set: QTF Data Load Set

Test Case Patient Association: QTF TEST QTFTEST-004

Section: CCD

Responding systems will run this test on the condition that their network contains Continuity of Care Documents that can be searched for and retrieved in the Document Query Scenario.

Testing Tool initiates a synchronous RD Request to the SUT for one Continuity of Care Document. SUT returns an RD Response with the requested document.

Test Steps: CCD

1. Use the Testing Tool to execute the test RG-Retrieve_secondpurposeofuse.CCD-20.
2. The Testing Tools extracts the value for Document Unique ID from the test RG-Query_secondpurposeofuse.CCD-20; this ID will be used in the next step.
3. The Testing Tool sends a synchronous Retrieve Documents Request for one document to the SUT, using the following required parameters:
 - RepositoryUniqueld:
 - DocumentUniqueld:
 - homeCommunityId: [HCID for the SUT]
4. The System returns to the Testing Tool an RD Response containing the requested document.
 - a. RegistryResponse/@status:Success
 - b. DocumentResponse: 1 present
 - c. RepositoryUniqueld:
 - d. DocumentUniqueld:
 - e. homeCommunityId: [HCID for the System]

Assessment: CCD

1. Verify that the RG-Retrieve_secondpurposeofuse.CCD-20test runs successfully.
2. Examine the RD Response in the Testing Tool. Verify the SUT conforms to the following:
 - TF conformance statements QTF-43 through QTF-64
3. Audit messages will be examined in the test *RG 2.0 Retrieve Document Secured*.

Section: Discharge Summary

Responding systems will run this test on the condition that their network contains Discharge Summary documents that can be searched for and retrieved in the Document Query Scenario.

Testing Tool initiates a synchronous RD Request to the SUT for one Discharge Summary document. SUT returns an RD Response with the requested document.

Test Steps: Discharge Summary

1. Use the Testing Tool to execute the test RG-Retrieve_secondpurposeofuse.DischargeSummary-20.
2. The Testing Tool extracts the value for Document Unique ID from the test RG-Query_secondpurposeofuse.DischargeSummary-20; this ID will be used in the next step.

3. The Testing Tool sends a synchronous Retrieve Documents Request for one document to the SUT, using the following required parameters:
 - RepositoryUniqueId:
 - DocumentUniqueId:
 - homeCommunityId: [HCID for the SUT]
4. The System returns to the Testing Tool an RD Response containing the requested document.
 - RegistryResponse/@status:Success
 - DocumentResponse: 1 present
 - RepositoryUniqueId:
 - DocumentUniqueId:
 - homeCommunityId: [HCID for the System]

Assessment: Discharge Summary

1. Verify that the RG-Retrieve_secondpurposeofuse.DischargeSummary-20 test runs successfully.
2. Verify the SUT conforms to the following:
 - TF conformance statements QTF-43 through QTF-64

Section: Progress Note

Responding systems will run this test on the condition that their network contains Progress Note documents that can be searched for and retrieved in the Document Query Scenario.

Testing Tool initiates a synchronous RD Request to the SUT for one Discharge Summary document. SUT returns an RD Response with the requested document.

Test Steps: Progress Note

1. Use the Testing Tool to execute the test RG-Retrieve_secondpurposeofuse.ProgressNote-20.
2. The Testing Tool extracts the value for Document Unique ID from the test RG-Query_secondpurposeofuse.ProgressNote-20; this ID will be used in the next step.
3. The Testing Tool sends a synchronous Retrieve Documents Request for one document to the SUT, using the following required parameters:
 - RepositoryUniqueId:
 - DocumentUniqueId:
 - homeCommunityId: [HCID for the SUT]
4. The System returns to the Testing Tool an RD Response containing the requested document.
 - RegistryResponse/@status:Success
 - DocumentResponse: 1 present
 - RepositoryUniqueId:
 - DocumentUniqueId:
 - homeCommunityId: [HCID for the System]

Assessment: Progress Note

1. Verify that the RG-Retrieve_secondpurposeofuse.ProgressNote-20 test runs successfully.
2. Verify the SUT conforms to the following:
 - TF conformance statements QTF-43 through QTF-64

Section: Unstructured Document

Responding systems will run this test on the condition that their network contains C-CDA Unstructured Documents that can be searched for and retrieved in the Document Query Scenario.

Testing Tool initiates a synchronous RD Request to the SUT for one Unstructured Document. SUT returns an RD Response with the requested document.

Test Steps: Unstructured Document

1. Use the Testing Tool to execute the test RG-Retrieve_secondpurposeofuse.Unstructured-20 .
2. The Testing Tool extracts the value for Document Unique ID from the test RG-Query_secondpurposeofuse.Unstructured-20; this ID will be used in the next step.
3. The Testing Tool sends a synchronous Retrieve Documents Request for one document to the SUT, using the following required parameters:
 - RepositoryUniqueId:
 - DocumentUniqueId:
 - homeCommunityId: [HCID for the SUT]
4. The System returns to the Testing Tool an RD Response containing the requested document.
 - RegistryResponse/@status:Success
 - DocumentResponse: 1 present
 - RepositoryUniqueId:
 - DocumentUniqueId:
 - homeCommunityId: [HCID for the System]

Assessment: Unstructured Document

1. Verify that the RG-Retrieve_secondpurposeofuse.Unstructured-20 test runs successfully.
2. Verify the SUT conforms to the following:
 - TF conformance statements QTF-43through QTF-64

Referenced Specifications

IHE XCA Profile Specification	IHE Cross-Community Access (XCA) profile - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
IHE Audit Trail and Node Authentication (ATNA)	<i>IHE Audit Trail and Node Authentication (ATNA) profile</i> - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
Secure Use of Transport Layer Security (TLS)	<i>Recommendations for Secure Use of Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS) (IETF BCP 195)</i> - available at: https://tools.ietf.org/html/bcp195

Change History

Date	Changes
December 6, 2022	Initial Draft Version
May 31, 2023	Updated Toolkit test names to match updated version of test cases.
March 18, 2024	Relabel for QTF 1.1
January 27, 2025	Relabel for QTF 2.0 Consolidate four conditional tests into a single test that is required. Newly minted test has four sections. Responding Gateways must complete at least one section.

4.3. Message Delivery

All Message Delivery tests for the Responding Gateway use patient QTF TEST QTFTEST-003. As described in the *QHIN Conformance Testing Process: Initialization Test Cases document*, you are required to:

- Configure your testing environment to include patient QTF TEST QTFTEST-003 with the stated demographics.

The Testing Tool will send sample documents for patient QTF TEST QTFTEST-003 as shown in the table below. You will execute the relevant accept document test for each of the four document types listed below.

Document Type
C-CDA 2.1 Continuity of Care Document (CCD)
C-CDA 2.1 Discharge Summary
C-CDA 2.1 Progress Note
C-CDA 2.1 Unstructured Document

Please see the *QHIN Conformance Testing Process: User Guide* document that describes how to use the Testing Tool and the section on testing a Responding Gateway.

RG 2.0 Accept Document Secured

Test Case ID:	RG 2.0 Accept Document Secured
Title:	Responding Gateway supports Message Delivery with all security provisions
IHE Profile:	Cross-Community Document Reliable Interchange (XCDR)
Flow:	Basic Success
Optionality:	Required
Test Tool	XDS Toolkit

Purpose/Description

The system under test responds to MD Requests with all security provisions. Those provisions include:

1. Appropriate TLS 1.3/1.2 communication with mutual authentication
2. Appropriate audit records generated

Preconditions

Data Load Set: QTF Data Load Set

Test Case Patient Association: QTF TEST QTFTEST-003

Test Steps

The Testing Tool is configured to use SAML and TLS 1.3/1.2 connections for all test steps.

1. Use the Testing Tool to execute the following tests:
 - RG-Accept.CCD-20
 - RG-Accept.DischargeSummary-20
 - RG-Accept.ProgressNote-20
 - RG-Accept.Unstructured-20
2. The System Under Test will respond with a status of Success.
3. Submit the relevant extract of the ATNA log entries for the four document types sent to your system by the Testing Tool. These audit messages must be validated using Gazelle EVS Client and the permanent links submitted by email to qhintesting@sequoiaproject.org.
4. Inform the Test Manager which *Accept* test or tests should be included with this test.

Assessment

1. Verify that the RG.Accept...-20 tests runs successfully.
2. Verify the SUT generates an audit message for each request and that:
 - Each audit message conforms to ATNA Syslog requirements for ITI-80
 - Each audit message contains appropriate content for the ITI-80 transaction

Referenced Specifications

IHE XCDR Profile Specification	IHE Cross-Community Document Reliable Exchange (XCDR) profile - available as a supplement at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_Suppl_XCDR.pdf
IHE Audit Trail and Node Authentication (ATNA)	<i>IHE Audit Trail and Node Authentication (ATNA) profile</i> - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
Secure Use of Transport Layer Security (TLS)	<i>Recommendations for Secure Use of Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS)</i> (IETF BCP 195) - available at: https://tools.ietf.org/html/bcp195
HL7 C-CDA R2.1	<i>HL7 Consolidated CDA Release 2.1</i> available at http://www.hl7.org/implement/standards/product_brief.cfm?product_id=492

Change History

Date	Changes
December 6, 2022	Initial Draft Version
May 31, 2023	Updated Purpose/Description to call out MD instead of improper RD
March 18, 2024	Relabel for QTF 1.1
January 27, 2025	Relabel for QTF 2.0
July 3, 2025	Updated process for submitting audit messages

RG 2.0 Reject Metadata

Test Case ID:	RG 2.0 Reject Metadata
Title:	Gateway rejects documents due to Metadata errors
IHE Profile:	Cross-Community Document Reliable Interchange (XCDR)
Flow:	Error conditions: incorrect metadata
Optionality:	Required
Test Tool	XDS Toolkit

Purpose/Description

The testing tool sends multiple submission sets with XDS metadata that is purposely incorrect. Documents are sent using the Cross-Gateway Document Provide [ITI-80] transaction. The Responding Gateway is required to reject these documents with a status of urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:Failure. All submission sets submitted by this test must be rejected.

This test only uses metadata that is in error and is not intended to use or send C-CDA documents that are in error.

Preconditions

Data Load Set: QTF Data Load Set

Test Case Patient Association: QTF TEST QTFTEST-003

Test Steps

1. Use the Testing Tool to execute the test RG-Reject.Metadata-20.
 - The Testing Tool will send multiple submission sets with purposely incorrect metadata.
 - The System Under Test will respond with a status of Failure.
2. Submit the relevant extract of the ATNA log for the documents sent to your system by the Testing Tool. These audit messages must be validated using Gazelle EVS Client and the permanent links submitted by email to qhintesting@sequoiaproject.org.

Assessment

1. Verify that the RG-Reject.Metadata-20 test runs successfully. Each step expects a Failure response status from the system under test.
2. Verify the SUT generates an audit message for each request and that:
 - Each audit message conforms to ATNA Syslog requirements for ITI-80
 - Each audit message contains appropriate content for the ITI-80 transaction

Referenced Specifications

IHE XCDR Profile Specification	IHE Cross-Community Document Reliable Exchange (XCDR) profile - available as a supplement at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_Suppl_XCDR.pdf
IHE Audit Trail and Node Authentication (ATNA)	<i>IHE Audit Trail and Node Authentication (ATNA) profile</i> - available in the IHE IT Infrastructure (ITI) Technical Framework Volume 1: Integration Profiles at: https://www.ihe.net/uploadedFiles/Documents/ITI/IHE_ITI_TF_Rev17-0_Vol1_FT_2020-07-20.pdf
Secure Use of Transport Layer Security (TLS)	<i>Recommendations for Secure Use of Transport Layer Security (TLS) and Datagram Transport Layer Security (DTLS)</i> (IETF BCP 195) - available at: https://tools.ietf.org/html/bcp195
HL7 C-CDA R2.1	<i>HL7 Consolidated CDA Release 2.1</i> available at http://www.hl7.org/implement/standards/product_brief.cfm?product_id=492

Change History

Date	Changes
September 30, 2022	Initial Draft Version
March 18, 2024	Relabel for QTF 1.1
January 27, 2025	Relabel for QTF 2.0
July 3, 2025	Updated process for submitting audit messages

4.4. ATNA Syslog Checklist for Responding Gateway Systems

The Responding Gateway tests listed above state requirements for sending ATNA Syslog messages to the testing team for evaluation. This section contains a table that can be used as a checklist.

Test Name	Syslog Messages
RG 2.0 Discover Patient 004 Secured	One syslog message for each ITI-55 Exchange Purpose combination. There are 6 required Exchange Purpose values.
RG 2.0 Patient Discovery Exceptions	One syslog message for each ITI-55 message sent to the Responding Gateway.
RG 2.0 Optional Patient Discovery	None
RG 2.0 Query Document Secured	One syslog message for each ITI-38 Exchange Purpose combination. There are 6 required Exchange Purpose values.
RG 2.0 Query Document Exceptions	One syslog message for each ITI-38 Exchange Purpose combination. There are 4 required Exchange Purpose values.
RG 2.0 Query C-CDA 2.1	None
RG 2.0 Optional Transactions	None
RG 2.0 Retrieve Secured	One syslog message for each ITI-39 Exchange Purpose combination. There are 6 required Exchange Purpose values.
RG 2.0 Retrieve 2.1 C-CDA	None
RG 2.0 Accept Document Secured	One syslog message for each inbound ITI-80 transaction processed. There are four required document types to be accepted and tested: <ul style="list-style-type: none"> • CCD • Discharge Summary • Progress Note • Unstructured Document
RG 2.0 Reject Metadata	One syslog message for each inbound ITI-80 transaction. As of 2024.03.18, there are two test transactions.