eHealth Exchange™

Test Cases

Access Consent Policy (ACP) and Social Security Administration (SSA) Transport Testing for Health Information Technology Partner Onboarding

ACP/SSA Test Cases to Support Disability Determination Use Case

Introduction

The Sequoia Project has aligned with the ONC Meaningful Use Requirements as a baseline for content specifications that define types of content that may be exchanged by nodes across the eHealth Exchange to address particular use cases or business needs. Health Information Organizations (HIOs), which act as nodes on the eHealth Exchange are termed participants. These content specifications make use of the eHealth Exchange query use case for discovery and information exchange capabilities and rest upon a foundational set of messaging, security, and privacy services.

This document provides the testing methodology and scenarios required for interoperability testing and exchange of consent policies between eHealth Exchange participants. It references the Access Consent Policy (ACP) specification for the interoperability requirements outlined within. An ACP is an element of an optional SAML statement described in the eHealth Exchange Authorization Framework specification. The purposes of these tests are to:

1. Test the content and format of Access Consent policies covering the electronic exchange of health information between eHealth Exchange participants, and
2. To test for the adherence to a standard language for expressing restrictions on access to health information. These restrictions are also known as Access Consent Policies.
3. Test for the exchange of Access Consent policies specific to the Social Security Administration (SSA) disability benefits determination implementation.
4. Test the use of the "Cross Gateway Query" and "Cross Gateway Retrieve" transactions in support of document exchange.

Business Needs Supported by This Testing Profile

A core requirement of the eHealth Exchange is for consumers "to limit the type of data that may be available to any or selected providers. Although the requirement to restrict access to and disclosure of health information is often described in the context of "consumers" (a term that is more broadly applicable than the term "patient", and is thus

used in this testing program), other types of users may also have the need to restrict access to health information. For example:

1. An eHealth Exchange participant that operates within a state may need to implement restrictions on access to health information as required by that state's laws.
2. A physician may wish to restrict access to newly created health information by patients until he/she has the opportunity to review the information for accuracy or for any health concerns that he/she wishes to discuss with the patient.
3. These test cases may be used as underlying requirements for various use cases that describe these kinds of restrictions, in addition to those created and adopted by consumers.

Sample Scenario

There are likely to be a number of scenarios that will be able to take advantage of this specification. The one described here should be considered as an example as referenced by the eHealth Exchange Access Consent Policies Specification v1.0.

A consumer moves to a new city and establishes themselves as a patient with a healthcare provider who participates within the eHealth Exchange or Carequality initiatives staffed by Sequoia. As part of establishing their identity within the eHealth Exchange, certain Access Consent policies are established as applying to this consumer. Those policies would permit the consumer's new healthcare provider to retrieve clinical information held by their previous healthcare providers.

When the new healthcare provider attempts to retrieve existing clinical information through the eHealth Exchange using the "Query for Documents" transaction, the NHIO may indicate (Using a mechanism defined in the eHealth Exchange Authorization Framework specification) the Policy ID of an Access Consent policy that the requesting NHIO believes would be germane to the responding eHealth Exchange participant. Using the transactions and Access Consent policy formats defined by the 2010 Access Consent Policy specification, the responding participant initiates a Query for Documents and subsequent Retrieve Document transaction to retrieve the Access Consent policy and apply that policy in determining whether to permit the original "Query for Documents" request. See *Figure 1: Exchange Access Consent Policies sequence diagram* showing the base ACP specification workflow defined below:

Figure 1: Exchange Access Consent Policies sequence diagram

Conformance to the ACP specification will be validated against the ACP Conformance Checklist (CL_Access_Consent_policy_ACP+SSA.xls).

The Access Consent Policy Testing program will leverage the existing 2011 smoke tests to capture the Participant's Query for Document Response and Retrieve Document Response messages.

SSA Use Case Message Sequencing

Please refer to the [SSA/eHealth Exchange Interoperability Guide v1.1](#) for the following section references and sequencing:

1. **Section 2.0** of the SSA Interoperability Guide requires Web Services Interfaces Integration with SSA via the eHealth Exchange is comprised of three web service interfaces:
   (1) Patient Discovery
   (2) Query for Documents
   (3) Retrieve Documents
2. **Section 2.2** of the SSA Interoperability Guide requires Query for Documents and Retrieve Documents
   (1) The Query for Documents and Retrieve Documents interfaces are based on the IHE Cross Community Access (XCA) and the Cross-Enterprise Document Sharing (XDS.b) profiles.
   (2) These interfaces are used to list and retrieve patient-related documents.
   (3) SSA NHIN gateway = requesting client. Health IT Partner's gateway = responding gateway.
   (4) These services will be used to retrieve the patient's medical information after a patient is discovered at the NHIO.
3. **Section 4.1** of the SSA Interoperability Guide requires: Patient Discovery Request
   (1) Step 1 in the messaging sequence: The Testing Tool sends the Patient Discovery Request message to the Health IT Partner (NHIO).
   (2) The request will include the following patient's data:
       (a) Name (first, middle, last)
       (b) Gender
       (c) DOB
       (d) SSN
       (e) Address
   (3) The Testing Tool will be using the Demographic Query only mode of the Patient Discovery transaction (only the demographics of the patient are included in the request). Will not include a patient identifier in the body of the request.
   (4) Security Assertion Markup Language (SAML) assertion included in the Patient Discovery request from the testing tool will include a Patient Identifier. This identifier is only intended for supporting the privacy policy retrieval and SHALL not be used for creating a patient correlation.

a. The MinimumDegreeMatch element in the request will be set to 100, the highest value defined, to indicate that the responder should have the highest confidence in their patient match response.

4. **Section 4.2:** Initial Access Control Decision

   (1) Step 2 in the sequence: The Health IT Partner performs the initial security evaluation.

   (2) Health IT Partner evaluates the SAML assertion information, source organization, purpose of use, role, and asserted privacy policies and takes a decision whether to act upon the testing tool Patient Discovery request.

   (3) If the Health IT Partner does not accept the SAML assertion statements, it SHOULD return an HTTP Error 403 Forbidden error code and include a reason for the refusal.

5. **Section 4.3:** Query for Documents Request (For Access Consent Policy)

   (1) Step 3 in the messaging sequence: Health IT Partner sends a Query for Documents Request message to the testing tool.

   (2) Health IT Partner SHALL set the value of the patient identifier in the request message to the Patient Identifier value that was included in the SAML assertion of the Patient Discovery request from the testing tool.

   (3) $XDSDocumentEntryPatientID SHALL be populated with the Patient Identifier value that was included in the SAML assertion of the Patient Discovery request from SSA.

   (4) $XDSDocumentEntryStatus SHALL be populated with 'urn:oasis:names:tc:ebxml-regrep:StatusType:Approved'

   (5) $XDSDocumentEntryClassCode MAY be populated with LOINC code of 57016-8 (privacy policy acknowledgement).

   (6) $XDSDocumentEntryEventCodeList SHALL be populated with the InstanceAccessPolicy value included in the SAML assertion authorization decision statement of the Patient Discovery request from SSA.

6. **Section 4.4:** Query for Documents Response (For Access Consent Policy)

   (1) Step 4: The testing tool sends a Query for Documents Response message to the Health IT Partner.

   (2) The Query for Documents Response will contain the list of access consent policies that can be retrieved for the patient.

(3) The following table contains a sample of the XDS metadata values that the Health IT Partner can expect to receive from the testing tool:

XDS Metadata	Value
availabilityStatus	urn:oasis:names:tc:ebxml-regrep:StatusType:Approved
classCode	57016-8 (LOINC)
classCode DisplayName	Privacy Policy Acknowledgement
confidentialityCode	N (Normal)
formatCode	urn:ihe:iti:bppc-sd:2007
formatCode codeSystem	1.3.6.1.4.1.19376.1.2.3
healthcareFacilityTypeCode	385432009 (SNOMED CT code for Not Applicable)
mimeType	text/xml
practiceSettingCode	385432009 (SNOMED CT code for Not Applicable)
serviceStartTime	Effective start date of privacy policy (authorization)
serviceStopTime	Effective end date of privacy policy (authorization)
Title	AUTHORIZATION TO DISCLOSE INFORMATION TO THE SOCIAL SECURITY ADMINISTRATION

7. **Section 4.5:** Retrieve Document Request (For Access Consent Policy)
   (1) Step 5: Health IT Partner sends a Retrieve Document Request message to the testing tool to retrieve access consent policy documents.
   (2) Once the testing tool has received the last Retrieve Document response message, the ability to retrieve the access consent policy will no longer be allowed.
8. **Section 4.6:** Retrieve Document Response (For Access Consent Policy)
   (1) Step 6: The testing tool sends Retrieve Document Response message to the Health IT Partner.
   (2) The testing tool will respond with the access consent policy document (Authorization to Release Information) identified in the Retrieve Document request message.

9. **Section 4.7:** Final Access Control Decision
    (1) Step 7: Health IT Partner makes the final access control decision.
    (2) Health IT Partner reviews the access consent policy obtained in the previous step and makes a decision regarding whether they will accept the policy and allow for the release of medical information.
    (3) The Health IT Partner SHOULD use the access consent policy identifier as a reference mechanism when establishing the permissions for the response to the testing tool.

10. **Section 4.8:** Patient Discovery Response
    (1) Step 8: Health IT Partner sends a Patient Discovery Response message to the testing tool.
    (2) If the patient discovery query returns no matches, the Health IT Partner should return an empty result set per the specification.
        (a) Patient not found: When a Health It Partner's gateway is unable to locate the patient based on demographics data provided in the PD request by the testing tool.
    (3) If the patient discovery request results in an ambiguous match, the Health IT Partner should return an empty result set. When ambiguous matches are close, the Health IT partner may use a response code of 'AnswerNotAvailable'
        (a) Ambiguous Match: When an NHIN participant's gateway has located more than one patient.
    (4) If the patient query results in an unambiguous match for the Health IT partner, the Health IT partner identifier for the patient and the patient demographics that the Health IT Partner matched on SHOULD be returned.

11. **Section 4.9:** Query for Documents Request (For Clinical Document)
    (1) Step 9: The testing tool sends a Query for Documents request message to the HIT Partner.
    (2) The Health IT Partner **SHALL** support queries based on the following parameters (slots):
        (a) $XDSDocumentEntryFormatCode
        (b) $XDSDocumentEntryPatientId
        (c) $XDSDocumentEntryServiceStartTimeFrom
        (d) $XDSDocumentEntryServiceStartTimeTo
        (e) $XDSDocumentEntryServiceStopTimeFrom
        (f) $XDSDocumentEntryServiceStopTimeTo
        (g) $XDSDocumentEntryStatus

(3) For Health IT Partners that support dynamic creation of documents, the partner **SHALL** explicitly look for queries where the $XDSDocumentEntryStatus is set to a value of 'urn:ihe:iti:2010:StatusCode:DeferredCreation'. In this situation, the document data **SHALL** honor the service start and stop time values, if they are specified in the request. (Please note prior discussion thread by the eHealth Exchange Specification factory with additional information on this topic can be found at (http://exchange-specifications.wikispaces.com/share/view/54214588)

(4) For Health IT Partners that support a repository of static documents, the partner **SHALL** explicitly look for queries where the $XDSDocumentEntryStatus is set to a value of 'urn:oasis:names:tc:ebxml-regrep:StatusType:Approved' 'In this situation, the list of available documents **SHALL** honor the service start and stop time values, if they are specified in the request.

(5) Empty strings in a query **SHALL** be treated as being equal to NULL or empty value, which is not the same as an unspecified value.

12. **Section 4.10:** Query for Documents Response (For Clinical Document)
    (1) Step 10: Health IT Partner sends the Query for Documents response message to the testing tool.
    (2) Response message contains the list of electronic medical record documents that the testing tool can retrieve.

13. **Section 4.11:** Retrieve Documents Request (For Clinical Document)
    (1) Step 11: The testing tool sends Retrieve Document request message to Health IT Partner for each of the document references that were returned to SSA in the Query for Documents response message.

14. Retrieve Documents Response (For Clinical Document)
    (1) Step 12: Health IT Partner sends Retrieve Document response message to the testing tool.
    (2) Response message contains the requested document.

This section describes the sequencing of the Patient Discovery, Query for Documents, and Retrieve Document messages that comprise the integration with SSA. The following diagram depicts the message sequence.
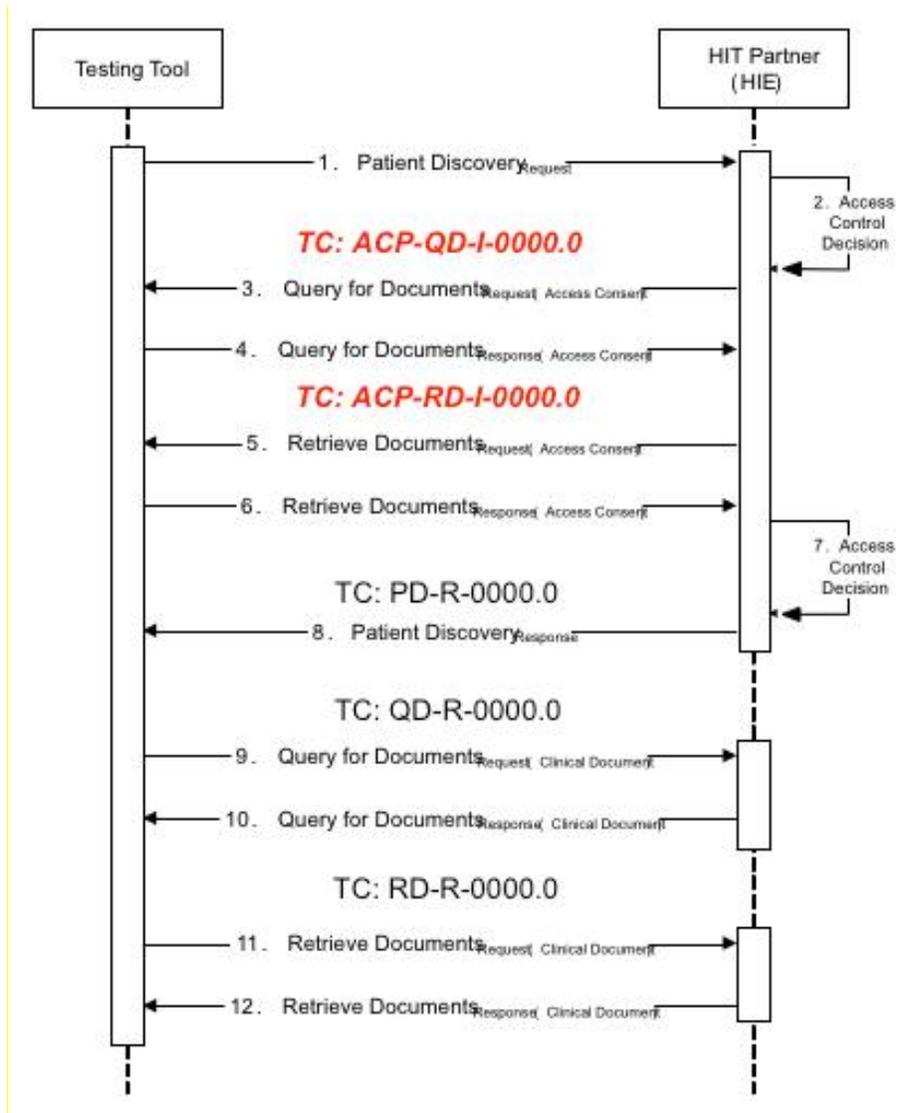
Figure 2: eHealth Exchange (eHEX) Messaging between the testing tool and System Under Test (SUT)

End-To-End Test Scenarios

TC: ACP-PD-R-0000.0 – Patient Discovery (PD)

Test Case ID:	TC: ACP-PD-R-0000.0
Title:	Respond to a basic PD for patient found / Patient discovery request
SUT Role:	Responder
IHE Profile:	[Cross-community Patient Discovery (XCPD)](#)
Flow:	Basic Success
Optionality:	Required

PURPOSE/DESCRIPTION

Testing Tool sends a PD Request to the System with the required elements. System responds with a match.

PRECONDITIONS

Data Load Set:

Test Case Patient Association: P-000000002

TEST STEPS

1. The Testing Tool sends an immediate PD Request to the System with the following parameters, with values taken from patient P-000000002:

- SOAP Header = MP: MA Default Request (SUT) Message Parameters
- LivingSubject Name
- LivingSubjectAdministrativeGender
- LivingSubjectBirthTime
- LivingSubjectID- SSN
- PatientAddress (Address#1)
- Subject Role (i.e. Social Worker)
    - Type = CE
    - Code = 106328005
    - Code System = 2.16.840.1.113883.6.96
    - Code System Name = SNOMED_CT
    - Display Name = Social worker

- Purpose of Use (i.e. Coverage)
  - Type = CE
  - Code = COVERAGE
  - Code System = 2.16.840.1.113883.3.18.7.1
  - Code System Name = nhin-purpose
  - Display Name = Disclosures for insurance or disability coverage determination
- Patient Identifier (Resource ID) = [P-000000002 Resource ID]
- Authorization Decision Statement.InstanceAccessConsentPolicy = urn:oid: 2.16.840.1.113883.3.184.50.1

2. The System returns a PD Response with a match for patient P-000000002 NOTE: The Patient Discovery response will not be sent to the Testing Tool until the ACP Query and Retreive test scenarios (outlined below) have completed successfully.

3. Verify conformance of the PD Response to the:
- CL: PD Responder Response Checklist
- CL:MA SOAP Response Checklist
- CL:ACP
- CL:SSA

REFERENCED SPECIFICATIONS

2011 Exchange Specification	Patient Discovery v2.0
2011 Underlying Specification	IHE IT Infrastructure Cross-Community Patient Discovery (XCPD) ITI-55 (Version 2010-08-10) and IHE IT Infrastructure Technical Framework Vol.1 & 2a, 2x, 3 Revision 7.0 (2010-08-10)

CHANGE HISTORY

Date	Changes
July, 2018	Sequoia Testing Team

TC:ACP-QD-I-0000.0 – Query For Documents (QD)

Test Case ID:	TC: ACP-QD-I-0000.0
Title:	Send a basic ACP QD
SUT Role:	Initiator
IHE Profile:	Cross-community Access (XCA)
Flow:	Basic Success
Optionality:	Required

PURPOSE/DESCRIPTION

System initiates ACP QD synchronous Find Documents request to the Testing tool with the required parameters. Testing tool responds with the matching policy document(s) metadata.

PRECONDITIONS

Data Load Set:

Test Case Patient Association: P-000000002

TEST STEPS

1. The System sends a synchronous/immediate ACP Find Documents Request to the Testing Tool, using the following required parameters:

- SOAP Header = MP: MA Default Request (SUT) Message Parameters
- $XDSDocumentEntryPatientID = [P-000000002 Resource ID]
- $XDSDocumentEntryStatus = Approved
- $XDSDocumentEntryClassCode = LOINC code of 57016-8 with scheme "2.16.840.1.113883.6.1"
- $XDSDocumentEntryEventCodeList = [Instance Access Policy OID from PD Request with scheme "N/A"]
- returnType = LeafClass
- SOAP request = synchronous
- returnComposedObjects = true

SSA confirmed ACP documents are always Stable. We will allow a participant to request something other than Stable.
The System Under Test can request Approved only or Approved
The System Under Test can request Stable only or Stable + On Demand.

2. The Testing Tool successfully processes the Request and returns a Response to the System that contains the following objects:

- A 'Document Match' for [D-000000002.SSA-1]
  Note: The parameters that are part of the Request should be the minimum that's checked on the Response.

3. Verify conformance of the PD Request to the:
- CL: QD Initiator Request Checklist
- CL: QD Initiator FindDocuments Checklist
- CL: MA SOAP Request Checklist
- CL: ACP
- CL: SSA

REFERENCED SPECIFICATIONS

2011 Exchange Specification	Query for Documents v3.0
2011 Underlying Specification	IHE IT Infrastructure Cross Community Access (XCA) Cross Gateway Query ITI-18 (Version 2010-08-10) and IHE IT Infrastructure Technical Framework Vol.1 & 2a, 2x, 3 Revision 7.0 (2010-08-10)

CHANGE HISTORY

Date	Changes
July, 2018	Sequoia Testing Team

TC:ACP-RD-I-0000.0 – Retrieve Documents (RD)

Test Case ID:	TC: ACP-RD-I-0000.0
Title:	Send a basic ACP RD (retrieve document request)
SUT Role:	Initiator
IHE Profile:	Cross-community Access (XCA)
Flow:	Basic Success
Optionality:	Required

PURPOSE/DESCRIPTION

System initiates a synchronous ACP Retrieve Documents request for one document to the Testing Tool. Testing tool responds with the requested policy document.

PRECONDITIONS

Data Load Set:

Test Case Patient Association: P-000000002

TEST STEPS

1. The System transmits to the Testing Tool a synchronous Retrieve Documents request for one policy document using the following required parameters:
   - SOAP Header = MP: MA Default Request (SUT) Message Parameters
   - RepositoryUniqueId: [Repository ID for D-000000002.XSSA-1]
   - DocumentUniqueId: [Document ID for D-000000002.XSSA-1]
   - homeCommunityId: [HCID for the Testing Tool]

2. The Testing Tool returns to the System an RD Response containing the requested document:
   - RegistryResponse/@status:Success
   - DocumentResponse: 1 present, contains document D-000000002.SSA-1.

3. Verify conformance of the QD Request to the:
   - CL: RD Initiator Request Checklist
   - CL: MA SOAP Request Checklist

REFERENCED SPECIFICATIONS

2011 Exchange Specification	Retrieve Documents v3.0
2011 Underlying Specification	IHE IT Infrastructure Cross Community Access (XCA) Cross Gateway Retrieve ITI-43 (Version 2010-08-10) and IHE IT Infrastructure Technical Framework Vol.1 & 2a, 2x, 3 Revision 7.0 (2010-08-10)

CHANGE HISTORY

Date	Changes
July, 2018	Sequoia Testing Team

TC:ACP-QD-R-0000.0 – Query for Documents (QD)

Test Case ID:	TC: ACP-QD-R-0000.0
Title:	Respond to a basic QD (Query for Documents response)
SUT Role:	Responder
IHE Profile:	Cross-community Access (XCA)
Flow:	Basic Success
Optionality:	Required

PURPOSE/DESCRIPTION

Testing Tool initiates QD synchronous Find Documents request to the System with the required parameters. System responds with the matching policy document(s) metadata.

PRECONDITIONS

Data Load Set:

Test Case Patient Association: P-000000002

TEST STEPS

1. The Testing Tool sends a synchronous Find Documents Request to the System, using the following required parameters:

- SOAP Header = MP: MA Default Request (TestTool) Message Parameters
- $XDSDocumentEntryPatientID = [P-000000002 PID]
- $XDSDocumentEntryStatus = Approved OR Deprecated
- $XDSDocumentEntryType = [Stable OR On-Demand Documents]
- returnType = LeafClass
- SOAP request = synchronous
- returnComposedObjects = true
- Authorization Decision Statement.InstanceAccessConsentPolicy = urn:oid: 2.16.840.1.113883.3.184.50.1

2. The System successfully processes the Request and returns a Response to the Testing Tool that contains the following objects:
One Stable document with:
- A 'DocumentMatch' of either: XDSDocumentEntry.uniqueId = D-000000002.1 OR (XDSDocumentEntry.patientID = [P-000000002 PID] AND XDSDocumentEntry.authorPerson = [value from D-000000002.1])
- A match on: XDSDocumentEntry.status = [value from D-000000002.1]
- A match on: XDSDocument.objectType = [value from D-000000002.1]

If the SUT is testing as an On-Demand system, they would send one On-Demand document with:
- A 'DocumentMatch' of either: XDSDocumentEntry.uniqueId = D-000000002.1 OR (XDSDocumentEntry.patientID = [P-000000002 PID] AND XDSDocumentEntry.authorPerson = [value from D-000000002.1])
- A match on: XDSDocumentEntry.status = [value from D-000000002.1]
- A match on: XDSDocument.objectType = [value from D-000000002.1]

NOTE: The creationTime, hash, and size SHALL NOT be included in the Response. The legalAuthenticator SHOULD NOT be included in the Response.

3. Verify conformance of the QD Request to the:
- CL: QD Responder Response Checklist
- CL: MA SOAP Response Checklist
- CL: ACP
- CL: SSA

REFERENCED SPECIFICATIONS

2011 Exchange Specification	Query for Documents v3.0
2011 Underlying Specification	IHE IT Infrastructure Cross Community Access (XCA) Cross Gateway Query ITI-18 (Version 2010-08-10) and IHE IT Infrastructure Technical Framework Vol.1 & 2a, 2x, 3 Revision 7.0 (2010-08-10)

CHANGE HISTORY

Date	Changes
July, 2018	Sequoia Testing Team

TC:ACP-RD-R-0000.0 – Retrieve Documents

Test Case ID:	TC: ACP-RD-R-0000.0
Title:	Respond to a basic RD (retrieve document response)
SUT Role:	Responder
IHE Profile:	Cross-community Access (XCA)
Flow:	Basic Success
Optionality:	Required

PURPOSE/DESCRIPTION

Testing Tool initiates a synchronous Retrieve Documents request for one document to the System. System responds with the requested document.

PRECONDITIONS

Data Load Set:

Test Case Patient Association: P-000000002

TEST STEPS

1. The Testing Tool sends a synchronous Retrieve Documents Request to the System for one document, using the following required parameters:
- SOAP Header = MP: MA Default Request (SUT) Message Parameters
- RepositoryUniqueId: [Repository ID for D-000000002.1]
- DocumentUniqueId: [Document ID for D-000000002.1]
- homeCommunityId: [HCID for the System]
- Authorization Decision Statement.InstanceAccessConsentPolicy = urn:oid: 2.16.840.1.113883.3.184.50.1

If the SUT is testing as an On-Demand system, the following On-Demand document
would also need to be retrieved:

- SOAP Header = <u>MP: MA Default Request (TestTool)</u> Message Parameters
- RepositoryUniqueId: [Repository ID for the System]
- RepositoryUniqueId: [Repository ID for D-000000002.1]

- DocumentUniqueId: [Document ID for D-000000002.1]
- homeCommunityId: [HCID for the System]

2. The System returns to the Testing Tool an RD Response containing the
   requested document:
- RegistryResponse/@status:Success
- DocumentResponse: 1 present, contains document D-000000002.1
- RepositoryUniqueId: [Repository ID for [D-000000002.1]
- DocumentUniqueId: [Document ID for [D-000000002.1]
- homeCommunityId: [HCID for the System]

If the SUT is testing as an On-Demand system, the following On-Demand document
would be in the Response:

- RepositoryUniqueId: [Repository ID for [D-000000002.1]
- DocumentUniqueId: [Document ID for [D-000000002.1]
- homeCommunityId: [HCID for the System]
- Attribute NewRepositoryUniqueId should be present
- Attribute NewDocumentUniqueId should be present

3. Verify conformance of the QD Request to the:
- CL: RD Responder Request Checklist
- CL:MA SOAP Request Checklist

REFERENCED SPECIFICATIONS

2011 Exchange Specification	Retrieve Documents v3.0
2011 Underlying Specification	IHE IT Infrastructure Cross Community Access (XCA) Cross Gateway Retrieve ITI-43 (Version 2010-08-10) and IHE IT Infrastructure Technical Framework Vol.1 & 2a, 2x, 3 Revision 7.0 (2010-08-10)

CHANGE HISTORY

Date	Author
July, 2018	Sequoia Testing Team