

NHIN Patient and Document Interoperability Test Scenarios

This document contains the step-by-step instructions for candidates to execute the NHIN interoperability test scenarios for the Patient and Document service set (consisting of test cases from Patient Discovery, Query for Documents, Retrieve Documents, Supplemental and Service Registry).

Notes:

- This document contains all the definitive scenarios for the Interop Lab in the current release. There are some scenarios presented by the Interop Lab web application that are not intended to be part of this release. Please execute only scenarios that appear in this document. The remaining scenarios will not be part of the candidate’s evaluation.
- In some cases, the instructions displayed in the Interop Lab web application may differ from what is documented here. For example, the lab may refer to “RI1” while this document refers to “Node 1”. This document takes precedence.
- The interop lab was designed to evaluate the scenarios exactly as documented below. If your system needs to deviate from the test in a way that doesn’t violate the spec (for example, you can’t send date ranges in doc queries), you are free to proceed with the scenario as follows:
 - The lab may report test/scenario failures because it is checking exact success conditions.
 - You should provide us an explanation of why you ran the test differently.
 - We will evaluate the results after the fact by analyzing logs.

Table of Contents

NHIN Patient and Document Interoperability Test Scenarios	1
Scenario 1	3
Scenario 2	4
Scenario 3	6
Scenario 4	8
Scenario 5	10
Scenario 6	12
Scenario 16.....	14
Scenario 18.....	15
Scenario 28.....	17
Scenario 29.....	18
Scenario 30.....	19
Scenario 39.....	20
Scenario 44.....	21
Scenario 45.....	22
Scenario 50.....	23
Scenario 51.....	23
Scenario 60.....	24

Scenario 61.....	25
Scenario 62.....	26

Scenario 1			
Candidate Role	Initiator		
Description	Request information on Marta Marquez's (F, DOB 10/1/1970) medical history from Node 1. Retrieve all documents found.		
Test Case	Initiator	Responder	
PDI-1.1c	Action	Candidate transmits to the Testing Tool a synchronous patient discovery request with Patient Name, Gender and Date of Birth as described.	The Testing Tool returns a patient discovery response with a match.
	Parameters	To Node 1: Patient Name = Marta Marquez Gender = F Date of Birth = 10/1/1970	From Node 1: [Marta Marquez ID]
QDI-1.1	Action	Candidate transmits a synchronous find documents query request to the Testing Tool, using the parameters as described.	Node 1 returns all matching documents.
	Parameters	To Node 1: Document Entry Patient ID = [Marta Marquez ID] Document Entry Status = Approved Return Type = LeafClass SOAP request = synchronous	From Node 1: Three matching documents: [Reference] [Hash] [Size]
RDI-1.1b (currently shown as RDI-1.1 in Testing Tool)	Action	Candidate transmits a synchronous retrieve document request for more than one document to the Testing Tool.	Testing Tool returns the requested documents.
	Parameters	To Node 1: Document Reference(s) = [Reference(s) returned] SOAP request = synchronous	From Node 1: [3 Documents]

Scenario 2			
Candidate Role	Initiator		
Description	Request information on Charles T. Brown's (M, DOB 1/5/1935) medical history from Node 1 and Node 2. Retrieve all documents found.		
Test Case	Initiator	Responder	
PDI-1.1c	Action	Candidate transmits to the Testing Tool a synchronous patient discovery request with Patient Name, Gender and Date of Birth as described.	The Testing Tool returns a patient discovery response with a match.
	Parameters	To Node 1 & Node 2: Patient Name = Charles T. Brown Gender = M Date of Birth = 1/5/1935	From both Node 1 and Node 2: [Charles T. Brown ID] Note: Each node will have its own ID for the patient.
QDI-1.2	Action	Candidate transmits a synchronous find documents query request to each of the two Testing Tools, using the parameters as described.	Both Node 1 and Node 2 return all matching documents.
	Parameters	To both Node 1 & Node 2: Document Entry Patient ID = [Charles T. Brown ID] Document Entry Status = Approved Return Type = LeafClass SOAP request = synchronous	From Node 1 and Node 2: For each matching document: [Reference] [Hash] [Size] Note: Node 1 will list 2 documents; Node 2 will list 2 documents. <i>The lab will note this as a failure, as it expects one document. This is not a failure; the NHIN Validating Body will accept that 2 documents were returned.</i>
RDI-1.2	Action	Candidate transmits a synchronous retrieve document request for more than one document to two Testing Tools. Note: candidates that only retrieve one document per request may do so.	Both Testing Tools return the requested documents.

	Parameters	<p>To both Node 1 and Node 2: Document Reference(s) = [Reference(s) returned] SOAP request = synchronous</p>	<p>From Node 1: [2 Documents]</p> <p>From Node 2: [2 Documents] <i>The lab will note this as a failure, as it expects one document. This is not a failure; the NHIN Validating Body will verify that 2 documents were retrieved.</i></p>
--	-------------------	---	--

Scenario 3		
Candidate Role	Responder	
Description	Node 2 requests information on Jennifer B. Fleming (F, DOB 8/7/1940).	
Test Case	Initiator	Responder
PDR-4.1	Action	<p>Testing Tool transmits to the candidate a synchronous patient discovery request with Patient Name, Gender and Date of Birth as described and no Initiating Gateway Identifier.</p> <p>Note: The specifications are expected to clarify in the future that initiating gateway identifier is required. If candidates reject the request for this reason, that response will be accepted.</p>
	Parameters	<p>To Candidate: Patient Name = Jennifer B. Fleming Gender = F Date of Birth = 8/7/1940</p> <p>From Candidate: [Jennifer B. Fleming ID]</p>
QDR-4.4a	Action	<p>Testing Tool transmits a synchronous find documents query request to the candidate using the parameters as described.</p> <p>Response lists all documents for patient. If the HIE is document based, it will return a valid size and hash for each returned doc. If it creates documents dynamically, it will return a size and hash of -1, and a XSDSDocumentEntry. status = DeferredCreation</p>
	Parameters	<p>To Candidate: Document Entry Patient ID = [Jennifer B. Fleming ID] Document Entry Status = Approved OR Deferred Creation Return Type = Leaf Class SOAP request = synchronous</p> <p>From Candidate: For each matching document: [Reference]</p> <p>If the candidate is document-based: Size = [Size] Hash = [Hash] Document Entry Status = Approved</p> <p>If the candidate creates documents dynamically: Size = -1 Hash = -1 Document Entry Status = Deferred Creation</p>
RDR-3.2	Action	<p>Testing Tool transmits a synchronous retrieve document request for more than one document to the Candidate.</p> <p>The Testing Tool expects the Candidate to return the requested documents in a single response. Documents must be validated for schema, hash, size, mime type.</p>

	Parameters	<p>To Candidate: Document Reference(s) = [Reference(s) returned] SOAP request = synchronous</p>	<p>From Candidate: [Document(s)]</p> <p>Note: Candidate may return merged documents and/or documents converted to a different format.</p>
ADR-1.2	<p><i>Note: This test case is added to scenarios that require additional evidence for later manual validation, and it will show as gray if you attach nothing and yellow if you attach something. While it is displayed for this scenario, no additional evidence is required – so it should be disregarded.</i></p>		

Scenario 4		
Candidate Role	Initiator	
Description	Request information on Claudia Genuardi's (F, DOB 12/12/1983) medical history from Node 2, with service dates between 06/20/2008 and 08/20/2008. Retrieve all documents found.	
Test Case	Initiator	Responder
PDI-1.2	Description	Candidate transmits to the Testing Tool a synchronous patient discovery request with Patient Name, Gender, Date of Birth, a single address and a single phone number as described.
	Parameters	To Node 2: Patient Name = Claudia Genuardi Gender = F Date of Birth = 12/12/1983 Address = 3489 Mountain Lane Ashburn, VA 20147 USA Phone = 1-703-231-9000
QDI-2.2	Description	Candidate transmits a synchronous find documents query request to the Testing Tool using the parameters and service times as described. Note: various date formats are acceptable (see date/time format).
	Parameters	To Node 2: Document Entry Patient Id = [Claudia Genuardi ID] Document Entry Status = Approved Document Entry Service Start Time From = 20080620 Document Entry Service Start Time To = 20080820 Document Entry Service Stop Time From = 20080620 Document Entry Service Stop Time To = 20080820 Return Type = LeafClass SOAP request = synchronous Note: various date formats are acceptable (see date/time format), and we are accepting partial use of date constraints as well: using only start time from/to, or using only stop time from/to.
		The Testing Tool returns a patient discovery response with a match.
		From Node 2: [Claudia Genuardi ID]
		Should have 2 documents for her, one within the time range. We'll send the specific document for Claudia Genuardi for this time range.
		From Node 2: For the matching document: [Reference] [Size] [Hash]

RDI-1.1	Description	Candidate transmits a synchronous retrieve document request for a single document to the Testing Tool.	Testing Tool returns the requested document.
	Parameters	To Node 2: Document Reference = [Reference returned] SOAP request = synchronous	From Node 2: [1 Document]

Scenario 5		
Candidate Role	Responder	
Description	Node 1 seeks information on Heather L. Williams (F, DOB 5/25/1970), then retrieves only one doc.	
Post-test Verification	NOT RELATED TO VERIFICATION: candidate should record the time the scenario completed, in preparation for scenario 30.	
Test Case	Initiator	Responder
PDR-4.3	Description	Testing Tool transmits to the candidate a synchronous patient discovery request that contains Patient Name, Gender, Date of Birth, a single address and a single phone number as described.
	Parameters	To Node 1 Patient Name = Heather L. Williams Gender = F Date of Birth = 5/25/1970 Address = 4000 Minor St Jacksonville FL 32099 USA Phone = 1-904-900-3444
QDR-4.4a	Description	Testing Tool transmits a synchronous find documents query request to the candidate using the parameters as described.
	Parameters	To Candidate: Document Entry Patient ID = [Heather L. Williams ID] Document Entry Status = Approved OR Deferred Creation Return Type = Leaf Class SOAP request = synchronous
		From Candidate: For the matching document: [Reference] If the candidate is document-based: Size = [Size] Hash = [Hash] Document Entry Status = Approved If the candidate creates documents dynamically: Size = -1 Hash = -1 Document Entry Status = Deferred Creation

RDR-3.1	Description	Testing Tool transmits a synchronous retrieve document request for one document to the Candidate.	The Testing Tool expects the Candidate to return the requested document. Document must be validated for schema, hash, size, mime type.
	Parameters	To Candidate: Document Reference = [Reference returned] SOAP request = synchronous	From Candidate: [1 Document] Note: Candidate may return document converted to a different format.
ADR-1.2	<i>Note: This test case is added to scenarios that require additional evidence for later manual validation, and it will show as gray if you attach nothing and yellow if you attach something. While it is displayed for this scenario, no additional evidence is required – so it should be disregarded.</i>		

Scenario 6		
Candidate Role	Initiator	
Description	Maya Elena de la Rosa (F, DOB 8/8/1980) was treated at either Node 1 or Node 2 (she can't recall) within a given date range (see query for documents parameters). Find out where she was treated and for what. We expect that the request will query for service start and stop times.	
Test Case	Initiator	Responder
PDI-3.2	Description	Candidate transmits to the Testing Tool a synchronous patient discovery request with a patient name that has spaces within the given and/or family name (e.g. De La Cruz), Gender and Date of Birth as described.
	Parameters	To Node 1 and Node 2: Patient Name = Maya Elena de la Rosa Gender = F Date of Birth = 8/8/1980
QDI-2.8	Description	Candidate transmits a synchronous find documents query request to two or more Testing Tools using the Patient ID and Service Start/Stop Time From/To parameters as described. Note: various date formats are acceptable (see date/time format).
	Parameters	To Node 1 and Node 2: Document Entry Patient ID = [Maya Elena de la Rosa ID] Document Entry Status = Approved Document Entry Service Start Time From = 20080120 Document Entry Service Start Time To = 20080220 Document Entry Service Stop Time From = 20080220 Document Entry Service Stop Time To = 20080320 Return Type = LeafClass SOAP request = synchronous <i>Note: various date formats are acceptable (see date/time format), and we are accepting partial use of date constraints as well.</i>
RDI-1.1	Description	Candidate transmits a synchronous retrieve document request for a single document to the Testing Tool.
		Testing Tool returns the requested document.

	Parameters	<p>To Node 1: Document Reference = [Reference returned] SOAP request = synchronous</p>	<p>From Node 1: [1 Document] <i>Note: The candidate is not expected to retrieve any documents from Node 2, even if some were returned by the query. If you do attempt to do so, the lab will note it as a failure. This is not a failure; that validator will accept this result.</i></p>
--	-------------------	--	---

Scenario 16

Note: While this scenario is available in the Interoperability Lab, it should not be executed. If it is, it will not be evaluated.

Scenario 18		
Candidate Role	Responder	
Description	Node 2 requests information for Peter Parker (M, DOB 8/22/1914) based on service start and stop time. Expect to receive the 1 (of 3) documents that has the service start/stop times.	
Test Case	Initiator	Responder
PDR-4.2	Description	Testing Tool transmits to the candidate a synchronous patient discovery request that contains Patient Name, Gender, Date of Birth as described and Initiating Gateway Identifier.
	Parameters	To Candidate: Patient Name = Peter Parker Gender = M Date of Birth = 8/22/1914 Initiating Gateway ID = [Node 2 ID]
QDR-5.2a	Description	The Testing Tool expects the candidate to return a patient discovery response with a match.
	Parameters	From Candidate: [Peter Parker ID]
QDR-5.2a	Description	Testing Tool transmits a synchronous find documents query request to the candidate, with parameters and service times as described.
	Parameters	Ask for Peter Parker. Expect to receive the 1 (of 3) documents that has the service start/stop times. If the HIE is document based, it will return a valid size and hash for each returned document. If it creates documents dynamically, it will return a size and hash of -1, and a XDSDocumentEntry. status = DeferredCreation
RDR-3.1	Description	From Candidate: For the matching document: [Reference]
	Parameters	To Candidate: Document Entry Patient ID = [Peter Parker ID] Document Entry Status = Approved OR DeferredCreation Document Entry Service Start Time From = 20080120 Document Entry Service Start Time To = 20080220 Document Entry Service Stop Time From = 20080220 Document Entry Service Stop Time To = 20080320 Return Type = LeafClass SOAP request = synchronous
RDR-3.1	Description	If the candidate is document-based: Size = [Size] Hash = [Hash] Document Entry Status = Approved
		If the candidate creates documents dynamically: Size = -1 Hash = -1 Document Entry Status = Deferred Creation
RDR-3.1	Description	Testing Tool transmits a synchronous retrieve document request for one document to the Candidate.
		The Testing Tool expects the Candidate to return the requested document. Document must be validated for schema, hash, size, mime type.

	Parameters	To Candidate: Document Reference = [Reference returned] SOAP request = synchronous	From Candidate: [1 Document] Note: Candidate may return document converted to a different format.
ADR-1.2	<i>Note: This test case is added to scenarios that require additional evidence for later manual validation, and it will show as gray if you attach nothing and yellow if you attach something. While it is displayed for this scenario, no additional evidence is required – so it should be disregarded.</i>		

Scenario 28

Note: While this scenario is available in the Interoperability Lab, it should not be executed. If it is, it will not be evaluated.

Scenario 29		
Candidate Role	Initiator	
Description	<p>Seek information on Robert Winchester's medical history from Node 1 (M, DOB: 2/8/1966). After querying for documents, attempt to retrieve each document individually.</p> <p><i>Note: This scenario verifies two conditions:</i></p> <ul style="list-style-type: none"> • That the candidate gateway can retrieve invalid documents without interfering with its operation. This behavior is required. To verify this condition, the candidate must provide a gateway audit log that includes the retrieve. • That the candidate system can validate retrieved documents. This behavior is optional. To verify this condition, the candidate may provide some kind of system log that shows this validation took place and the results. If no such log is attached, this condition will not be checked. <p><i>Attached log(s) will be verified by the NHIN Validating Body.</i></p>	
Pre-test Setup	Candidate should ensure appropriate system and gateway audit logging is running.	
Post-test Verification	Candidate should export the log(s) and attach them to the scenario.	
Test Case	Initiator	Responder
PDI-1.1c	Description	Candidate transmits to the Testing Tool a synchronous patient discovery request with Patient Name, Gender and Date of Birth as described.
	Parameters	To Node 1: Patient Name = Robert Winchester Gender = M Date of Birth = 2/8/1966
QDI-1.1	Description	Node 1 returns one matching document.
	Parameters	To Node 1: Document Entry Patient ID = [Robert Winchester ID] Document Entry Status = Approved Return Type = LeafClass SOAP request = synchronous
RDI-2.3a	Description	The Testing Tool returns an invalid document in the response. The candidate handles the invalid document without crashing.
	Parameters	To Node 1: Document Reference(s) = [Reference returned] SOAP request = synchronous

Scenario 30		
Candidate Role	Responder	
Description	Node 1 retrieves the document it already got on Heather L. Williams again, in order to compare it. Note: This scenario applies only to candidate systems that 1) dynamically generate documents, 2) have an expiration time for unused document references, e.g. references that have been returned in a query but not yet retrieved, and 3) support configuration of this expiration time.	
Pre-test Setup	1) Prior to all testing the Candidate should configure their system with an expiration of 5 minutes. After test is complete (this could be after the whole suite of RD tests) restore the previous timeout. 2) The candidate will have run Scenario 5 before this. 3) From the time Scenario 5 was executed, wait > 5 minutes to execute this test.	
Test Case	Initiator	Responder
RDR-3.3	Description	Testing Tool transmits a synchronous retrieve document request for one document to the Candidate.
	Parameters	To Candidate: Document Reference = [Reference returned from RDR-3.1 in scenario 5] SOAP request = synchronous
		The Testing Tool expects the Candidate to return the requested document. Document must be validated for schema, hash, size, mime type.
		From Candidate: [1 Document] Note: Candidate may return document converted to a different format than initially provided for testing, but it must match the format returned previously.
ADR-1.2	<i>Note: This test case is added to scenarios that require additional evidence for later manual validation, and it will show as gray if you attach nothing and yellow if you attach something. While it is displayed for this scenario, no additional evidence is required – so it should be disregarded.</i>	

Scenario 39

Note: While this scenario is available in the Interoperability Lab, it should not be executed. If it is, it will not be evaluated.

Scenario 44		
Candidate Role	Initiator	
Description	Query for John Smith's medical history from node 2 (John Smith, M, DOB 4/23/1957). Node 2 will request more information for patient identification (e.g. PatientAddressRequested).	
Test Case	Initiator	Responder
PDI-2.1	Description	Candidate transmits to the TestingTool a synchronous patient discovery request with Patient Name, Gender, and Date of Birth as described.
	Parameters	<p>First request to Node 2: Patient Name = John Smith Gender = M Date of Birth = 4/23/1957</p> <p>Second request to Node 2: Patient Name = John Smith Gender = M Date of Birth = 4/23/1957 Address = 102 Drink Cup Drive Kansas City, MO 64116 USA</p>
QDI-1.1	Description	Candidate transmits a synchronous find documents query request to the Testing Tool, using the parameters as described.
	Parameters	<p>To Node 2: Document Entry Patient ID = [John Smith ID] Document Entry Status = Approved Return Type = LeafClass SOAP request = synchronous</p>
RDI-1.1	Description	Candidate transmits a synchronous retrieve document request for a single document to the Testing Tool.
	Parameters	<p>To Node 2: Document Reference = [Reference returned] SOAP request = synchronous</p>
ADI-1.1	<i>Note: This test case is added to scenarios that require additional evidence for later manual validation, and it will show as gray if you attach nothing and yellow if you attach something. While it is displayed for this scenario, no additional evidence is required – so it should be disregarded.</i>	

Scenario 45		
Candidate Role	Responder	
Description	Node 1 queries for information on the medical history of Charles Brown's (M, DOB 10/10/1983), a patient with multiple names, then retrieves a deprecated document.	
Pre-test Setup	For dynamic document HIEs, must first persist the document and then change its status to deprecated.	
Test Case	Initiator	Responder
PDR-5.7	Description	Testing Tool transmits to the candidate a synchronous patient discovery request that contains Patient Name, Gender and Date of Birth as described.
	Parameters	To Candidate: Patient Name = Charles Brown Gender = M Date of Birth = 10/10/1983
QDR-5.8	Description	Testing Tool transmits a synchronous find documents query request to the candidate, with the parameters and status of deprecated as described.
	Parameters	To Candidate: Document Entry Patient ID = [Charles Brown ID] Document Entry Status = Deprecated Return Type = LeafClass SOAP request = synchronous
RDR-3.1	Description	Testing Tool transmits a synchronous retrieve document request for one document to the Candidate.
	Parameters	To Candidate: Document Reference = [Reference returned] SOAP request = synchronous
ADR-1.2	<i>Note: This test case is added to scenarios that require additional evidence for later manual validation, and it will show as gray if you attach nothing and yellow if you attach something. While it is displayed for this scenario, no additional evidence is required – so it should be disregarded.</i>	

Scenario 50

Note: While this scenario is available in the Interoperability Lab, it should not be executed. If it is, it will not be evaluated.

Scenario 51

Note: While this scenario is available in the Interoperability Lab, it should not be executed. If it is, it will not be evaluated.

Scenario 60		
Candidate Role	Responder	
Description	Candidate handles valid SAML assertions with PD, QFD, RD.	
Test Case	Test Steps	
STR-2.2	<ol style="list-style-type: none"> 1. Execute at least one PD-QD-RD responder scenario successfully. 2. Select scenario 60 and choose "Discover". 3. The interop lab will evaluate the first successful PDR, QDR, and RDR request and response that it finds for the following criteria: 	
Test Case	Initiator	Responder
STR-2.2 PDR-*	Description	Testing Tool transmits to the Candidate a (PD, QFD, RD) request, with all required SAML assertions. The assertions identify a patient. The Candidate validates the SAML assertions successfully and authorizes the request.
STR-2.2 QDR-*		
STR-2.2 RDR-*		
	Parameters	
	To Candidate: SOAP Request with SAML assertions for Testing Tool, including [Patient ID], and NHIN Request payload	From Candidate: SOAP Response with NHIN Response payload

Scenario 61			
Candidate Role	Initiator		
Description	Candidate passes valid SAML assertions with PD, QFD, RD		
Pre-test Setup	Attach to the scenario a file containing the following info for cross-checking: SAML assertion data used, for example: the authenticated user who is running the test, and the organization ID.		
Test Case	Test Steps		
STI-1.2	<ol style="list-style-type: none"> 1. Execute at least one PD-QD-RD initiator scenario successfully. 2. Select scenario 61 and choose "Discover". 3. The interop lab will evaluate the first successful PDI, QDI, and RDI request and response that it finds for the following criteria: 		
Test Case	Initiator	Responder	
STI-1.2 PDI-*	Description	Candidate transmits to the Testing Tool a (PD, QFD, RD) request, with all required SAML assertions. The assertions identify a patient. The Testing Tool validates the SAML assertions successfully and authorizes the request.	
STI-1.2 QDI-*			The contained NHIN request is processed and responded to.
STI-1.2 RDI-*			
	Parameters		
	To Testing Tool: SOAP Request with SAML assertions for Candidate, including [Patient ID], and NHIN Request payload	From Testing Tool: SOAP Response with NHIN Response payload	

Scenario 62		
Candidate Role	Initiator	
Description	Prior to the first initiator test, find the service endpoints for the two test nodes using UDDI.	
Test Case	Initiator	Responder
SRI-1.2 Any of: PDI-* QDI-* RDI-*	Description	<p>1. Candidate issues UDDI queries to NHIN Service Registry. The NHIN Service Registry responds with business, service and binding information for organizations registered with the UDDI and matching the search criteria. The Candidate Gateway receives responses.</p> <p>2. Candidate transmits any NHIN request to each Testing Tool node.</p>
	Parameters	<p>1. UDDI is very flexible, and many different combinations of queries will yield the desired result (see the UDDI spec - browse and drill-down patterns, etc.). NHIN does not require a particular way is used.</p> <p>2. To Node 1: [Any NHIN request] To Node 2: [Any NHIN request]</p> <p>Note: because the communications between the candidate and the NHIN Service Registry are entirely external to the Testing Tool, this test does not need to be triggered by the candidate. It is tested implicitly as follows: Once the candidate has sent a request to both nodes (through the execution of any scenarios), this scenario has passed.</p>
		<p>1. The candidate has obtained the NHIN web service endpoint(s) for the two Interoperability test services.</p> <p>2. Each Testing Tool receives a NHIN request.</p>
		<p>1. Business, service and binding information for organizations registered with the UDDI.</p> <p>2. [No NHIN responses needed for verification]</p>