

IHE International

Conformity Assessment Scheme

Part 2: Requirements for Conformity Assessment - 2015 Cycle
(IHE-CAS-2)

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Conformity Assessment Coordination Committee

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1 SECTION 1 - GENERAL INFORMATION

1.1 Context

This document is the second of the two volumes of the IHE Conformity Assessment Scheme (IHE-CAS). It describes:

- The set of IHE profiles selected for IHE Conformity Testing
- Test methods including: test cases, test tools and test data
- Templates to be used by test laboratories

IHE-CAS-2 builds upon the governance and processes of conformity assessment specified by IHE-CAS-1. See http://www.ihe.net/Conformity_Assessment.aspx

IHE-CAS-2 provides requirements for assessing implementations against the selected IHE Profiles. A Testing Report is delivered by an IHE Authorized Testing Laboratory as the result of this assessment.

IHE-CAS-2 also provides requirements for any Testing Laboratory in its accreditation and IHE authorization processes (see section 3.6 of IHE-CAS-1).

1.2 Lifecycle

The IHE-CAS-2 document is periodically updated (typically every year) by the IHE International Conformity Assessment Coordination Committee (CASc) as described in section 4.2 of IHE-CAS-1

The first version of this document (June 2015) introduces an initial set of Profiles that has been intentionally limited to enable the ramp-up of the IHE Conformity Assessment program by a limited number of IHE deployment Committees and IHE authorized laboratories.

The current version of this IHE-CAS-2 document is available at:

http://wiki.ihe.net/index.php?title=Conformity_Assessment_Committee#Scope_and_Current_Work

1.3 Scope

1.3.1 A party seeking conformity assessment of its product may select one or more Profiles listed below.

1.3.2 For each selected Profile, a party seeking conformity assessment may select one or more Actors among those listed in the table below.

1.3.3 For each Actor, a party seeking conformity assessment may support the profile-defined Option(s) listed in the table below.

1.3.4 A testing laboratory offering conformity assessment of products shall select one or more Profiles listed in the table below. It shall offer conformity assessment of products for all Actors and profile-defined Option(s) listed in the table below.

1.3.5 The reference technical specification points to the latest corresponding Technical Framework published on or before January 1st 2015.

1.3.6 Change Proposals that have been approved by IHE since the publication of the Technical Framework, but before the cut-off date specified in section 1.3.5, are required to be supported as listed by the Test Cases (see Section 3).

1.3.7 Change Proposals approved after the cut-off date specified in section 1.3.5 may be supported by implementations under test, but are out of scope in terms of CAS-2 testing.

1.3.8 Table 1.4-1 list the Profile/Actor pairs for which Conformity Assessment is available

Table 1.4.-1 Conformity Assessment Profiles, Actors, and Options

Profile	Actors and <i>Options</i> (required per sections 1.3.3 & 1.3.4)	Reference Technical Framework	Test Methods
IT Infrastructure			
IHE-CT Consistent Time <i>enables system clocks and time stamps of computers in a network to be synchronized (median error less than 1 second).</i>	Time Client: - <i>No Options</i>	IHE IT Infrastructure Technical Framework • Vol 1 – Section 7	Section 3.1.1
IHE-ATNA Audit Trail and Node Authentication <i>Basic security through (a) functional access controls, (b) defined security audit logging and (c) secure network communications.</i>	Secure Application: - <i>No Option</i>	IHE IT Infrastructure Technical Framework: • Vol 1 – Section 9	Section 3.2
IHE-XDS.b Cross Enterprise Document Sharing <i>Share and discover electronic health record documents between healthcare enterprises, physician offices, clinics, acute care in-patient facilities and personal health records.</i>	Document Registry : - <i>Patient Identity Feed</i> - <i>Patient Identity Feed v3</i>	IHE IT Infrastructure Technical Framework: • Vol 1 – Section 10	Section 3.3.4
	Document Repository: - <i>No Options</i>		Section 3.3.3
	Document Source : - <i>Doc Replacement</i>		Section 3.3.2

	Document Consumer : - <i>No Options</i>		Section 3.3.1
PDQ Patient Demographics HL7v2	Patient Demographics Consumer : - <i>Pediatric Demographics</i>	IHE IT Infrastructure Technical Framework : • Vol 1 – Section 8	Section 3.4.1
	Patient Demographics Supplier: - <i>Pediatric Demographics</i>		Section 3.4.2
PDQv3 Patient Demographics Query HL7v3	Patient Demographics Consumer: - <i>Pediatric Demographics</i>	IHE IT Infrastructure Technical Framework : • Vol 1 – Section 24	Section 3.5.1
	Patient Demographics Supplier: - <i>Pediatric Demographics</i>		Section 3.5.2
PIXv3 Patient Identifier Cross Referencing HL7v3	Patient Id Cross-Reference Consumer: - <i>No Options</i>	IHE IT Infrastructure Technical Framework : • Vol 1 – Section 23	Section 3.6.1
	Patient Id Cross-reference Manager: - <i>Pediatric Demographics</i>		Section 3.6.2

Note: See appendix A for applicable CPs.

1.4 Glossary

See IHE-CAS-1 Section 1.4 “Definitions”. In addition, the following terms are defined.

Conformity

Conformity means compliance with standards, rules, or laws [NOAD]

Conformity assessment

Testing to see if an implementation or product faithfully meets the requirements of a standard or specification. [ISO]

Testing Report

A document issued by an authorized and accredited testing laboratory, attesting to the performing of the test methods specified by the IHE conformity assessment scheme - Part 2 (CAS-2).

System Under Test (SUT)

A system implementation that has applied to be tested against a conformity assessment scheme.

Test method

Defined technical procedure, test cases, test tools and processes to determine one or more specified characteristics of a product.

Test Method Evaluation Report

A quality management report that covers the description of the test tools and test cases included, their requirements coverage, and the quality management process applied to the test tools development.

Test case

A set of test scripts including input values, execution preconditions, expected results and execution post-conditions, developed for a particular objective or test condition, such as to exercise a particular program path or to verify compliance with a specific requirement. [From IEEE 610]

Test management tool

A tool that provides support to the test management and controls part of a test process. It often has several capabilities, such as testware management, scheduling of tests, logging of results, progress tracking, incident management and test reporting.

Test plan:

A document describing the scope, approach, resources and schedule of intended test activities. It identifies amongst others test cases, the features to be tested, the testing tasks, who will do each task, degree of tester independence, the test environment, the test design techniques and entry and exit criteria to be used, and the rationale for their choice, and any risks requiring contingency planning. It is a record of the test planning process. [After IEEE 829]

Test scripts

Test procedures that describe the sequence of actions for the execution of a given test. (ISTQB)

Test tool

A software product that supports one or more test activities, such as planning and control, specification, building initial files and data, test execution and test analysis. [TMap].

Validation:

The assurance that a product, service, or system meets the needs of the customer and other identified stakeholders. It often involves acceptance and suitability with external customers. [IEEE]

Verification:

Confirmation by examination and through provision of objective evidence that specified requirements have been fulfilled. [ISO 9000]

1.5 High level requirements for test methods

The selection of each one of the test methods supporting CAS-2 shall be placed under a quality process where the following items are examined and documented in a Test Method Evaluation Report that covers:

- 1 Test Tool Description including operating environment
- 2 Requirements Coverage: IHE CAS-2 test cases and test tools selected are placed under requirements management (linked to the Profile/Actor pairs as specified in the IHE Technical Framework) with an evaluation of testing coverage (See 5.a). Specified requirements should include:
 - a) Profiles/Actors covered by the test cases and test tool
 - b) Functional coverage:
 - i. Message, transport, content, and behavior as specified
 - ii. Testing of responses to selected non-conforming exchanges
 - c) Test Options as required by IHE-CAS-2 and underlying standards
 - d) For each Profile/Actor pair: % of testable assertions addressed (Number of testable assertions addressed/Number of testable assertions identified)
 - e) For each Profile/Actor pair: % of testable assertions not addressed (Number of testable assertions not addressed/ Number of testable assertions identified)
- 3 Testing relevance and scope: IHE CAS-2 test cases shall be efficient and pragmatic meaning they:
 - a) Simplify test execution (e.g. do not repeat identical tests except in the case of test workflow and only when relevant)
 - b) Cover profile specification testing requirements (see assertions) with priority on sensitive areas
 - c) Make use of tools to support the test cases, when possible
 - d) Use a pool/dynamic generation of test data when practical to prevent gaming of the tests
 - e) Data should have clinical accuracy, vetted by clinicians
 - f) Should be automated and easy to use for the SUT and the test team.
- 4 Quality Management of the test methods selected by IHE-CAS-2 requires:
 - a) Test Tools and test cases selected shall be developed either:
 - i. by organizations operating under ISO 17025 (or ISO 9001) quality system, or
 - ii. by an IHE-designated organization under ISO 17025 (or ISO 9001) quality system, that validates the test tool
 - b) Validation proof (e.g. report) for the Test Tools is provided
 - c) The Test Tools shall have a documented track record of use (e.g. used in testing programs, for pre-connectathons if tool used there)
 - d) The Test Tools should be easy to access and use by an organization developing a SUT and the test validator in the testing laboratory.
 - e) Authorized test laboratories may offer access to these test tools “over the web” in the context of the SUTs conformity assessment sessions.
 - f) Commitment by an organization to sustain and maintain the Test Tool, including continuous feedback and quality improvement of the test methods.

- g) Test Methods, including test data, should be subject to rigorous change control and configuration management
 - h) New versions of test cases and test tools need to be released to test laboratories in a way they may execute the current version while deploying a new version
 - i) Generate reports and documentation required for ISO 17025 (observer notes, check points, documentation templates) and enable efficient observer documentation generation
- 5 Test Cases and Tools access
- a) Test tools use in Conformity Assessment should be useable in other contexts such as Connectathons, vendor in-house testing, governmental programs, etc.
 - b) Test Tools source code shall be available as open source (Apache or equivalent right-to-use and able to be modified without having to contribute back changes)
 - c) Test Cases shall be available under IHE International copyright (may be shared with others) as open source (right-to-use, modifications shall be contributed back)
 - d) Test Tools should demonstrate integration with an IHE International approved test management platform (Gazelle test management platform).
- 6 Test Tools extensibility (desirable to create a better testing ecosystem, although not required for IHE-CAS):
- a) The test tools should be as much as possible “extensible” for project/national extensions interoperability specifications testing.

2 COMMON RESOURCES

2.1 Templates to specify test cases and to report test execution

The included Word file below specifies the format used by IHE-CAS to specify test cases as well as the format used by an IHE International Authorized Testing Laboratory to report the execution of those test cases.



These two templates are closely related. The one used for reporting test execution builds upon the one used by IHE-CAS to specify the test cases to be executed by Test Laboratories.



IHE-CAS-2-Test
Script Specification anc

Section 3 documents the list of Test Cases to test a specific Profile/Actor. A Test Case includes one or more test scripts (Gazelle calls it a test) as well as the supporting test data.

An SUT (System under Test) plays one of the ROLES for which the test case has been specified.

2.2 Templates used for summary reports of test execution

The included Word file below specifies the template to be used by an IHE International Authorized Testing Laboratory to report the execution of all specified test cases by a System Under Test. It provides the framework for a high-level summary of the test execution report (See Section 2.1). It is intended for making testing reports publicly-available by IHE International or by the party seeking conformity assessment in promoting its conformity to specific IHE Profiles.



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2.3 Types of test tools

IHE-CAS classifies the Interoperability Testing tools that support the execution of test cases in several categories (from EU Antilope Project D3.1 deliverable¹):

Test Management Tool: facilitates the execution of tests but may include additional functionalities that would be useful in performing the tests and collecting the results. This document will focus on two distinct groups within the wide range of Test Management tools:

- a) Tools that help organize and run large interoperability events involving large number of participants and a large number of tests. The tools in this group will typically manage test scenarios for peer-to-peer tests and may also support test planning and setup for large test events. They may also support the configuration process for all participating communication partners (e. g. IP addresses, ports, codes to be used, message types, other tools like simulators and validators). In order to trigger actual test runs, the software ideally selects the communication partners from the pool of existing systems based on a number of criteria, including their communication capabilities and test instances required to reach the system's certification goals for the event (e. g. to run each test case with a certain number of distinct test partners). Such tools may also support other functionalities such as authoring of test cases and reporting of interim and final test results to the test managers and test partners.
- b) Execution frameworks that facilitate the selection of individual tests, collection of test results including evidence of tests performed such as pass/fail verdicts with corresponding traces.

Interoperability Validator: automated tool that is checking the behavior of the system under test. It collects the messages exchanged between the two interacting systems one of which may be a simulator tool and evaluates whether the order, timing and/or content of messages sent by the system under test conform to the requirements of a given standard and profile.

Interoperability validator tools vary considerably in their checking capabilities. Some may be dedicated to check only specific requirements, for example message or document syntax. In addition, the level of automation in triggering testing activities and in collecting the test traces can be quite different.

Simulator: is a tool acting as a connection partner to the system that needs to be tested.

In most cases, a simulator interacts with a system under test (SUT) in order to trigger certain behavior. For a system on a network, the simulator could send network messages. For other systems, it could simulate user input or any other input.

¹ Antilope: www.antilope-project.eu

A simulator itself does not assess the behavior of the SUT. However, a simulator may have integrated capability to collect the trace of the exchange that could then be evaluated manually or using other means.

Simulator tools are useful for testing before peer-to-peer interoperability events or as replacement for needed communication partners that are not available.

Test data generator: accelerates test data preparation by providing valid, input data to be used in testing. The best results are achieved if a data generator can be used such that it efficiently generates data that both respects and exercises the constraints set by a profile being tested.

Support tools: During testing and debugging various support tools may be useful. While they do not test anything themselves, they may provide means of collecting the information that is needed to progress with testing. The examples are viewers that present the information in an understandable format, proxies that facilitate reliable and uniform collection of traces and many others.

Sniffers: also known as network analyzers or protocol analyzers. A sniffer is able to capture, record, decode and analyze communication protocol messages inside the data packages. This can be done transparently to the ongoing communication, as required by non-destructive protocol testing. Network sniffers must be able to decode all relevant communication protocols (TCP/IP, HL7, DICOM, etc.) in order to prepare message validation or other tasks. Sniffers are used not only in eHealth but are applicable to any domain that uses network messaging to exchange information.

3 TEST CASES SPECIFICATIONS AND TEST TOOLS

The specification of the test Methods are available:

- As a set of documents (based on the above template) only on-line
- Test Data only on-line
- Test Tool only on Line
- In the IHE Gazelle test management tool

Each Test Case shall be identified by a name and an ID number.

A System Under Test (SUT) shall be tested using the test methods as specified in this section. SUTs shall succeed at all test cases for the profile/actor pair and option(s) selected for Conformity Assessment.

3.1 Profile CT

3.1.1 Time Client

3.1.1.1 List of test cases

ID	Test Case	Test Case and test Data Version and Reference	Description	Support Test Tool ID
CT_Client_Synch	CT Time Synchronization NTP	Version : CATS2015 Last Modified : 3/26/15 5:50:04 PM Permanent number : 12558	CT Client Synchronizes with Time Server	None

3.1.1.2 List of related test tools

Not applicable.

3.2 Profile ATNA

3.2.1 Secure Application

3.2.1.1 List of test cases

ID	Test Cases	Test Cases and test Data Version and Reference	Description	Support Test Tool ID
ATNA_Complete_Questionnaire	ATNA: Complete Questionnaire	Version : CATS2015 Last Modified : 4/17/15 10:06:41 AM Permanent number: 12553	ATNA: Complete Questionnaire	Gazelle ATNA tool
ATNA_Message_Send	ATNA: Send messages to Audit Record Repository	Version : CATS2015 Last Modified : 4/21/15 4:22:01 PM Permanent number: 12562	The purpose of this test is to check that your system correctly implements the syslog protocol	Syslog collector
ATNA_Audit_message_check	ATNA - Audit message check	Version : CATS2015 Last Modified : 4/16/15 2:44:25 PM Permanent number: 12556	Audit message check	Gazelle ATNA tool
ATNA_Authentication_Test	ATNA - Authentication test	Version : CATS2015 Last Modified : 4/17/15 10:44:33 AM Permanent number: 12554	Test authentication using TLS and certificates	Gazelle ATNA tool
ATNA_Authentication_Error_Cases	ATNA - Authentication error cases	Version : CATS2015 Last Modified : 4/21/15 4:41:18 PM Permanent number: 12564	Test TLS authentication error cases	Gazelle ATNA tool

3.2.1.2 List of related test tools

ID	Tool	Test Tool Version	Developed by	Info Page	Tool Category
Syslog Collector	Simulator for collecting syslog messages	2.1	MIR	http://ihewiki.wustl.edu/wiki/index.php/Syslog_Message_Browser	Validator
Gazelle ATNA tool	PKI, TLS Simulator and ATNA Questionnaire	4.7.12	IHE Europe	http://gazelle.ihe.net/	Simulator

3.3 Profile XDS

3.3.1 Document Consumer

3.3.1.1 List of test cases

ID	Test Cases	Test Cases and test Data Version and Reference	Description	Support Test Tool ID
XDS.b_CONS_Configuration	XDS.b registry and repository configuration for Document Consumer	Version : CATS2015 Last Modified : 4/16/15 3:35:24 PM Permanent number: 12517	Description of the configuration of the registry and repository used for testing	XDS Toolkit
XDS.b_CONS_Query	XDS.b Consumer testing	Version : CATS2015 Last Modified : 4/16/15 3:04:34 PM Permanent number: 12518	A list of steps to be executed to verify the consumer is able to interact with a registry/repository	XDS Toolkit
XDS.b_CONS_Retrieve_TLS	XDS.b Document Consumer Retrieve over TLS	Version : CATS2015 Last Modified : 4/16/15 3:03:59 PM Permanent number: 12519	The Document Consumer SHALL retrieve successfully a binary document from the document Repository, over TLS transaction	XDS Toolkit

3.3.1.2 List of related test tools

ID	Tool	Test Tool Version	Developed by	Info Page	Tool Category
XDSToolkit	XDS Tools 2	200	NIST	http://ihexds.nist.gov/	Simulator Validator

3.3.2 Document Source

3.3.2.1 List of test cases

ID	Test Cases	Test Cases and test Data Version and Reference	Description	Support Test Tool ID
XDS.b_SRC_Replace	XDS.b Document Source - Replace Existing Document	Version : CATS2015 Last Modified : 4/17/15 2:44:41 PM Permanent number: 12552	Verify that Document Source can issue a document replacement	XDS Toolkit
XDS.b_SRC_Submit	Submit one document via XDS.b	Version : CATS2015 Last Modified : 4/17/15 4:31:35 PM Permanent number: 12542	Verify that the XDS.b Document Source can submit a single document via Provide and Register Document Set-b transaction.	XDS Toolkit

3.3.2.2 List of related test tools

ID	Tool	Test Tool Version	Developed by	Info Page	Tool Category
XDSToolkit	XDS Tools 2	200	NIST	http://hexds.nist.gov/	Simulator Validator

3.3.3 Document Repository

3.3.3.1 List of test cases

ID	Test Cases	Test Cases and test Data Version and Reference	Description	Support Test Tool ID
XDS.b_REP_PnR	XDS.b - Document Repository - Accept one document via XDS.b	Version : CATS2015 Last Modified : 4/16/15 3:38:31 PM Permanent number: 12543	Verify that the XDS.b Document Repository can accept a single document via the Provide and Register Document Set-b transaction and forward the updated metadata to the Public Registry.	XDS Toolkit
XDS.b_REP_PnR_TLS	XDS.b - Document Repository - Accept one document via XDS.b over TLS	Version : CATS2015 Last Modified : 4/16/15 3:22:54 PM Permanent number: 12544	Verify that the XDS.b Document Repository can accept a single document via the Provide and Register Document Set-b transaction and forward the updated metadata to the Public Registry. Transaction over TLS	XDS Toolkit
XDS.b_REP_PnR_XDSRepositoryErr	XDS.b - Document Repository - XDSRepositoryMetadataError	Version : CATS2015 Last Modified : 4/16/15 3:38:43 PM Permanent number: 12545	Testing the XDSRepositoryMetadataError Error as applied to supplied size and hash attributes.	XDS Toolkit
XDS.b_REP_RegErrors	XDS.b - Document Repository - Return Errors from Registry (XDS.b)	Version : CATS2015 Last Modified : 4/16/15 3:27:51 PM Permanent number: 12546	Return Errors from Registry (XDS.b)	XDS Toolkit
XDS.b_REP_Retrieve	XDS.b - Document Repository - Retrieve Document Set	Version : CATS2015 Last Modified : 4/16/15 3:28:35 PM Permanent number: 12547	Accept Retrieve Document Set – two documents	XDS Toolkit
XDS.b_REP_Retrieve_Single_	XDS.b - Document Repository -	Version : CATS2015 Last Modified : 4/16/15 3:29:01 PM	Accept Retrieve Document Set – single document	XDS Toolkit

Doc	Retrieve single Document	Permanent number: 12548		
XDS.b_REP_Retrieve_TLS	XDS.b - Document Repository - Retrieve Document Set over TLS	Version : CATS2015 Last Modified : 4/16/15 3:29:43 PM Permanent number: 12549	Accept Retrieve Document Set – single document via TLS	XDS Toolkit
XDS.b_REP_Submit2	XDS.b - Document Repository - Submit Two Document	Version : CATS2015 Last Modified : 4/16/15 3:38:57 PM Permanent number: 12550	Verify that the XDS.b Document Repository can accept a submission containing two documents	XDS Toolkit
XDS.b_REP_Submit_Reject	XDS.b - Document Repository - Reject submissions	Version : CATS2015 Last Modified : 4/16/15 3:39:08 PM Permanent number: 12551	Reject submissions where metadata and documents do not match (XDS.b)	XDS Toolkit

3.3.3.2 List of related test tools

ID	Tool	Test Tool Version	Developed by	Info Page	Tool Category
XDSToolkit	XDS Tools 2	200	NIST	http://ihexds.nist.gov/	Simulator Validator

3.3.4 Document Registry

3.3.4.1 List of test cases

ID	Test Cases	Test Cases and test Data Version and Reference	Description	Support Test Tool ID
XDS.b_REG_Association	XDS.b - Document Registry - Association Documentation Classifications	Version : CATS2015 Last Modified : 4/16/15 3:03:30 PM Permanent number: 12520	Test the Registry actors management of a Association Documentation Classifications	XDS Toolkit
XDS.b_REG_Configuration	Load test data into Document Registry via Register.b transaction	Version : CATS2015 Last Modified : 4/16/15 3:05:20 PM Permanent number: 12521	Load test data into Document Registry via Register.b transaction	XDS Toolkit
XDS.b_REG_Folder_2	XDS.b - Document Registry - Accept Create Folder with Initial Document	Version : CATS2015 Last Modified : 4/16/15 3:06:05 PM Permanent number: 12522	Verify that the XDS.b Document Registry can accept the submission of a Folder with a document.	XDS Toolkit
XDS.b_REG_Folder_3	XDS.b - Document Registry - Accept Add New Document to Folder	Version : CATS2015 Last Modified : 4/16/15 3:06:40 PM Permanent number: 12523	Verify that the XDS.b Document Registry can accept a submission that contains a document which is added to an existing folder.	XDS Toolkit
XDS.b_REG_Folder_4	XDS.b - Document Registry - Reject Add Document to Folder	Version : CATS2015 Last Modified : 4/16/15 3:07:25 PM Permanent number: 12524	Verify that the XDS.b Document Registry will reject a submission that contains a document which is added to an existing folder with a different Patient ID	XDS Toolkit

XDS.b_REG_F older_Add	XDS.b - Document Registry - Add Existing document to existing folder	Version : CATS2015 Last Modified : 4/16/15 3:35:37 PM Permanent number: 12525	Add Existing document to existing folder	XDS Toolkit
XDS.b_REG_F older_Repl	XDS.b - Document Registry - R.b Accept Document Replace, Document in Folder	Version : CATS2015 Last Modified : 4/16/15 3:35:53 PM Permanent number: 12526	Accept Document Replace, Document in Folder	XDS Toolkit
XDS.b_REG_la stUpdateTime	XDS.b - Document Registry - Folder lastUpdateTime	Version : CATS2015 Last Modified : 4/16/15 3:09:02 PM Permanent number: 12527	Test an XDS.b Document Registry implementation to prove it can properly manage the XDSFolder.lastUpdateTime attribute	XDS Toolkit
XDS.b_REG_R. b_TLS	XDS.b Document Registry Register Document Set Single Document over TLS	Version : CATS2015 Last Modified : 4/16/15 3:36:18 PM Permanent number: 12528	Test the Document Registry regarding the transaction Register Document Set - Submission of single document over TLS	XDS Toolkit
XDS.b_REG_R. b_Trans_RPLC	XDS.b Document Registry Register Document Set - Transform/Replace	Version : CATS2015 Last Modified : 4/16/15 3:36:33 PM Permanent number: 12529	Test the Document Registry regarding the transaction Register Document Set - Transform/Replace documents	XDS Toolkit
XDS.b_REG_R. b_UnknownPati entId	XDS.b Document Registry Register Document Set - Invalid Patient ID	Version : CATS2015 Last Modified : 4/16/15 3:36:52 PM Permanent number: 12530	Test the Document Registry regarding the transaction Register Document Set - Reject Submission of Invalid Patient ID via XDS.b	XDS Toolkit
XDS.b_REG_R. b_XDSPatientId DoesNo	XDS.b Document Registry Register Document Set - Patient ID does not match Document	Version : CATS2015 Last Modified : 5/27/15 5:38:59 PM Permanent number: 12531	Test the Document Registry regarding the transaction Register Document Set - Reject Submission Set, Patient ID does not match Document (XDS.b)	XDS Toolkit

XDS.b_REG_Register_Create_Folder	XDS.b Document Registry Register Document Set - Create Folder	Version : CATS2015 Last Modified : 4/16/15 3:37:15 PM Permanent number: 12532	Test the Document Registry regarding the transaction Register Document Set - Accept Create Folder	XDS Toolkit
XDS.b_REG_Register_Query_Addenda	XDS.b Document Registry Register Document Set - Document Addendum	Version : CATS2015 Last Modified : 4/16/15 3:37:26 PM Permanent number: 12533	Test the Document Registry regarding the transaction Register Document Set - Document Addendum	XDS Toolkit
XDS.b_REG_Register_Query_Multipl	XDS.b Document Registry Register Document Set - Multiple Document	Version : CATS2015 Last Modified : 4/16/15 3:37:40 PM Permanent number: 12534	Test the Document Registry regarding the transaction Register Document Set - Submission of multiple documents	XDS Toolkit
XDS.b_REG_Register_Query_Replace	XDS.b Document Registry Register Document Set - Replace Document	Version : CATS2015 Last Modified : 4/16/15 3:37:55 PM Permanent number: 12535	Test the Document Registry regarding the transaction Register Document Set - replace document	XDS Toolkit
XDS.b_REG_Register_Query_Single	XDS.b Document Registry Register Document Set Single Document	Version : CATS2015 Last Modified : 4/16/15 3:38:07 PM Permanent number: 12536	Test the Document Registry regarding the transaction Register Document Set - Submission of single document	XDS Toolkit
XDS.b_REG_Register_Query_Tranfor	XDS.b Document Registry Register Document Set - Document Transform	Version : CATS2015 Last Modified : 4/16/15 3:16:45 PM Permanent number: 12537	Test the Document Registry regarding the transaction Register Document Set - Document Transform	XDS Toolkit
XDS.b_REG_Register_Resubmission	XDS.b - Document Registry - R.b Document Resubmission	Version : CATS2015 Last Modified : 4/16/15 3:17:09 PM Permanent number: 12538	Verify that the XDS.b Document Registry will accept a duplicate XSDocumentEntry, with same DSDocumentEntry.uniqueId, if XSDocumentEntry.hash is the same reject if the hash is different	XDS Toolkit

XDS.b_REG_RollBack	XDS.b - Document Registry - Submission Stored - All or Nothing	Version : CATS2015 Last Modified : 4/16/15 3:17:35 PM Permanent number: 12539	Verify the capability of Document Registry to rollback a complete submission	XDS Toolkit
XDS.b_REG_Stored_Query	XDS.b Stored Query Testing	Version : CATS2015 Last Modified : 4/16/15 3:18:45 PM Permanent number: 12540	Test the ability of document registry to respond to SQ transaction	XDS Toolkit
XDS.b_REG_XDSResultNotSinglePatient	XDS.b - Document Registry - XDSResultNotSinglePatient Error	Version : CATS2015 Last Modified : 4/16/15 3:20:10 PM Permanent number: 12541	Testing the XDSResultNotSinglePatient Error.	XDS Toolkit

3.3.4.2 List of related test tools

ID	Tool	Test Tool Version	Developed by	Info Page	Tool Category
XDSToolkit	XDS Tools 2	200	NIST	http://ihexds.nist.gov/	Simulator Validator

3.4 Profile PDQ

3.4.1 Patient Demographic Consumer

3.4.1.1 List of test cases

ID	Test Scripts	Test Script and test Data Version and Reference	Description	Support Test Tool ID
PDQ_PDC_PediatricDemographics	PDQ/PDC Query with Pediatric Demographics	Version : CATS2015 Last Modified : 24/03/15 21:30:42 Permanent number: 12485	This test evaluates the capability of the SUT to support the Pediatric Demographics Option	Gazelle Patient Manager
PDQ_PDC_Query	PDQ/PDC Query with various parameters	Version : CATS2015 Last Modified : 15/04/15 13:32:57 Permanent number: 12481	This test evaluates the capability of the SUT to send a valid query to the PatientManager tool acting as a PDQ supplier	Gazelle Patient Manager

3.4.1.2 List of related test tools

ID	Tool	Test Tool Version	Developed by	Info Page	Tool Category
PatientManager	Patient Manager	8.0.1	IHE-Europe	http://gazelle.ihe.net/	Simulator
GazelleHL7Validator	HL7 V2 and V3 Message Validator	2.5.4	IHE-Europe	http://gazelle.ihe.net/	Validator

3.4.2 Patient Demographic Supplier

3.4.2.1 List of test cases

ID	Test Scripts	Test Script and test Data Version and Reference	Description	Support Test Tool ID
PDQ_PDS_Case1	PDQ/PDS Case 1: Data Found - Single Domain	Version : CATS2015 Last Modified : 02/04/15 15:43:14 Permanent number: 12486	This test checks the ability of your system to answer to an exact match query in a single domain	Gazelle Patient Manager
PDQ_PDS_Case2	PDQ/PDS Case 2: Data Found - Single Domain	Version : CATS2015 Last Modified : 02/04/15 15:43:31 Permanent number: 12487	This test checks the ability of your system to answer to a query in a single domain	Gazelle Patient Manager
PDQ_PDS_Case3	PDQ/PDS Case 3: Unknown Domain	Version : CATS2015 Last Modified : 02/04/15 15:43:48 Permanent number: 12488	This test checks the ability of your system to answer to a query with an unknown value in QPD-8	Gazelle Patient Manager
PDQ_PDS_Continuation_Pointer	PDQ/PDS Continuation Pointer	Version : CATS2015 Last Modified : 24/03/15 21:18:52 Permanent number: 12489	This test checks the ability of your system to support the HL7 Query Continuation Pointer Protocol	Gazelle Patient Manager
PDQ_PDS_PediatricDemographics	PDQ/PDS Pediatric Demographics option	Version : CATS2015 Last Modified : 02/04/15 15:44:07 Permanent number: 12490	This test checks the ability of your system to support the pediatric demographics option	Gazelle Patient Manager
PDQ_PDS_Prerequisite	PDQ/PDS Pre-Requisite	Version : CATS2015 Last Modified : 02/04/15 11:35:07 Permanent number: 12491	This test explains how to configure both your System and the tooling to perform the following test cases in the best conditions	Gazelle Patient Manager

3.4.2.2 List of related test tools

ID	Tool	Test Tool Version	Developed by	Info Page	Tool Category
PatientManager	Patient Manager	8.0.1	IHE-Europe	http://gazelle.ihe.net/	Simulator
GazelleHL7Validator	HL7 V2 and V3 Message Validator	2.5.4	IHE-Europe	http://gazelle.ihe.net/	Validator

3.5 Profile PDQ-V3

3.5.1 Patient Demographic Consumer

3.5.1.1 List of test cases

ID	Test Scripts	Test Script and test Data Version and Reference	Description	Support Test Tool ID
PDQV3_PDC_PediatricDemographics	PDQV3/PDC Query with Pediatric Demographics	Version : CATS2015 Last Modified : 3/24/15 4:15:45 PM Permanent number: 12496	This test evaluates the capability of the SUT to support the Pediatric Demographics Option	Gazelle Patient Manager
PDQV3_PDC_Query	PDQV3/PDC Query with various parameters	Version : CATS2015 Last Modified : 4/2/15 11:19:23 AM Permanent number: 12492	This test evaluates the capability of the SUT to send a valid query to the PatientManager tool acting as a PDQV3 supplier	Gazelle Patient Manager

3.5.1.2 List of related test tools

ID	Tool	Test Tool Version	Developed by	Info Page	Tool Category
PatientManager	Patient Manager	8.0.1	IHE-Europe	http://gazelle.ihe.net/	Simulator
GazelleHL7Validator	HL7 V2 and V3 Message Validator	2.5.4	IHE-Europe	http://gazelle.ihe.net/	Validator

3.5.2 Patient Demographic Supplier

3.5.2.1 List of test cases

ID	Test Scripts	Test Script and test Data Version and Reference	Description	Support Test Tool ID
PDQV3_PDS_Case1	PDQV3/PDS Case 1: Data Found - Single Domain	Version : CATS2015 Last Modified : 4/2/15 3:44:26 PM Permanent number: 12497	This test checks the ability of your system to answer to an exact match query in a single domain	Gazelle Patient Manager
PDQV3_PDS_Case2	PDQV3/PDS Case 2: Data Found - Single Domain	Version : CATS2015 Last Modified : 4/2/15 3:44:39 PM Permanent number: 12498	This test checks the ability of your system to answer to a query in a single domain	Gazelle Patient Manager
PDQV3_PDS_Case3	PDQV3/PDS Case 3: Unknown Domain	Version : CATS2015 Last Modified : 4/2/15 3:44:57 PM Permanent number: 12499	This test checks the ability of your system to answer to a query with an unknown value in otherIDsScopingOrganization	Gazelle Patient Manager
PDQV3_PDS_PediatricDemographics	PDQV3/PDS Pediatric Demographics option	Version : CATS2015 Last Modified : 4/2/15 3:45:10 PM Permanent number: 12500	This test checks the ability of your system to support the pediatric demographics option	Gazelle Patient Manager
PDQV3_PDS_Prerequisite	PDQV3/PDS Pre-Prerequisite	Version : CATS2015 Last Modified : 4/2/15 11:34:19 AM Permanent number: 12560	This test explains how to configure both your System and the tooling to perform the following test cases in the best conditions	Gazelle Patient Manager

3.5.2.2 List of related test tools

ID	Tool	Test Tool Version	Developed by	Info Page	Tool Category
PatientManager	Patient Manager	8.0.1	IHE-Europe	http://gazelle.ihe.net/	Simulator
GazelleHL7Validator	HL7 V2 and V3 Message Validator	2.5.4	IHE-Europe	http://gazelle.ihe.net/	Validator

3.6 Profile PIXv3

3.6.1 Patient Id Cross-referenceConsumer

3.6.1.1 List of test cases

ID	Test Scripts	Test Script and test Data Version and Reference	Description	Support Test Tool ID
PIXV3_Query	PIXV3: Patient Identifier Cross-Reference Consumer queries PIXV3 manager	Version : CATS2015 Last Modified : 3/23/15 8:43:00 PM Permanent number: 12515	This test checks that your SUT is able to query a PIXV3 manager	Gazelle Patient Manager

3.6.1.2 List of related test tools

ID	Tool	Test Tool Version	Developed by	Info Page	Tool Category
PatientManager	Patient Manager	8.0.1	IHE-Europe	http://gazelle.ihe.net/	Simulator
GazelleHL7Validator	HL7 V2 and V3 Message Validator	2.5.4	IHE-Europe	http://gazelle.ihe.net/	Validator

3.6.2 Patient Identity Cross Reference Manager

3.6.2.1 List of test cases

ID	Test Scripts	Test Script and test Data Version and Reference	Description	Support Test Tool ID
PIXV3_Manager_Feed_Merge	PIXV3: Patient Identity Feed HL7V3 - Merge	Version : CATS2015 Last Modified : 3/23/15 10:19:52 PM Permanent number: 12501	This test checks that your SUT correctly integrates the Merge message received from a PIX Source	Gazelle Patient Manager
PIXV3_Manager_Feed_W_known_dom	PIXV3: Feed Patient Identifier Cross-Reference Manager with a valid domain	Version : CATS2015 Last Modified : 3/23/15 10:02:50 PM Permanent number: 12502	This test checks that your SUT accept feeds for a patient with identifiers from a valid and known domain	Gazelle Patient Manager
PIXV3_Manager_Feed_W_Uknown_dom	PIXV3: Feed Patient Identifier Cross-Reference Manager with an unknown domain	Version : CATS2015 Last Modified : 3/23/15 10:04:20 PM Permanent number: 12503	This test checks that your SUT does not accept feeds for a patient with identifiers from an unknown domain	Gazelle Patient Manager
PIXV3_Manager_Query_Case1	PIXV3: Query PIXV3 Manager (Case 1)	Version : CATS2015 Last Modified : 3/25/15 11:19:07 AM Permanent number: 12505	This test checks that your SUT correctly answers to PIXV3 queries	Gazelle Patient Manager
PIXV3_Manager_Query_Case2	PIXV3: Query PIXV3 Manager (Case 2)	Version : CATS2015 Last Modified : 3/23/15 9:11:56 PM Permanent number: 12504	This test checks that your SUT correctly answers to PIXV3 queries	Gazelle Patient Manager

PIXV3_Manag er_Query_Cas e3	PIXV3: Query PIXV3 Manager (Case 3)	Version : CATS2015 Last Modified : 3/23/15 9:13:47 PM Permanent number: 12506	This test checks that your SUT correctly answers to PIXV3 queries	Gazelle Patient Manager
PIXV3_Manag er_Query_Cas e4	PIXV3: Query PIXV3 Manager (Case 4)	Version : CATS2015 Last Modified : 3/23/15 9:18:43 PM Permanent number: 12507	This test checks that your SUT correctly answers to PIXV3 queries	Gazelle Patient Manager
PIXV3_Manag er_Query_Cas e5	PIXV3: Query PIXV3 Manager (Case 5)	Version : CATS2015 Last Modified : 3/23/15 10:13:15 PM Permanent number: 12508	This test checks that your SUT correctly answers to PIXV3 queries	Gazelle Patient Manager
PIXV3_Manag er_Query_Cas e6	PIXV3: Query PIXV3 Manager (Case 6)	Version : CATS2015 Last Modified : 3/23/15 9:27:24 PM Permanent number: 12509	This test checks that your SUT correctly answers to PIXV3 queries	Gazelle Patient Manager
PIXV3_Manag er_Update	PIXV3: Update Patient Identifier Cross-Reference Manager	Version : CATS2015 Last Modified : 3/23/15 9:38:49 PM Permanent number: 12510	This test checks that your SUT accept feeds and is able to update patients	Gazelle Patient Manager
PIXV3_Manag er_Update_No tificatio	PIXV3 Manager sends update notifications	Version : CATS2015 Last Modified : 3/23/15 9:47:43 PM Permanent number: 12561	We are testing the ability of your system to issue PIXV3 Update notification messages to a consumer which registered for such feeds	Gazelle Patient Manager
PIXV3_Manag er_Update_un known_dom	PIXV3: Update Patient Identifier Cross-Reference Manager with an unknown domain	Version : CATS2015 Last Modified : 3/23/15 9:51:01 PM Permanent number: 12511	This test checks that your SUT does not accept to update patient demographics when coming from an unknown domain	Gazelle Patient Manager

PIXV3_PDO_BirthInformation	PIXV3: Query PIXV3 Manager PDO (Multiple Birth indicator and birth order)	Version : CATS2015 Last Modified : 4/2/15 3:45:22 PM Permanent number: 12512	This test checks that your SUT correctly supports the Pediatric Demographics Option	Gazelle Patient Manager
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3.6.2.2 List of related test tools

ID	Tool	Test Tool Version	Developed by	Info Page	Tool Category
PatientManager	Patient Manager	8.0.1	IHE-Europe	http://gazelle.ihe.net/	Simulator
GazelleHL7Validator	HL7 V2 and V3 Message Validator	2.5.4	IHE-Europe	http://gazelle.ihe.net/	Validator

3.7 Support tools

ID	Tool	Test Tool Version	Developed by	Info Page	Tool Category
Gazelle Test Management	The Gazelle Test Management Test Bed	4.11.0	IHE Europe	http://gazelle.ihe.net/	Validator
Gazelle ATNA tool	PKI, TLS Simulator and ATNA Questionnaire	4.7.12	IHE Europe	http://gazelle.ihe.net/	Simulator

APPENDIX A – LIST OF CHANGE PROPOSALS INCLUDED

To be included in the next version of IHE-CAS-2.