



Building trust
in eHealth
interoperability

IHE Services Overview

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e-Health Forum
Strategic challenges and
interoperability standards in Health IT
Sopot, Sheraton Hotel, 16/09/2016

IHE-Services

- Formally created in 2012
- Built upon a long experience in interoperability testing management and experience with epSOS.
- IHE-Services has the goal to offer professional services to support IHE Members as well as national/regional authorities, local projects or any other organisations deploying IHE profiles for their ehealth projects

IHE Services Catalogue

**1. Connectathons
and Projectathons**

**2. Gazelle Test Bed
and Tools**

3. Training

**4. Virtual
Connectathons**

**5. Consulting / IoP
Specifications**

**6. Tailored Test
Tools**

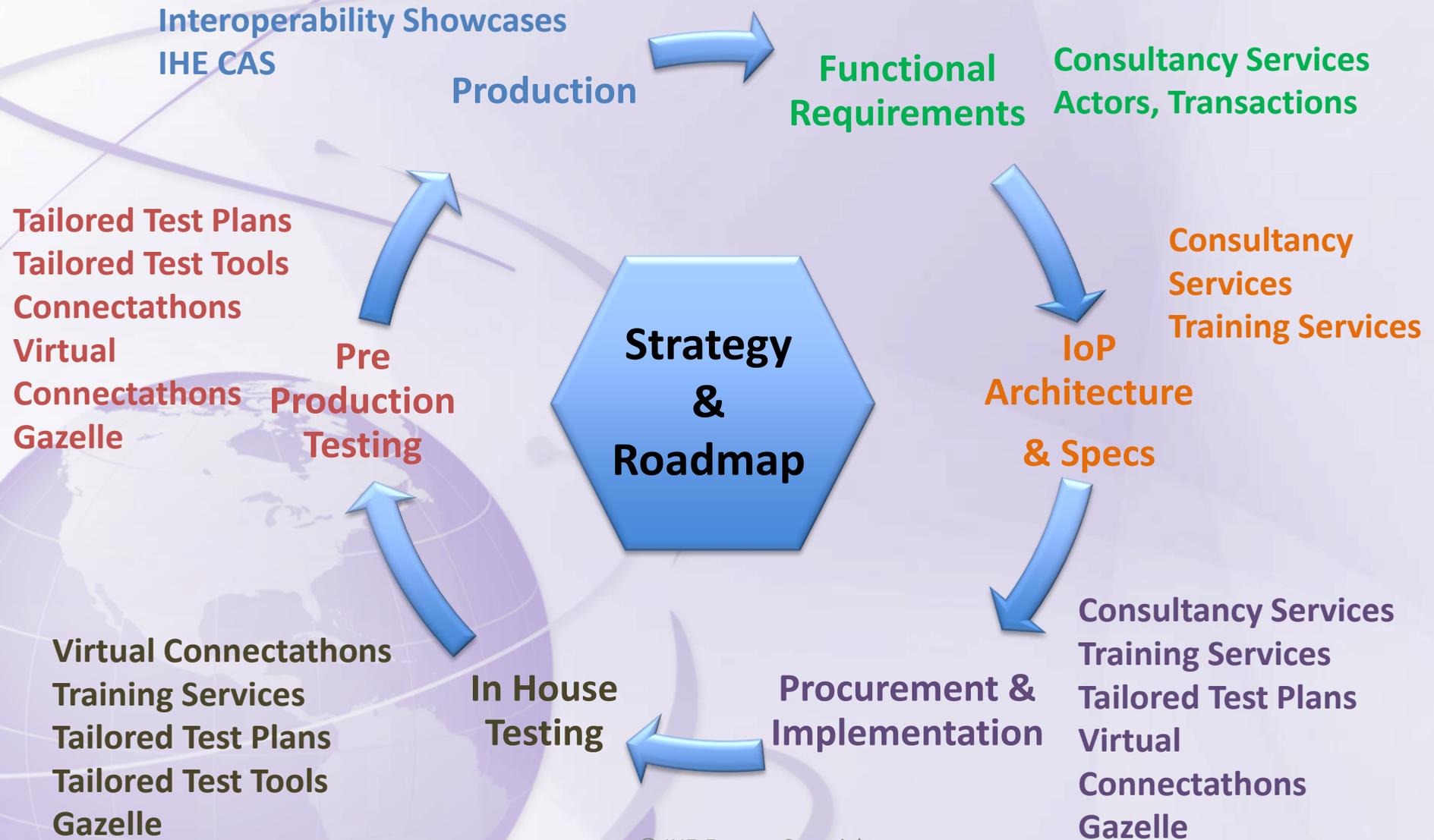
New!

**9. Conformity
Assessment/Report**

**8. Interoperability
Showcases**

**7. Tailored Test
Plans**

IHE Service & Project Lifecycle



1. Connectathons and Projectathons

IHE Connectathon

- Open invitation to vendor and other implementers community
- Advanced testing tools (GAZELLE, a GITB platform)
- Testing organized and supervised by project management team and monitors
- Thousands of cross-vendor tests performed
- Results recorded and published



Connectathon Results Browser

On-line registry showing for all Connectathons worldwide which vendors have successfully passed the tests with their products for a selected set of IHE Profiles.

- ❖ Health IT suppliers have the opportunity to showcase the IHE competency of their company.
- ❖ Health IT buyers can easily search for evidence of supplier's IHE claims.

<http://connectathon-results.ihe.net/>

Result Matrix For integration_profile : "Scheduled Workflow"

Result with :

- Actor is 'Image Manager'
- Integration Profile is 'Scheduled Workflow'
- Connection is 'North-America 2005'
- All Companies

	AGFA GEVAERT NV	Cedera Software	Corner Corporation	Eastman Kodak Company	Emageon	Fujifilm	GE Healthcare	Hitachi Medical Corporation	INFINITT	InSiteOne	Intel Medic System
	North-America 2005	North-America 2005	North-America 2005	North-America 2005	North-America 2005	North-America 2005	North-America 2005	North-America 2005	North-America 2005	North-America 2005	North-Am 2005
Order Placer				*							
Department System Scheduler/Order Filler			*	*					*		
Image Manager	*	*	*	*	*	*	*	*	*	*	*
Acquisition Modality		*		*		*	*	*	*		
Evidence Creator	*	*		*		*	*	*	*		
Image Display	*	*		*	*	*	*	*	*		

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Connectathon Results Browsing

Simple browsing

Advanced browsing

www.ihe.net

www.ihe-europe.org

-- Select a connection --

Or

-- Select a vendor --

Or

-- Select an actor --

- Display
- Document Consumer
- Document Registry
- Document Repository
- Document Source
- Enterprise Report Repository
- Evidence Creator
- External Report Repository Access
- Image Display
- Image Manager**
- Information Source
- Kerberos Server
- Kerberos Authentication Server
- Order Placer
- Order Result Tracker
- Patient Context Participant
- Patient Demographics Consumer
- Patient Demographics Supplier
- Patient Identity Consumer
- Patient Identity Cross-reference Manager

Webmaster
Consultation date: Mon, 27 Jun 2005 00:25:51 GMT
Last modified: Sun, 26 Jun 2005 23:20:56 GMT

Product Registry

Search Integration Statements



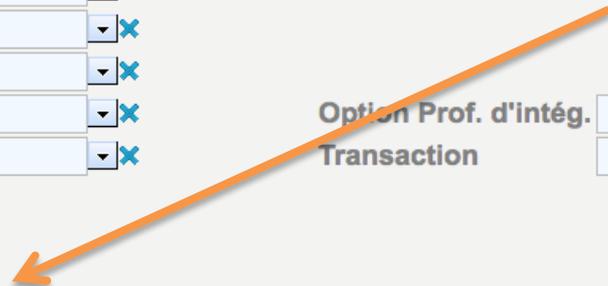
Critère de recherche

Comme	<input type="text"/>	✕
Organisation	<input type="text"/>	✕
Nom du système	<input type="text"/>	✕
Type de système	<input type="text"/>	✕
System sub type	<input type="text"/>	✕
Domaine	<input type="text"/>	✕
Profil d'intégration	<input type="text"/>	✕
Acteur	<input type="text"/>	✕
Date de publication	Any	⌵

Initialiser

Option Prof. d'intég. ✕
Transaction ✕

713 IS available over the world



713 Integration Statements for this search

« « 1 2 3 4 5 6 7 8 9 10 » »

	Organisation: Mindray Nom du système/produit: A5 Anesthesia System Version: 01.02.00 Date de publication: 04/04/11
	Organisation: Iatric Systems, Inc. Nom du système/produit: Accelero Connect Version: 12/01/15 Date de publication: 12/01/15

Projectathons

- epSOS projectathons since 2011



- **EXPANDATHON**

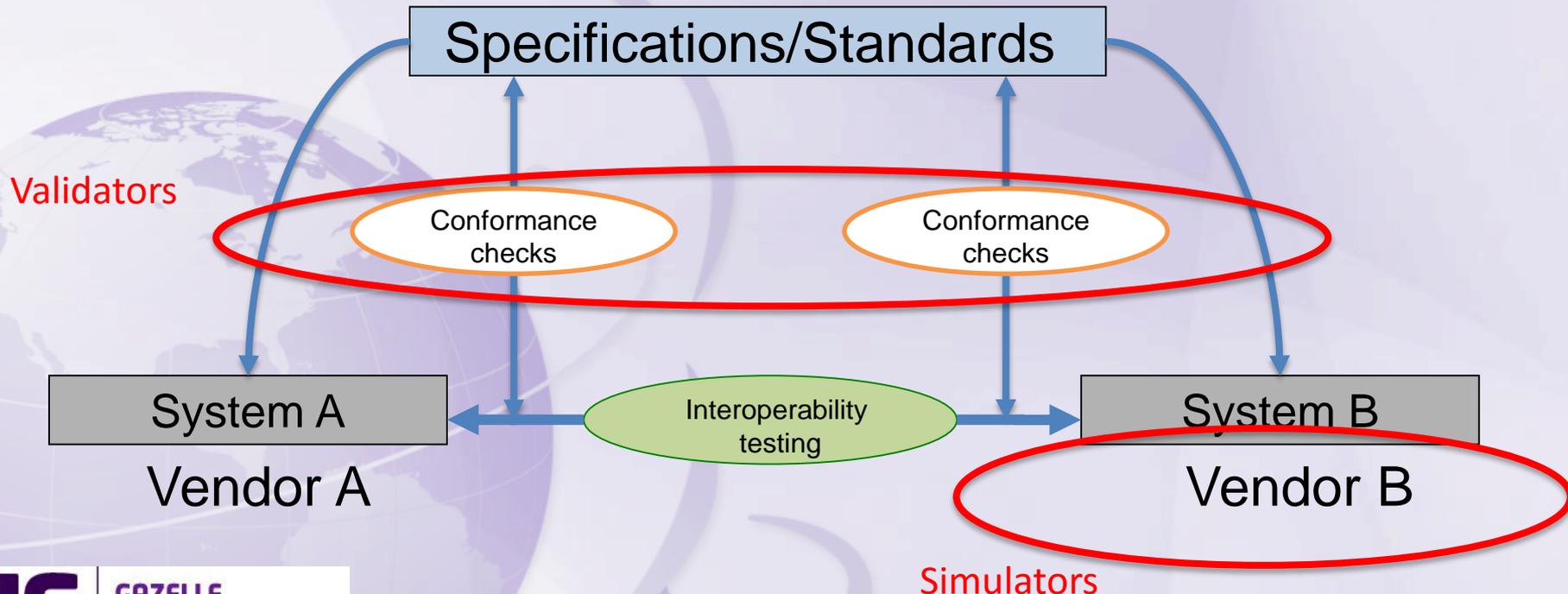
- Lisbon 9-11 December 2015

- <http://www.expandproject.eu/expand-final-event-lisbon-ehealth-week/>

2. Gazelle Test Bed and Tools

Gazelle Test Framework

- ❖ Test management tool oriented toward interoperability and conformance testing.
- ❖ Suite of conformance testing tools.
- ❖ Suite of simulators tools.



Gazelle Maintenance Packages

- **Two** versions of Gazelle (Open source)
 - Community (non-supported)
 - Enterprise (supported + validated)
- **Enterprise** Versions
 - In House
 - Cloud Basic
 - Cloud Premium
 - Cloud EVS
- Maintenance Packages are a **combination of maintenance and additional services tailored to customer's needs** (specification creation, training, consultancy, custom test tools, custom test plans, virtual connectathons, projectathons etc.)

Community Edition	Enterprise Editions			
Downloadable public domain files	Cloud Basic Hosted @ IHE Services Basic Pack	InHouse Edition Onsite Installation	Cloud Premium Hosted @ IHE Services Premium Pack	Cloud EVS Hosted @ IHE EVS Services only

Gazelle Usage by Veneto Region, Italy



- Suitable tool for the certification process for systems involved in the regional HIE
- Used in the context of ePrescription, eDispensation, Patient management, laboratory Information system
- 67 systems with 118 users

Integration Profile Information																			
Id		Keyword		Name		Description		Status		Document Section									
257	NR	Notifiche di Inizio e Fine Ricovero		Il presente documento ha l'obiettivo principale di adempiere a quanto decretato dal Ministero della Salute di concerto con il Ministero del Lavoro e delle Politiche Sociali e il Ministero dell'Economia e delle Attività Produttive con il PM 14 aprile 2015 modificato al decreto 24 febbraio 2012, recante Definizi tematico dei dati delle certificazioni implementazioni		NR_10 Trasferimento/Prescrizione		ready	connectathon	No Peer	false	elecst	m.giardello	8/13/15 9:57:46 AM					
		NR_11 Ricovero non lavoratore	NotificheRicovero2015	ready	connectathon	Peer To Peer	false	elecst	m.giardello	8/13/15 9:58:34 AM									
		NR_12 Consenso negato lavoratore	NotificheRicovero2015	ready	connectathon	Peer To Peer	false	elecst	m.giardello	8/13/15 9:58:50 AM									
		NR_13 Consenso lavoratore	NotificheRicovero2015	ready	connectathon	Peer To Peer	false	elecst	m.giardello	8/13/15 9:59:18 AM									
		NR_14 AggiornamentoRicovero	NotificheRicovero2015	ready	connectathon	Peer To Peer	false	elecst	m.giardello	8/13/15 9:59:46 AM									
		NR_15 Cancellazione Ricovero	NotificheRicovero2015	ready	connectathon	Peer To Peer	false	elecst	m.giardello	8/13/15 10:01:09 AM									
		NR_16 Rettifica inizio ricovero	NotificheRicovero2015	ready	connectathon	Peer To Peer	false	elecst	m.giardello	8/13/15 10:04:06 AM									
		NR_17 Rettifica Certificato	NotificheRicovero2015	ready	connectathon	Peer To Peer	false	elecst	m.giardello	8/13/15 10:03:52 AM									
		NR_18 Ri-stampa certificato	NotificheRicovero2015	ready	connectathon	No Peer	false	elecst	m.giardello	8/13/15 10:03:37 AM									
		NR_19 Rifiuto stampa certificato	NotificheRicovero2015	ready	connectathon	Peer To Peer	false	elecst	m.giardello	8/13/15 10:03:23 AM									
		NR_20 RettificaChiusuraRicovero	NotificheRicovero2015	ready	connectathon	Peer To Peer	false	elecst	m.giardello	8/13/15 10:03:08 AM									
		NR_21 Ri-ospedalizzazione	NotificheRicovero2015	ready	connectathon	Peer To Peer	false	elecst	elecst	8/24/15 10:06:04 AM									
		NR_22 Ricovero Day Hospital	NotificheRicovero2015	ready	connectathon	Peer To Peer	false	elecst	m.giardello	8/13/15 10:02:41 AM									
		NR_23 Paziente STP	NotificheRicovero2015	ready	connectathon	Peer To Peer	false	elecst	m.giardello	8/13/15 10:02:25 AM									
		NR_24 Paziente sconosciuto	NotificheRicovero2015	ready	connectathon	Peer To Peer	false	elecst	m.giardello	8/13/15 10:02:12 AM									
		NR_30 Scenario notifiche	NotificheRicovero2015	ready	connectathon	Peer To Peer	false	elecst	m.giardello	8/13/15 10:01:41 AM									

Proxy Tool: Allows to view the list of messages passing from the initiator system to the responder one and to analyze them. In total, 29322 messages passed through the proxy tool.

Feedback on Gazelle



- A valid and structured **method for certification** of software systems (keeping log files, timing, etc.)
- Configurable to **add regional technical specs** as new integration profiles
- Organize **use cases in test cases** and test steps giving a clear and structured process to vendors
- **Guidance to developers**
- Keeps **track of test execution**, test status evolution
- **Proxy tool** shows the real sequence of transactions between systems, the actual exchange of messages and possible errors
- **EVS Client Validator** gives vendors a rapid feedback about the correctness of messages providing a precise result, with the details of errors or the positive outcome.

3. Training

Training

- IHE Service in association with expert partners supports training sessions
 - IHE profiles training
 - IoP Basics
 - Tailored training
 - National/Regional strategy support
 - End user engagement – awareness
 - Vendor training

Training course IHE XDS Advanced



- **What is covered**

- This training course provides the attendee with hands-on troubleshooting experience. It also offers guidance on how to design, develop and test software that uses the XDS/XDS-I/XCA specifications. Available XDS/XDS-I/XCA implementation toolkits (public domain, commercial) is covered as well. This is a hands-on training course; at least 50% of the time is spent on hands-on exercises.
- Number of Days: 2 days, 09:30 to 17:00.

- **Learning goals**

- After this training course the attendees will be able to:
- Troubleshoot XDS/XDS-I/XCA connectivity issues
- Use XDS/XDS-I/XCA simulation and validation tools
- Help their organization to determine how they might implement XDS/XDS-I/XCA
- Understand how XDS/XDS-I/XCA fit within common software-engineering principles.

- **Stay tuned for next training session!**

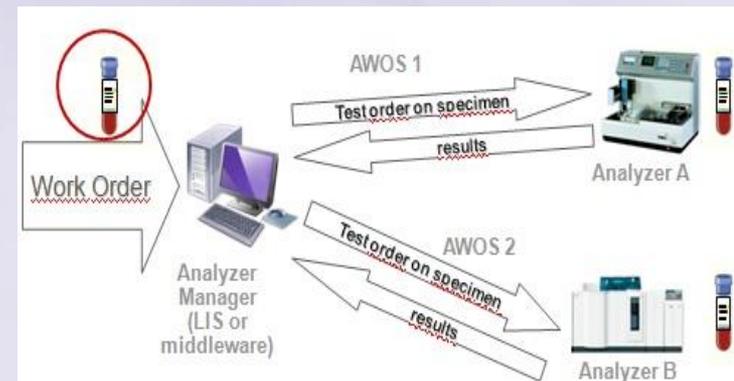
4. Virtual Connectathons

Virtual Connectathons

- IHE Services can establish and operate a virtual testing session for
 - Educational purposes
 - IICC
 - Pre-procurement purposes
 - Vendor engagement
 - Arsenal.IT
 - Pre Connectathon Testing
 - Expandathon
 - Pre production testing
 - epSOS
 - In House testing
 - Testing support for a specific certification/labelling scheme

IVD Industry Connectivity Consortium (IICC)

- Establishing a Virtual Connectathon Facility for IICC and its supporters
 - Helpdesk, training, support to participants
- Update the Gazelle tools to meet the latest version of the LAW supplement (1.4)
- 6 International participants
- Self financed by participants

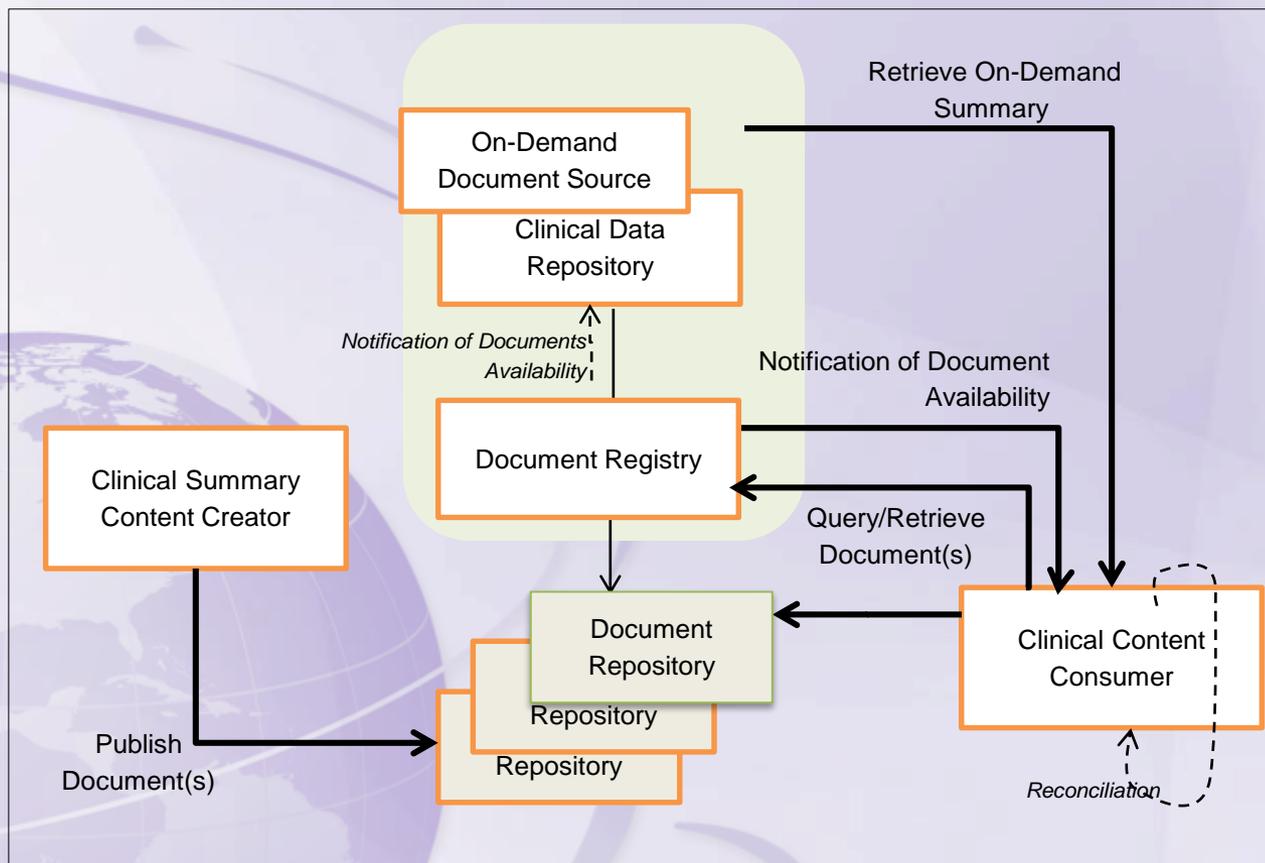


5. Consulting / IoP Specifications

Consultancy – IoP Specifications

- IHE Services provides expert support for:
 - Interoperability specifications
 - Interoperability Architecture design
 - Test Tools
 - Test Plans
 - Training Programs
 - Healthcare information Exchange Governance
- IHE Services support the lifecycle of project and enhances quality and rigor in the cycle of healthcare related software
 - Specifications linked to test plans, test tools, labeling or certification schemes.
 - Then supported by Gazelle platform

Greek Patient Summary Core Interoperability Specifications



6. Tailored Test Tools

Tailored Test Tools

- IHE services provides consultancy and implementation services to create new testing tools for
 - IHE profiles national/regional extensions
 - New IHE profiles
 - Custom / Local testing tools¹⁹
 - National Program support
 - Validation tools - ObjectsChecker
 - Simulator tools
 - Continuous integration between specification – testing tools – test plans

7. Tailored Test Plans

Tailored Test Plans

- IHE Services can provide consultancy and expertise on creating
 - Analytical test plans
 - Link test plans to tools
 - Link test plans to specification
 - Link test plans to IHE profiles
 - Create test plans for IHE profile extensions

- Charte BP6 provide a methodology for the improvement of the interoperability in hospitals and more specifically for the patient venue in hospitals based on IHE profile
- InteropSanté published three documents:
 - Diagram of states for the patient venue
 - Messages Interaction list
 - Set of test scénarios for real business cases
- Use of Gazelle
 - To test the profiles PAM and its French extensions dedicated to the PMSI and T2A
 - Common understanding on messages and their uses
 - Support to
 - The implementers when developing their systems
 - Check the conformity of their software development
 - Validate the extensions (BP6 working Group)
 - Next step: Test sessions

8. Interoperability Showcases

Interoperability Showcases



9. Conformity Assessment/Report

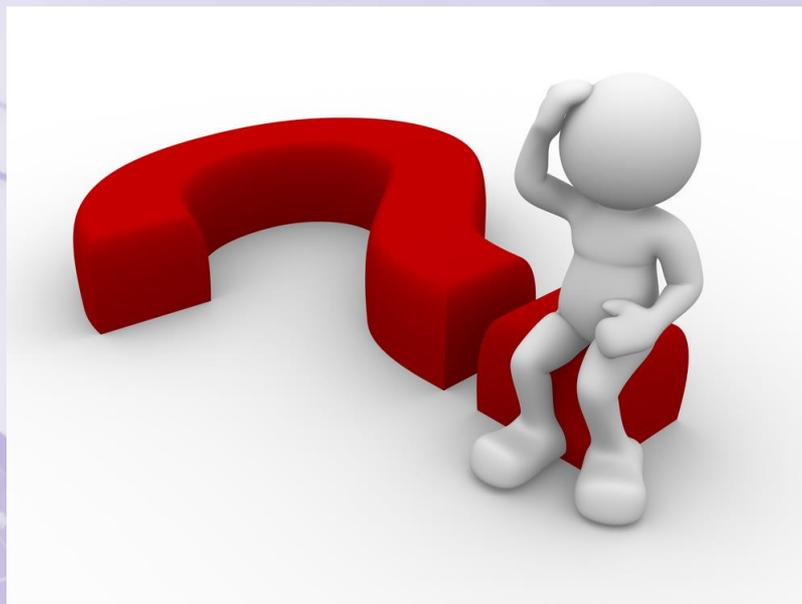
IHE Conformity Assessment

- Test Report provided by a trusted neutral organization (generally called testing laboratory) that guarantees that the IHE profile implementation in a commercial products is positively tested against an IHE intl conformity assessment scheme defined in term of ISO17025.
 - Specific version of a specific product
 - Requires vendor to pass connectathon for seeking profile conformity assessment
- 4 SUT's successfully tested in 2015 under CAS 2015

Links

- IHE-International: www.ihe.net
- IHE-Europe: www.ihe-europe.net
- Link to Product Registry :
 - <http://product-registry.ihe.net>
- Documentation :
 - <http://gazelle.ihe.net/content/product-registry>
- Conformity Assessment Program:
[http://ihe.net/Conformity Assessment.aspx](http://ihe.net/Conformity_Assessment.aspx)
- IHE Services web site: <http://www.ihe-services.net>
- Gazelle web site: <http://gazelle.ihe.net>

Any Question ?



www.ihe-Europe.net