

# Interoperability that Works: Integrating the Healthcare Enterprise

HIMSS Middle-East – Riyadh 2011  
Charles Parisot IHE International Board  
GE Healthcare

May 2011 1 Interoperability that Works

## Interoperability: From a problem to a solution

Base Standards      Profile Development & testing      eHealth Projects

OASIS IETF ISO W3C cen DICOM IEEE IHE CDISC ETSI LOINC IHTSDO ITU

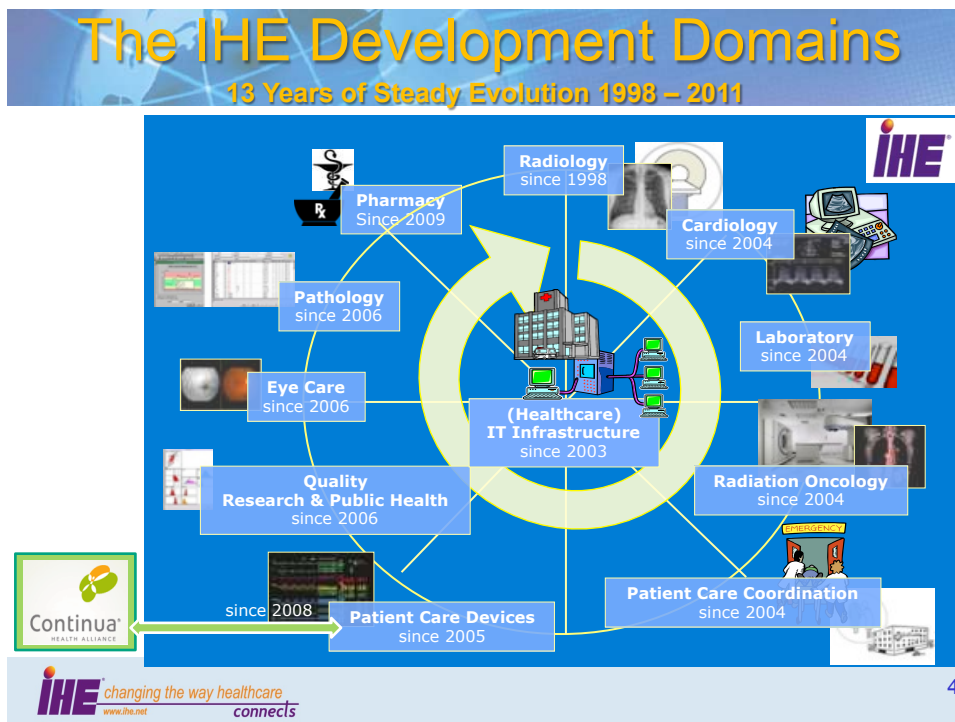
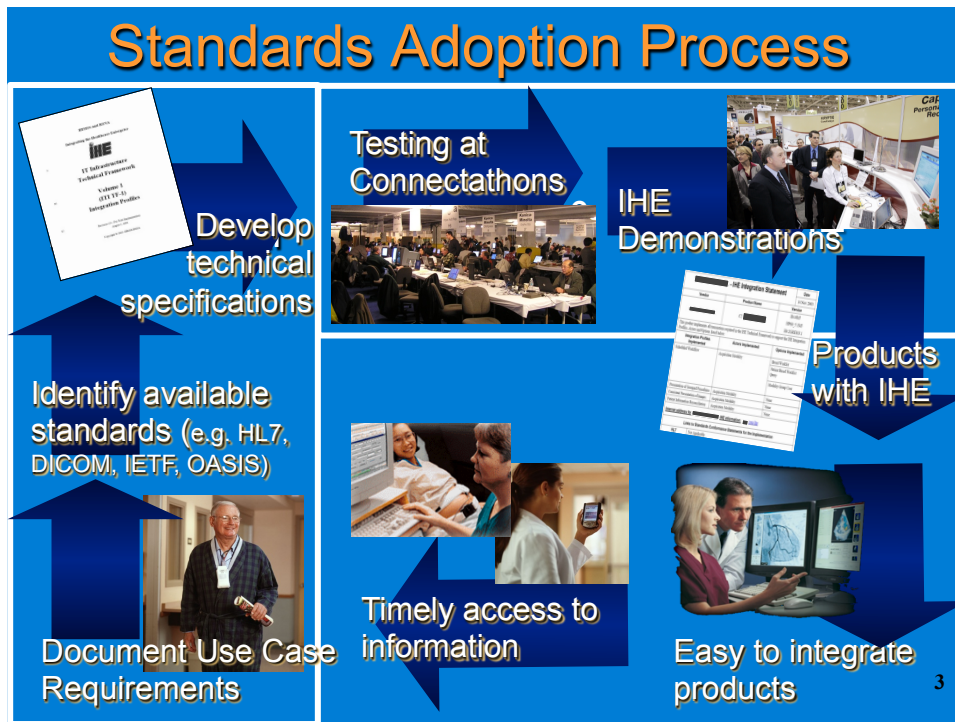
IHE Continua

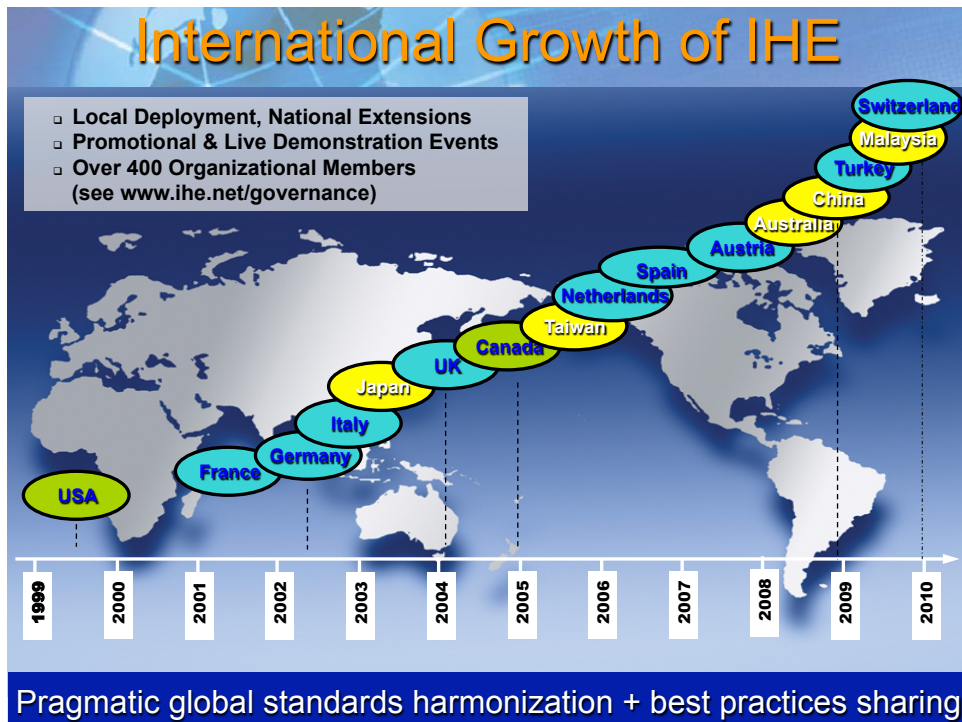
Project Specific Extensions

Profiling Organizations are well established

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## What is IHE, how much adopted ?


- ISO TR28380 Global Standards Adoption – IHE Process and Profiles
- Home Health: CONTINUA and IHE work together.
- Widespread adoption of IHE Profiles by National and Regional Projects around the world:
  - US Nationwide Health Information Network (NwHIN) leverages IHE profiles (XCA, XDR, XCPD, BPPC, ATNA)
  - 23 Country European epSOS Project: IHE-Europe hosting Industry Team, support project interoperability conformance testing (XCA, XCPD, ATNA, XUA, BPPC, CDA Content Modules from PCC).
  - In use in several national and regional projects: Austria, France, South Africa, Italy, Netherlands, USA, Japan, Switzerland, Canada
  - EU Commission eHealth Interop Mandate 403 and HITCH roadmap conformance testing leverage IHE process


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## IHE Connectathon

- Open invitation to vendor and other implementers community
- Advanced testing tools (GAZELLE)
- Testing organized and supervised by project management team
- Thousands of cross-vendor tests performed
- Results recorded and published. Over 400 Health IT and Systems companies passed:  
<http://connectathon-results.ihe-europe.net>


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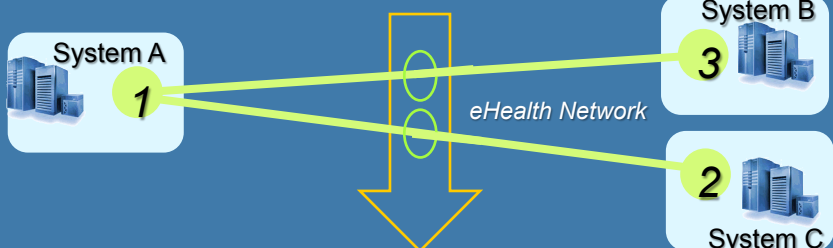
## IHE Connectathons

**2011 Connectathon:**  
**Chicago, USA, January 17-21**  
**Pisa, ITALY, April 11-15**  
**Australia, July**  
**Japan, October**



**Massive yearly events :**  
**70-80 vendors**  
**250-300 engineers**  
**100-150 systems**  
**...integrated in 5 days**

## Interoperability Procurement

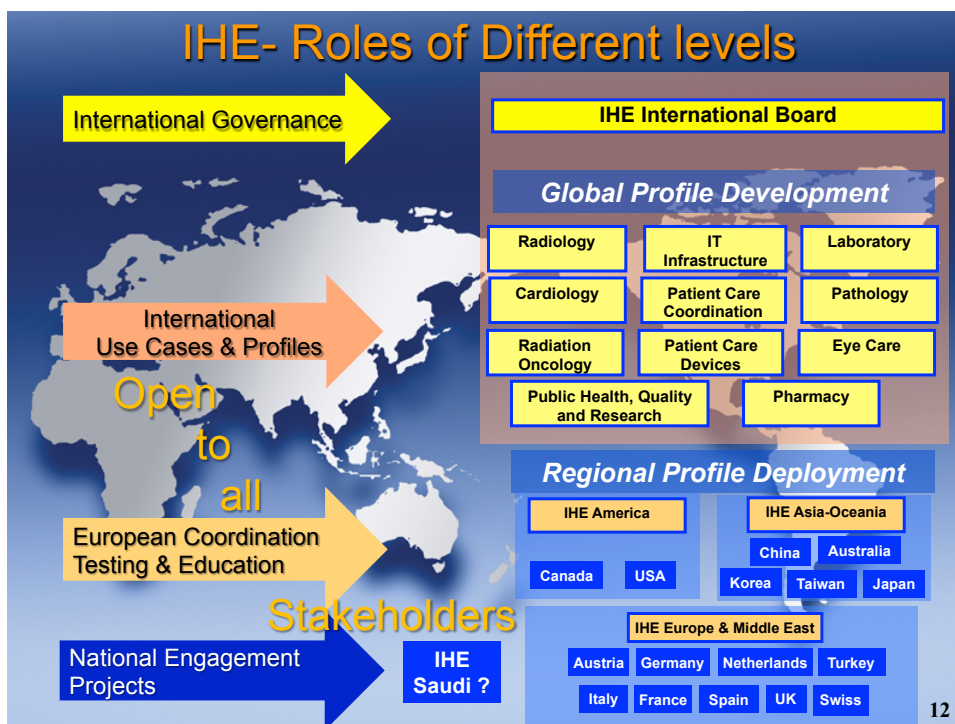
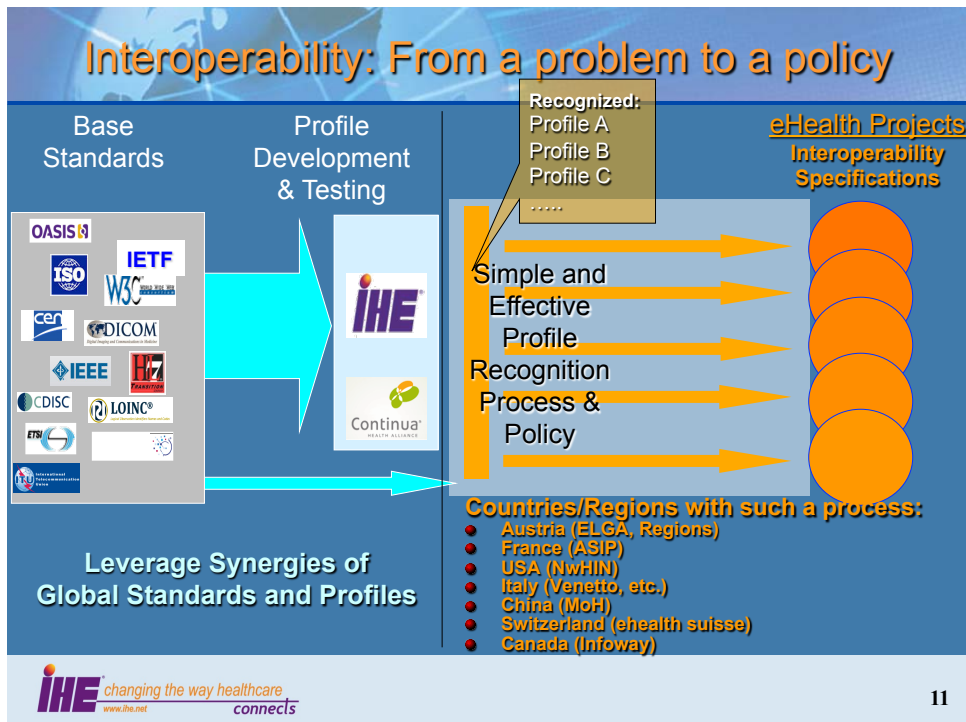


**A Profile specifies (by references to standards) what is exchanged “on the wire” between called actors (e.g. 1,2,3)**  
**For each systems procured:**

- 1 - Specify the Profile/Actors to be supported
- 2 - Ask for the vendors IHE Integration Statement (declares Profile/Actors)
- 3 – Ask for a declaration that the Actor/Profile implemented tested at an IHE Connectathon (check vendor is on the IHE Product Registry).
- 4 – Place contractual commitments

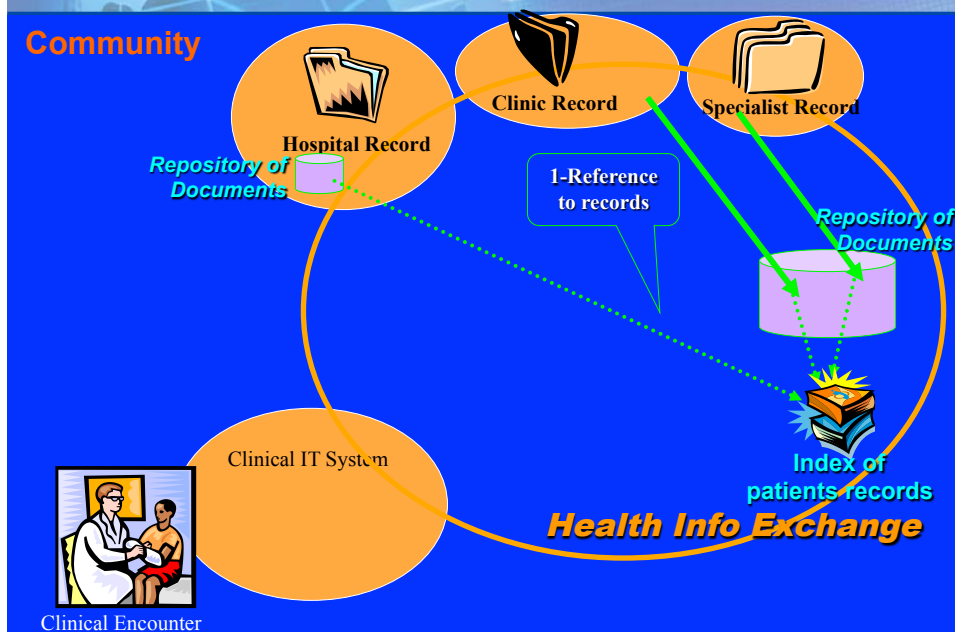
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## eHealth and Interoperability: Key IHE Profiles for national interoperability

### Registering Health Records: IHE-XDS








## IT Infrastructure

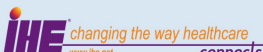
### XDS and related Profiles extend deployment:

- Off-the shelf sharing of records/documents. All type of clinical content (e.g. HL7 CDA/CCD).
- Robust service: submission sets, replace/amend, etc.
- Open source and support by well over 100 products (infrastructure & EPRs).
- Projects range from communities (a few hospitals/clinics) to regions and nations. Now a few registries/repositories with more than 1 million patients.
- Implementation feedback is positive: moving beyond interfacing to user experience.


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## Implementing IHE today in Regional and National Health Networks: Most Popular Services

Sharing of Patient Summaries <small>(Incl Prescriptions)</small>	Sharing of Laboratory Results	Sharing of Imaging Info	Sharing of Cardiology Info	Sharing of Scanned Docs	} IHE Content Profiles	
<b>Sharing of Documents</b> <small>Point-to-Point Push(XDR), Sharing(XDS), Federated(XCA), Media and e-mail(XDM)</small>						
Audit Trail and Secured Connection	Digital Signature	Privacy and Consent	Patient Identification Mgt	Provider Directory	Terminology Services	} IHE IT Infrastructure Profiles



## Principles for a Regional/National eHealth Network

1. Set a standards based boundaries with stable/proven/unambiguous interoperability specifications (profiles of well accepted standards):

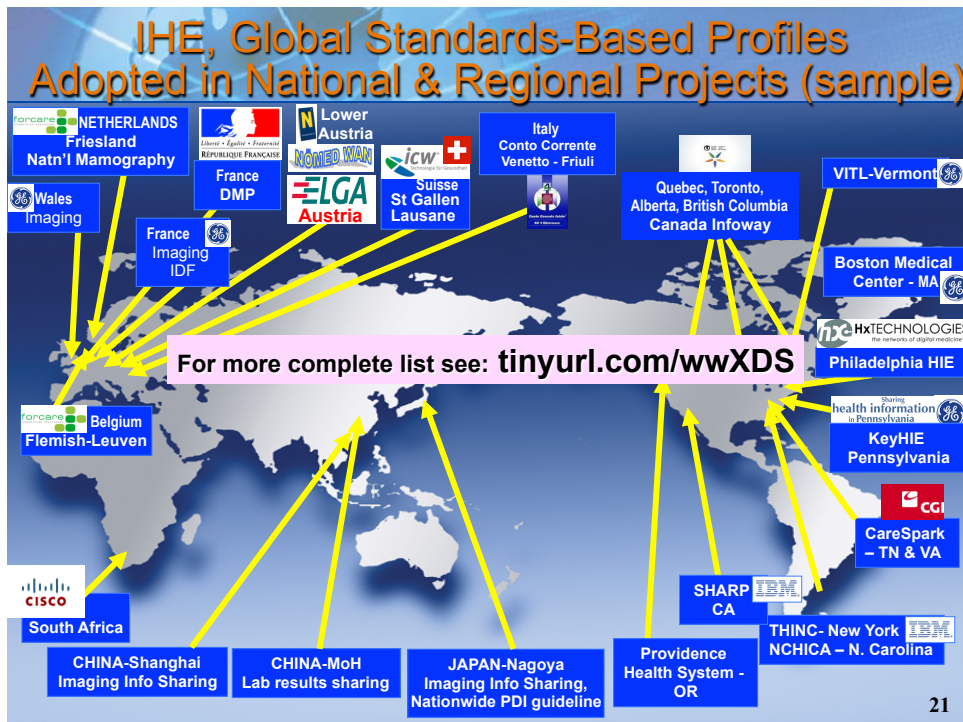
**Health Information  
Sharing Infrastructure  
Interoperable EHR**

2. Keep things simple and robust within the standards-based boundary (365x24 availability, costs, new use cases, etc.).

- Create your own boundary or leverage IHE profiles ?
- IHE Profiles come with testing tools, process, shared experience, open source, a broader community, multi-vendor and stability

## Countries and approaches

Countries	Data Messaging	Document Sharing	
England	<i>Abandoned</i>	CDA	Operational since 2009. Designed in 2006, before XDS. Similar to XDS transactions with customized HL7V3 messages
Austria		XDS+CDA	Operational since 2009. 4 million patient with records. Uses documents (HL7CDA) for content and transport with XDS,
Turkey		CDA	Mainly data reporting to Ministry. Transport (HL7V3-customised by Turkey), documents (HL7CDA) for content.
Canada		XDS-I+DICOM	Early deployments in a few provinces. Transport and content HL7 V3. Use XDS for Imaging.
France		XDS+CDA	Early deployments nation-wide. HL7 CDA Documents for content and XDS for transport.
USA		XCA+CDA	Nationwide Health information Network. In use today between Kaiser , VA, SSA, Virginia,
Switzerland		XDS+CDA	Documents (HL7CDA) used for content. Transport uses XDS as national standard. Deployed in city of Geneva (University Hospital leadership).
Cross-Border Europe		XCA+CDA	epSOS Project – Uses HL7 CDA document for content with XCA, Testing of 13 participating nations at IHE-Europe Connectathon April 2011: France, Germany, Switzerland, Spain, Italy, Austria, Slovenia, Turkey, Portugal, Denmark, Sweden, Czech Republic, Slovakia,
Regions:		XDS+CDA XDS-I+DICOM	Italy, Belgium, Netherlands, USA, China, South Africa



**IHE based “Interoperability” experience has demonstrated significant benefits to national and regional programs:**

- Reduce specification consensus time
- Simplify implementation efforts
- Reuse of testing tools and processes
- Shared implementation experience

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