



Introduction to Integrating the Healthcare Enterprise (IHE)

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What is Standards Harmonization?

- Healthcare is a complex multi-specialty multi-stakeholder system. Multiple standard development organizations are necessary.
- Challenge is to achieve “interoperability” while implementing multiple standards to meet a broad range of information exchange needs:
 - **Application-to-application**
 - **System-to-system**
 - **Setting-to-setting**
- Coordinate adoption of standards to meet clinical and administrative Use Cases
 - **Identify the key interoperability problems they face**
 - **Providers and industry work together to develop and make available standards-based solution**

Standards: Necessary...Not Sufficient

- Standards are
 - Foundational - interoperability and communications
 - Broad - varying interpretations and implementations
 - Narrow - may not consider relationships between standards domains
 - Plentiful - often redundant or disjointed
 - Focused - standards implementation guides typically focus on a single standard

Need a standard process for implementing multiple standards

What is “Integrating the Healthcare Enterprise”?



- A 11-year public-private initiative
- Driven by end-users, IHE improves patient care by harmonizing electronic health information exchange
- Enables approved standards to seamlessly pass health information among care providers on a local, regional and national level
- IHE products are freely available to all

The IHE International Organization

Established IHE as an International Organization (end of 2007)

Governance

- [Principles of Governance](#)
- [Membership](#)
- [Domain Committees](#)
- [National/Regional Deployment Committees](#)
- [Sponsoring Organizations](#)
- [IHE International Board](#)

Integrating the Healthcare Enterprise (IHE) International is an organization that enables users and developers of information technology for healthcare to achieve interoperability of systems through the precise definition of healthcare tasks, the specification of standards-based communication between systems required to support those tasks and the testing of systems to determine that they conform to the specifications. The work is managed by IHE committees and sponsored by various national and international bodies.

IHE International Principles of Governance
[The IHE International Principles of Governance document](#) describes the organization, policies and procedures of IHE International. It was officially adopted by the Board of IHE International on October 5, 2007. Currently, IHE International is an unincorporated association composed of many member organizations. The IHE International Board has expressed the intention to undertake the legal steps necessary to form a non-profit corporation by March 2008. The current document will govern IHE International activities until the process of incorporation is complete, at which time it will be superseded by the articles of incorporation and a policies and procedures manual for IHE International, Inc. Comments on this document can be submitted to the Secretariat of IHE International.

~ 250+ Member Organizations

- Healthcare Professional Associations
- Healthcare Provider Organizations
- Healthcare Education / Research Orgs
- Trade Associations
- Healthcare IT Companies
- Government Agencies
- Standards Organizations (SDOs)
- Health Information Exchanges (HIEs)



Who's involved in IHE?

- **Users** - Clinicians, Staff, Administrators, CIOs, Health Authorities)
- **Professional Societies**
 - representing over 300,000 individual members
- **Standards Development Orgs (SDOs):**
 - HL7, DICOM, ISO, CDISC, W3C, IEEE, IETF, etc
- **Vendors & consultants** (e.g., EHRs, imaging, laboratory, cardiology, medical devices)

Proven Standards Adoption Process



Develop technical specifications

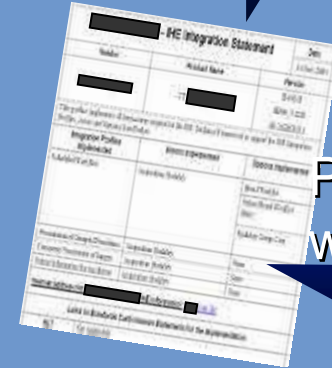
Testing at Connectathons



IHE Demonstrations



Products with IHE



Identify available standards (e.g. HL7, DICOM, IETF, OASIS)

Document Use Case Requirements



Timely access to information



Easy to integrate products



How does IHE work?

- Clinicians and IT professionals identify key clinical and business workflow problems
- Clinicians, IT professionals, consultants, and vendors jointly solve those problems by standardizing the way existing standards are implemented in HIT products
- IT professionals follow the IHE guidelines in purchasing and integrating effective systems

The IHE Deployment Initiative Worldwide

International Adoption

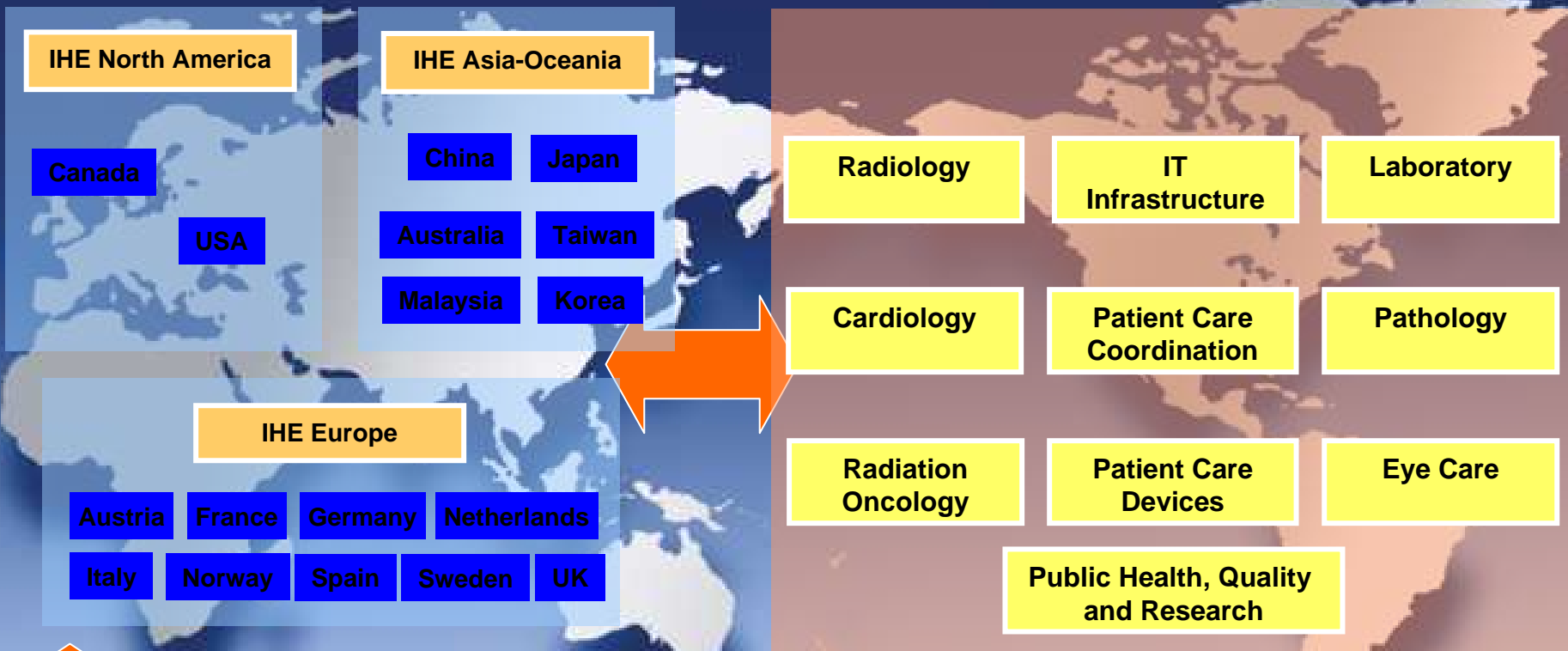


IHE Organizational Structure

IHE International Board

Regional Deployment

Global Development



Professional Societies / Sponsors

- | | | | | | | | |
|------|-------|------|---------|---------|------|-------|-----------|
| ACC | ACP | RSNA | COCIR | SIRM | ESC | JAHIS | METI-MLHW |
| ACCE | GMSI | SFR | EAR-ECR | BIR | MSC | JIRA | MEDIS-DC |
| ACEP | HIMSS | SFIL | DRG | EuroRec | MDEC | JRS | JAMI |

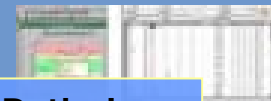
Contributing & Participating Vendors

The IHE Development Domains

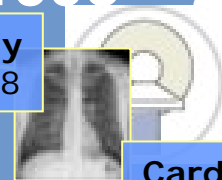
11 Years of Steady Evolution 1998 – 2009



Pharmacy
NEW 2009



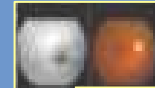
Pathology
since 2006



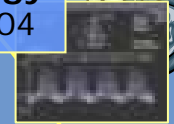
Radiology
since 1998



Cardiology
since 2004

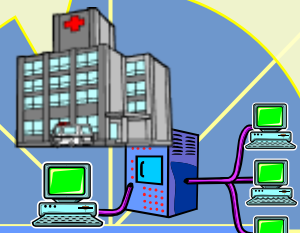
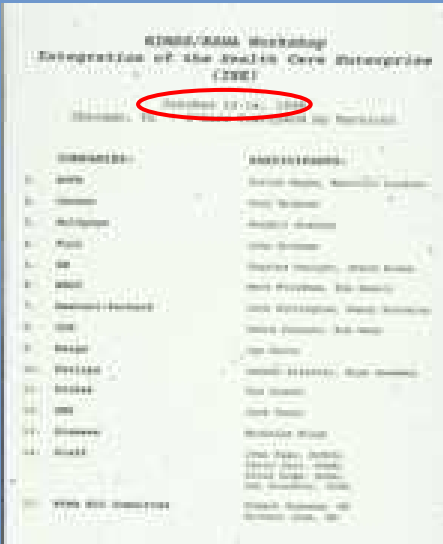


Eye Care
since 2006

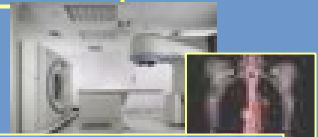


Laboratory
since 2004

Laying the Groundwork
1998



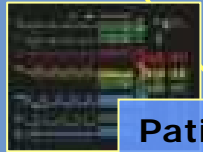
**(Healthcare)
IT Infrastructure**
since 2003



Radiation Oncology
since 2004



**Quality
Research & Public Health**
since 2006



Patient Care Devices
since 2005



Patient Care Coordination
since 2004

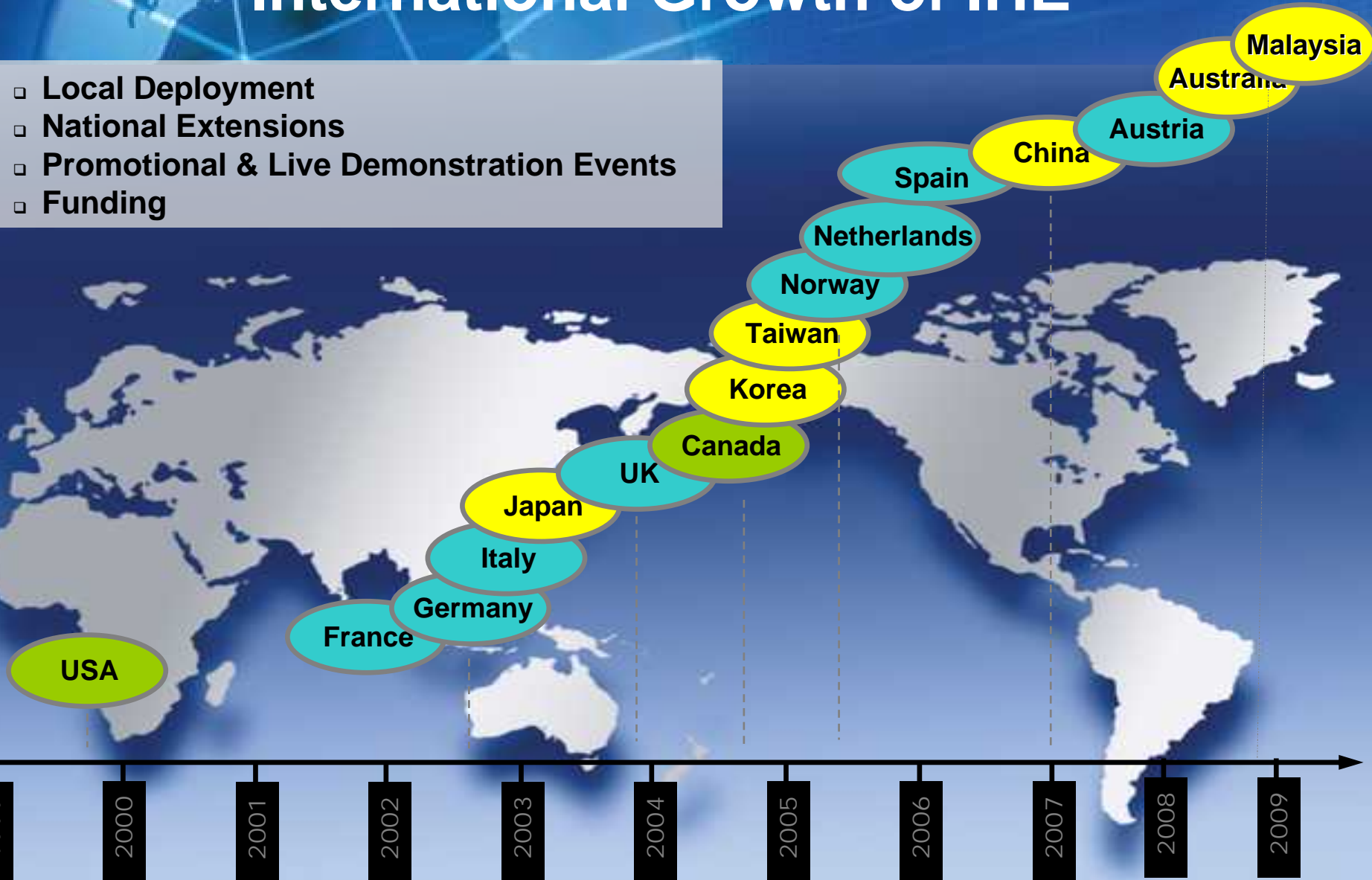


Who benefits from IHE's work?

- Patients
 - Enhance care's quality, safety, efficiency & effectiveness
- Clinicians
 - Improve workflow & information reporting
 - Fewer error opportunities; Less repeated work
- Vendors & Consultants
 - Satisfy customers' interoperability demands
 - Decreased cost & complexity of installation & mgt
- SDOs
 - Rapid feedback to address real-world issues
 - Establishment of critical mass and widespread adoption
- Government
 - Reduced costs of implementing EHR systems
 - Increased patient information interoperability

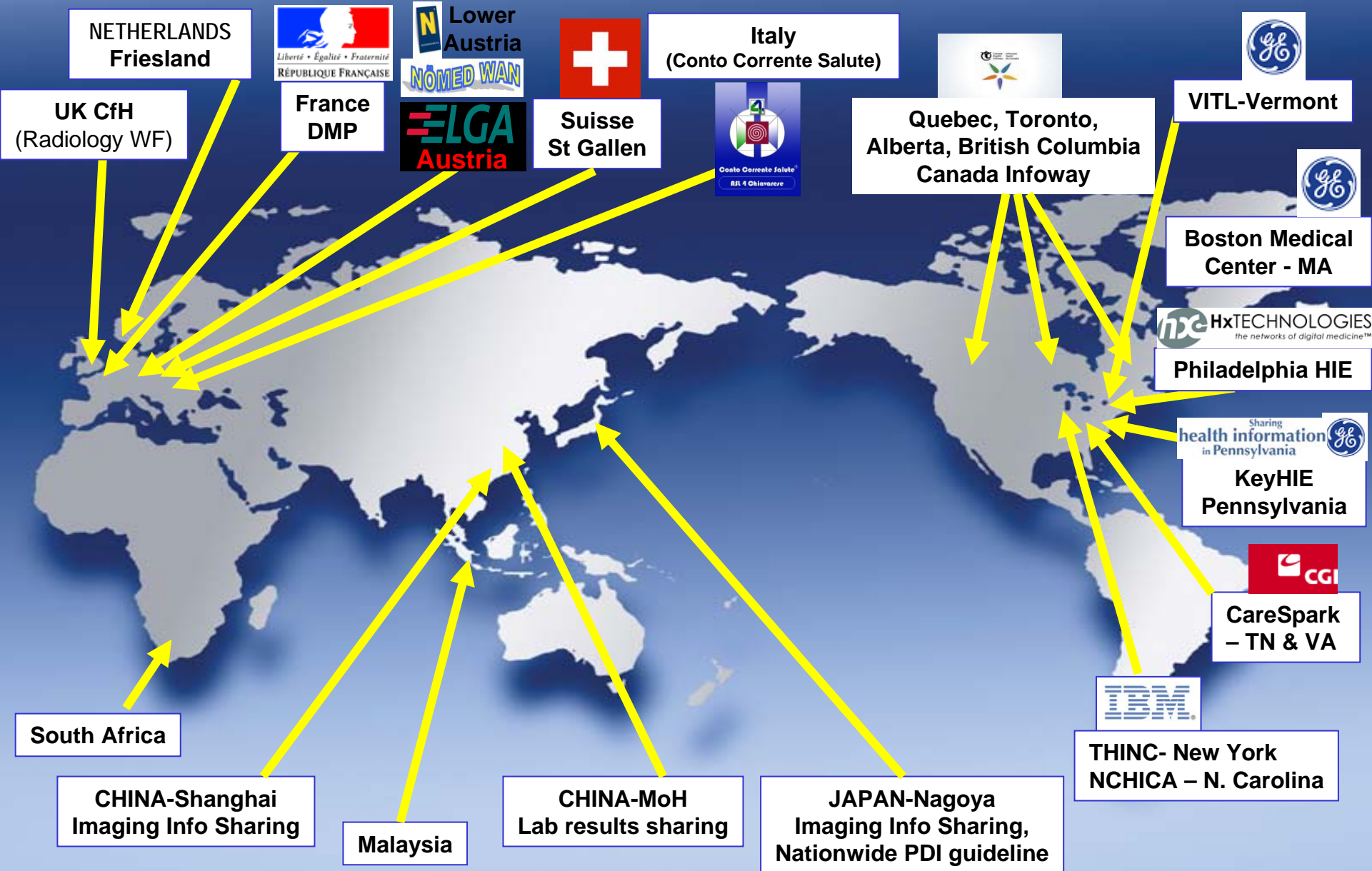
International Growth of IHE

- Local Deployment
- National Extensions
- Promotional & Live Demonstration Events
- Funding



Pragmatic global standards harmonization + best practices sharing

IHE, Global Standards-Based Profiles Adopted in National & Regional Projects



IHE - Europe

- **IHE-Europe is now 9 IHE national initiatives:**
 - Germany, France, Italy, Spain, Norway, The Netherlands, United Kingdom, Finland, Austria
 - Denmark, Poland, Turkey, and Switzerland in the process to join
- **IHE-Europe is also:**
 - Board member of IHE International
 - Directly contributing to the global development of the IHE Profiles
 - Organizer of the European Connectathon, a yearly testing event including vendors and users from 24 countries.
- **IHE-Europe was the first regional formal organization engaging countries in a world region to deploy IHE.**

Europe and Interoperability



- European Commission has launched a major technical coordinating activity on interoperability:
 - The eHealth Interoperability Standards Mandate (M403)
- Phase 1 has established in 2008 process and organization structure. Activities to start mid-2009.
 - www.ehealth-interop.eu

Use Case
definition
and
prioritisation

Base
Standards
development

Profile
development
and
maintenance

Profile
Quality
Assurance
Test
Plans
and Tools

Sharing
of Best
Practices in
deploying
eHealth
projects

5 Core Processes – *Execution and effectiveness*



- **EpSOS project :**
 - Involves 12 European countries in cross-border information exchange.
 - Industry Team coordinated under IHE-Europe
- **Based on specification of**
 - Use cases (Patient Summary and e-prescription)
 - Interoperability specifications likely to include IHE profiles
 - Conformance and pilot deployment testing
 - Pilot Operation in 2011
- **Calliope Project :**
 - Forum of key governmental, industry and users stakeholders (Includes IHE Europe)



IHE creates usable “*composite standards,*” called “*IHE Profiles*” that are based on ***proven, accepted, open-balloted standards*** from MANY industries, and remove conflicting “optionalities”

How to Use IHE

As a Vendor Implementer

- Implement IHE Integration Profiles
- Test systems through Connectathon process
- Publish an IHE Integration Statement for products

As a User Implementer or Consultant

- Use IHE Integration Profiles to develop interoperability strategy
- Use Connectathon Results and Integration Statements to evaluate vendors
- Demand IHE Integration Profile compliance in RFPs

How to Participate

As a User or Vendor Committee Member

- Become a member of a Domain's Planning or Technical Committees

As a User, Consultant or Vendor Interested Observer

- Provide Public Comments on Technical Framework Supplements
- Attend Demonstrations, Educational Events and Workshops

www.ihe.net Resources

IHE *changing the way healthcare connects*
www.ihe.net

Home For Users For Members

Integration Profiles
Radiology User's Handbook
User Success Stories
Integration Statements

Resources Search Search IHE.net

IHE Integration Statements

IHE Integration Statements are documents prepared and published by vendors to describe the intended performance of their products with the IHE Technical Framework. They identify the specific IHE capabilities a given product is designed to support in terms of the key concepts of IHE: Actors and Integration Profiles.

The links below lead to IHE Integration Statements published by the companies listed:

- [Aeva Technologies](#)
- [Aeva Healthcare](#)
- [Aeva](#)
- [Cerner Corporation](#)
- [Cognomic Imaging](#)
- [Eastman Kodak Company](#)
- [Erascan](#)
- [Epic Systems Corporation](#)
- [ETAM](#)
- [Euflex Medical Systems USA](#)
- [GE Medical Systems](#)
- [Healthix, Inc.](#)
- [HIPACT, Inc.](#)
- [ihs Technologies](#)
- [IHS](#)
- [MHI](#)
- [Multimodality Reporting System, Inc.](#)

What's New in IHE?
[IHE Workshop for Healthcare Providers and IT Vendors June 21-23, 02](#)

[IHC Lesson 0 Status Updated to IHL 0.2](#)

[Quality Domain Meeting, Mar 21-24, 02](#)

[More news...](#)

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**Providers and Vendors
Working Together to Deliver
Interoperable Health Information Systems
in the Enterprise
and Across Care Settings**

<http://www.ihe-europe.net>



changing the way healthcare

www.ihe.net

connects

WWW.IHE.NET