Symposium

IHE | Integrating the Healthcare Enterprise

Introduction into the IHE World

Jürgen Brandstätter, MSc
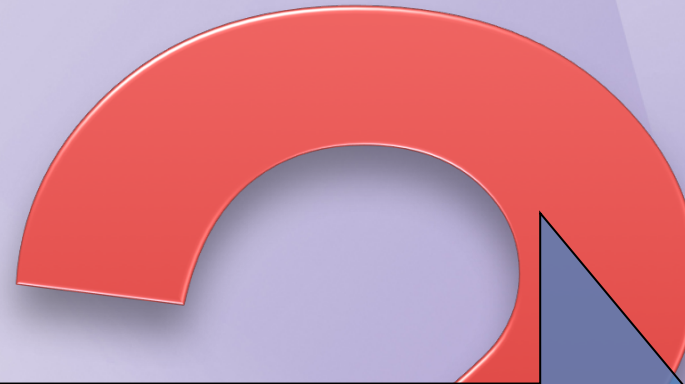Co-chair, IHE Europe
Co-chair, Pharmacy Planning committee
Co-chair, Global Deployment Coordination Committee (GDC)
Member, IHE International Board
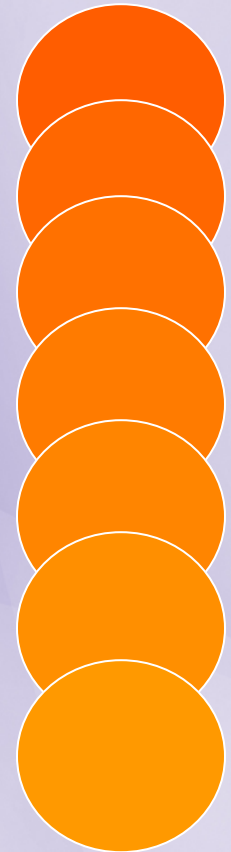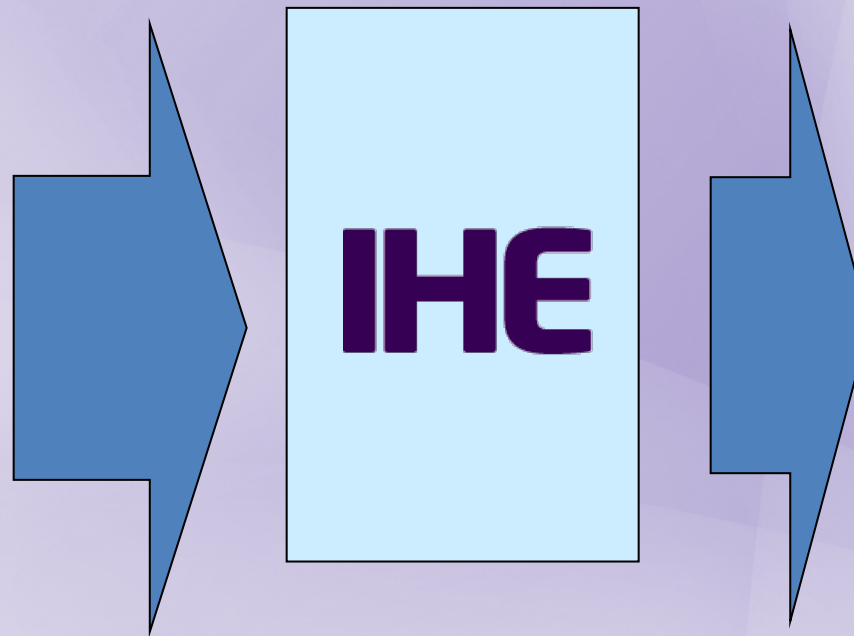CodeWerk Software GmbH, Austria
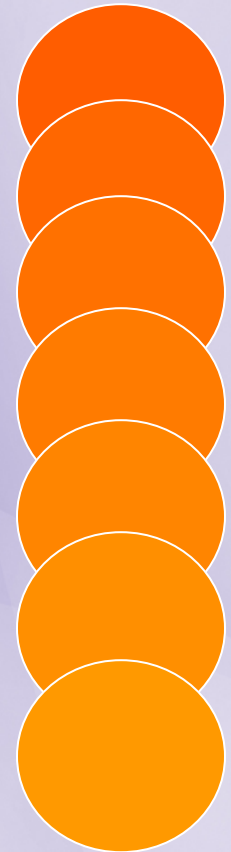
What is IHE?

Standards

Profiling and Testing

eHealth Projects

IHE is a ***non-profit*** SDO which uses „***existing***" standards to profile Interoperability use-cases

IHE International Board

Example Deployment Committees

IHE North America
Canada USA

IHE Asia-Oceania
China Japan
Korea Australia

IHE Europe
Austria France Germany Netherlands
Italy Spain Suisse Sweden UK

Development Domains

Radiology | IT Infrastructure | Laboratory

Cardiology | Patient Care Coordination | Pathology

Radiation Oncology | Patient Care Devices | Eye Care

Public Health, Quality and Research | | Pharmacy

Endoscopy | Surgery

Professional Societies / Sponsors

Contributing & Participating Vendors

IHE Europe
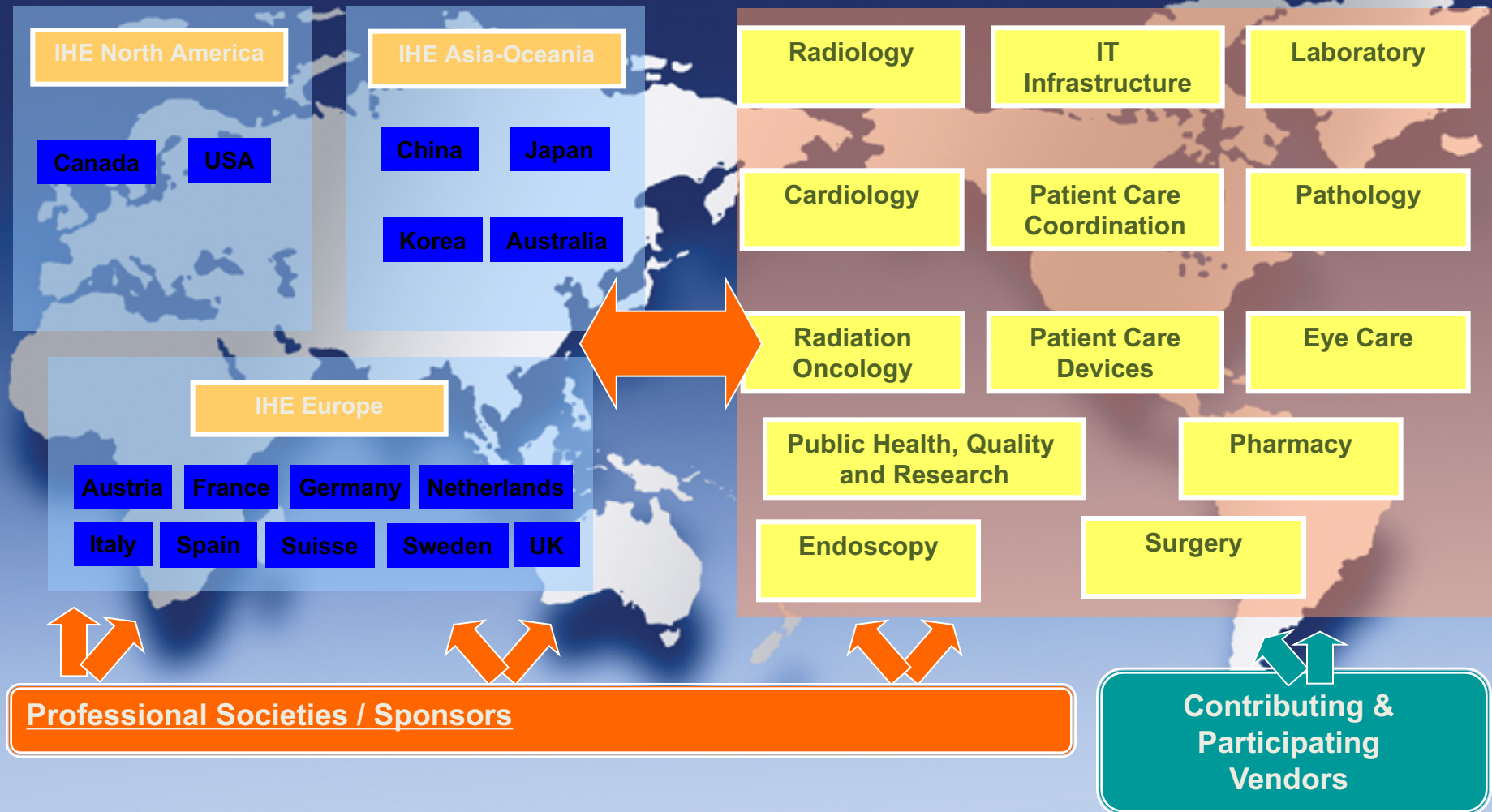
- Regional Deployment Committee founded in 2000
  - http://www.ihe-europe.net

- Overarches European National Deployment Committees
  - Austria, Belgium, Finland, France, Germany, Italy, Luxembourg, Spain, Switzerland, The Netherlands, Turkey, United Kingdom

- Several committees
  - IHE Services
  - EU Affairs
  - MarCom

- Organizes the European CAT
  - Since 2001 in Paris
  - 2018: Den Haag, The Netherlands

IHE methodology
(ISO TR 28380-1 to 3)

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Projects

Products

Profile Development

Testing at Connectathons

Identify available standards

Use Case

ISO17025 accredited World-wide equivalence

Products declare IHE

RFPs with IHE reqs

Testing is an <u>integral part</u> of the IHE profiling cycle

Easy to integrate pr
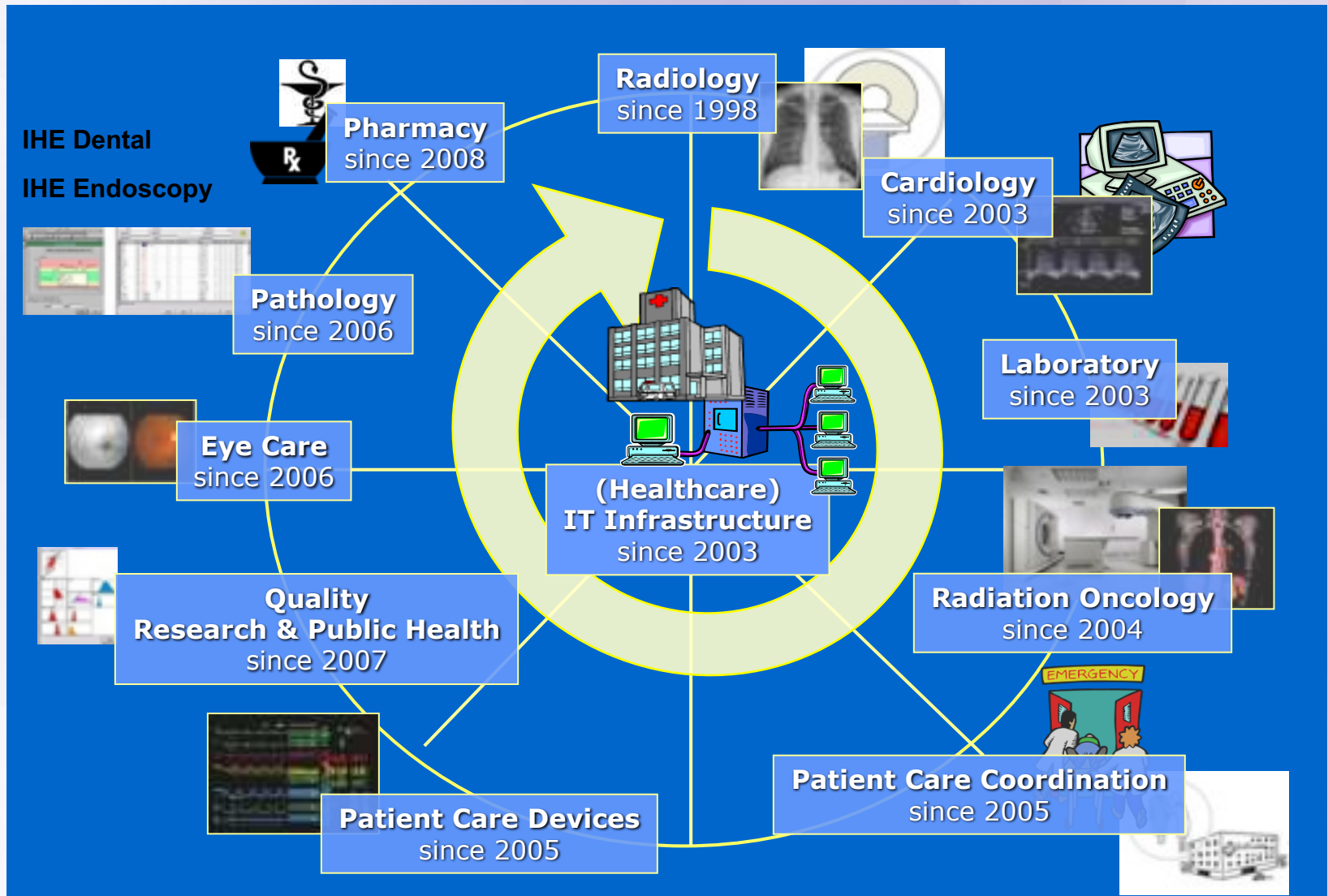
Testing as part of the cycle

- Everone accepts: **Testing is crucial for success of a project**

- But reputation of testing is low
  - It is a lot of effort and expensive
  - Nothing is „created", no innovation -> simply boring!

- Everyone relies on that „it is done by someone, somehow"

- Problem: Testing becomes a bottleneck in the future
  - Large-scale eHealth projects are starting up everywhere, vendors start getting overloaded by many tailored testing needs

- Solution: Synergies in testing must be found!

That's why IHE invented the Connectathon!

CAT – Triple purpose

1. **Test implementation of the IHE profiles** within product/open source
   – Verify that the vendors did a good job

2. **Verify that what the committees specified** is clear!
   – Verify that the Technical Frameworks are not ambiguous
   – Verify that that the Technical Committee did not miss anything

3. **Build a community** of computer geeks who loves local brewed beers and have fun working together to connect healthcare

- **IHE International Conformity Assessment** program was launched in 2015 and is the next step in testing rigor
  - More rigorous testing process
  - Assessment at product level
  - Stronger assurance of interoperability to marketplace

- Based on an internationally recognized quality system
  - Testing for specific IHE Profiles is performed by Testing Laboratories **ISO17025 accredited**

- Conformity assessment scheme
  - **Ensure world-wide equivalence**

Phases of Interoperability Testing

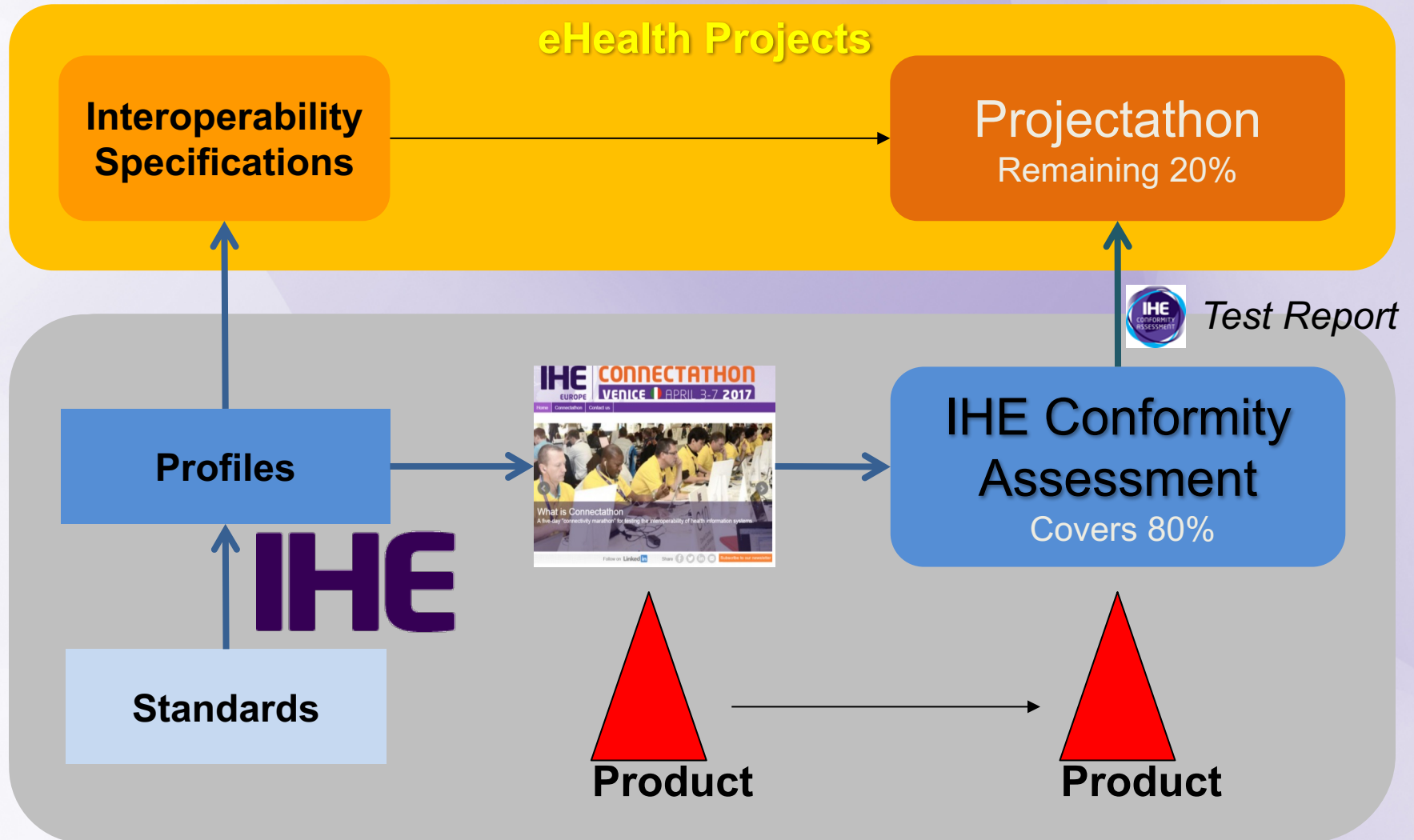| IHE driven	Project driven (national, regional, hospital)		
1) Profile level Testing of vendor/open source systems	**2) Use case level testing of vendor/open source systems** (covers transport, content, security, privacy, workflow)	**3) Operational On-Boarding level testing of partners engaging in Info Exchange** (covers technical, semantic and policies)	***eHealth Project in Production***

Connectathon

Profile Labeled Product →

Projectathon
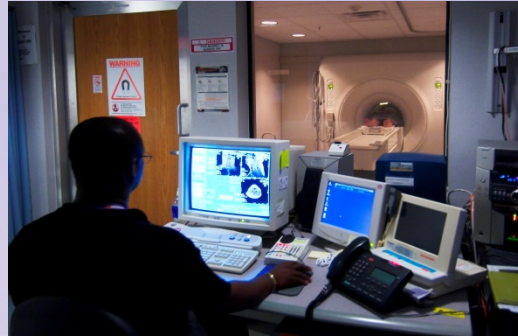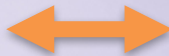
Project Interop Spec Labeled Product →

Project Partner Testing

Production Ready Partner →

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eHealth Projects

Interoperability Specifications

Projectathon
Remaining 20%

Test Report

Profiles

IHE

IHE CONNECTATHON EUROPE VENICE APRIL 3-7 2017
What is Connectathon
A five-day "connectivity marathon" for testing the interoperability of health information systems

IHE Conformity Assessment
Covers 80%

Standards

Product

Product

Interoperability „small"

Modality

PACS

HIS

...

Hospital

Transport

Interoperability „small"
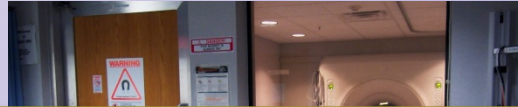
Base Standards available

Use case profiles available for „plug&play" connectivity
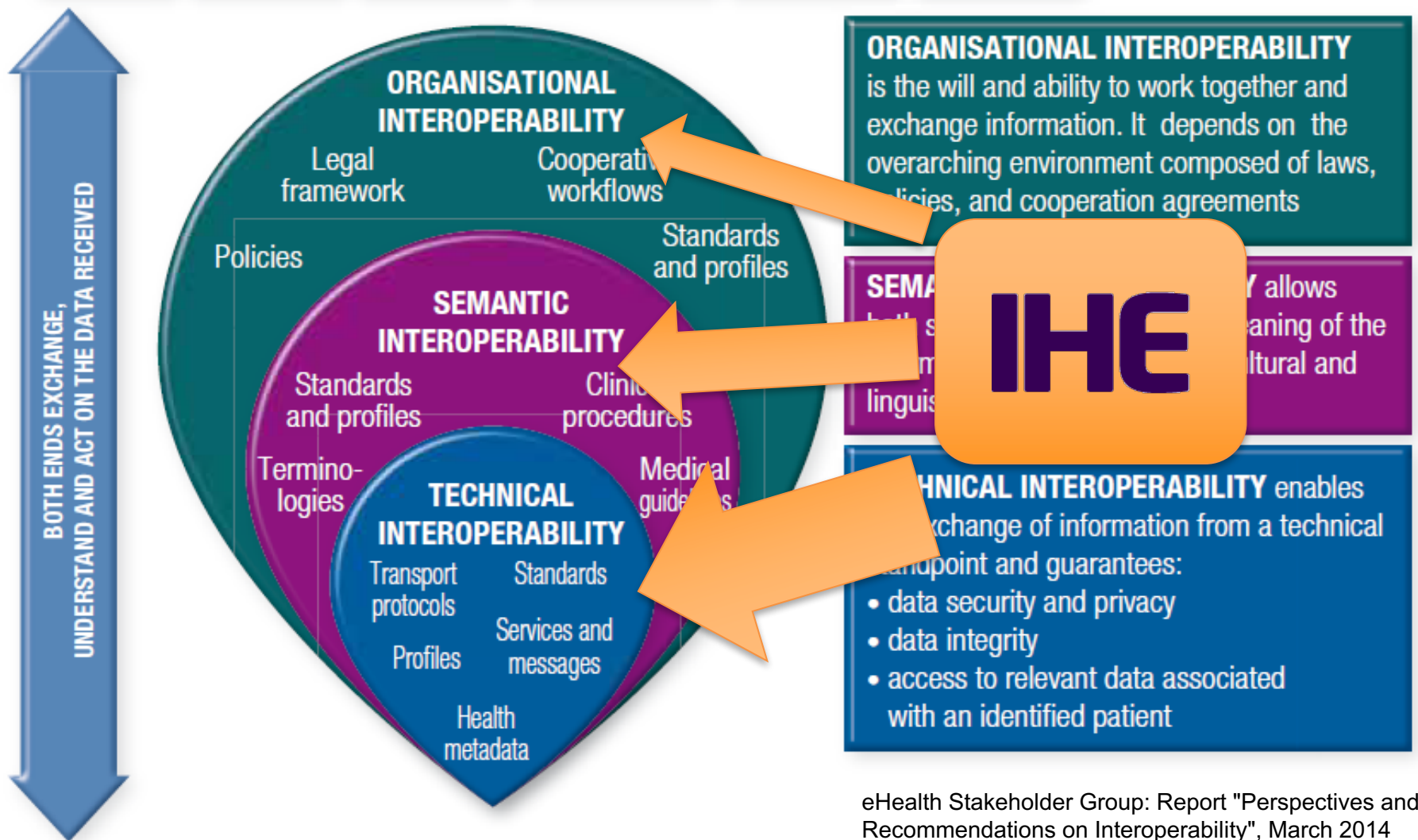
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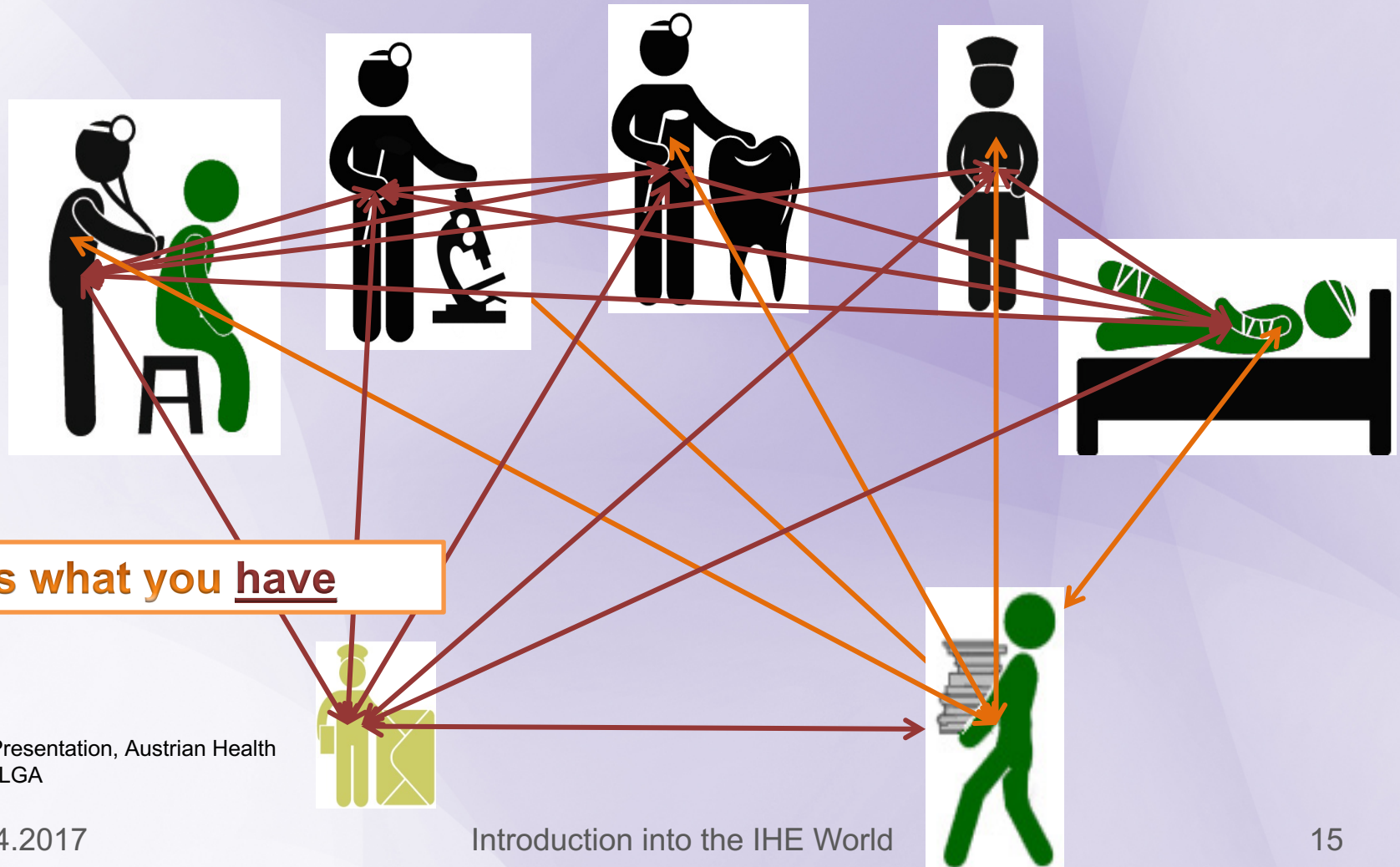
Interoperability „large"

National / regional HIEs require interoperability in large scale

This is what you <u>have</u>

Source: Presentation, Austrian Health
Record ELGA

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National / regional HIEs require interoperability in large scale

Medical information, whenever and wherever needed

This is what you <u>want</u>

Source: Presentation, Austrian Health Record ELGA

Layers of Interoperability

ORGANISATIONAL INTEROPERABILITY
is the will and ability to work together and exchange information. It depends on the overarching environment composed of laws, ...licies, and cooperation agreements

SEMA... ...Y allows ...eaning of the ...ltural and linguis...

...HNICAL INTEROPERABILITY enables ...xchange of information from a technical ...ndpoint and guarantees:
- data security and privacy
- data integrity
- access to relevant data associated with an identified patient

eHealth Stakeholder Group: Report "Perspectives and Recommendations on Interoperability", March 2014

http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=5168&usg=AFQjCNEkGJHkR4TyyycRbj5FmDif3T7YPA&sig2=WHoQC4xURmGXaJTYt-Mt1A

Challenges of HIE

- **Multi-stakeholder, multi-systems**
  - Paradigm change needed towards cooperation and collaboration
- **Significant investment needs to be channelled**
  - Maximum sustainability needed, multi-vendor approach
  - Avoid stranded costs
- **Commonly accepted Interoperability specification needed**
  - Based on international standards
  - Stable guidance needed
  - Best-practise needed
- **Procurement and testing procedures must be created**
  - Extensive specifications raise efforts and costs (not only in the beginning)

- **What shall be exchanged/shared/operated?**

  - **Administrative**

    - Patient ID, Patient information, Healthcare Provider Information

  - **Security and Privacy**

    - Access Control, Audit and Logging, C

  - **Clincial**

    - Documents, Images, Medication information, Immunizations, …

  - **Other**

    - Advanced directives, Birth, Death, Cancer-Registers, …

Interoperability use-cases

1

2

3

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- Stable Profile specification: IHE Technical Framework

- First implementation of XDS in clinical use in region of Veneto - Italy since early 2008

- Several regions since:
  - Lower Austria, Japan, Dutch, Italian, Denmark, England
  - US States (Vermont, New York, Texas, Pennsylvania, etc.), eHealth Exchange Network

- In deployment by several national programs world-wide:
  - US Meaningful Use Stage 3, US Interop Standards Advisory
  - Austria, Switzerland, Finland, Luxembourg, Denmark (PHR), etc.

- Embedded in other Frameworks
  - OpenHIE (Low and emerging countries)

First eHealth large scale deployment: European Patient Smart Open Services
2008 – 2014
36,5 Mio € spent
25 European countries

Creating a #DigitalSingleMarket

The building blocks represent a massive investment since their creation by the Large Scale Pilots. As their user base grows, the Commission is already working on their sustainability beyond CEF.

Piloting	Consolidation	Roll-Out	Ecosystem
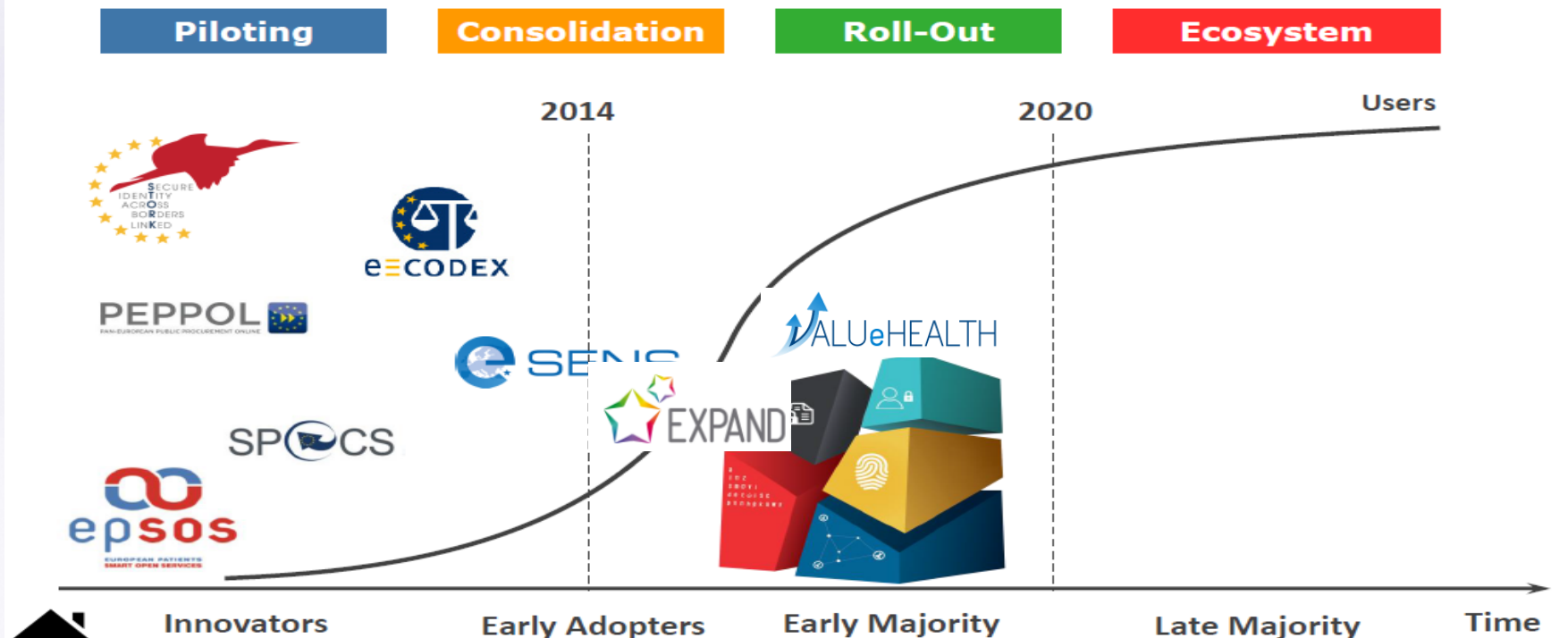
Source: Gerald Cultot, European Commission, Keynote speech at IHE World Summit 2016

Europe

- **Commission Decision 2015/1302**, published on 31 July 2015, identifies **27 IHE Integration profiles for referencing in public procurement**
  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:JOL_2015_199_R_0011

- These IHE profiles have the potential to increase interoperability of eHealth services and applications to the benefit of patients and medical community

- The 27 IHE profiles should therefore be identified as ICT technical specifications eligible for referencing in public procurement

Profiles assessed for conformity

LAW – Laboraty Analytical Workflow
PAM – Patient Administration Management
PDQ – Patient Demographics Query
PDQV3 – Patient Demographics Query HL7 V3
PIV – Point-of-Care Infusion Verification
PIX – Patient Identity Cross-Reference
PIXV3 – Patient Identity Cross-Reference HL7 V3
XCA – Cross Community Access

The IHE profiles identified by the European Commission are already included in the IHE Conformity Assessment

IHE as framework for HIE

IHE's philosophy **stimulates cooperation** on organizational, strategical and political levels
Users and Vendors work together!
Engagement in IHE results in benefit for yourself

IHE **supports the paradigm change** needed nowadays
Stakeholders <u>have to</u> work together to solve the challenge

IHE is a **stable guidance**
By profiles, best-practices, others doing the same, etc.

IHE is a **solid basis** for the Interoperability specification

Open, free, vendor-neutral

Typical use-cases already profiled: Patient identification and demographics, Sharing clinical documents, eP/eD, …

IHE **cuts costs on every edge**
Specification, Procurement, Testing

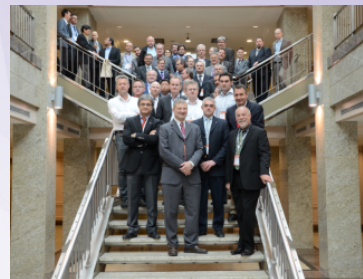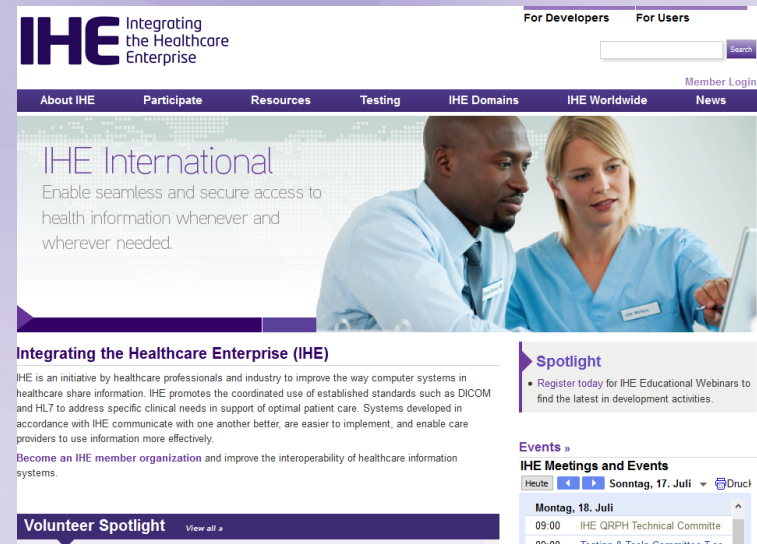**Bet on IHE as early as possible** to leverage maximum benefits

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MARINA BAY SANDS SINGAPORE

11 September 2017

In conjunction with **HiMSS AsiaPac17**

Links

- IHE Homepage
  - http://www.ihe.net/
  - http://www.ihe-europe.net/

- IHE International Social Media
  - YouTube channel: https://www.youtube.com/user/IHEIntl
  - IHE Webinars: http://www.ihe.net/Webinars/
  - Twitter: https://twitter.com/IHEIntl

- IHE Wiki
  - http://wiki.ihe.net/

- Google groups
  - http://groups.google.com/