Irish National Projectathons and Test Tools

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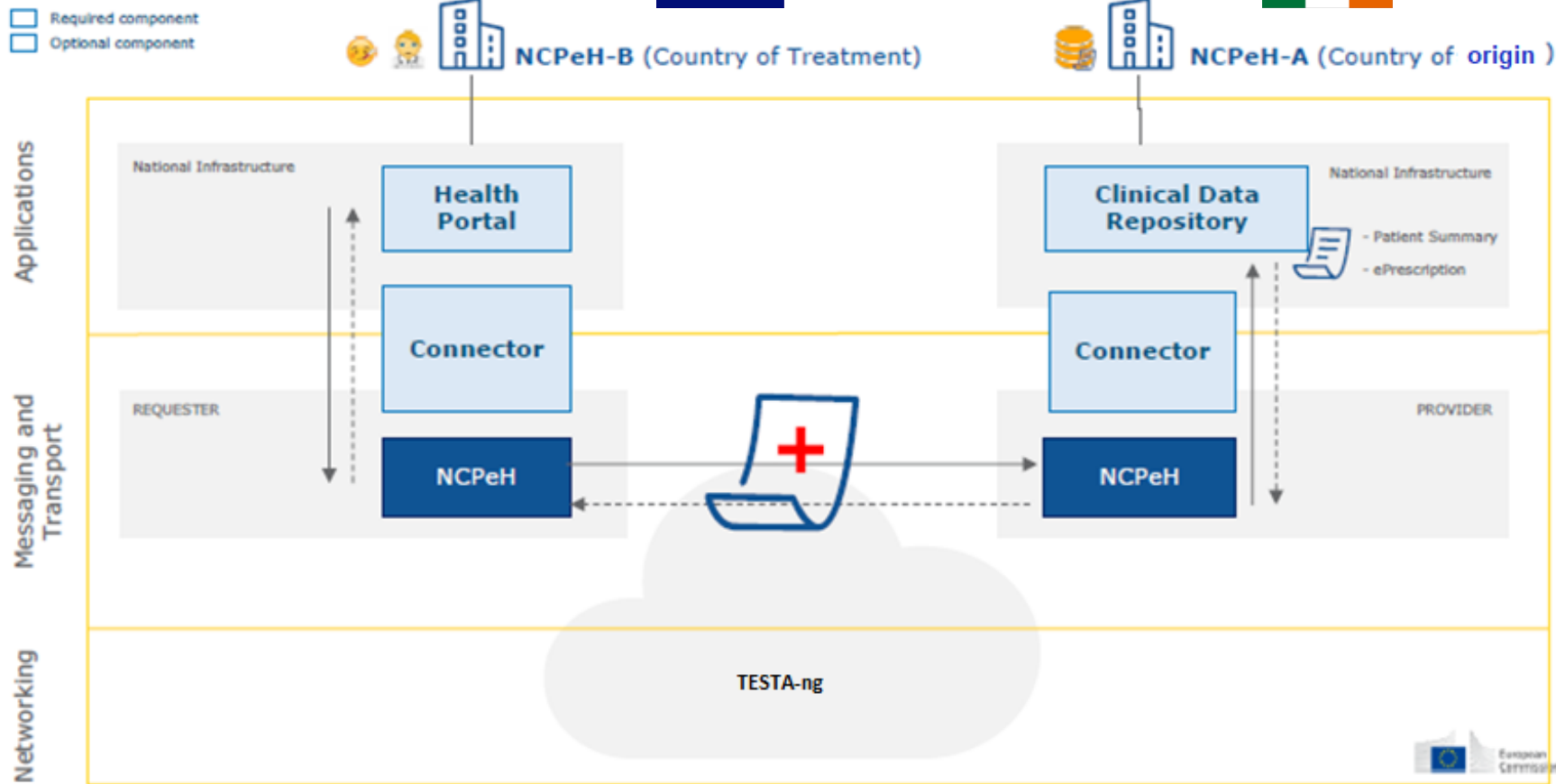
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In relation to eHealth it can be defined as follows…

"In healthcare, interoperability is the ability of different information technology systems and software applications to communicate, exchange data, and use the information that has been exchanged. "
(definition HIMSS 2013)

Testing is the backbone to interoperability.

Irish Projectathons and Testing Tools

The interoperability challenge

□ Required component
□ Optional component

NCPeH-B (Country of Treatment)

NCPeH-A (Country of origin)

Applications

National Infrastructure

Health Portal

Connector

National Infrastructure

Clinical Data Repository
- Patient Summary
- ePrescription

Messaging and Transport

REQUESTER

NCPeH

PROVIDER

NCPeH

Networking

TESTA-ng

*(Trans European Services for Telematics between Administrations) – next generation
is a communication platform to exchange electronic data between European and Member States administrations in a secure, reliable and efficient way)
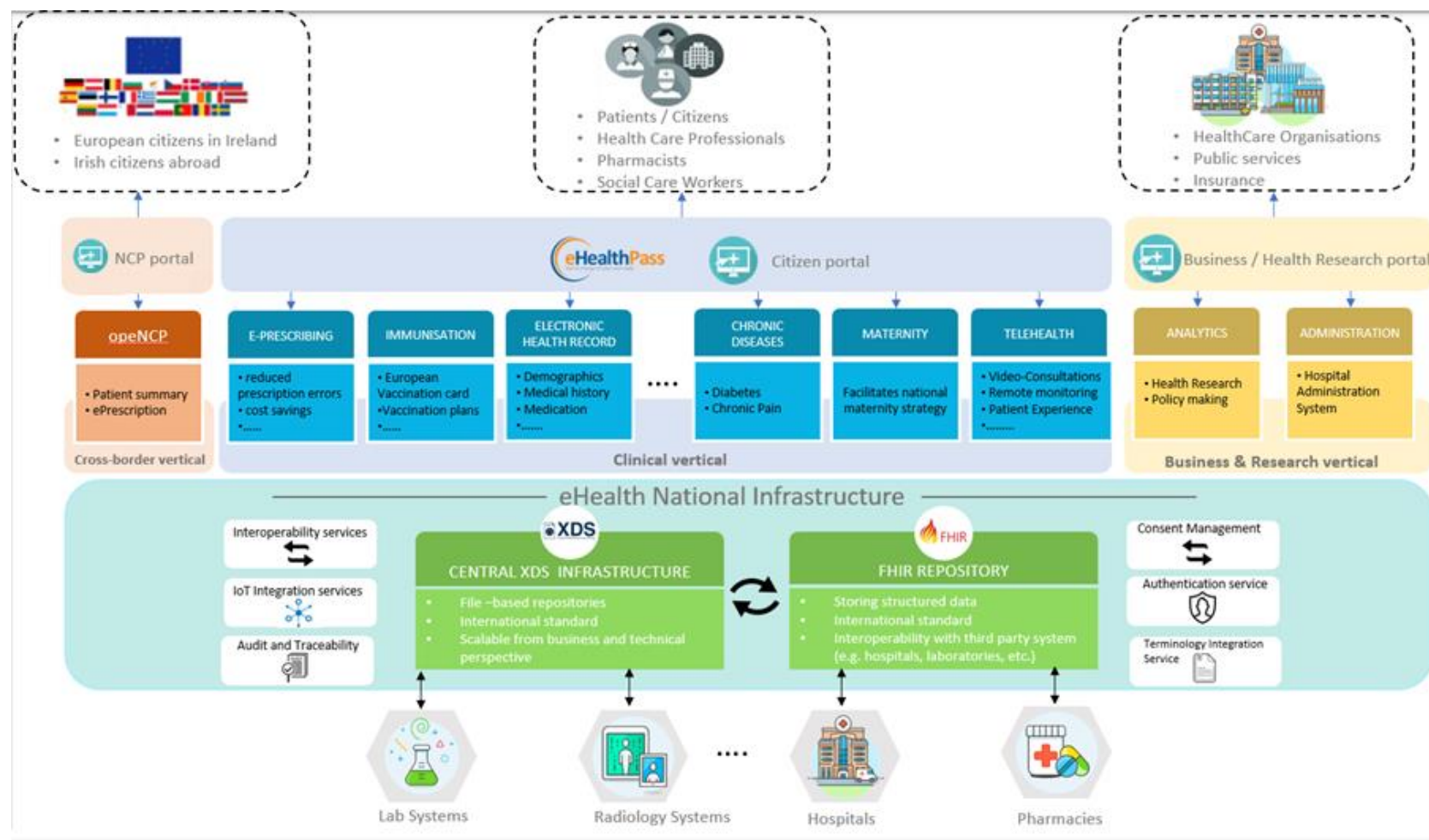
✓ Define Use cases and their prioritisation to answer the eHealth strategy objectives of nation/region;

✓ From use cases to design the interoperability infrastructure and specifications based on IHE profiles

✓ To define the testing strategy and identify test plan and test methods (test cases, test tools and test data)

✓ To support Project teams to procure products or solutions for their eHealth Project (Telemedicine, national/regional EHR, replacement of product in hospitals…)

* Bourquard,Karima and Berler, Alexander. Use case driven approach for a pragmatic implementation of interoperability in eHealth. IGI Global Journal
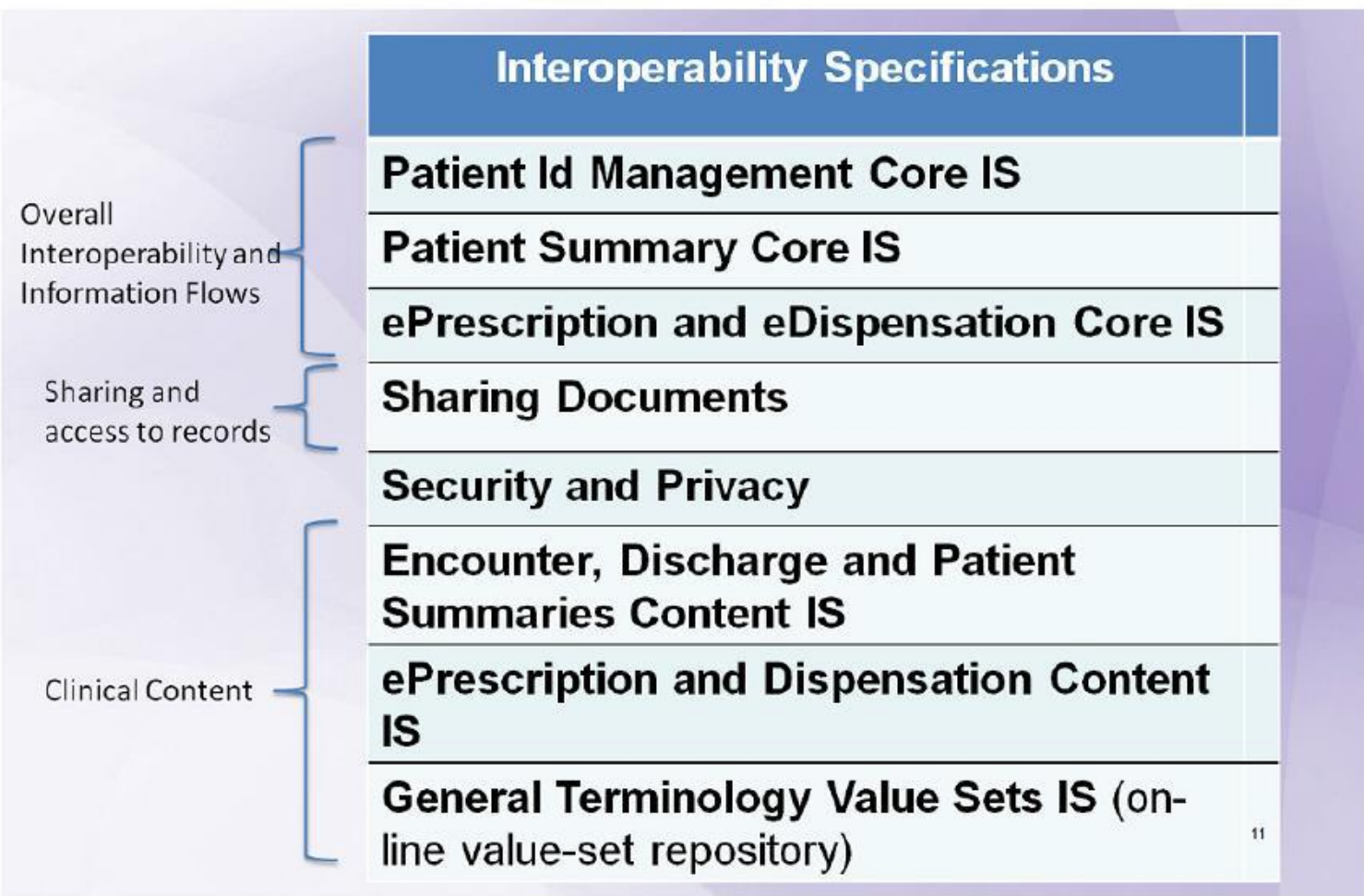
Use Case Workshops x 2	Q1 2018	✔
Architecture Workshop	Q2 2018	✔
IOP Specifications Stable	Q4 2018	✔
Test Harness installed	Q4 2018	✔
Test Tools with Irish Extension	Q4 2019	✔
Projectathon 1	Q3 2020	✔
Projectathon 2	Q4 2020	✔
Projectathon 3	Q3/4 2021	⚠

- The Irish Open NCP and supporting infrastructure acts as the lynchpin for other eHealth Initiatives called out in Sláintecare and the National Service Plan.

- This horizontal XDS based architecture and supporting infrastructure will feed the various vertical clinical systems and also the Irish National Contact Point enabling the Irish – EU EHR.
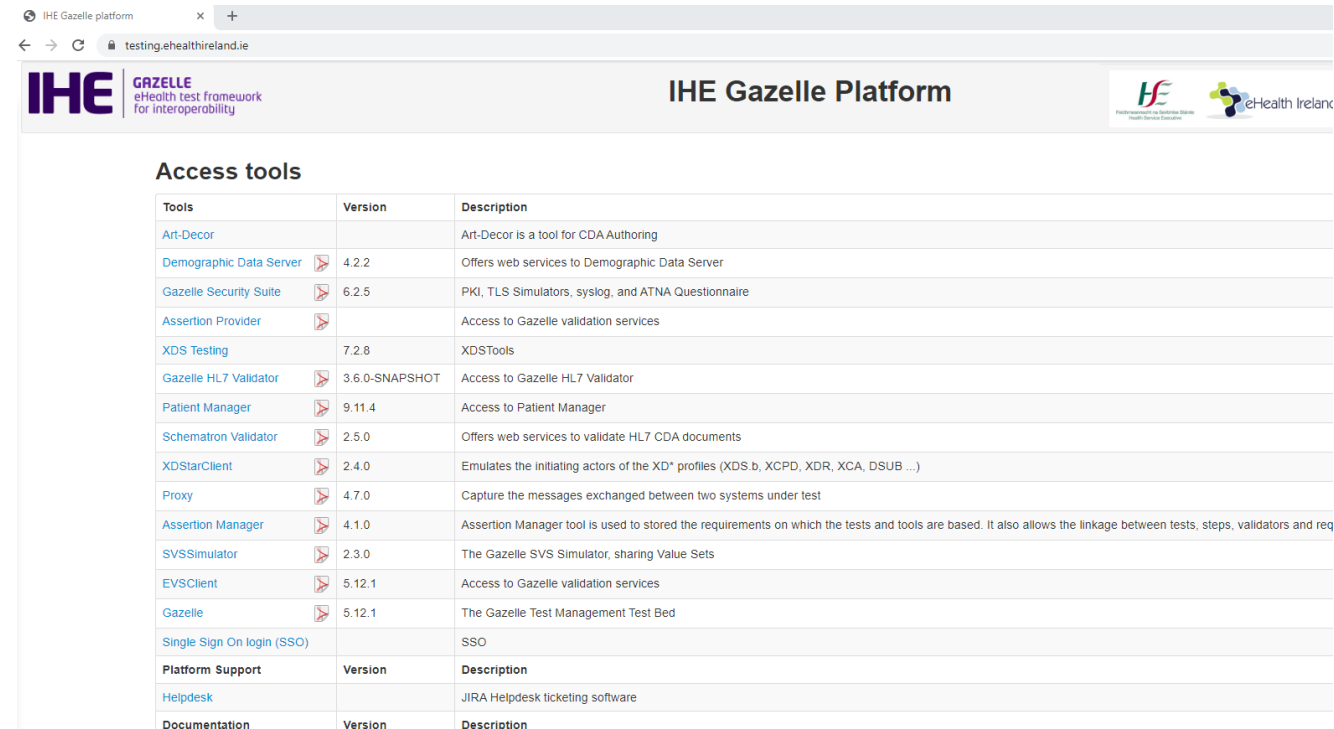
Interoperability Specifications

Overall Interoperability and Information Flows
- Patient Id Management Core IS
- Patient Summary Core IS
- ePrescription and eDispensation Core IS

Sharing and access to records
- Sharing Documents
- Security and Privacy

Clinical Content
- Encounter, Discharge and Patient Summaries Content IS
- ePrescription and Dispensation Content IS
- General Terminology Value Sets IS (on-line value-set repository)

✓ To support the architecture IHE and HSE developed a number of supporting interoperability specifications.

✓ These covered the fundamental elements of safe secure clinical data exchange

✓ Form the basis of the testing

✓ These specifications can also be utilised by other national and cross border use cases

✓ The specifications underpin the architecture and in essence form an Irish interoperability framework

The Irish Test Platform (based on Gazelle) is an interoperability test bed that offers a variety of testing tools to verify

❖ conformance of messages supplied by a system
❖ conformance of information exchanged between systems
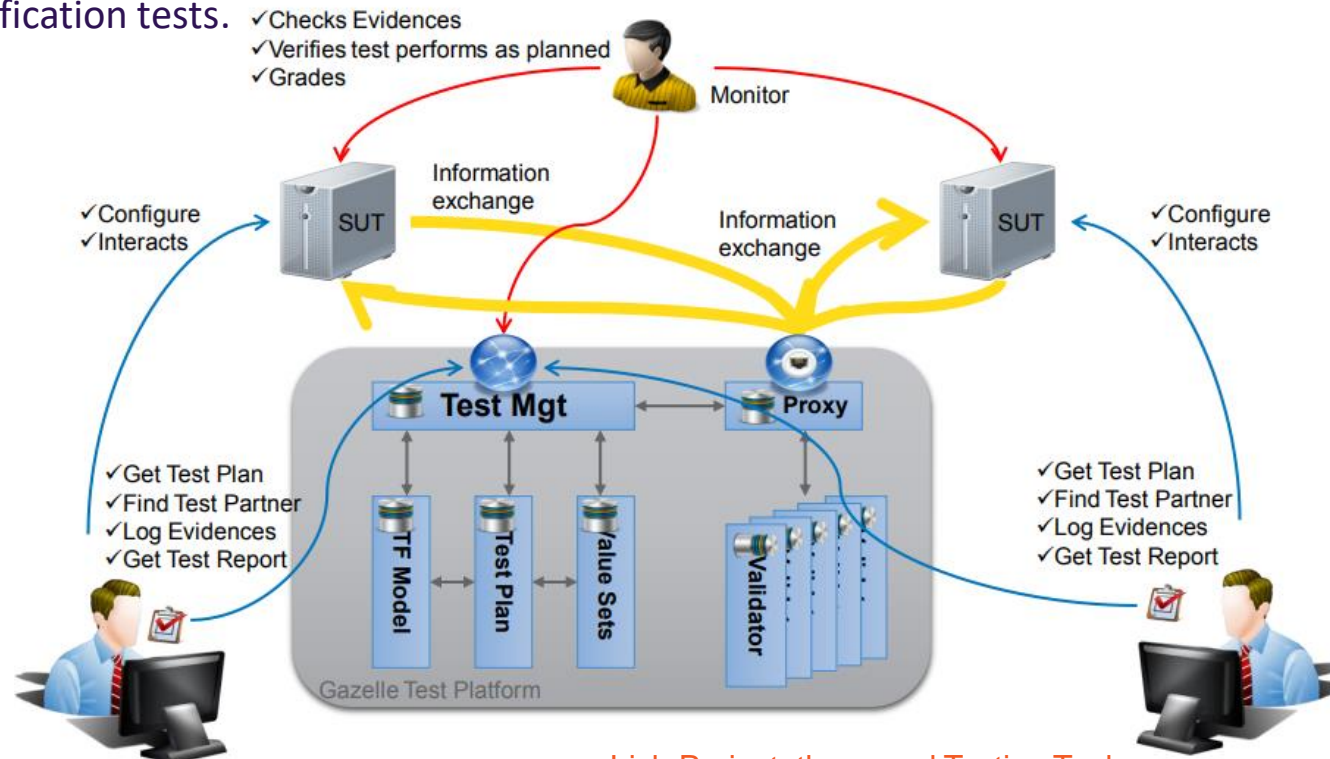❖ conformance of systems to relevant interoperability standards

Available at
https://testing.ehealthireland.ie/

Irish Projectathons and Testing Tools

The Irish eHealth Test Platform based on Gazelle Test is used for national test Projectathons.
The aim is to have the relevant actors/systems in the data exchange/use case register their system for the test event to enable testing of the systems required role in the implementation of the project.
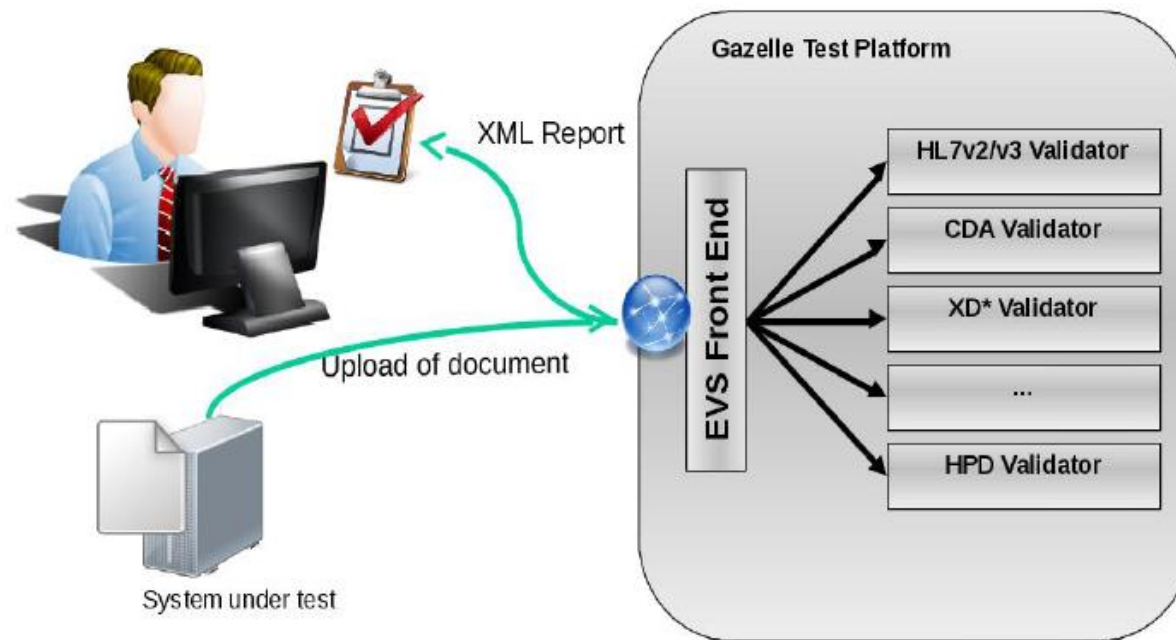
Ireland has hosted 2 national Projectathons as part of it's delivery of the EU Cross Border services i.e. transmission of Patient Summary and ePrescription data for Irish citizens in need of unscheduled treatment abroad.
An actor/system here for example will be the identity provider i.e. IHI (national patient id) registry which will be tested for conformance to the required Patient Identification tests.

✓ Checks Evidences
✓ Verifies test performs as planned
✓ Grades

Monitor

Information exchange

Information exchange

✓ Configure
✓ Interacts

SUT

SUT

✓ Configure
✓ Interacts

Test Mgt

Proxy

✓ Get Test Plan
✓ Find Test Partner
✓ Log Evidences
✓ Get Test Report

TF Model

Test Plan

Value Sets

Validator

✓ Get Test Plan
✓ Find Test Partner
✓ Log Evidences
✓ Get Test Report

Gazelle Test Platform

Image source: https://gazelle.ihe.net

✓ Saves time for all Project stakeholders during testing and for users during field deployment.

✓ Saves money for all Project stakeholders with corrections made on the fly during the test event.

✓ Gives users higher levels of confidence.
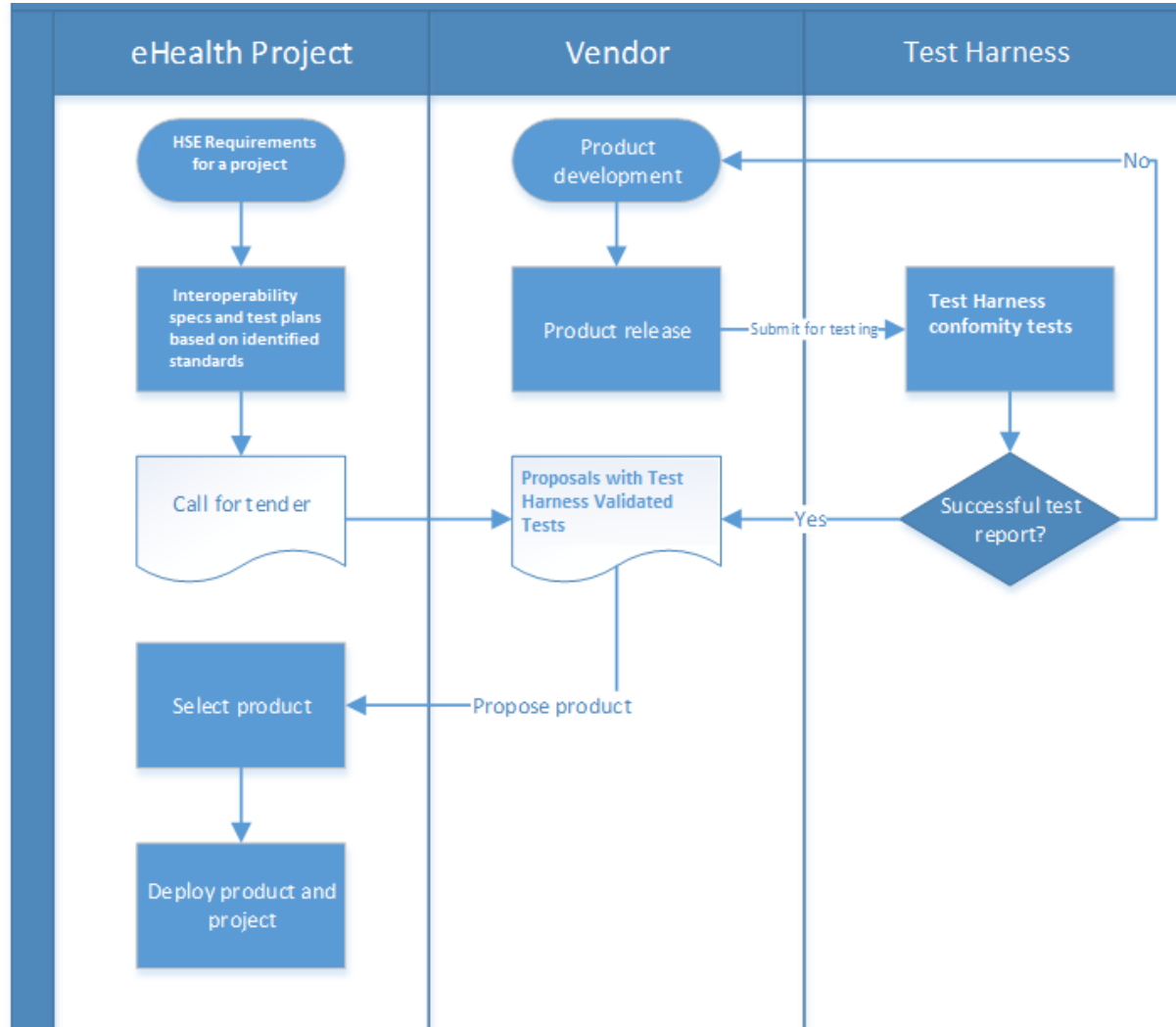
✓ Reduces clinical risk.

A first for Ireland, EA and colleagues in A2I have worked with IHE and NIST (American Standards Body) to create implementation guides in the NIST tool IGAMT based on the Healthlink (national messaging broker) messaging specifications.

Once complete the implementation guides are subsequently uploaded to the Test Platform which then serves as the conformance basis for the testing/validation of those messages by the relevant stakeholders for e.g. a Hospital supplying a Discharge Summary

- ✓ Automates testing
- ✓ Detailed feedback to vendor to fix any identified issues
- ✓ Increased governance and transparency
- ✓ Conformance achieved
- ✓ For future projects that need to send/receive messages via Healthlink smoother implementation

Image source: https://gazelle.ihe.net

- ✓ During the procurement process Project Managers can outline what the required standards are to support the interoperability Use Case(s)

- ✓ During the procurement process vendors can configure the system/product to comply with the identified standards

- ✓ Avoids costly re-works post implementation

- ✓ Reduces risk levels for both HSE and the vendors whilst enhancing/delivering the solution

- ✓ Greater efficiency of operation enables enhanced patient care

Example of an Interoperability function to test: Requester of an imaging report

Use Case	Interoperability function	Services	Opt	Technical actor	Opt	Profile/transactions	Interoperability specifications
Request Radiology examination	Requester of Imaging report	Request for imaging report	R	Order Placer	R	IHE Scheduled workflow	HSE specifications for EHR

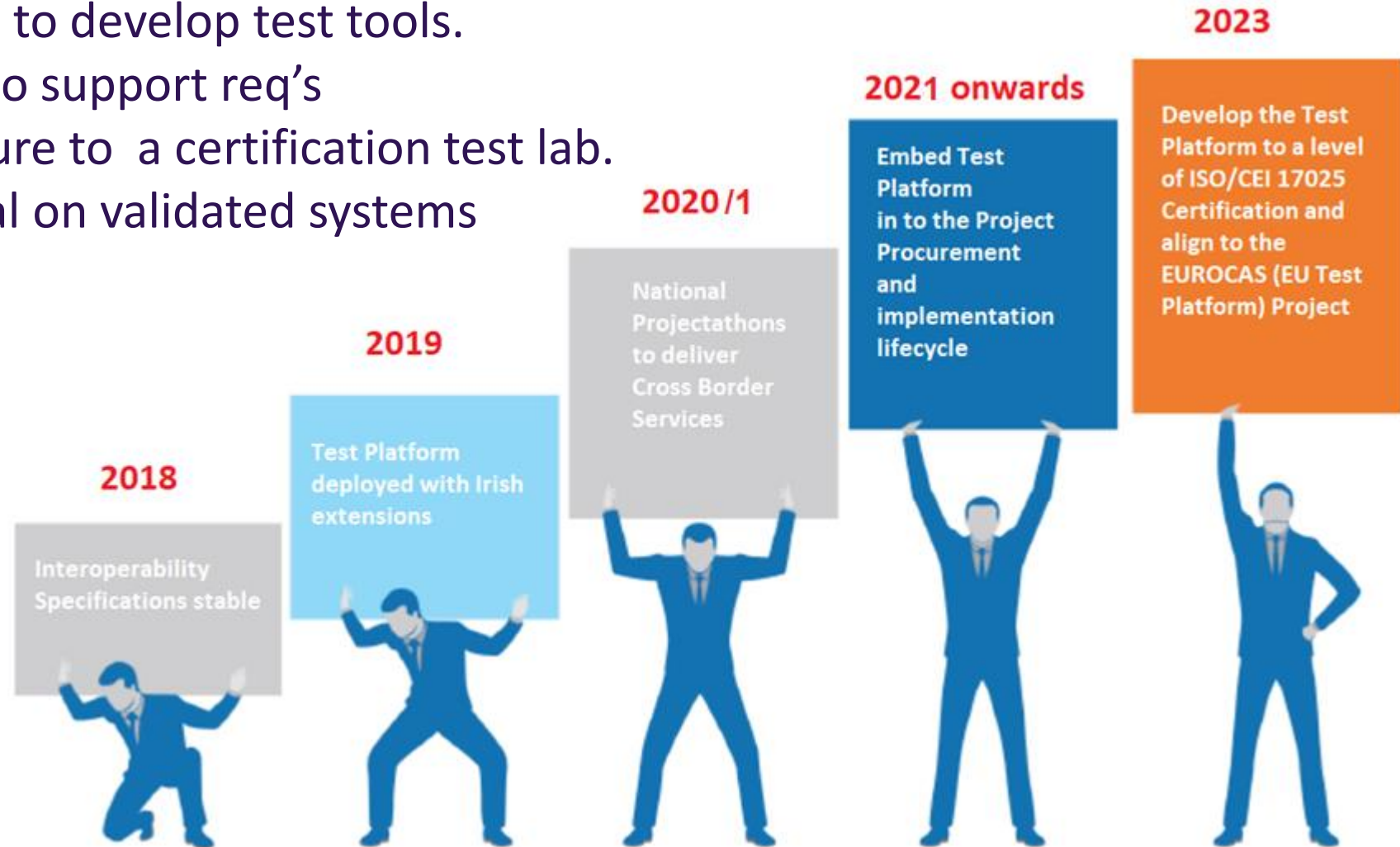　　　　　　Use Case　　　　　　　　　　　　　　　　　　Interoperability Specifications

Sample text for tender specification:

Products or solutions that are referenced in the *HSE Project Proposal* for the interoperability function *Request of imaging report* shall implement the interoperability requirements as described in the *HSE specifications for EHR* interoperability specification.

Sample text for tender evaluation:

The product or solution has conformed to the interoperability requirements as described in the « *name of the interoperability specifications* » for the interoperability function « *name of the interoperability function* » Answer Yes/No (please provide evidence of test report)

✓ Start with specific use cases to develop test tools.
✓ Once test tools are proven to support req's
✓ Serve as foundation to mature to a certification test lab.
✓ Put HSE/eHealth Ireland seal on validated systems

2023
Develop the Test Platform to a level of ISO/CEI 17025 Certification and align to the EUROCAS (EU Test Platform) Project

2021 onwards
Embed Test Platform in to the Project Procurement and implementation lifecycle

2020/1
National Projectathons to deliver Cross Border Services

2019
Test Platform deployed with Irish extensions

2018
Interoperability Specifications stable

Irish Projectathons and Testing Tools

- ✓ IHE have a highly skilled and professional team

- ✓ A wealth of experience from projects in other countries

- ✓ Collaboration with different stakeholders and departments

- ✓ Huge knowledge sharing with the Irish team

- ✓ International best practices and tools embedded in Irish eHealth ecosystem

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