Embedding IHE Profiles Standards and Test Tools in Cross Border and National Use Cases

Eamon Coyne:

→ Technical Architecture Lead, Health Service Execuitive Ireland
→ MyHealth@EU eHealth Member State Expert Group Co-Chair

* The **Health Service Executive (HSE)** is the publicly funded healthcare system in Ireland, responsible for the provision of health and personal social services. It came into operation on 1 January 2005.

The HSE is a large organisation of over 100,000 people, whose job is to run all of the public health services in Ireland. The HSE manages services through a structure designed to put patients and clients at the centre of the organisation.

** eHealth and Disruptive Technologies is the HSE office responsible for **the delivery of technology** to support and improve healthcare in Ireland. eHealth and Disruptive Technologies is **committed to realising the eHealth Ireland Strategy** by ensuring that information and technology support healthcare efficiently and effectively throughout the whole health service. The purpose of the strategy is to provide an outline of eHealth and demonstrate how the individual citizen, the Irish healthcare delivery systems – both public and private – **and the economy as a whole will benefit from eHealth**.
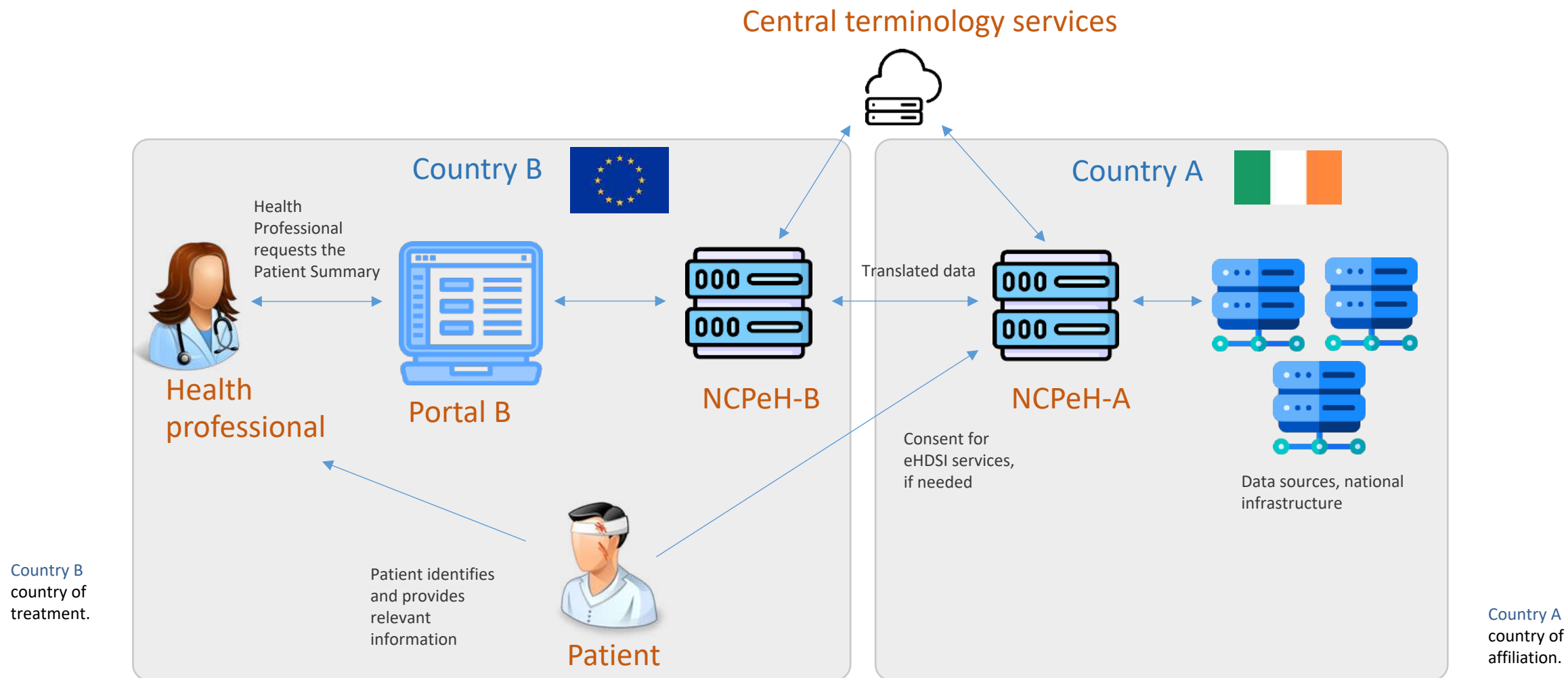
Source: * https://www.hse.ie/eng/about/foi-publication-scheme/about-us/
Source: ** https://www.hse.ie/eng/about/who/ehealth-and-disruptive-technologies/
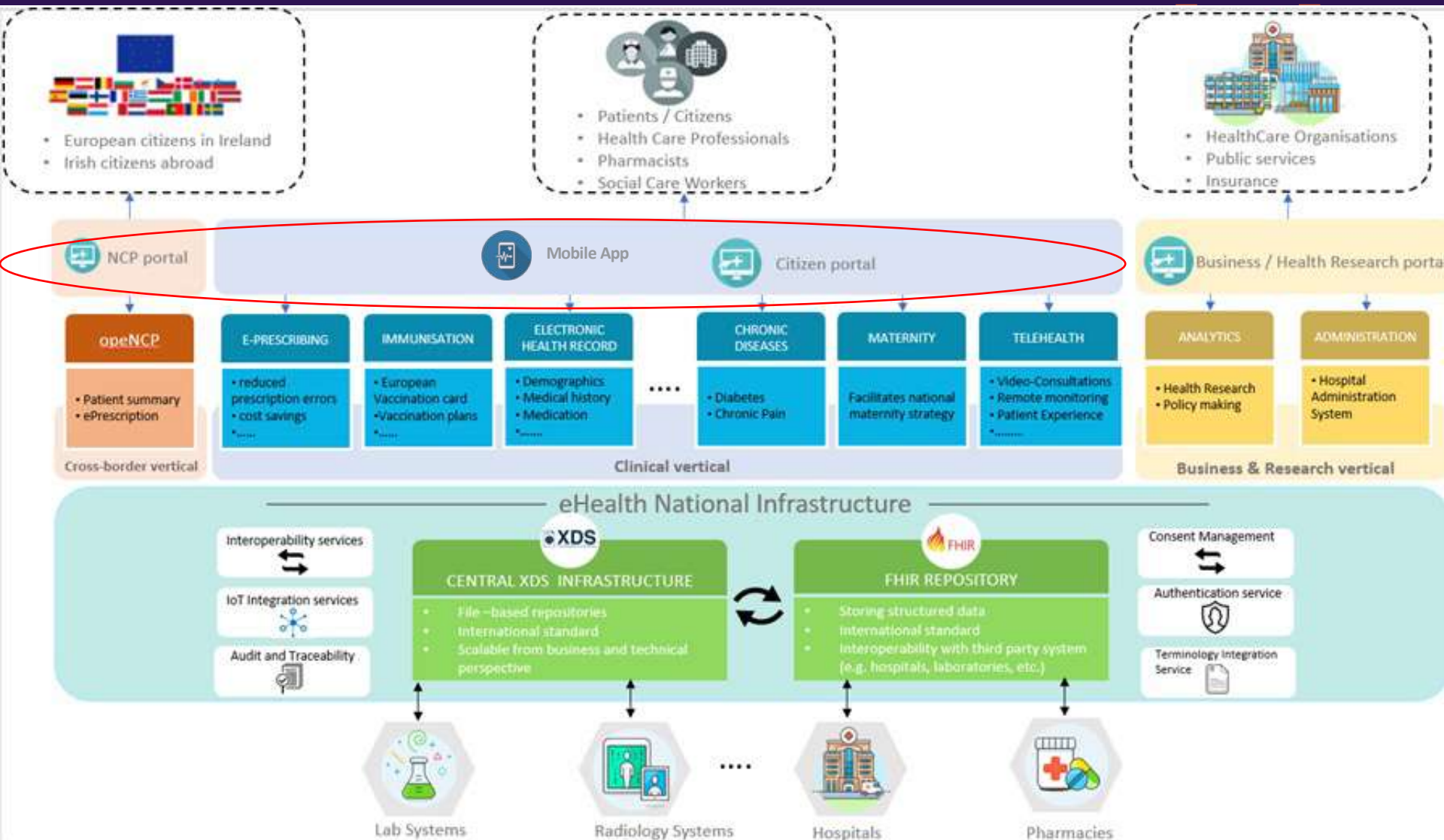
*"At the **core of an integrated health and social care system** is the need to share information between healthcare practitioners **both within and across organisational boundaries** including public and private. This requires a **standards-based approach** to **health information and interoperability**, that is to say projects are underpinned by **international and national standards**"* (HIQA, 2021).

Central terminology services

Country B

Country A

Health Professional requests the Patient Summary

Health professional

Portal B

NCPeH-B

Translated data

NCPeH-A

Data sources, national infrastructure

Consent for eHDSI services, if needed

Country B country of treatment.

Patient identifies and provides relevant information

Patient

Country A country of affiliation.

We needed to address and support the sharing of both Patient Summary and ePrescriptions via **MyHealth@EU** for **Irish Citizens** abroad in need of emergency treatment **as per directive 2011/24/EU;** We did this based on the **Use Case driven interoperability methodology.**

We have created **modular architecture** and **EHR data sharing infrastructure** based on **proven international IHE Profiles** and applicable **data exchange standards (XDS, CDA and FHIR)** which can also support the domestic use cases such as national EHR's and the other **EHRxF domains** coming down the tracks.

A standards Trojan Horse!!!
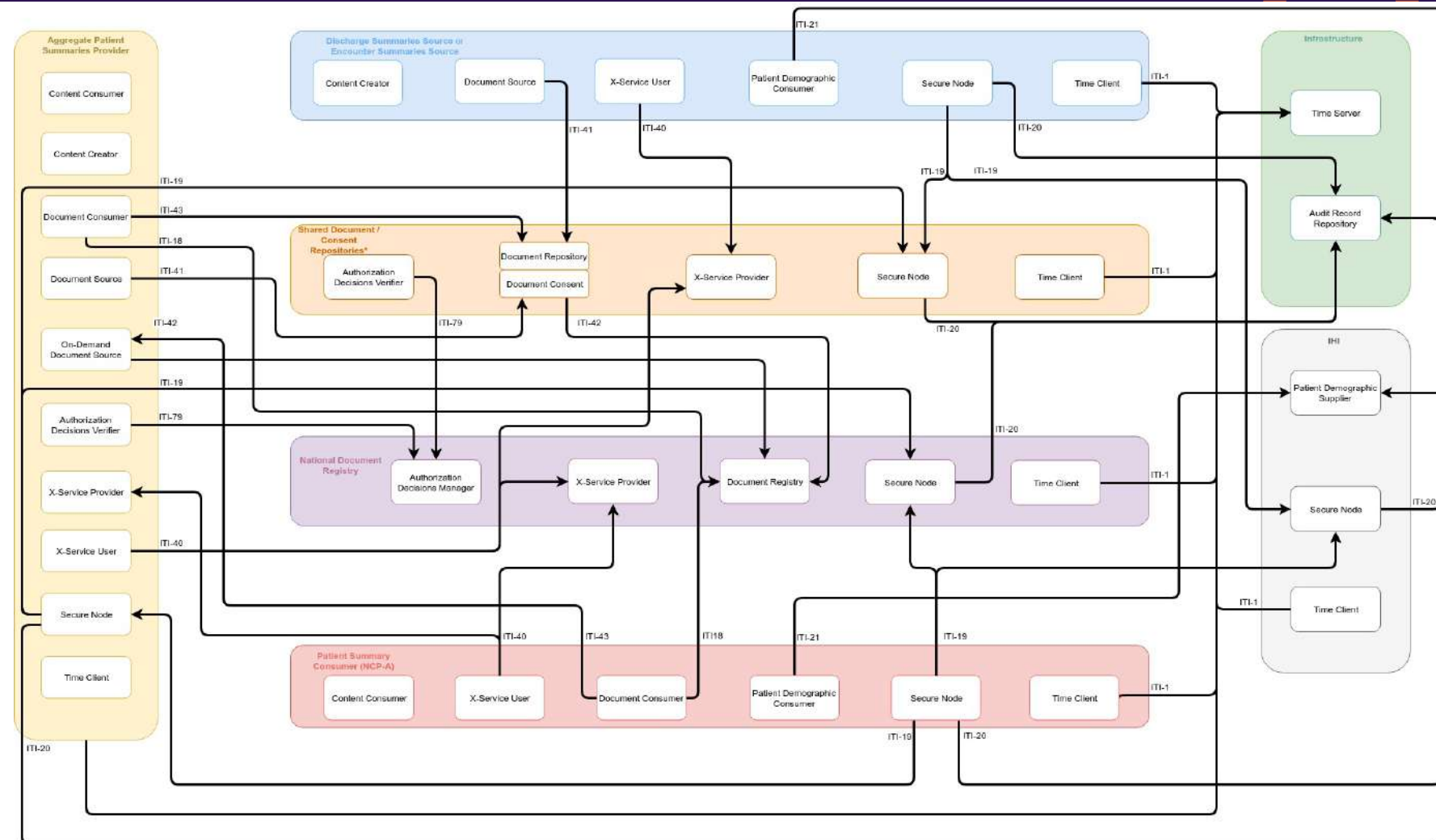
We took **inspiration** from the **eHealth Suisse ePR Blueprint***
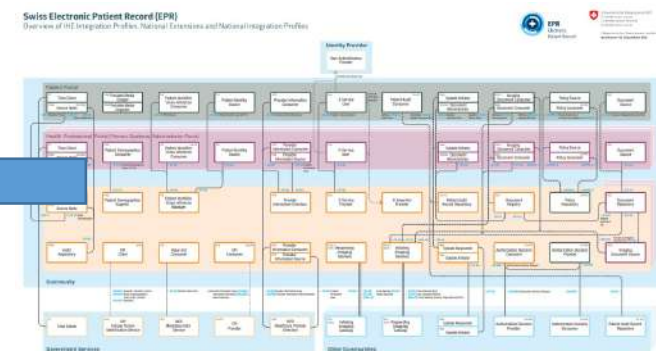
and created our own for both Patient Summary and ePrescription.

Detailed blueprints which call out the IHE ITI transactions that need to be supported by the relevant actors to enable the use case.

Source:* https://www.e-health-suisse.ch/fileadmin/user_upload/Dokumente/E/Graphic_Swiss_Electronic_Patient_Record_v4.0-2021-04-15.pdf

https://profiles.ihe.net/ITI/TF/Volume2/ITI-42.html example of an ITI transaction

From the CDA template in Art Décor

To the CDA XML

To display in HTML

- **Art Decor** is an **open-source tool** and a methodology for **various multidisciplinary stakeholders** of healthcare information exchange. It supports comprehensive **collaboration of team members** within and between **governance groups**. It allows separation of concerns and different views on a single documentation for different domain experts. It **supports creation and maintenance of HL7 templates** (STU), value sets, data sets and more.

- It **enables Irish Health Service staff** to model clinical documents and templates to **ensure** the appropriate **standards based interoperability** and governance.

We have developed the **Irish National Test Harness** built on **Gazelle** to ensure compliance to the relevant digital health standards via **interoperability testing**. Initial focus is on the cross border data sharing use cases of Patient Summary and ePrescriptions for EU exchange, resulting in a **first for Ireland** with the successful hosting of **2 National Projectathons** (Interoperability Test Events) .

Working with the **IHE team,** **HSE staff have upskilled significantly** in relation to **Digital Health interoperability** as a consequence of these test events. This interoperability testing can be **replicated across** the other **national and cross border Digital Health** use cases.
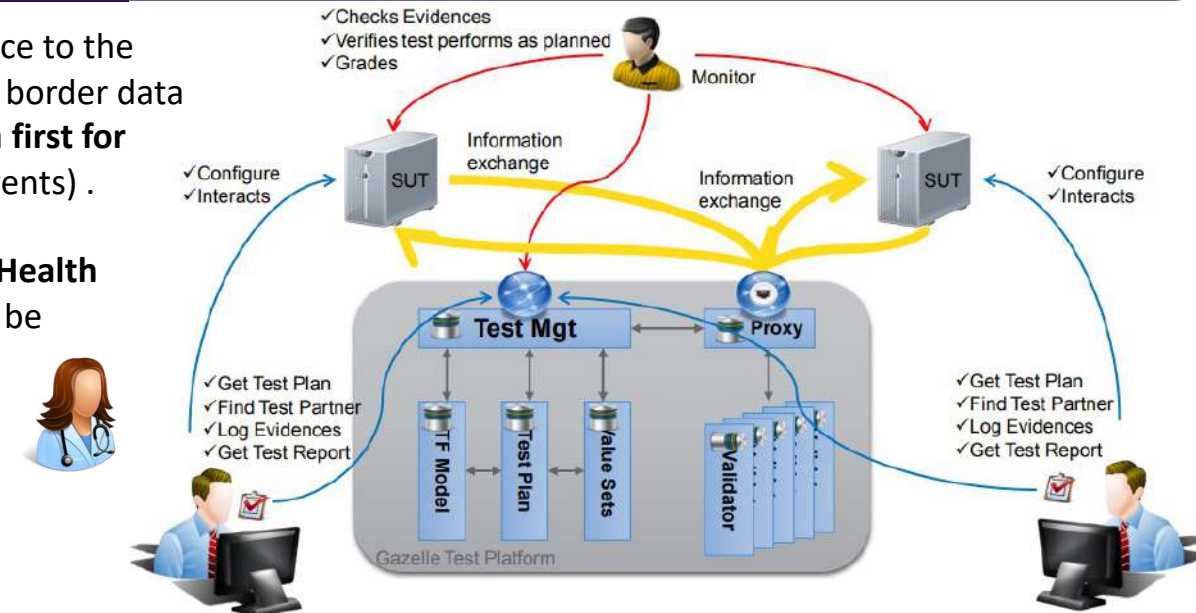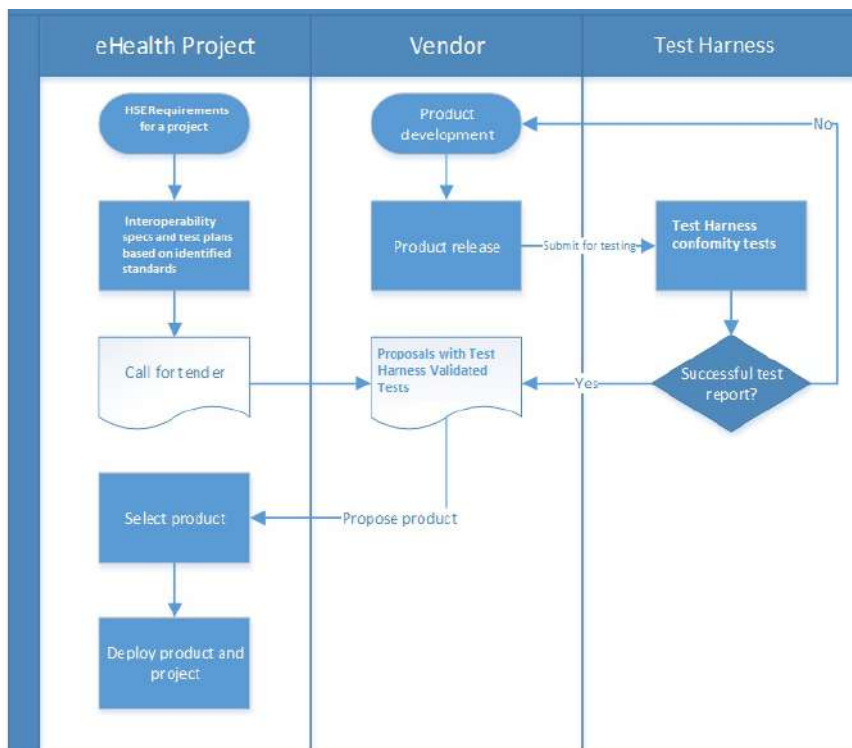
The **Irish Test Harness** can be expanded in to the **procurement cycle**, by calling out our Technical and Semantic interoperability requirements in advance of award, thereby **ensuring the Vendors fit in our shoes** (i.e. HSE ecosystem).

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

Avoids costly re-works during and post implementation. **Reduces clinical risk. Reduces risk levels** for both HSE and the vendors whilst enhancing/delivering the solution.

Greater efficiency of operation which enables **enhanced patient care** and **patient safety**.

IHE-Europe EXPERIENCE DAY 2022

9
9

In relation to sharing of health information the primary focus "can" be on making it available to the Healthcare Professional. But what about the patient?

There is an EU Digital Decade target that by 2030 all EU citizens will have access to their healthcare records*

At home in Ireland IPPOSI (Irish Platform for Patient Organisations, Science and Industry) conducted a Citizen Jury whereby a message was strongly conveyed that Irish citizens want to access to their own Health information **.

So how can we do it?

Source:* https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_en
Source: ** https://www.ipposi.ie/our-work/policy/health-information/citizens-jury/

The future state MyHealth@EU infrastructure landscape including a patient app/portal allowing citizens access to their own healthcare data.

Ireland are participating in the Patient Access to their Healthcare Data consortium with 11 other Member States

Central terminology services

Country B

Country A

Health Professional requests the Patient Summary

Portal B

NCPeH-B

Translated data

NCPeH-A

Healthcare professional

Data sources, national infrastructure

Transmitting the data possibilities (PS, eP, Lab etc)

Consent for eHDSI services, if needed

Patient identifies and provides relevant information

App or Portal A

Patient

Main enablers:
- Need to develop a patient portal or app
- Integration between NCP-A and the national/regional patient portal (or app)
- Access to Master Translation Catalogues of countries B, if possible (otherwise translation to English only)

Country B
country of treatment.

Country A
country of affiliation.

With the build up of structured and standardised data in the **Irish modular architecture** and **EHR data sharing infrastructure**. Leveraging the appropriate standards and technology **Irish Citizens can access and gain control** of their **relevant healthcare information** such as Patient Summary, ePrescriptions and other digital health use cases also further enabling mobile and telehealth services in our ecosystem. This is in alignment with the **EU Digital Decade target that by 2030 all EU citizens** will have access to their electronic health records. We have begun this work as shown....

Citizen Portal connecting to EHR data infrastructure to display Patient Summary

eHealth Pass Mobile application connecting to EHR data infrastructure to display Patient Summary

"No candle loses its light by lighting another candle"

The HSE Technical Architecture team have benefitted greatly from working with the IHE team

Together with applicable stakeholders they have

- ✓ Designed a standards based architecture

- ✓ Supporting interoperability framework

- ✓ Modelled Blueprints based on best practice

- ✓ Created CDA Templates for Irish EU Cross Border exchange

- ✓ Created test plans and test tools and hosted National Projectathons

Thank You

Go raibh míle maith agat

eamon.coyne@hse.ie

https://ie.linkedin.com/in/eamoncoyne1