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XpanDH – Driving the xpansion of the EEHRxF ecosystem

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Agenda

- **XpanDH Overview**
- **XpanDH main outputs**
  - X-Bundles
  - X-Bubbles
  - Readiness model
  - X-Nets
  - 3C-3P
- **Next steps**

Team

Anderson Carmo
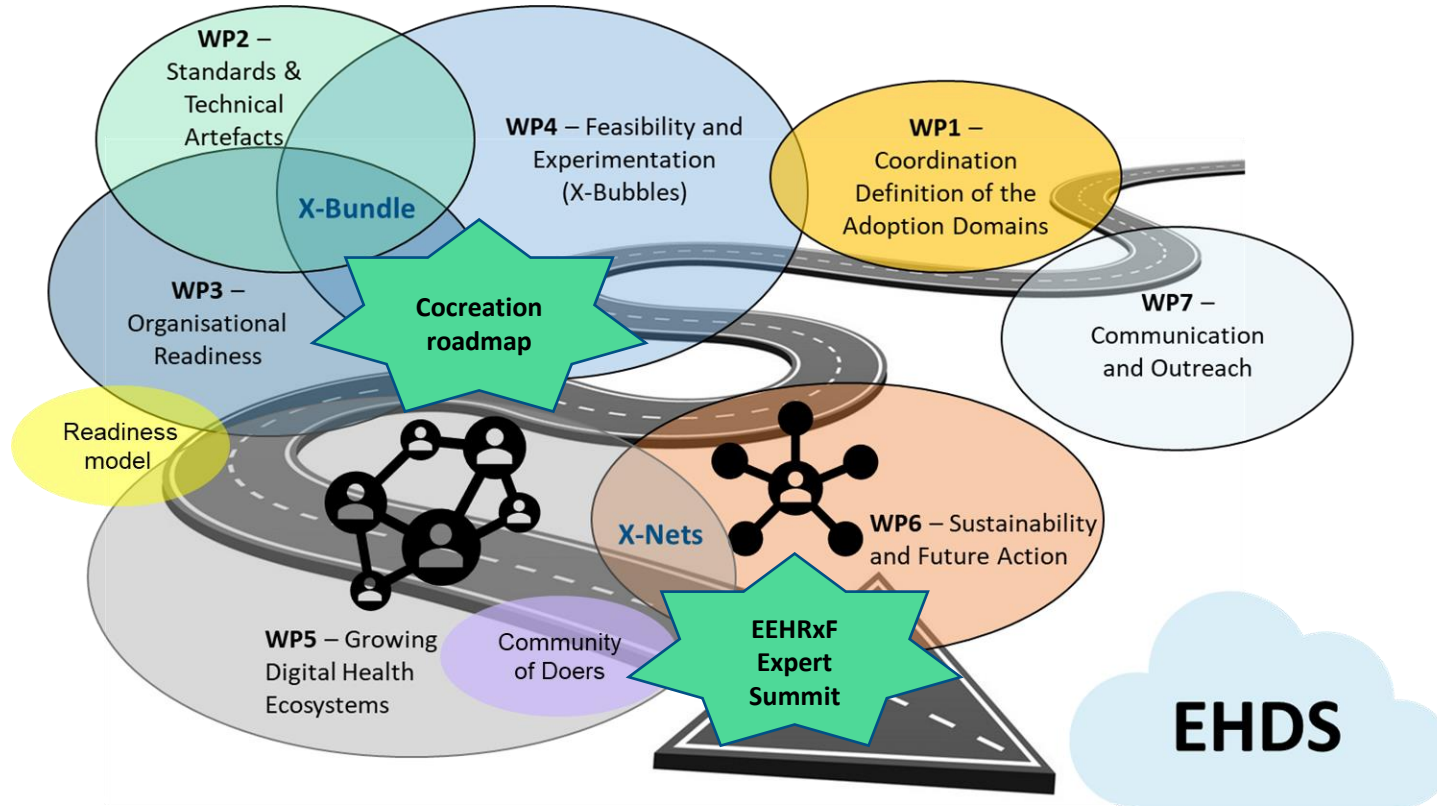EU Digital Health project Manager

Henrique Martins
Associated Professor

Simon Lewerenz
EU Digital Health and Interoperability Projects
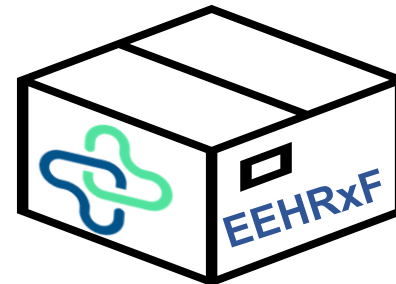
Main XpanDH outputs

- X-Bundles
- X-Bubbles
- Readiness model
- X-Nets
- 3C3P community

The **X-Bundle** correspond to a **group** of **well-defined interoperability assets** that provide the necessary conditions along the Refined eHealth European Interoperability Framework ReEIF six dimensions (Legal, organizational, semantic, technical, cybersecurity and person-readiness/digital capabilities).

It will **support** that a simple or composite **adoption domain be able to be implemented in two or more connecting ends** of an EEHRxF-compatible sharing health data connection.

A single-entry point for the **X-Bundle assets has been created**, it gives access to a coherent ecosystem of **technical specifications**, in the form of **HL7 FHIR IGs**, and github repositories **covering different priority domains** (e.g. Laboratory, Hospital Discharge Report).

We are **organizing the existing X-bundles** produced within the narrow EEHRxF community of projects, according to their **intended use, production status and adoption level**.

The focus on the assets that have the **maturity and adoption level** to be used directly for deployment:

a) **assist implementors in Member States** to incorporate the Format into their national projects as well as

b) **industry to build interoperability** into the design of their innovations.

To ensure the reuse of the **X-bundles** produced on XpanDH, and the broader assets sustainability, we are organizing some joint activities with **xShare and Xt-EHR** to:

- **Refinement of the concepts**

- **Development and publication** of the X-Bundles for the selected business use cases

- **Defining quality labelling metadata** for the assets and the bundles

X-format ecosystem

X-Bubbles - current and new ones
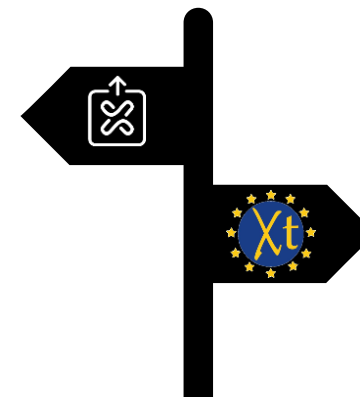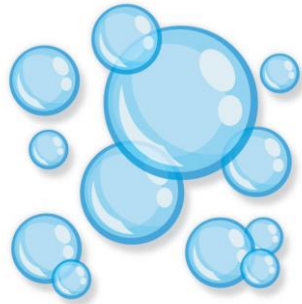
X-Bubbles are groups of organizations that test **the feasibility** of using use of EEHRxF.

Bubbles levels:
- Follow up
- Level 1 – "Real testing"
- Level 2 – Realignment
- Level 3 – In silico

Discharge Reports

X-Bubble 6
NCZI ⇒ OKFO
Slovakia ⇒ Hungary

X-Bubble 3
CHUdSA

X-Bubble 2
CHUdSA
Portugal

X-Bubble 4
KETEKNY

X-Bubble 5
KETEKNY
Greece

Laboratory Reports

Austria
Portugal
Spain

X-Bubble 1
OKFO
Hungary

Patient Summary

Greece
Portugal
Madeira

✳ National Authority 🏢 Organisation ▯ Patient

XpanDH --> xShare Adoption Sites (use and demo the xShare Button)
X-Bubbles --> i2X demonstrators (in-service use) of EEHRxFormat-adapted EHRs (feasibility)
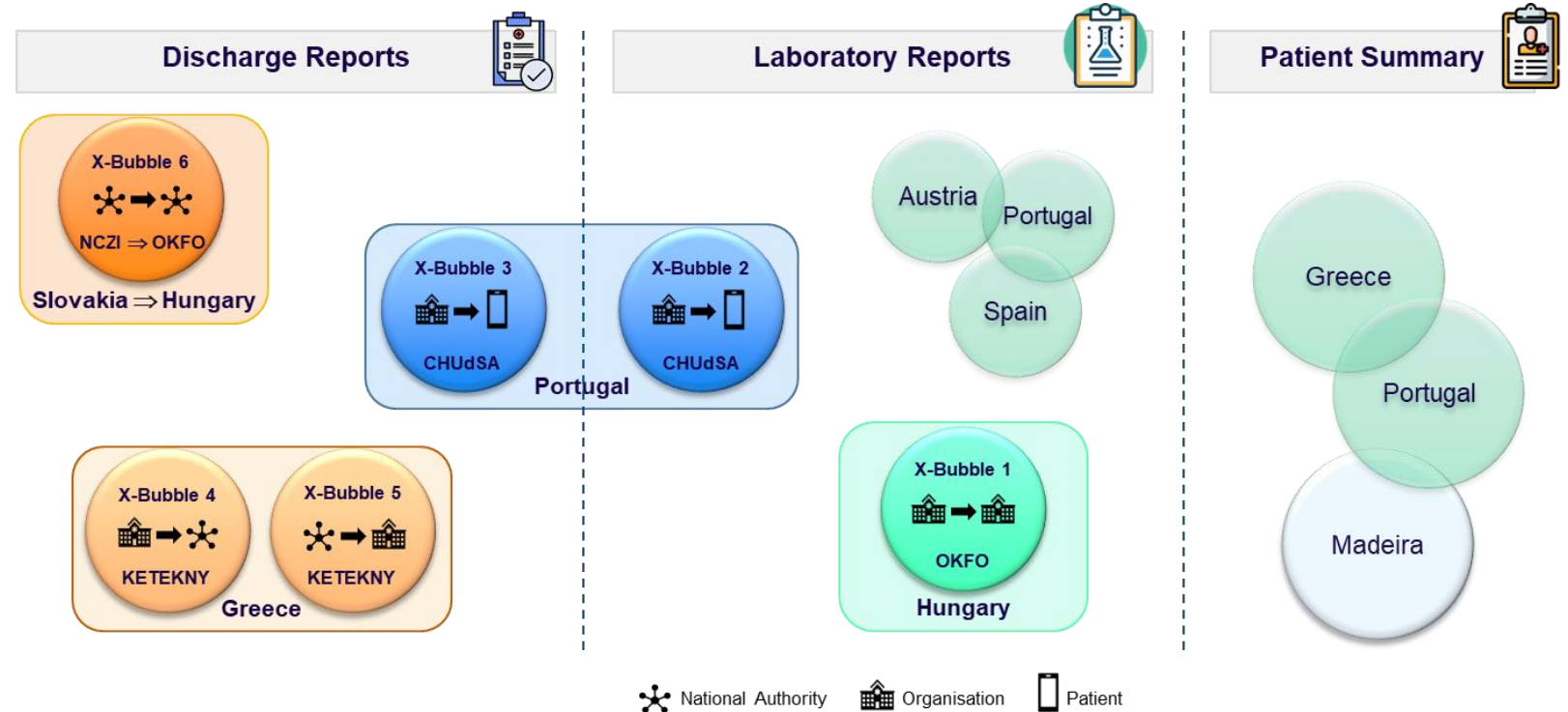
Field	Bubble 1 Hungary	Bubble 2 Portugal	Field	Bubble 1 Hungary	Bubble 2 Portugal
A.1 Report header data elements			A.1.8 Laboratory report metadata (9)	6 mandatory 1 optional 2 not required	6 mandatory 2 optional 1 not required
A.1.1 Identification of the patient/subject (5)	4 mandatory 1 optional	5 mandatory	**A.2 Order information (6)**	6 optional	1 mandatory 5 not required
A.1.2 Patient/subject related contact information (2)	2 optional	1 optional 1 not required	**A.3 Order reason (1)**	1 optional	1 optional
A.1.3 Health insurance and payment information (4)	4 not required	2 optional 2 not required	**A.4 Specimen information (9)**	9 optional	9 optional
A.1.4 Information recipient (6)	6 not required	1 mandatory 3 optional	**A.5 Results data elements**		
A.1.5 Author (3)	3 mandatory	1 mandatory 2 optional	A.5.1 Laboratory report narrative (2)	1 mandatory 1 optional	1 mandatory 1 optional
A.1.6 Legal authenticator (4)	2 mandatory 2 optional	1 mandatory 3 optional	A.5.2 Observation details (14)	4 mandatory 8 optional 2 not required	6 mandatory 7 optional 1 not required
A.1.7 Result validator (4)	3 mandatory 1 optional	4 optional			

Feedback loop

European Projects and Initiatives

Other assets related to eHDSI cross-border services, eHN frameworks

X-Bundle Readiness Model — T3.1

Guides — T3.3

→ educate relevant parties on the next steps to reach their next level in the readiness model

Test

X-Bubbles

Evaluation Process — T3.2
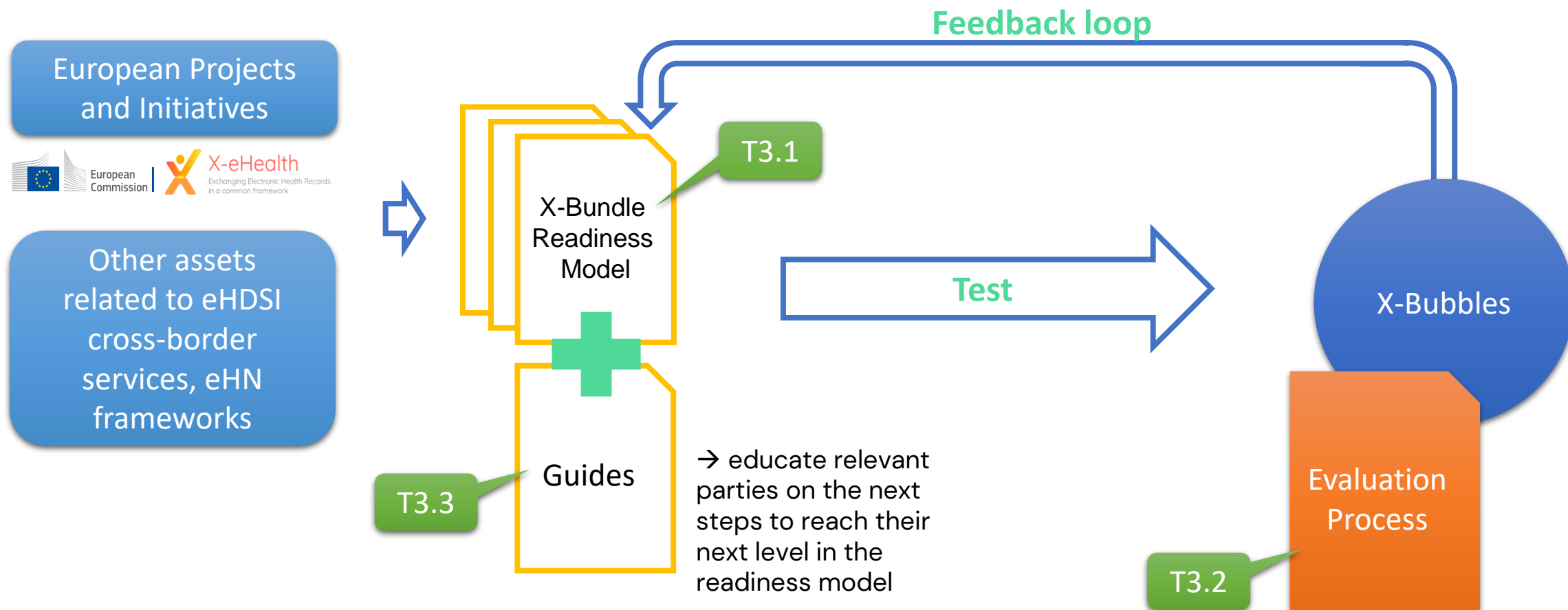
Healthcare providers
- eHealth Agency
- Hospital or Hospital provider
- Daycare clinic
- Community Healthcare provider (General practitioner, Laboratory, Radiology department, …)
- Community Pharmacy
- Nursing home
- Other

Vendors
- Electronic Medical Record (EMR) vendors
- Hospital Information System (HIS) vendors
- Laboratory Information Systems (LIS) vendors
- Other

Readiness aspects

Processes
IT Implementation
Care professionals

Types of entities
Healthcare providers
Vendors

EEHRxF use-cases

Laboratory Result Report
Hospital Discharge Report

3 aspects (Processes, IT Implementation, Care professionals)
- Policy, Finance and Change Management, Care processes, Clinical documentation, Availability of systems, Testing

Structure supports completion by different people in the organization

Readiness Model consists of …
- … general parts (use-case independent)
- … use-case specific parts

"Generic" – can be extended by more use-cases

Current use-cases covered:
- Laboratory Result Report
- Hospital Discharge Report

- **Readiness Model will be sent to a large number of organizations**
  - Pre-knowledge on the EEHRxF can not be assumed
  - Must be self-explaining
  - Educational character

- **Survey is complex and touches several different areas**
  - Multiple persons of different departments will likely answer the survey
  - The structure must correspond to this
  - Tool selection is important (must allow "save-as-draft")

- **Quantifiable questions preferred**
  - However, narrative questions are not avoidable

X-Nets – networks of networks

X-Nets

are networks of organisations
dire...
heal...
will
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Euro...
Eco...
the
Net...
Asso...
Star...
Orga...

X-Net activation

Co-creation of X-Nets methodology

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X-Net members invited through
consortium contacts, also through
contacts from summit

https://www.hospitalsonfhir.eu/

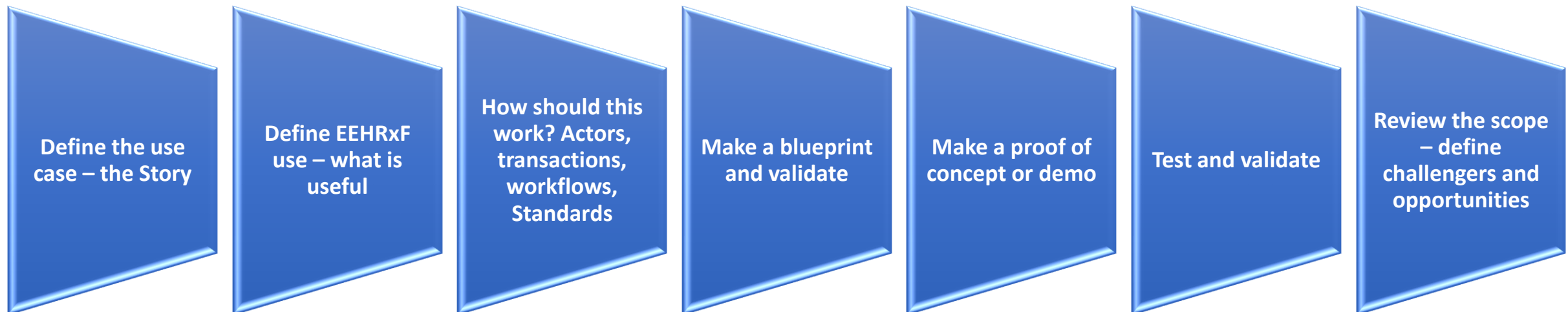| X-Net	Agitator	Kick-off held (date)
Patient	ISCTE /	04.03.2024
		29.06.2024
	...TE	24.11.2023
		23.11.2023
		Q3 2024 (tbd)
		Q2 2024 (tbd)
		24.11.2023
Hospitals-on-FHIR	HL7	25.09.2023
ERN and PerMed	UCN	25.06.2024
Health Regional Authorities	ARIA	05.12.2023
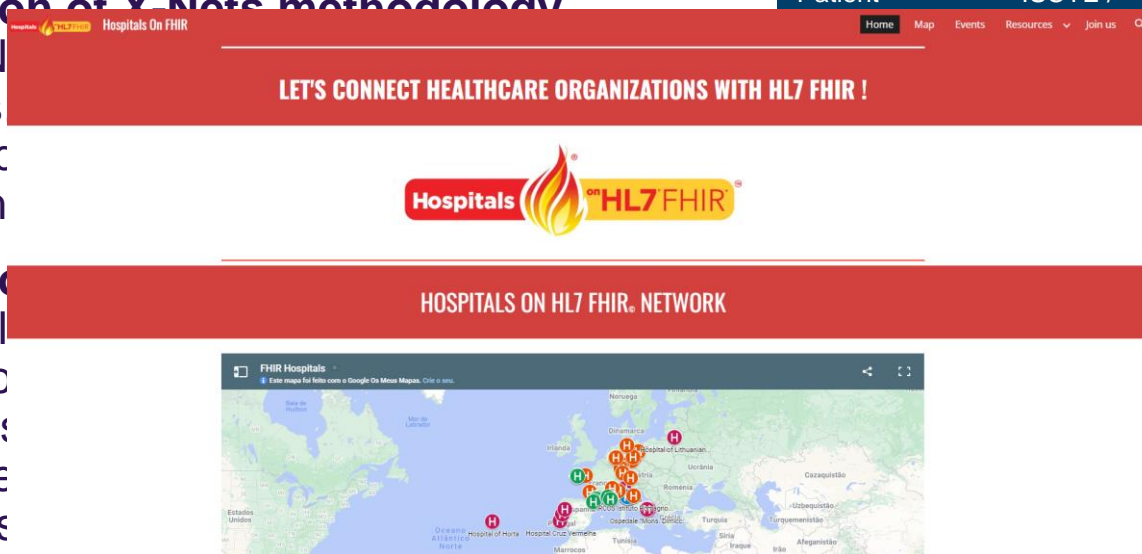
Community of Doers and Co-creators:

To bring together implementers and end-users of new and existing solutions:
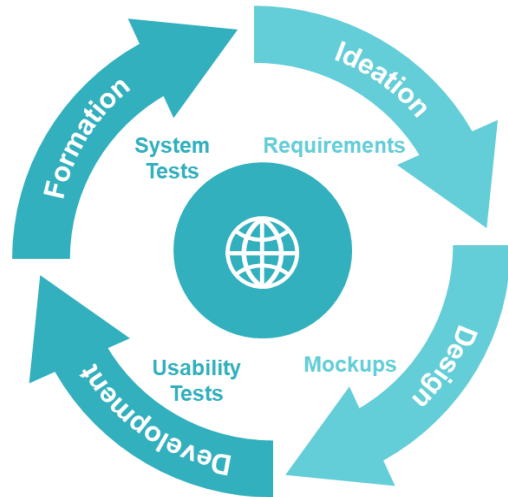
- IT developers and vendors/suppliers;
- patient and healthcare professionals,

in a **3C-3P community** (co-creation Community of Patients, Professionals and Programmers)

| Define the use case – the Story | Define EEHRxF use – what is useful | How should this work? Actors, transactions, workflows, Standards | Make a blueprint and validate | Make a proof of concept or demo | Test and validate | Review the scope – define challengers and opportunities |

The Community Assets

- **EEHRxF specifications** as they are proposed as Standards and technical Artifacts
- **X-Bundles**
- Coverage of **all EEHRxF documents**
- **Testing tools**
- **Software components**
- The **Readiness model** of EEHRxF

Some initial use cases

	Use case	Count
●	Cancer patient related use cases	24
●	Rare disease related use cases	11
●	Patient experience reporting	28
●	Patient access reporting	25
●	Deployment of national EHR Sol...	26
●	Medical imaging and reports	15
●	Active ageing use cases	15
●	Patient mediated sharing of doc...	30
	Other ⟩	10
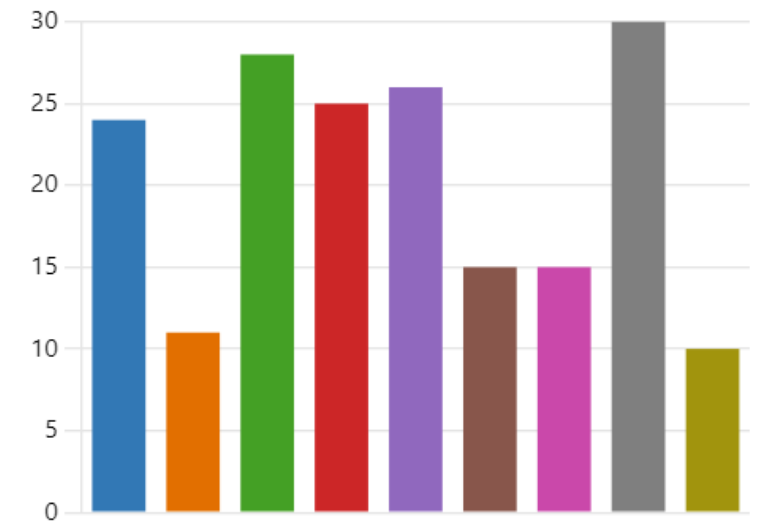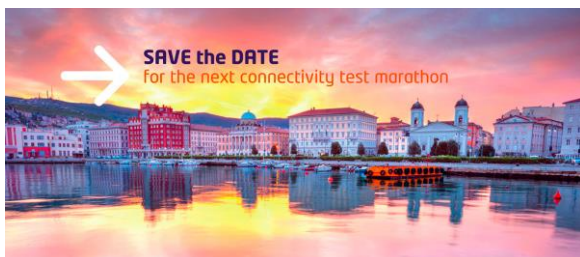
Plugathon
Setting up XpanDH's ideas

27 June,
Setting up XpanDH's Community of Doers and Co-creators

2 July,
In collaboration with ELLOK & XpanDH's Community of Doers and Co-creators

Next Steps

- Organisation of the **2° EEHRxF Expert Summit** (2024)

- **X-Bundles** – consolidate the assets and prepare its sustainable handover

- **Readiness model** – refinement of the models and test among the stakeholders and x-nets

- **X-Bubbles** – evaluate the development of each bubble, including the in-silico ones

- **X-nets** – launch all the x-nets, prepare for a 2nd Multi-Stakeholder focus group, consult the x-nets about the project's developments

- **3C3P** – selection of use-cases to be initially developed on the events (hackathons, plugathon, etc.)

- **XpanDH ends** in DEC – handover & final event in LISBON

SAVE THE DATES for LISBON –

16-17-18 Dec

XpanDH Project Handover & Final Event

Venue: ISCTE (in Lisbon Centre)

Thanks!

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[XpanDH website & Social media](#)