

2<sup>nd</sup> X-eHealth

# INNOVATION DAY

26<sup>TH</sup> OCTOBER 2022



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no 951938



2nd X-eHealth

INNOVATION DAY

# Opening Ceremony

Luís Goes Pinheiro

Chair of the Board of Shared Services for Ministry of Health (SPMS),  
Portugal

2nd X-eHealth

INNOVATION DAY

# Opening Ceremony

Kyriacos Hatzaras

Programme Officer – EU policies at European Commission, Directorate- General  
CNECT (CONNECT)

2nd X-eHealth

INNOVATION DAY

# Opening Ceremony

David Novillo-Ortiz

Unit Head, Data and Digital Health at World Health Organization,  
European Region



# 2<sup>nd</sup> X-eHealth Innovation Day

Wednesday, 26 October 2022



European Region

David Novillo Ortiz  
*Unit Head, Data and Digital Health  
Division of Country Health Policies and Systems  
World Health Organization, regional office for Europe*

[dnovillo@who.int](mailto:dnovillo@who.int)



[@davidnovillo](https://twitter.com/davidnovillo)



---

## Lessons learned

### *Data in the context of the COVID-19*

- Real-time data for decision-making is crucial in guiding an effective, timely and targeted response
- Effective integration of different data and information systems can facilitate data-driven decisions
- Inability to effectively leverage the volume and different types of data available



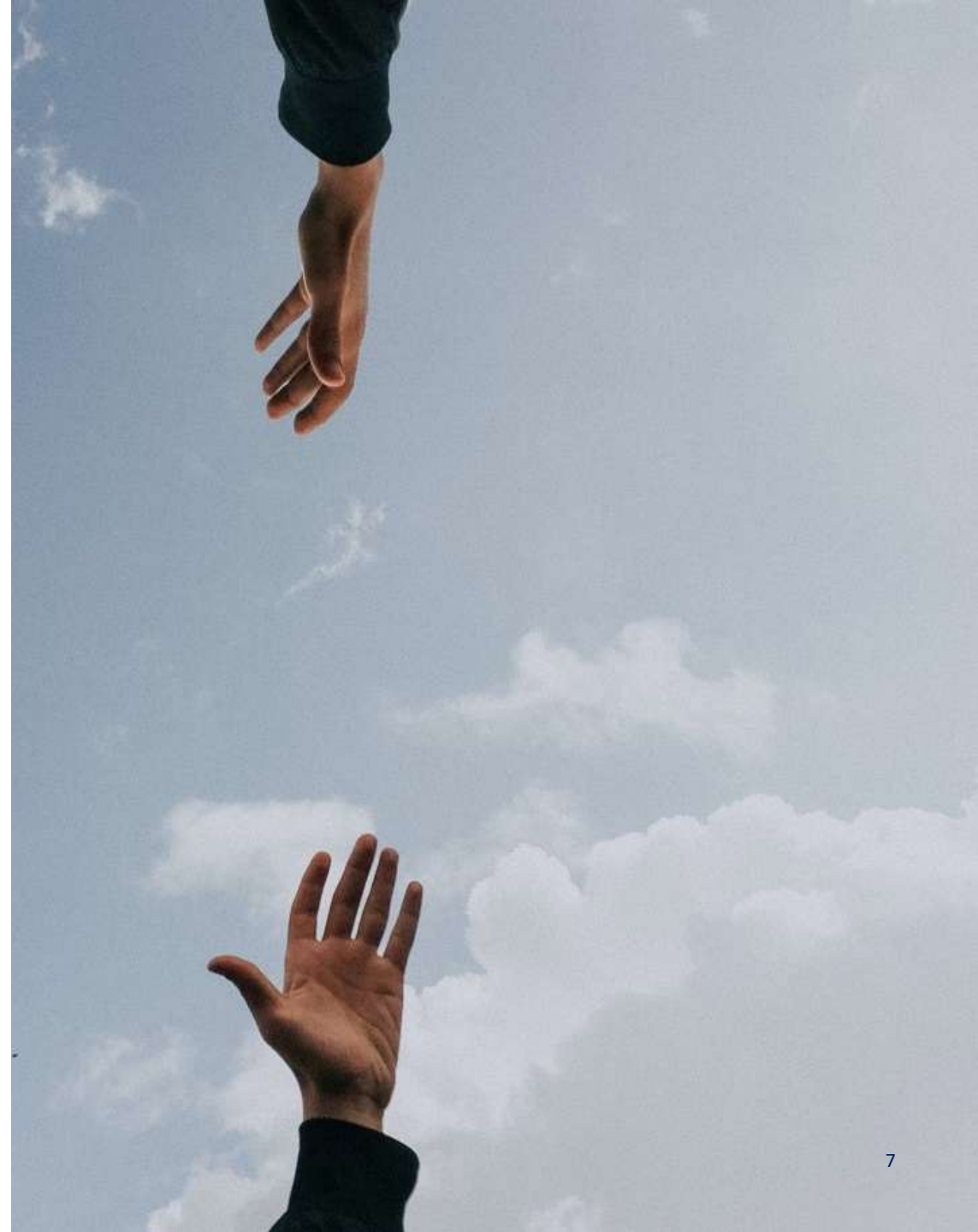
---

## Call to action

### *Better Data for Better Health*

- To establish a national **data coordination mechanism** and **implement a data governance framework**
- To **invest in data and digital technology** that can be useful for policymaking
- To **empower citizens** to control the data they produce and develop their data skillsets

Source: Azzopardi-Muscat N, Kluge HHP, Asma S, Novillo-Ortiz D. **A call to strengthen data in response to COVID-19 and beyond.** J Am Med Inform Assoc. 2021 Mar 1;28(3):638-639. doi: 10.1093/jamia/ocaa308.



---

# Regional digital health action plan for the WHO European Region 2023–2030

## *Leveraging digital transformation for better health in Europe*

### Guiding principle

Recognize that institutionalization of digital health requires a long-term commitment and an **integrated care approach**.

---

### Strategic priority

Enhancing country capacities to **better govern digital transformation in the health sector** and advance digital health literacy.

---

### Impact

Efforts are strengthened to develop a comprehensive roadmap for full implementation of health data standards for data interoperability within countries to **facilitate integrated health information systems**.



---

# Thank you

For more information, please contact:

David Novillo Ortiz  
Unit Head, Data and Digital Health  
[dnovillo@who.int](mailto:dnovillo@who.int)



---

European Region

2nd X-eHealth

INNOVATION DAY

# Coffee Break

10h:35m – 10h55m WET

11H:35m – 11H:55m CET

2nd X-eHealth

INNOVATION DAY

# Fostering Innovation through X-eHealth

X-eHealth - A bridge for a European (Digital) Health Union

2nd X-eHealth

INNOVATION DAY

Cátia Sousa Pinto

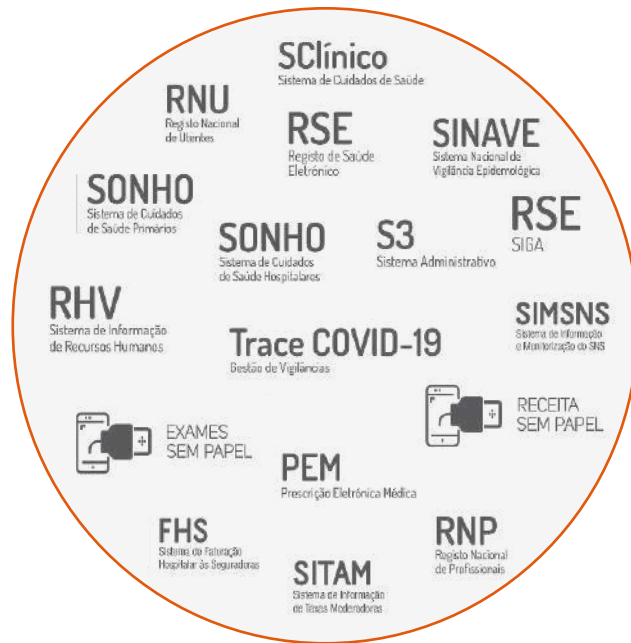
Coordinator of International Projects and Affairs Unit at SPMS

2nd X-eHealth

INNOVATION DAY

# A Global eHealth community

## Global eHealth at the core of Portugal's national digital health strategy



### Information systems

National Health System,  
Health Professionals & Citizens



### International cooperation

Advancing Innovation,  
Learning & sharing experiences



### National eHealth Authority

Cross-border eHealth policy &  
technical cooperation

# Framework for the Cross-border Exchange of EHR



Patient Summary



ePrescription/  
eDispensation

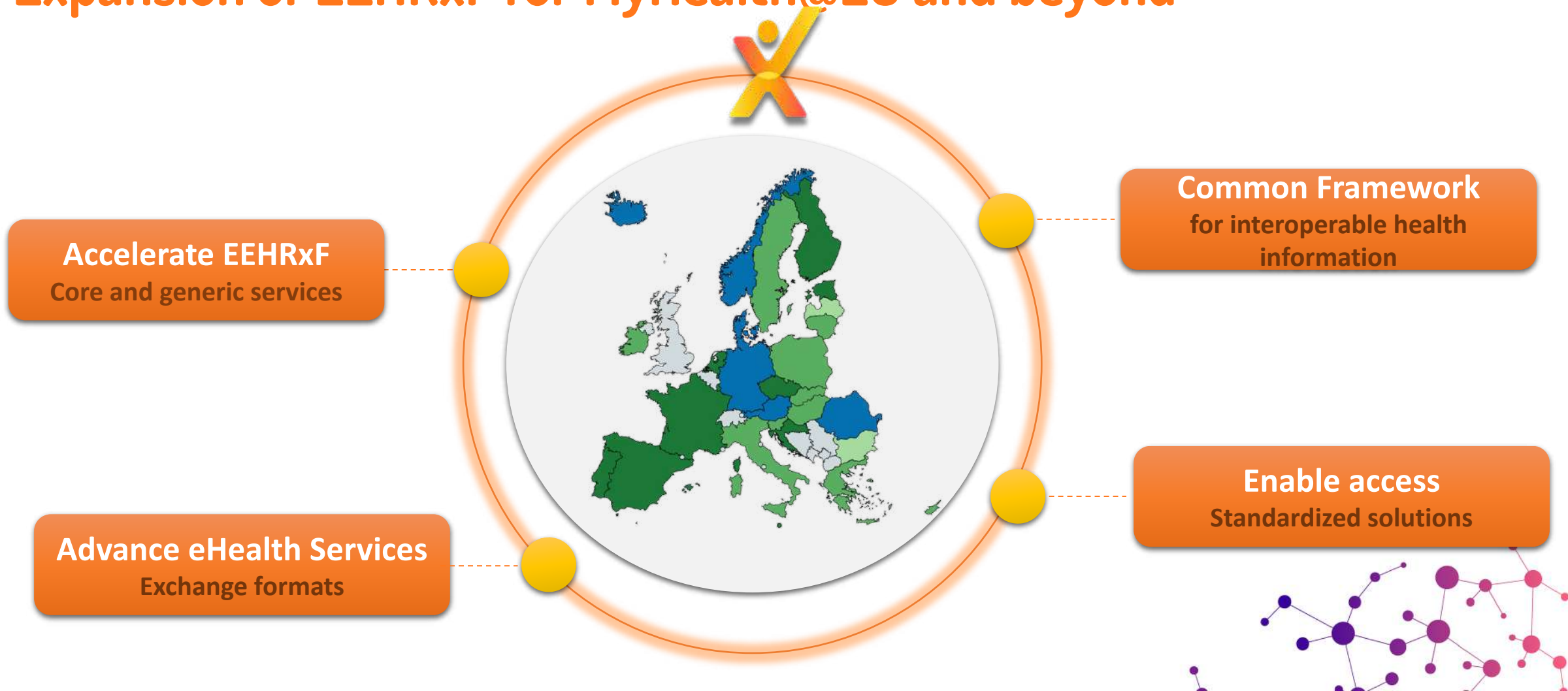


X-eHealth

Exchanging Electronic Health Records  
in a common framework

- Laboratory requests and results
- Medical images and imaging reports
- Hospital discharge reports
- Patient Summary for Rare Diseases

## Expansion of EEHRxF for MyHealth@EU and beyond



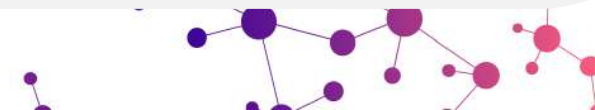
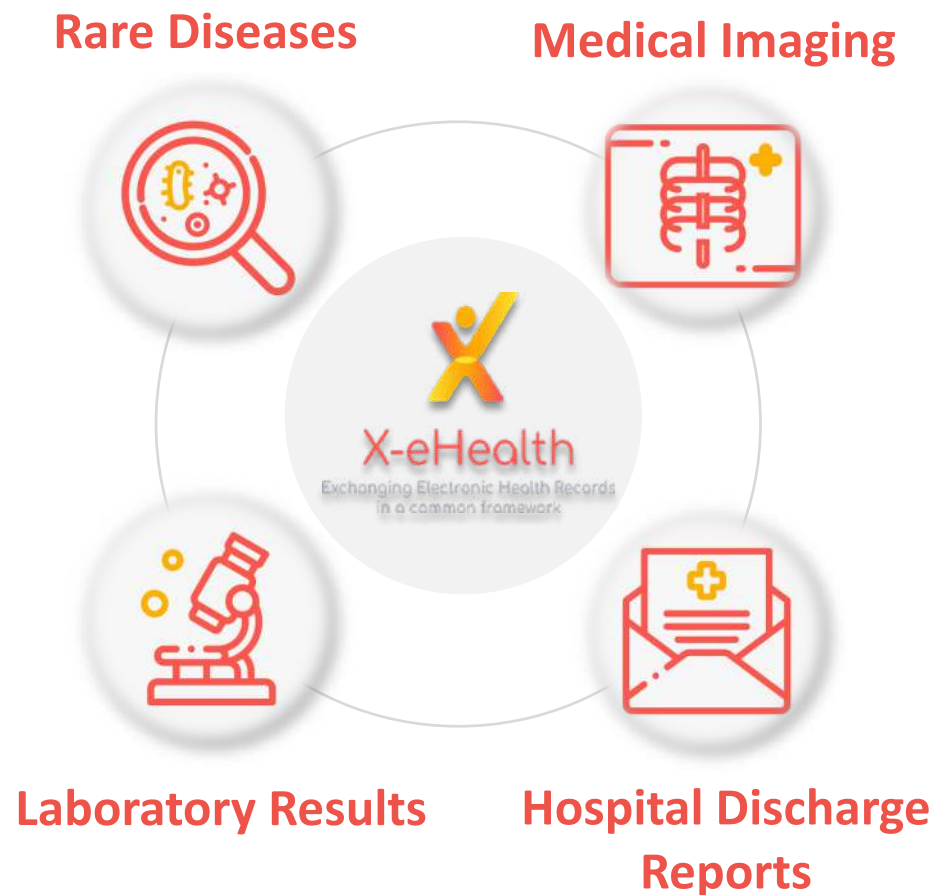


2nd X-eHealth

INNOVATION DAY

X-eHealth: Building  
*next generation*  
European Electronic  
Health Record

## Data interoperability workplan: the backbone of digital healthcare



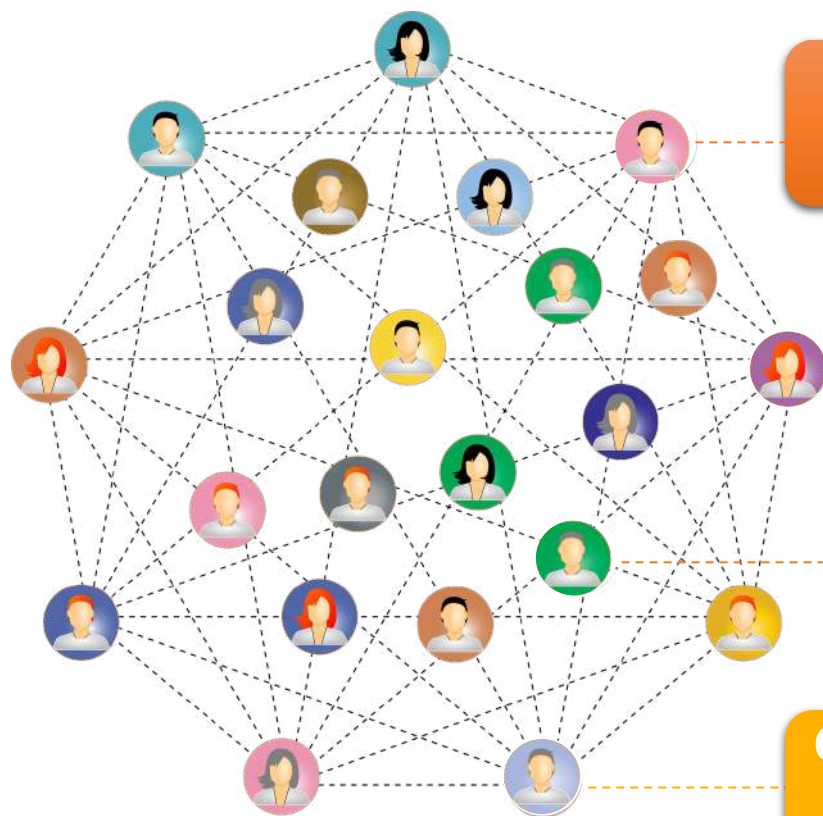


2nd X-eHealth

INNOVATION DAY

# X-eHealth: moving towards the European Health data space

## Moving towards the EHDS



**Empowering Citizens**  
More control, more access

**Fostering Innovation**  
Innovative digital solutions ,  
better health outcomes

**Connecting & Sharing Health Data**  
Interoperability, security of health data

**Consistent & Efficient Frameworks**  
Better reuse of health data for research,  
innovation, policy-making



- **Myhealth@EU**  
Primary use  
of data
- **HealthData@EU**  
Secondary  
use of data

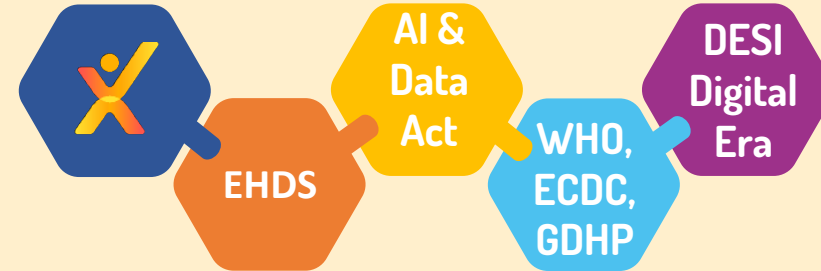


## The legacy and the future



Paving the way to the digital decade

### Global Digital Health



### MyHealth @ EU

eP



PS

# THANK YOU

2nd X-eHealth  
INNOVATION DAY



2nd X-eHealth

INNOVATION DAY

# Leading eHealth Progress

What is needed, what is available and what is implementable?



2nd X-eHealth

INNOVATION DAY

# Vincent van Pelt

International Senior Advisor at NICTIZ, eHealth Network subgroup  
Chair, Netherlands

2nd X-eHealth

INNOVATION DAY

# Hynek Kruzik

Senior Digital Health Consultant at the Ministry of Health of the Czech Republic

Senior Healthcare Consultant at Kraj Vysočina

2nd X-eHealth

INNOVATION DAY

# Giorgio Cangioli

Technical Lead at HL7 Europe

2nd X-eHealth

INNOVATION DAY

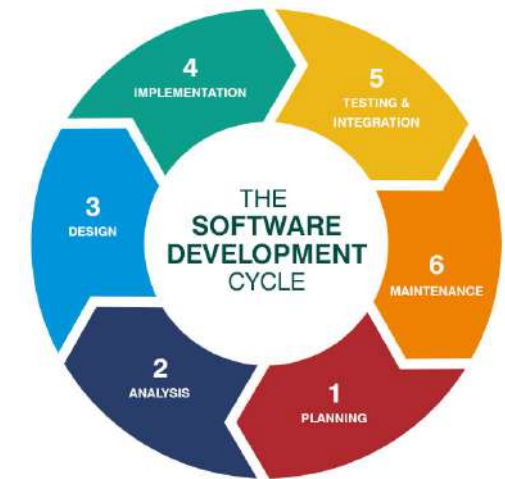
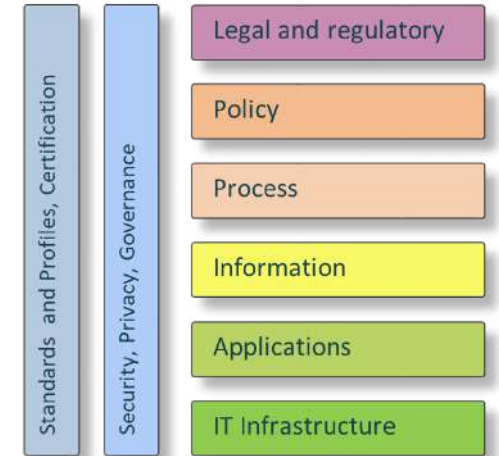
# Marcello Melgara

Programme Manager at eHealth Projects at ARIA SpA /Lombardy  
Region DG Welfare, Italy

# Methodology and approach

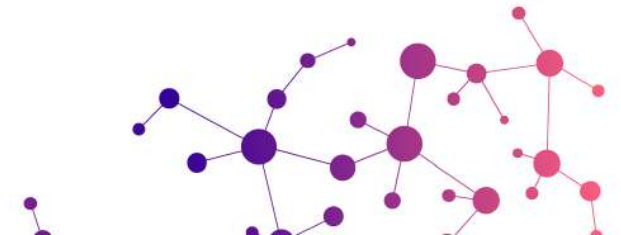


## ReEIF



# X-eHealth main achievements

- Methodology
- Detailed specifications: Functional, Technical, Implementation Future
- Data models, binding to terminologies, value sets
- Information building blocks
- Standardisation: start big end small



# 2nd X-eHealth INNOVATION DAY



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no 951938



**X-eHealth - Templates**

Project Datasets Scenarios Terminology Templates Issues

**Templates**

XeH RD Patient Summary -

History (5)

**Id** 2.16.840.1.113883.2.51.10.12 [ref: eehrf]

**Status** Draft

**Name** XeHRDPatientSummary

**Description**

**Context** Pathname / CDA Document Level Template

**Classification** CDA Document Level Template

**Open/Closed** Open (other than defined elements are allowed)

**Used by / Uses** Used by 0 transactions and 0 templates, Uses 24 templates

**Relationship** Version: template 2.16.840.1.113883.10.22.1.1 Intern Version: template 2.16.840.1.113883.10.22.1.1 Intern

**X-eHealth** Exchanging Electronic Health Records in a common framework

**X-eHealth Implementation Guide** 0.0.1 - CI Build

IG Home Table of Contents Models Specifications Artifact Index Support

Table of Contents > Home

X-eHealth Implementation Guide, published by: This is not an authorized publication; it is the continuous build for version 0.0.1. This version is available at <https://github.com/h17-eu/x-ehealth/> and changes regularly. See the Directory of published versions!

Home

Official URL: <a href="http://h17.eu/fhir/ig/xeh/ImplementationGuide/h17.eu.fhir.xeh">http://h17.eu/fhir/ig/xeh/ImplementationGuide/h17.eu.fhir.xeh</a>	Version: 0.0.1
Draft as of 2022-04-05	Computable Name: XeHealth

1.1 Scope

Specify HL7 FHIR logical models and profiles to be used with the European eHealth project, supporting the European EHR Exchange

1.2 The X-eHealth Project

XeH Clinical Document -

History (1)

XeH Diagnostic Imaging Report -

History (2)

XeH Laboratory Result Report -

History (24)

XeH RD Patient Summary -

History (13)

XeH Hospital Discharge Report -

History (17)

Id	Name	Effective Date	Version Label	Display Name
2.16.840.1.113883.2.51.10.12 [ref: eehrf]	XeH Hospital Discharge Report			

**Context** Pathname / CDA Document Level Template

**Classification** CDA Document Level Template

**Open/Closed** Open (other than defined elements are allowed)

**Used by / Uses** Used by 0 transactions and 0 templates, Uses 38 templates

**Relationship** Adaptation: template 2.16.840.1.113883.10.22.1.1 International Patient Summary (2020-07-14) Adaptation: template 2.16.840.1.113883.10.22.1.1 International Patient Summary (2020-07-14)

10.20.1 Resource Profile: Patient Summary (X-eHealth)

Official URL: <http://h17.eu/fhir/ig/xeh/StructureDefinition/PatientSummary-xeh>

Active as of 2022-04-05

Copyright/Legal: © European Union, 2022

Clinical document type: Clinical document type

Usage:

- This Resource Profile: Patient Summary (X-eHealth)

10.20.1.1 For

10.18.1 Resource Profile: Hospital Discharge Report (X-eHealth)

Official URL: <http://h17.eu/fhir/ig/xeh/StructureDefinition/HospitalDischargeReport-xeh>

Active as of 2022-04-05

Copyright/Legal: © European Union, 2022

Clinical document type: Clinical document type

Usage:

- This Resource Profile: Hospital Discharge Report (X-eHealth)

10.18.1.1 For

10.13.1 Resource Profile: Bundle: Laboratory Report (Xeh)

Official URL: <http://h17.eu/fhir/ig/xeh/StructureDefinition/Bundle-LaboratoryReport-xeh>

Active as of 2022-04-05

Copyright/Legal: © European Union, 2022

Clinical document type: Clinical document type

Usage:

- This Resource Profile: Bundle: Laboratory Report (Xeh)

10.13.1.1 For

0.61.1 Resource Profile: ServiceRequest: Laboratory Order

Official URL: <http://h17.eu/fhir/ig/xeh/StructureDefinition/ServiceRequest-lab-xeh>

Active as of 2022-10-07

Responsible: X-eHealth Project

Copyright/Legal: © European Union, 2022

Clinical document type: Clinical document type

Usage:

- This Resource Profile: ServiceRequest: Laboratory Order

0.61.1.1 Formal Views of Profile Content

Description of Profiles, Differentials, Snapshots and how the different presentations work (f).

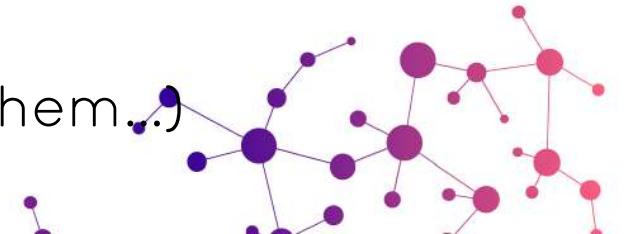
Text Summary Differential Table Snapshot Table Snapshot Table (Must Support) All

<https://art-decor.org/art-decor/decor-templates--eehrxf/>

<https://build.fhir.org/ig/h17-eu/x-ehealth/>

## What is needed?

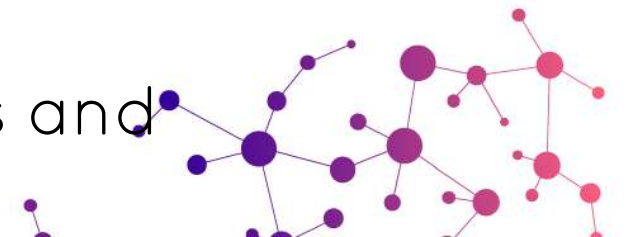
- Seamless Interoperability of Minds:
  - Make everyone to understand what is provided to them
- Make available what you need at your fingertips
  - As a health professional, in the different clinical cases of use (avoid spaghetti services)
  - As a citizen, to easily access to your clinical data anywhere, anytime
- Create a continuum from home to everywhere
  - Open the access to clinical data
  - From “Data travel with me” to “Data travel for me”, including the way back home, to allow full, real Continuity of Care
- Make data not to die
  - Secondary use is richness for all (without re-typing them...)





## What is needed?

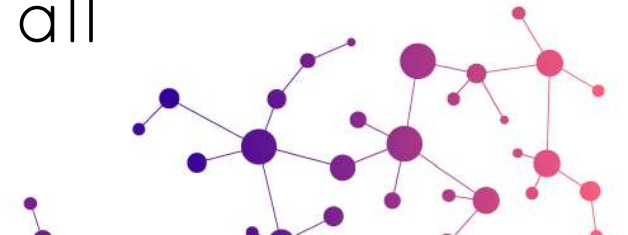
- Common specifications supporting current X-border services but looking to a better coverage of the EHDS goals, present-day/near future national services and global health data exchange initiatives
- Continuous maintenance of semantic and technical interoperability assets at EU level
- Pilot implementations of new use cases to validate proposed standards
- Feedback from wide community of future users and implementers



## What is needed?

Further along the  
line:

- Principles
  - Ambition
  - Plan
  - Architecture and tools
  - Support
- shared philosophy
  - clear goals
  - and roadmap
  - and tools for maintenance and development
  - MS, legal and financial, all stakeholders



## What is available?

- Routine cross-border operation for Patient Summary, ePrescription, Original Clinical documents in 3 domains (Lab reports, Images and Discharge Letters)
- Functional requirements in 4 domains for Extension and (partially) evolution of cross-border services, and National implementations
- New eHN implementation guides (lab, other in preparation)
- Initial value sets (lab, imaging, HDR, PS), but needs to be worked out further
- HL7 CDA and HL7 FHIR Implementation Guides based on the most recent international standards (e.g. IPS; XD-LAB); Metadata for XD\*/YC\* queries; Tools for validation



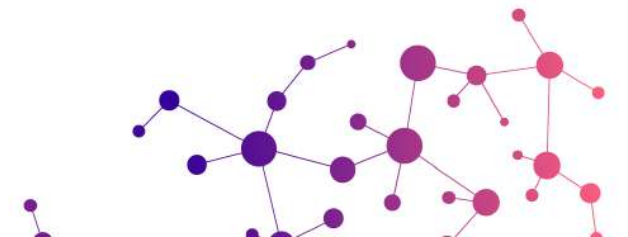
## What is implementable (short term)?

- Laboratory and Imaging reports, PS for Rare Diseases (Unplanned care), Hospital Discharge Reports [as HL7 CDA]; Laboratory report and order, PS for Rare Diseases (Unplanned care) [as HL7 FHIR]; ...but... *(more is available as Proof-of-concept and refinements are needed to adapt to the usage context)*

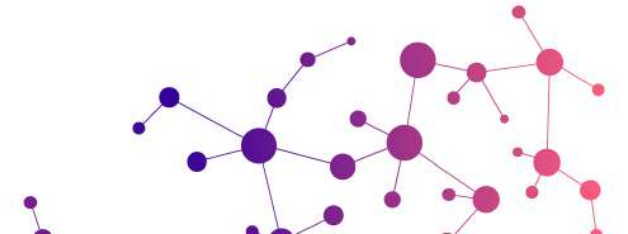


## What is implementable (medium-long term)?

- Starting from the defined documents:
- *Create new services as evolution of the current ones*
  - *To send documents (e.g. for Second Opinion)*
  - *To return documents (e.g. for Continuity of Care)*
  - *To access to image studies*
  - *To combine data (e.g. Laboratory Summary)*
  - *To provide documents more suitable for specific clinical domains (e.g. Cancer)*
- ...



# Conclusions and questions



2nd X-eHealth

INNOVATION DAY

# Leading eHealth Progress

What is needed, what is available and what is implementable?

2nd X-eHealth  
INNOVATION DAY





2nd X-eHealth

INNOVATION DAY

# Leading eHealth Progress

EHR Public Policy and Stakeholders

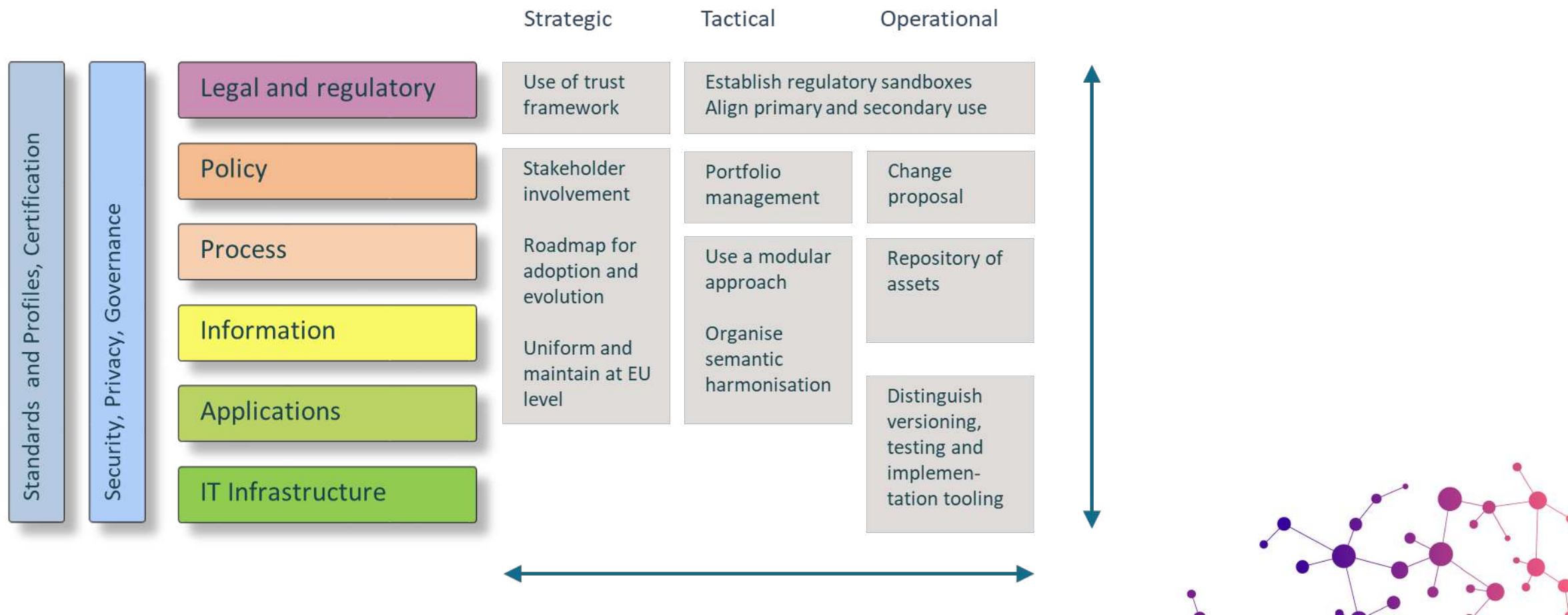
2nd X-eHealth

INNOVATION DAY

# Gaby Wildenbos

Senior Advisor at Nictiz, Netherlands

## Needs analysis - governance



# Needs analysis – roadmap

## Possible new domains:

- Medication for cross-border transfers
- Immunization
- Patient access to the patient summary
- Health monitoring services

## Impact assessment criteria:

- Impact on patient care
- Market stimulation
- Commitment
- Policy alignment



2nd X-eHealth  
INNOVATION DAY



2nd X-eHealth

INNOVATION DAY

# Diogo Canudo

Senior Communication Technician at SPMS, Portugal

2nd X-eHealth  
INNOVATION DAY

# X-eHealth Stakeholders Leaflet



This project has received funding  
from the European Union's Horizon 2020  
research and innovation programme  
under grant agreement no 361938



---

## WHAT IS THE **ROLE** OF THE X-EHEALTH STAKEHOLDERS?

- Providing expertise on best practices and interoperability assets
- Promoting liaisons with key players in the health sector
- Supporting healthcare providers in addressing citizens with information about digital services
- Identifying priorities and contributing important national perspectives, experiences and expectations
- Contributing to the development of use cases and technical specifications/requirements
- Ensuring that the deliverables will have a practical positive impact



## THE MAIN ACTIVITIES OF X-EHEALTH STAKEHOLDERS ARE:

- Involvement in training activities to educate and qualify health professionals to use cross-border services
- Following up on specific digital communication
- Participation in open work meetings concerning the project's development
- Sharing of experiences and perspectives on how to contribute to the development of European Electronic Health Record Exchange Format (EEHRxF) specifically
- Dissemination of events
- Creation of an action roadmap
- Involvement of healthcare industry representatives, researchers and developers at different stages of the project

# 2nd X-eHealth INNOVATION DAY



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no 951938



**SNOMED CT EXPO 2022**  
#SCTExpo22  
Sept 29-30 2022  
Lisbon, Portugal & Online  
SPMS

**X-EHEALTH**  
23<sup>rd</sup> MARCH 2022  
**Open Work Meeting for Innovator Stakeholders**

**X-EHEALTH**  
22<sup>nd</sup> MARCH 2022  
**#1 Professional Training Sessions**  
DATA EXCHANGE FOR BETTER HEALTH - ACCESSING AND SHARING MEDICAL IMAGES AND DISCHARGE LETTERS ACROSS EUROPE

**X-EHEALTH**  
26<sup>th</sup> MAY 2022 | 09:00 - 13:00 CET  
**#2 Professional Training Sessions**  
DATA EXCHANGE FOR BETTER HEALTH - ACCESSING AND SHARING MEDICAL IMAGES AND DISCHARGE LETTERS ACROSS EUROPE



*Welcome BACK TO WORK*  
with X-eHealth

**HOW CAN WE INTEGRATE EHEALTH RELATED SERVICES?**

**X-eHealth Deliverables**  
AVAILABLE FOR CONSULTATION

- 01** New domains for the EBHRF could include more patient focus, such as patient access to patient summary and patient safety.
- 02** New domains on the roadmap must be aligned with national priorities of EU Member States on health data exchange.
- 03** Clear sight on a division of roles and responsibilities regarding the maintenance of the EBHRF is necessary to preserve results of the X-eHealth project and guide further development.
- 04** Organization of the governance of European level or cooperation with eHDSI is required for maintenance.
- 05** Need for aligning primary use and secondary use governance of health data.



2nd X-eHealth  
INNOVATION DAY



2nd X-eHealth

INNOVATION DAY

# Kathrin Trunner

Project Manager at Public Health Institute Gesundheit Österreich  
GmbH, Austria

# Work Package 3: Evaluation

## Objectives

- Assess the project's activities to reach its dedicated goals.
- Ensuring the project's sustainability by measuring the results of all WP.

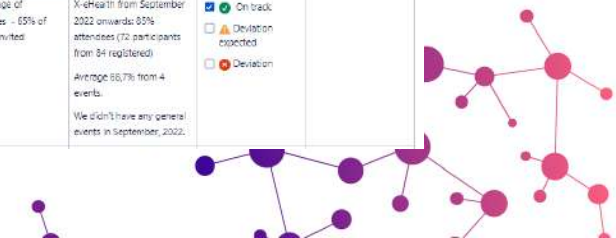
## Main evaluation questions

- *How successful was the project implementation?*
- *What are the effects of the project?*

## Methods and Workflow

- Implementation of tools for the evaluation
  - Establishment of Logframe matrix with determination of Key Performance Indicators (KPIs)
  - Release glossaries
- Monitoring of matrix
  - Updating values
  - Adjusting and adding KPIs
- Maintenance of glossaries
- Impact assessment: Output, Outcome (and Impact)
  - Target groups: Healthcare providers, decision makers, potential users / citizens

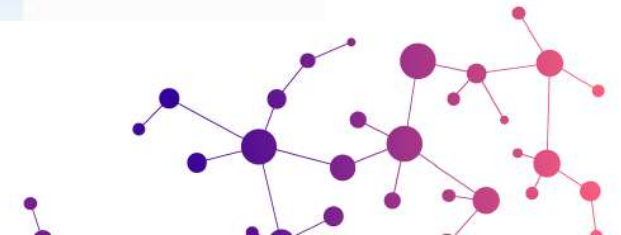
	No.								
WP 5 Definition of EHR4F functional specifications	5.1	Identify business functional requirements in the four project target areas.	Business functions (req./inserts derived from identified use cases will be specified and published).	Number of unresolved comments by all participating partners to the internal and final deliverable.	< 10%	3% of unresolved comments for internal deliverable (20/06/2021)	<input checked="" type="checkbox"/> On track <input type="checkbox"/> Deviation expected <input type="checkbox"/> Deviation		
	5.2	Identify information structures with elements. Specify the context and meaning of the exchanged content using a common clinical data structure.	Comprehensive information model of the exchanged content with description of all data elements will be part of the internal and final deliverable in all four project areas.	Number of unresolved comments by all participating partners to the internal and final deliverable.	< 10%	9% of unresolved comments for internal deliverable (20/06/2021)	<input checked="" type="checkbox"/> On track <input type="checkbox"/> Deviation expected <input type="checkbox"/> Deviation		
	5.3			Successful adoption of the model into an implementable specification.	Functional specification of at least 4 communication scenarios was successfully developed based on information model and functional specification.		Work in progress	<input checked="" type="checkbox"/> On track <input type="checkbox"/> Deviation expected <input type="checkbox"/> Deviation	Instead of "implementable specification" it is now "functional specification" - change to be communicated.
	5.4	Define functional specifications for new services.	Identified use cases	Number of use cases (including priority) taken into account	At least one use case per domain/task	100%	New use cases have been identified and prioritised for all domains	<input checked="" type="checkbox"/> On track <input type="checkbox"/> Deviation expected <input type="checkbox"/> Deviation	Added 01/2022
	5.5	Define a common methodology for WPs 6 and 7 based on a Use Cases driven methodology.	Alignment between Work Packages	Least amount of gaps. Change requests discussed		100%	Biweekly meetings with WP6 and weekly with WP7 are taking place to align as much as possible. Scenario's are being described in common agreement with WP6/7. We have a little delay due to complexity in scenario's	<input checked="" type="checkbox"/> On track <input type="checkbox"/> Deviation expected <input type="checkbox"/> Deviation	Added 01/2022
WP 1 Project coordination	1.1								
	1.2								
	1.3								
			the forecasted values		between 90%-110% of the forecasted value		<input type="checkbox"/> Deviation expected <input type="checkbox"/> Deviation		
						M12 = 1,05% of forecast			
						M18: Waiting for partners reports (16 currently missing)			
WP 2 Dissemination, communication & Stakeholders	2.1	Reach out and engagement the 4 key target stakeholders: <ul style="list-style-type: none"> <li>• Care Providers: Health Professionals and Citizens</li> <li>• Member States: Decision-Makers and National Health</li> </ul>	Level of engagement in X-eHealth events by target group (e.g. the X-eHealth Innovation Day)	Number of attendees	Percentage of attendees - 55% of people invited	X-eHealth from September 2022 onwards: 82% attendees (72 participants from 84 registered). Average 86,7% from 4 events. We didn't have any general events in September, 2022.	<input checked="" type="checkbox"/> On track <input type="checkbox"/> Deviation expected <input type="checkbox"/> Deviation		



# The Results Staircase



Source: Bergmüller, C. (2014): Kursbuch Wirkung. Das Praxishandbuch für alle, die Gutes noch besser tun wollen.



# Impact Assessment Results

## Main interview questions:

- Does X-eHealth advance the integration process of eHealth services in Europe?
- Will X-eHealth increase the use of the new European Electronic Health Record Exchange Format (EEHRxF) specifications?

OUTPUT	
Acceptance	Conditions
<ul style="list-style-type: none"> <li>• The specifications are accepted by all target groups. They see them as good quality.</li> <li>• The FHIR specifications are highly appreciated, even though partially challenging implementation.</li> </ul>	<ul style="list-style-type: none"> <li>• Organisational aspects (e.g. responsibility)</li> <li>• Resources (financial, human)</li> <li>• Legal framework</li> <li>• National infrastructure (NCP-eHs, terminology server, etc.)</li> </ul>
Awareness	
<ul style="list-style-type: none"> <li>• High awareness of new use cases and specifications.</li> <li>• A common understanding about the necessary efforts to adopt the EEHRxF specifications at different levels.</li> </ul>	<ul style="list-style-type: none"> <li>• Acceptance: Demonstrate added-value, ensure user friendliness, efficiency</li> <li>• Expansion of services (for citizens)</li> <li>• Data Security</li> <li>• Competence development by means of e-training (medical professionals), trainings in digital health literacy</li> </ul>

OUTCOME	
Digital Health Literacy	Attitudes & Behaviour
<p><b>Among all target groups:</b></p> <ul style="list-style-type: none"> <li>• Limited contribution from X-eHealth to strengthen digital health literacy</li> <li>• Main empowerment measure 'Professional Training Sessions'</li> <li>• Focus lied rather on technical aspects</li> </ul>	<p><b>Among stakeholders and healthcare providers:</b></p> <ul style="list-style-type: none"> <li>• Motivation to work towards the interoperability of data exchange</li> <li>• Challenge: Healthcare providers unlikely to apply/use the specifications unless they are legally obliged to do</li> </ul>
Knowledge on eHealth	
<ul style="list-style-type: none"> <li>• Increased knowledge on technical and legal levels (less on the benefits and eHealth in general)</li> <li>• Increased awareness of need to improve applications to increase access to secondary use of data</li> </ul>	

STRUCTURAL AND PROCESS RELEVANT OUTCOMES	
Opportunities	Networking & Communication
<ul style="list-style-type: none"> <li>• Beneficial for countries and organizations to participate in European initiatives - especially for smaller countries</li> </ul>	<ul style="list-style-type: none"> <li>• Enhanced networking and cooperation of actors, stakeholders, policymakers and institutions</li> <li>• Interoperability directly leads to earlier access to safe and effective healthcare for patients</li> </ul>
Future research	
<ul style="list-style-type: none"> <li>• Demand for secondary use of data in the healthcare sector is high</li> <li>• Expectation for new standards to be offered to analyse medical data across the EU</li> </ul>	



# Summary

## KPI Evaluation & Monitoring

- The project team delivered the planned output on time and within budget (including a project extension phase).
- Necessary pillars and building blocks for the new use cases in the Common European Health Data Space were produced and prepared for the next steps (i.e., handing them over to the eHDSI community).

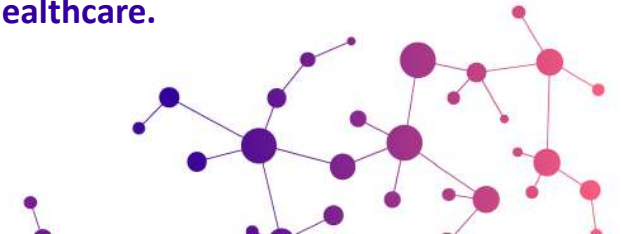
## Impact Assessment:

- The stakeholders are convinced that X-eHealth will advance the integration process of eHealth services in Europe.
- The impact of X-eHealth is considered positive on most levels analysed.
- There is high importance on the specifications being adopted by the European MS so that issues can be communicated and resolved together.

➡ **There is a high demand for establishing processes to facilitate the secondary use of health data.**

➡ **The European Health Data Space regulation proposal is understood as the future governance framework for sustainable maintenance, evolution and distribution of standardization and interoperability in healthcare.**

➡ **There is a desire for future projects stemming from X-eHealth.**





2nd X-eHealth  
INNOVATION DAY



2nd X-eHealth

INNOVATION DAY

# Alberto Zanini

Head of Unit European Interoperability services, Digital Identity and Digital Payments at ARIA S.p.A, Italy

## WP4 in a nutshell

- Has three workstream
  1. eID (*lead: ARIA*)
  2. Legal aspects and enablers (*lead: Kraj Vysocina*)
  3. Cybersecurity (*lead: EMK-SU*)
- Common definitions across the project, as defined by WP7:  
«**EXTENSION** when adding new functionalities on existing NCPeH, by reusing architecture and processes - while **EVOLUTION** requires architectural and process changes to the current framework»
- The three workstream address both **extension & evolution** (from Wave 8 on) scenarios



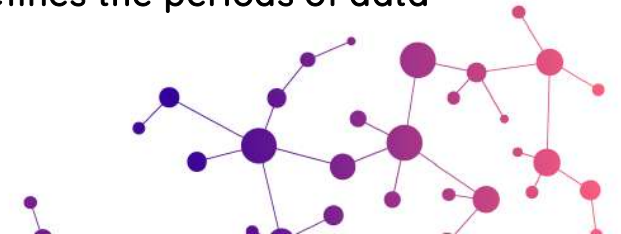
# Main achievements - eID

- Overall main focus: **evolution**
- Setting the scene: analysis of the current eID adoption across the EU (national level and cross-border)
  - deliverable [D4.1.1 eID in eHealth, survey of national solutions](#) - **approved** by the EC
  - standards, adoption rate in MS, success stories, pros & cons
  - Lombardy Region: 220+ municipalities web sites (out of 1500) enabled with eIDAS login yet with very low traffic
- Possible roadmap for a wider adoption in eHealth (cross-border)
  - deliverable [D4.1.2 From national solutions to eIDAS](#) - available on X-eHealth website
  - provide concrete use cases in the eHealth domain, and possible adoption/exploitation in X-eHealth
  - identify synergies with other projects/initiatives, paving the way for the upcoming European Digital Identity Wallet



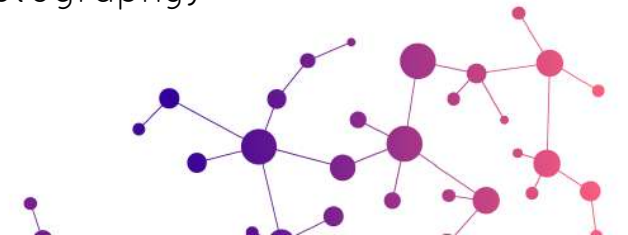
# Main achievements – legal enablers

- Main focus: both **extension** and **evolution**
- State of play of the current implementation of European cross-border exchanges of personal healthcare data in regards to legal and ethical barriers
  - deliverable [D4.2.1: Information paper on the current challenges in legal aspects of cross-border exchange of personal data](#) - **approved** by the EC
- Long-term general and specific recommendations on data protection aspects of cross-border data exchange in the scope of eHealth Digital Services Infrastructure (eHDSI) / MyHealth@EU, under the European Health Data Space
  - deliverable [D4.2.2: Recommendation paper on legislative enablers for cross-border personal data interoperability](#) - available on X-eHealth website
  - general and specific recommendations provided (e.g. define a common EU policy that defines the periods of data retention and deletion in the cross-border healthcare data exchange setting)
  - legal roadmap for future actions within the scope of eHDSI



# Main achievements - cybersecurity

- Overall main focus: **evolution**
- Description of the current European trust space
  - deliverable D4.3.1 - **approved** by the EC
  - MyHealth@EU's circle of trust (NCPeH nodes, TESTA network, eIDAS, ...)
  - *Identify-Protect-Detect-Respond-Recover* approach
- Long-term policy recommendations to improve digital data trust in the cyberspace
  - deliverable D4.3.2 - submitted by 31/10
  - 4 recommendations provided (e.g. adoption of Zero Trust principles, quantum cryptography)



## A focus on – eID (1/2)

- XCPD needed to identify the patient and retrieve their document at a later stage



Identification via paper-based documents still in place  
(current eHDSI workflow)

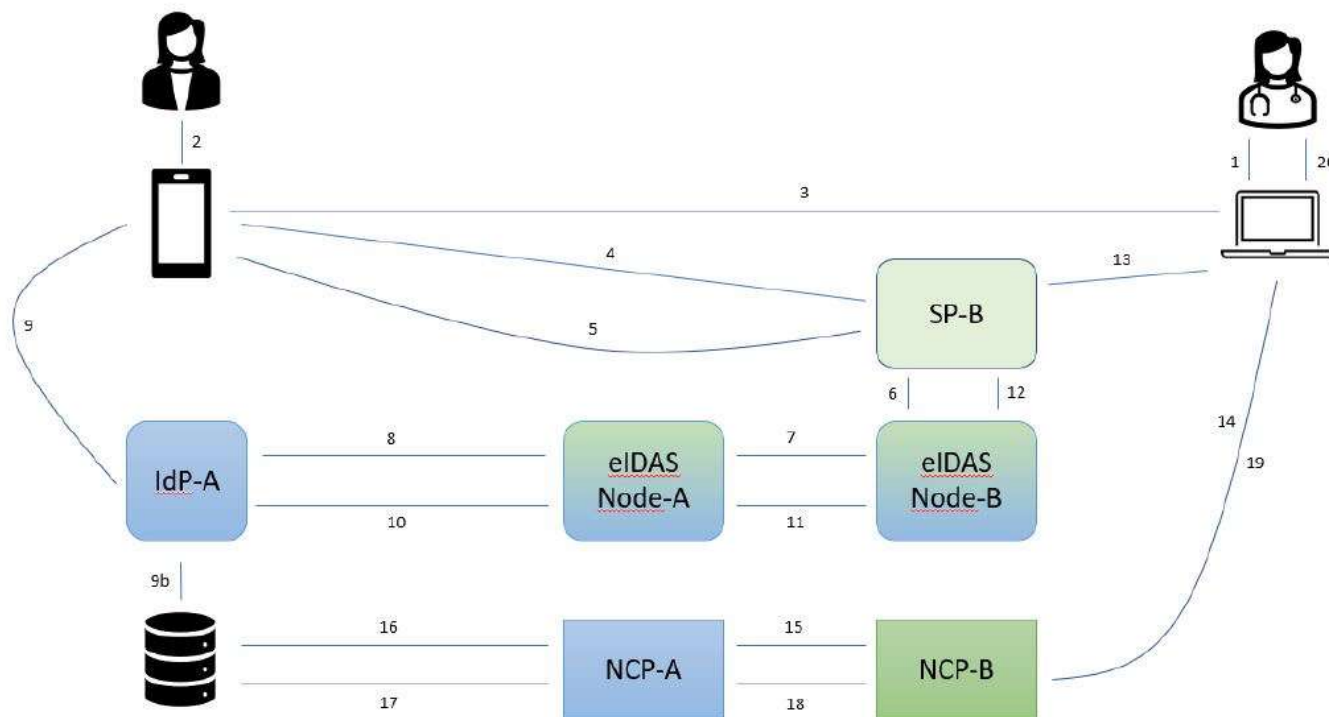


Identification via eID means released by the Country  
of Affiliation  
(improved security, enhanced data quality)

- “Patient empowerment”
  - ✓ share the right data... (selective disclosure)
  - ✓ ...with the right services (user awareness)
  - ✓ ...at the right moment (cross-border eIDAS online services)
- Leveraging existing standards and infrastructure (eIDAS cross-border auth to an online service)
- Aligned with the activities developed by the eHN Tech IOP Subgroup / eID task force



## A focus on - eID (2/2)



- QR code created by the HCP in Country B (Treatment), and scanned by the patient, to initiate the eIDAS login flow
- Patient could use her mobile device to authorize the healthcare professional to access her medical data in her Country A (Affiliation)
- Exploiting the functionalities of the EUDI Wallet (ARF) -> e.g. electronic signature of the patient information notice if requested by legal basis of the Country of Treatment





2nd X-eHealth

INNOVATION DAY

# Catherine Chronaki

Secretary General at HL7 Europe

# X-eHealth Scope



X-EHEALTH  
purpose is to develop the foundations for a common framework for:

- 01 Medical Imaging
- 02 Discharge Letters
- 03 Laboratory Results
- 04 Rare Diseases

www.x-ehealth.eu

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no 951938

X-eHealth  
Exchanging Electronic Health Records in a common framework

- **Groundwork for an interoperable, secure and cross-border EHRxF**
- Building upon the Patient Summary, X-eHealth's purpose is to develop the foundations for a uniform, interoperable data-sharing common **framework for medical imaging, discharge letters, laboratory results and rare diseases**, flowing both alongside care pathways of citizens and across health entities between the EU.



Medical Imaging



Discharge Letters



Laboratory Results

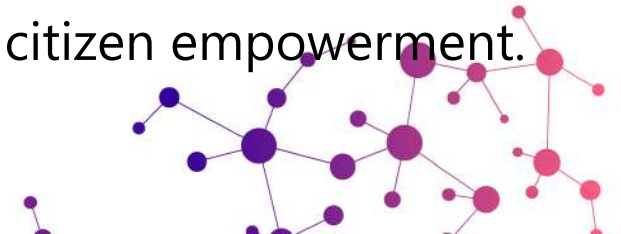


Rare Diseases

# X-eHealth Objectives



- Improve the **healthcare quality and safety** for citizens by allowing them to access and manage their electronic health record from any place in the EU;
- Contribute to **standardisation** and **harmonisation** of eHealth services in the EU by setting European agreements on diverse levels of interoperability;
- Contribute to **defragmentation** of European services;
- Facilitate **interaction** between patients and healthcare providers, to support prevention and citizen empowerment.



## X-eHealth Expected Results and Stakeholders

MS National eHealth Authorities, eHN

eHealth Digital Service Infrastructure

CBeHIS: Cross-Border eHealth Information  
Services

National Contact Points: NCPeH

Demonstrate the  
EEHRxF use cases,  
prepare roadmap for  
uptake, propose  
governance,  
influence & engage  
eHealth Stakeholders

### Target groups

Care Provision: Citizens, Health  
Professionals and Healthcare Providers

Infrastructure: Networks of hospitals

Innovators: Industries, Researchers and  
Developers

Member States: Decision makers and  
National Health Authorities



Care Provision  
Health Professionals and  
Citizens



Member States  
Decision-Makers and  
National Health  
Authorities



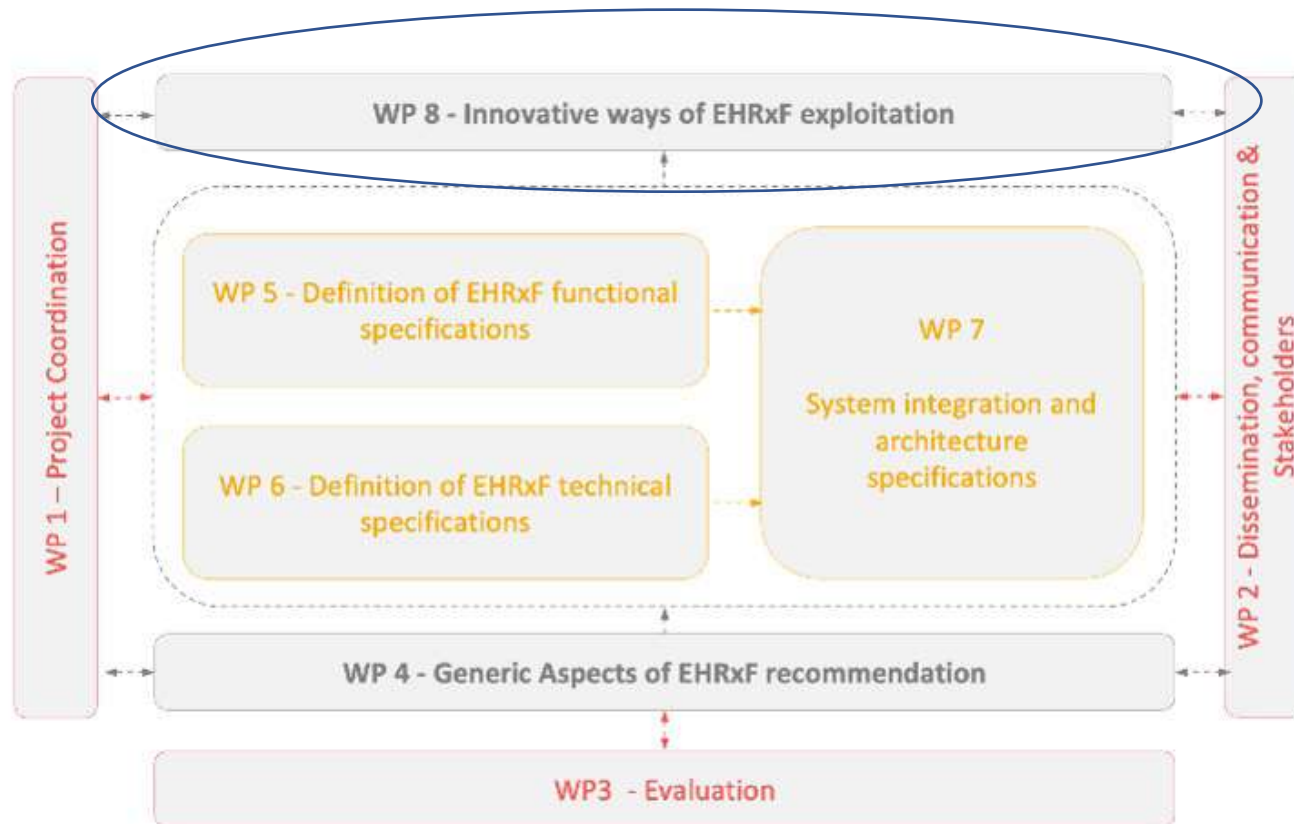
Innovators  
Health Industry and  
Scientific Community



Infrastructure  
Network of Hospitals



# X-eHealth Work Packages



**WP5:** Defines clinical and functional requirements for the selected domains and use cases.

**WP6:** Specifies how to technically implement the use cases selected by WP5 by using existing international standards and profiles.

**WP7:** Defines the X-eHealth architecture for the new domains and use cases and the changes needed in the current eHDSI architecture, creates guidelines on how to adopt the new domains and testing strategies.

**WP4:** Generic aspects such as eID, ethics, legal aspects of interoperability, cybersecurity, etc.

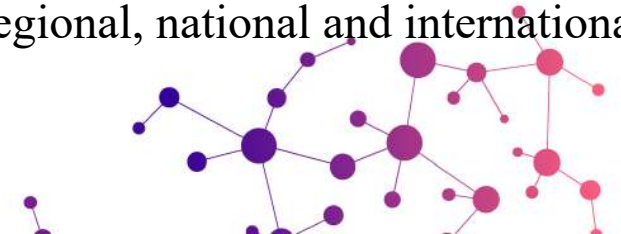
**WP8:** Delivers PoC demonstrators for selected use cases, focuses on building capacity through CoPs, prepares a priority list for future use cases and evaluates the PoC outcomes

**WP1:** Coordination, **WP2:** Dissemination and Communication, **WP3:** Evaluation



## WP8 EHRxF Communities of Practice: from Proof of Concept to large scale adoption and Infrastructure for Innovation: objectives

- Deliver, demonstrate, and evaluate proof-of-concept demonstrators for selected EEHRxF use cases for rare diseases patients and patients with chronic disease and comorbidities, and decision aids delivering value for citizens.
- Build capacity in an EEHRxF Community of Practice (CoP) engaging stakeholders including patients, implementers, developers, clinicians, researchers, business analysts, and policy makers.
- Support implementers and developers of EEHRxF in member states and across the world.
- Engage collaborative partners and other interested projects in implementing EEHRxF identifying a priority list of scenarios, tools and resources needed for future use cases in eHDSI bringing together government, healthcare organisations, industry and research in the transformation of health and care and enabling innovative paradigms that actively empower the patient.
- Collaborative partners such as Digital Europe, MedTech, EFMI, ECPC, COCIR, ECHALLIANCE, EHTEL: trade, patient advocacy, and professional associations will be engaged in the activities of this WP.
- in coordination with WP2 involve other sectors (e.g. transport), innovation hubs, large scale public private partnerships such as programs in life sciences e.g. ELIXIR, IMI and BDVA, EU projects, as well as regional, national and international interoperability initiatives.



## WP8 Deliverables

- D8.1 EEHRxF Community of Practice
- D8.2 Report on EEHRxF proof of concept demonstrators for-rare diseases
- D8.3 Report on EEHRxF proof of concept demonstrators for chronic disease management and prevention
- D8.4 :Exploratory study for decision aids and citizen driven health-science
- D8.5 : EEHRxF as infrastructure for innovation
- D8.6 Evaluation of EEHRxF proof of Concept



#chronicdiseasehackathon

X-EHEALTH

7 · 9 JUNE 2022 · ONLINE EVENT

# hackathon

FOR CHRONIC DISEASE MANAGEMENT



**SPMS**  
EPE  
Serviços Partilhados do  
Ministério da Saúde



This project has received funding  
from the European Union's Horizon 2020  
research and innovation programme  
under grant agreement no 951938



**X-eHealth**

Exchanging Electronic Health Records  
in a common framework



- Communities of Practice
- Products and Services
- Projects and Initiatives

2<sup>nd</sup> X-eHealth

# INNOVATION DAY

26<sup>TH</sup> OCTOBER 2022



Care Provision  
Health Professionals and



Member States  
Decision-Makers and



Innovators  
Health Industry and



Infrastructure  
Network of Hospitals.



# Key Performance Indicator #1: proof of concept demonstrators

8.1	Deliver, demonstrate, and evaluate proof-of-concept demonstrators for selected EEHRxF use cases	Number of proof of concepts: 3 demonstrators	How many PoC demonstrators constructed in the domains of rare diseases, chronic disease management and comorbidity	11 demonstrators: 7 indicators from Hackathon for chronic diseases - 4 indicators from Hackathon for rare diseases
-----	-------------------------------------------------------------------------------------------------	-------------------------------------------------	--------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------



# Key Performance Indicator #2: CoP promoting events

- 8.2 Build capacity in an EEHRxF Community of Practice (CoP)
- Number of EEHRxF hands-on events (Hackathons, Datathons, etc.)  
5 events
- Hackathons, Datathons, Connectathons and similar events on EEHRxF. Events on related subjects (e.g. FHIR) but involving EEHRxF should be taken into account.
- 8 events:
- Event 1: Greek National eHealth Interoperability Framework Projectathon (7-9 July 2021, several entities tested their systems against the first set of NeHIF specifications, in accordance with X-eHealth specifications).
  - Event 2: Panhellenic Congress on Economics and Health Policy (December 2021: online workshop/webinar on the domains of the X-eHealth project).
  - Event 3: HL7 FHIR Connectathon (May 7-May 8 2022),
  - Event 4: Medical Informatics Europe – MIE 2022 (May 27-May 30 2022).
  - Event 5: IHE Europe Connectathon (September 12-September 16 2022),
  - Event 6: Hackathon for Chronic Diseases Management (June 7-June 9 2022),
  - Event 7: Hackathon for rare diseases and cancers (3-4 October 2022).
  - Event 8: Innovation Day (October 26 2022).

## Key Performance Indicator #3: geography of CoP stakeholders

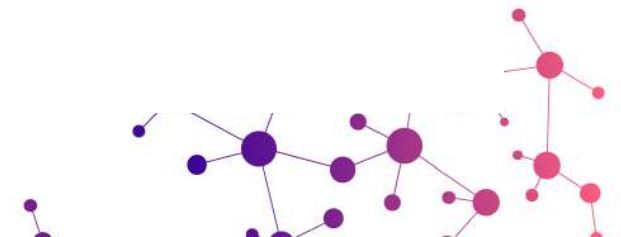
8.3 Build capacity in an EEHRxF Community of Practice (CoP)

Number of Stakeholders supported by EEHRxF Communities of practice

Categories of stakeholders engaged and supported by the CoP including patients, implementers, developers, clinicians, researchers, and policy makers. Measured by contacts and presentationsities of Practice

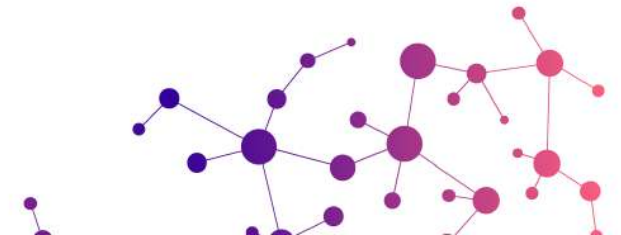
6 types involved, from at least 4 different countries representing South-EU, North-EU, Central EU and East-EU

all 6 types are involved from South, North, Central and East EU as they are participating in the organisations, infrastructures, networks and collaborative partners that use communities of practice to advance their strategic goals and are included in the Registry of Communities of Practice that WP8 has created.



# Key Performance Indicator #4: EHRxF implementers

8.4	Support implementers and developers of EEHRxF in member states and across the world	Number of implementers and developers of EEHRxF in member states and around the world that were supported by project activities	Those implementers/developers that are actively engaged by participating in the hands-on events, by being members of the CoP that are aware of the EEHRxF, etc.	30 implementers (of which 10 would be commercial/business developers/implementers). The number 30 includes developers associated with government, research, academic institutions.
-----	-------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------



# Key Performance Indicator #4: implementers

## 34 implementers

- 11 members of the CoP (RD-Code CoP, EJPRD Pillar 2-FAIR data stewardship programme CoP, IPS CoP under Trillium II, NABON, ELGA workshop, Coordination Center of Rare Diseases in Latvia, ECP in Netherlands, NEHIF CoP, Health Task Force on ICT technologies in Primary Care in Greece, Hellenic Digital Health Cluster, InteropEHRate),

## 10 implementing teams in the 2 Hackathon events:

1. DoctorNear - DoctorNearYou
2. GNOMON- eHealth Pass
3. HiSpin - CiviCARE
4. iMedPhys-AUTH - HosmartAI
5. Datamed SA - dm-RET
6. ICS CeHA – FORTH - Integrated Care Solutions
7. eHealth Lab UCY - eHealth4U
8. HL7 La Fe, Gaslini, Cineca – Survivorship Passport
9. Services for the MoH Austria – HIM-AT Prototype
10. Foundation Rare Care World - RareCareWorld

**13 projects/initiatives for the Interoperability Award 2022 that are positioned to be a beneficiary of X-eHealth's outputs or a contributor to the project's work.**

9 participants from these teams answered the questionnaire and, regarding the use of EEHRxF specifications in existing solutions, 5 participants mentioned that they indeed utilized EEHRxF specifications, while 4 mentioned that they plan to use them in the future.



## Key Performance Indicator #5: projects

- 8.5 Engage collaborative partners and other interested projects in implementing EEHRxF
- Number of projects that support the development or adoption of EEHRxF  
**5 projects**

5 Projects: Greek NeHIF -  
RD CODE - Gravitare  
Health - PanCareSurPass –  
Unicom

Interviews and questionnaires should be done addressing healthcare organisations and stakeholders in different member states asking them if supporting the development or adoption of EEHRxF is included in their standardisation strategies.



## Key Performance Indicator #6: supporting orgs and projects

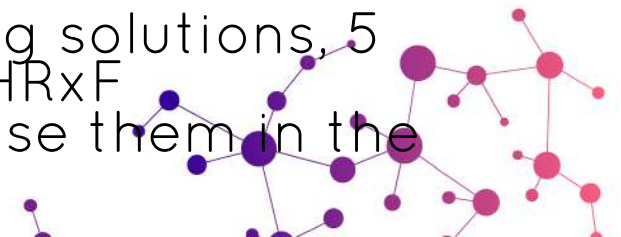
- 8.6 Engage collaborative partners and other interested projects in implementing EEHRxF
- Number of organisations that support the development or adoption of EEHRxF  
10 organisations:
- Interviews and questionnaires should be done addressing healthcare organisations and stakeholders in different member states asking them if supporting the development or adoption of EEHRxF is included in their standardisation strategies.





# Where does implementation of the EHRxF stand?

- Hackathon for chronic diseases (7 teams)
  - three projects are planning to use EEHRxF specifications, while for one project that manages patients with Chronic Diseases, there is compliance with IPS.
  - two other projects are already using EEHRxF Laboratory Profiles, with the one of them preserving also IPS conformance, while it can support Hospital Discharge Summary.
  - Most projects already use FHIR, HAPI FHIR, IHE XDS, while in two projects there are already AI solutions, for support in decision making, integrated.
- Hackathon for rare diseases (4 teams)
  - regarding the use of EEHRxF specifications in existing solutions, 5 participants mentioned that they indeed utilized EEHRxF specifications, while 4 mentioned that they plan to use them in the future.



**WE SUPPORT**

European Electronic Health  
Record Exchange Format

Medical Imaging

X-eHealth

**WE SUPPORT**

European Electronic Health  
Record Exchange Format

Hospital Discharge Letters

X-eHealth

**WE SUPPORT**

European Electronic Health  
Record Exchange Format

Laboratory Results

X-eHealth

**WE SUPPORT**

European Electronic Health  
Record Exchange Format

Rare Diseases

X-eHealth

2nd X-eHealth  
INNOVATION DAY



2nd X-eHealth

INNOVATION DAY

# Lunch Break

13h:00m - 14h30m WET

14h:00m - 15h:30m CET

# Common framework for a European EHR: Challenges and opportunities

To which extent can X-eHealth outputs improve eHealth interoperability in the EU? How to leverage results sustainability for the future of eHealth in Europe?

2nd X-eHealth

INNOVATION DAY

# Marcello Melgara

Programme Manager of eHealth Projects at ARIA SpA / Lombardy  
Region DG Welfare

2nd X-eHealth

INNOVATION DAY

# Klára Jiráková

Vysočina Region Regional Authority, eHMSEG Co-Chair, Czech Republic

2nd X-eHealth

INNOVATION DAY

# Konstantin Hypponen

Policy Officer (SNE) at DG Health and Food Safety (SANTE),  
European Commission



2nd X-eHealth

INNOVATION DAY

# Giorgio Cangioli

Technical Lead at HL7 Europe

2nd X-eHealth

INNOVATION DAY

# Vincent van Pelt

International Senior Advisor at NICTIZ, eHealth Network subgroup  
Chair, Netherlands

2nd X-eHealth  
INNOVATION DAY



2nd X-eHealth

INNOVATION DAY

# Coffee Break

15h:20m – 15h40m WET

16H:20m – 16H:40m CET

2nd X-eHealth

INNOVATION DAY

# X-eHealth Interoperability Award

Awards Ceremony

2nd X-eHealth

INNOVATION DAY

Cátia Sousa Pinto

Coordinator of International Projects and Affairs Unit at SPMS

2nd X-eHealth

INNOVATION DAY

# Brief Award Overview

# Brief Award



- The X-eHealth Interoperability Award aims to recognize excellence and innovative endeavor in other initiatives or projects in the field of health data interoperability.
- By placing a spotlight on outstanding work and celebrating innovative solutions, we hope to further extend existing partnerships, generate new synergies, opportunities, and recognition - thus leading to stronger networks and increasingly collaborative ties in the future of eHealth.





## The X-eHealth project will reward:

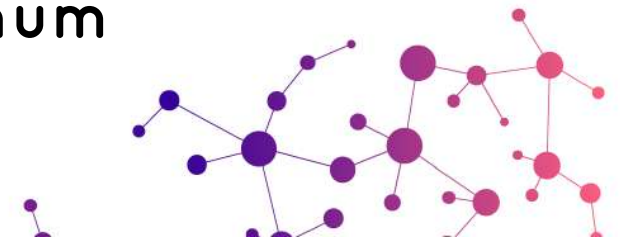


1 Award  
Winner

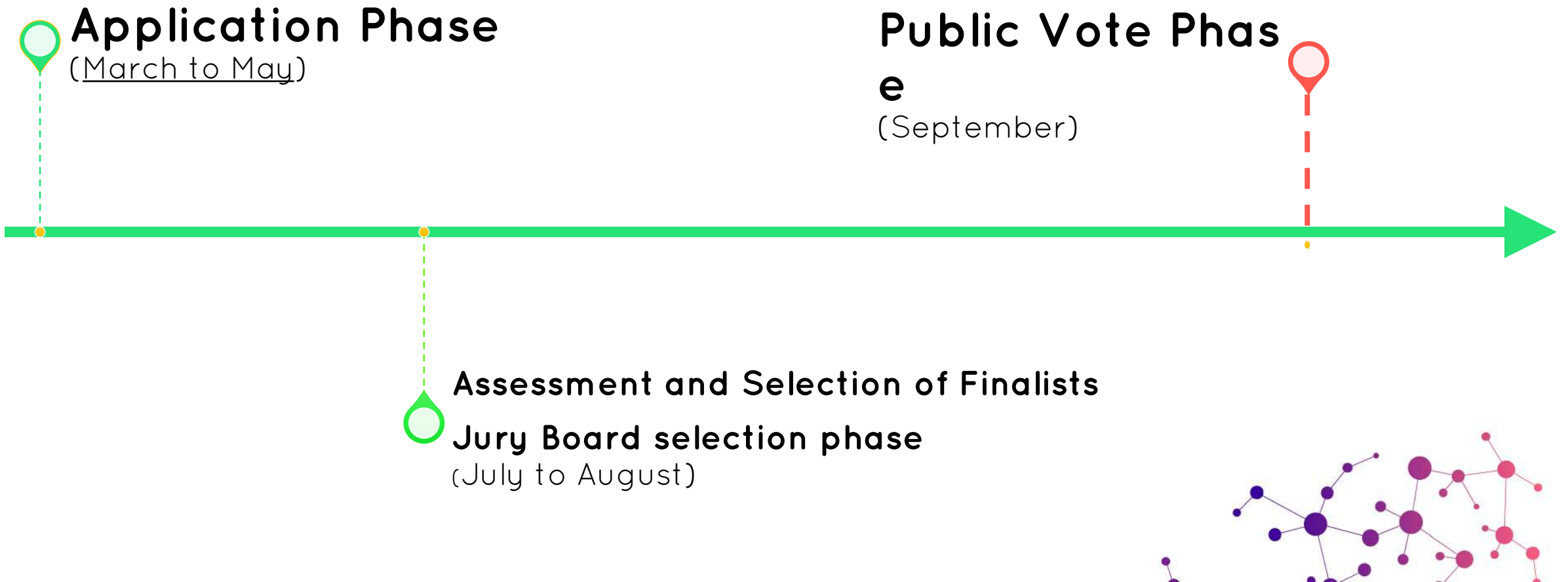


4 Honorable  
Mentions

- In the interest of promoting diversity, **only a maximum of 2 applications were accepted from the same country of origin.**

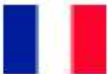











# Interoperability Award Timeline

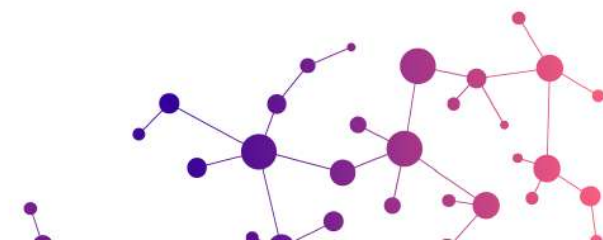


# Application Phase

Relevant projects/workgroups/initiatives were invited to apply via our online form from March 1<sup>st</sup> until May 31<sup>st</sup> 2022

 France · 7;	 Denmark · 1;
 Portugal · 2;	 Slovenia · 1;
 Belgium · 2;	 Cyprus · 1;
 Germany · 2;	 Netherlands · 1;
 Austria · 1;	 Switzerland/Austria · 1

19  
Applications



2nd X-eHealth

INNOVATION DAY

# Jury Board Selection Phase

2<sup>nd</sup> X-eHealth  
INNOVATION DAY



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no 951938



**Steven Posnack**

**Deputy National Coordinator for Health Information Technology, USA**  
**Global Digital Health Partnership**



**David Novillo Ortiz**

**Unit Head/ Regional Adviser, Data and Digital Health**  
**Division of Country Health Policies and Systems, Denmark**  
**World Health Organization**



**Luis Marti-Bonmati**

**Coordinador PRIMAGE-CHAIMELEON**  
**Grupo de Investigación GIBI230-IIS La Fe**  
**Spain**



**Nickolas Papanikolaou**

**Principal Investigator in Oncologic Imaging, Head of Computational Clinical Imaging Group**  
**Champalimaud Foundation**



**Kathrin Trunner**

**Project Manager**  
**Public Health Institute Gesundheit Österreich GmbH**  
**Austria**



**Juan González - García**

**Biocomputing Unit Manager**  
**Instituto Aragonés de Ciencias de la Salud (IACS)**  
**Spain**



# The selected Jury Board Members evaluated the applications based on 4 selection criteria



## Criterion 1: Trust-inspiring

The initiative shows transparency, security and ethical responsibility in handling data, and/or the focus of it is to provide solutions to improve the transparency, security and ethical responsibility of others handling health data.



## Criterion 2: Innovative excellence

The initiative is committed to advancing potentially paradigm-shifting innovation in the field of health data interoperability



## Criterion 3: Technical excellence.

The initiative demonstrates great attention to data quality, employing (or creating) methodologies and tools to ensure that users and stakeholders can have consistently high-quality data.



## Criterion 4: Following X-eHealth

The initiative is positioned to be a beneficiary of X-eHealth's outputs or has been a contributor to the project's work.



2nd X-eHealth

INNOVATION DAY

# Public Vote Phase



## The Finalists



**Medcom**



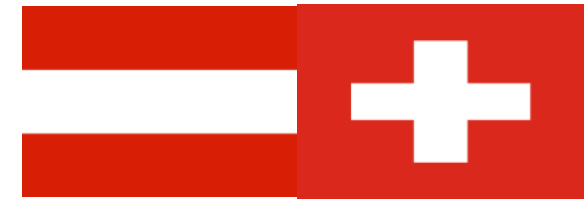
**Smart4Health  
ORCHESTRA**



**Andaman7**



**DDMN**



**DH-Convener  
Initiative HUSKY**



**UNICOM**



**Portuguese Health  
Certificates' Solution  
SESARAM**



**OTENTIK  
SMT**



**Border Regions  
Project**





VOTING IS OPEN  
INTEROPERABILITY  
AWARD  
2022

SPMS  
Serviços Partilhados do  
Ministério da Saúde

This project has received funding  
from the European Union's Horizon 2020  
research and innovation programme  
under grant agreement no 951938

X-eHealth  
Exchanging Electronic Health Records  
in a common framework



HOW TO VOTE

- 1 GO TO THE X-EHEALTH WEBSITE
- 2 EVALUATE THE CANDIDATES
- 3 VOTE FOR YOUR FAVOURITE!

INTEROPERABILITY  
AWARD  
2022

SPMS  
Serviços Partilhados do  
Ministério da Saúde

This project has received funding  
from the European Union's Horizon 2020  
research and innovation programme  
under grant agreement no 951938

X-eHealth  
Exchanging Electronic Health Records  
in a common framework



2nd X-eHealth

INNOVATION DAY

# Honourable Mentions

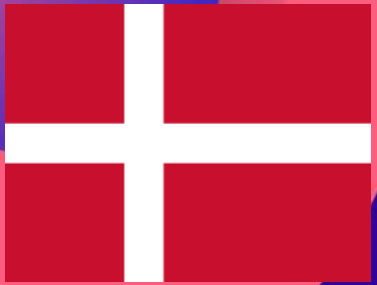
2nd X-eHealth

INNOVATION DAY

# Kathrin Trunner

Project Manager at Public Health Institute Gesundheit Österreich  
GmbH, Austria | WP3 Leader

# A National combined Messaging & Data Sharing Infrastructure Framework in Denmark (MedCom)



Winner of the following Honourable  
Mentions

- 1.Trust Inspiring;**
- 2.Innovative excellence;**
- 3.Technical excellence;**

# The Portuguese EU COVID Digital Certificates Solution



Winner of the following Honourable  
Mention:

**4. Following X-eHealth**

2nd X-eHealth

INNOVATION DAY

# Announcement of the winning project

Chair of the Board of Directors of SPMS  
Luís Goes Pinheiro

2nd X-eHealth

INNOVATION DAY



# Unveiling 'ONE HEALTH' at Autonomous Region of Madeira



Winner of  
X-eHealth Interoperability  
Award 2022



2nd X-eHealth  
INNOVATION DAY

Thank You

# Paving the way for the digital decade

How do you see the roadmap for exchanging Health Data at the EU level? How can the European Health Data Space regulation address health societal challenges?

EHR and eID

2nd X-eHealth

INNOVATION DAY

# Gaby Wildenbos

Senior Advisor at Nictiz, Netherlands

2nd X-eHealth

INNOVATION DAY

# Dmitry Etin

Digital Health Architect at Oracle Health, Austria

2nd X-eHealth

INNOVATION DAY

# Antoine de Marasse-Enouf

Projects Responsible at Agence Du Numérique En Sante, France

2nd X-eHealth

INNOVATION DAY

# Robert Stegwee

Chair at CEN/TC 251 Health Informatics, Netherlands

2nd X-eHealth

INNOVATION DAY

# Kyriacos Hatzaras

Programme Officer – EU Policies at European Commission,  
Directorate-General CNECT (CONNECT), Unit H3

2nd X-eHealth

INNOVATION DAY

# Tapani Piha

Senior Advisor, Health Data 2030 at Sitra, Finland



# Paving the way for the digital decade

How do you see the roadmap for exchanging Health Data at the EU level? How can the European Health Data Space regulation address health societal challenges?

EHR and eID

2nd X-eHealth

INNOVATION DAY

# Closing Ceremony

Cátia Sousa Pinto

International Projects and Affairs Unit Coordinator at Shared Services of Ministry of Health, Portugal

# THANK YOU

2nd X-eHealth  
INNOVATION DAY

