# EEHRxF: HL7 FHIR profiling in the EU

Giorgio Cangioli Technical Lead - HL7 Europe

FHIR Fagforum Virtual, 22 October 2025





### Who am I

### Giorgio Cangioli, PhD FHL7

- Senior Consultant
- Technical Lead and Board member, HL7 Europe
- TSC and Board member, HL7 International
- Chair of the eHMSEG STF Architecture WG
- Author of several UV and EU HL7 CDA and FHIR IGs

## Disclaimer



Any views or opinions expressed in this presentation are those of the author and do not necessarily represent official policy or position of the organizations mentioned.



## One and half year ago ..

The HL7 Europe Laboratory Report FHIR IG

Giorgio Cangioli Technical Lead HL7 Europe

fagforum, April 17th 2024

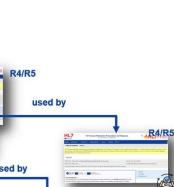




## What's up since then?







HL7

Europe







### SETTING THE SCENES





## The European "Format"



#### **EHDS: Primary use**





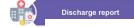


Member States may provide by virtue of national law that additional categories of personal health data are to be accessed and exchanged for primary use

The Commission is empowered to adopt delegated acts [...] by adding, modifying or removing the main characteristics of the priority categories









The European EHR eXchange Format





"Such format shall be **commonly used**, **machine-readable** and allow **transmission** of personal electronic **health data** between different software applications, devices and healthcare providers.

Such format shall support transmission of **structured** and **unstructured** health data..." (EHDS art. 15)











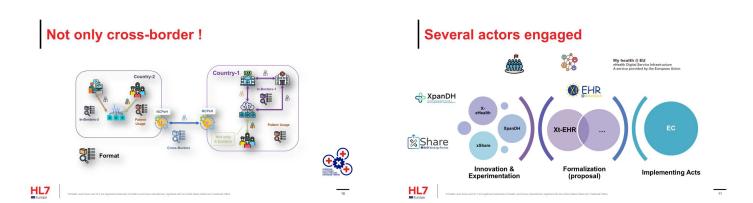






## **Key elements**



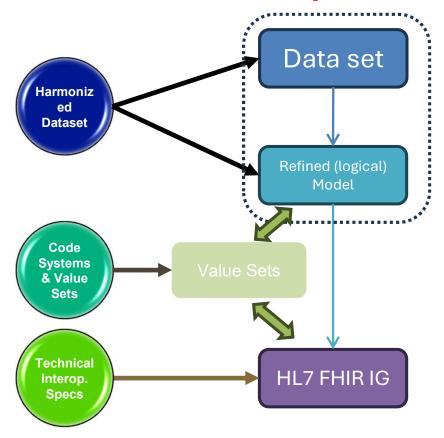




The "format" will be formally defined by European Commission in the Implementing Act!



## The EEHRxF (as of today)



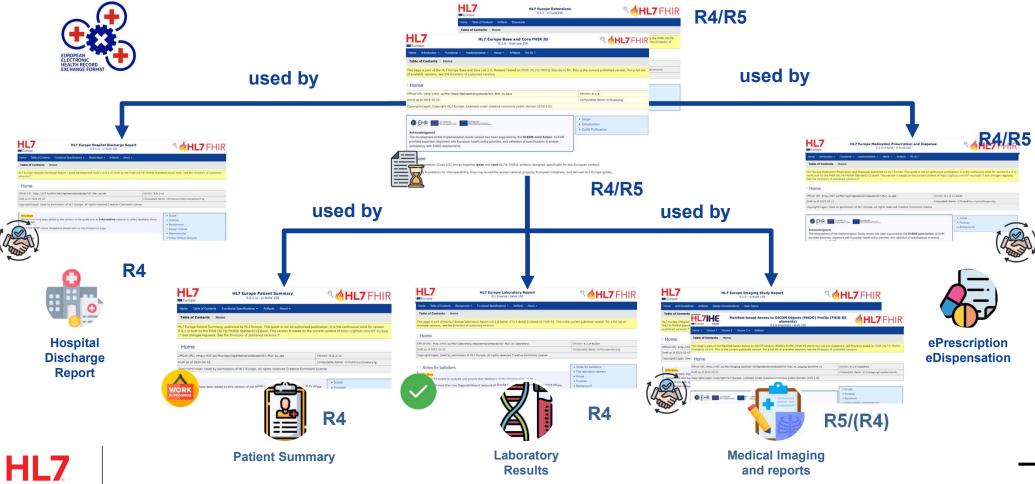
#### eHN Guidelines - data sets

#### https://health.ec.europa.eu/publications\_en





## The HL7 FHIR IG ecosystem for EHDS



### Latest releases



**Laboratory Report:** https://hl7.eu/fhir/laboratory



Hospital Discharge Report: https://hl7.eu/fhir/hdr



**European Patient Summary: no publications** 



Medical imaging Report: https://hl7.eu/fhir/imaging/snapshot1



Medication Prescription & Dispense: https://hl7.eu/fhir/mpd; https://hl7.eu/fhir/mpd-r5

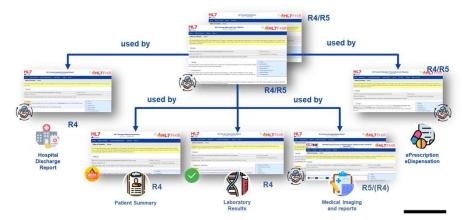


All CI-build: https://build.fhir.org/hl7-eu



### **DIVING-IN**







### **EU Extensions**





### https://hl7.eu/fhir/extensions

5.2.1 Release-specific NPM Package and Definitions

- R4 NPM Package 🕹
- R5 NPM Package 🕹

5.3 Examples









HL7 Europe European Patient Summary
 HL7 Europe Base

HL7 Europe Medication Prescription and Dispense
 HL7 Europe Hospital Discharge Report

#### Publication (Version) History

This guide lists the extensions specified for the European REALM.

The following versions have been published:

Date	IG Version	<b>FHIR Version</b>	Description	Links		
Current Vers	ions					
2025-04-30	B 0.1.1- ballot	5.0.0	Version used for the HL7 EU MPD ballot. First version covering both HL7 FHIR R4 and R5.			
(current)	(last commit - if in the last 3 months)	n/a	undefined			
Release Seq	uence					
2025-09-21	P 0.1.1- snapshot	5.0.0	This is a snapshot of the STU 1 version created for supporting the Xt-EHR stakeholder consultation. It is provided for review use only, and is not intended for production use. The official version will be published as part of the STU release.			
2025-04-30	B 0.1.1- ballot	5.0.0	Version used for the HL7 EU MPD ballot. First version covering both HL7 FHIR R4 and R5. (Permanent Home)			
2024-02-20	T 0.1.0	4.0.1	This is the first STU version released			



### **EU Base and Core**







MHL7 FHIR R4 https://hl7.eu/fhir/base



https://hl7.eu/fhir/base-r5

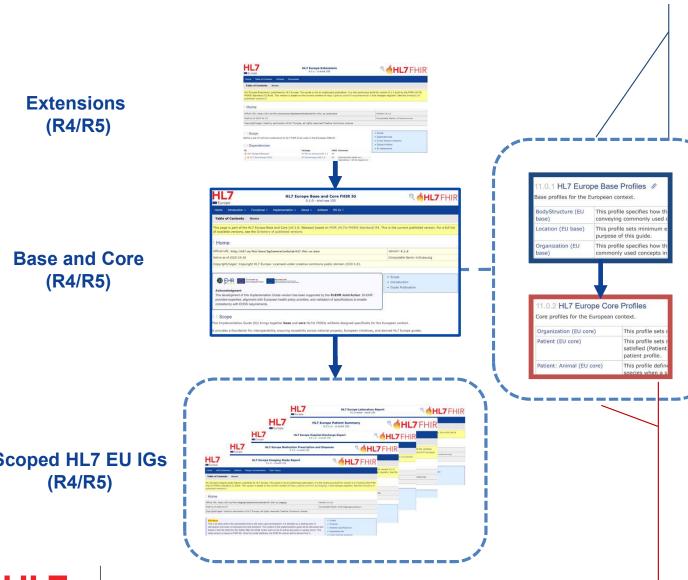


This Implementation Guide (IG) brings together base and core HL7® FHIR® artifacts designed specifically for the European context.

It provides a foundation for interoperability, ensuring reusability across national projects, European initiatives, and derived HL7 Europe guides.







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Base

- **Baseline** for all HL7 Europe profiles.
- Loosely constrained, providing a flexible foundation.
- Rarely used "as is", but always extended or specialized.

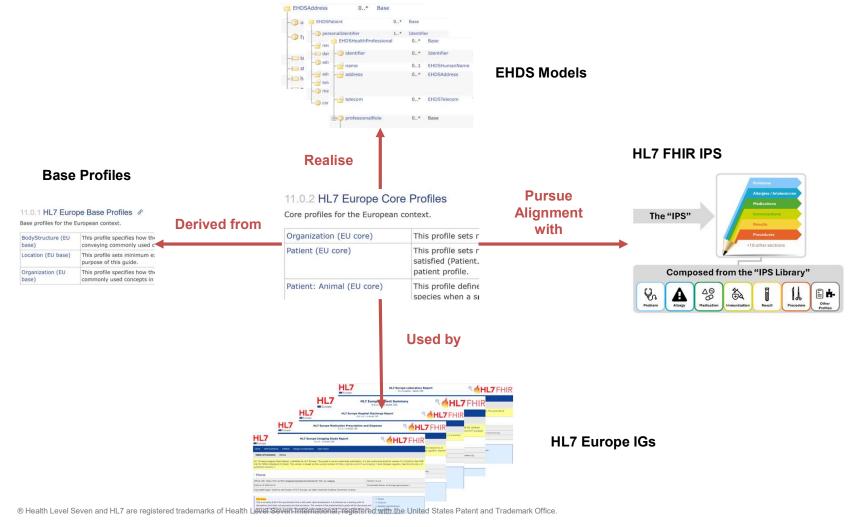
Core

- Defines essential constraints that cut across many use cases.
- Serves as the first reference point for the large majority of HL7 Europe FHIR IGs.
- Can often be used "as is", without further refinement.
- Realizes the common EHDS logical models in practice.

**Scoped HL7 EU IGs** 



## **Core Profiles**





# **EU Base and Core**

### • Patient, Practitioner, Organization, Location Resources

Body structure (EU base)	This profile specifies how the HL7 FHIR BodyStructure resource should be used for conveying commonly used concepts in the European context.			
Coverage: EHIC	Coverage profile for the European Health Insurance Card			
Location (EU base)	This profile sets minimum expectations for the Location resource to be used for the purpose of this guide.			
Organization (EU base)	This profile specifies how the HL7 FHIR Organization resource should be used for conveying commonly used concepts in the European context.			
Organization (EU core)	This profile sets minimum expectations for the Organization resource common to most of the use cases.			
Patient (EHIC)	This profile represents the constraints applied to the Patient resource when sed with the EHIC coverage profile.			
Patient (EU base)	This profile specifies how the HL7 FHIR Patient resource should be used for conveying commonly used concepts in the European context.			
Patient (EU core)	This profile sets minimum expectations for the Patient resource common to most of the use cases. When the ips-pat-1 invariant satisfied (Patient.name.given, Patient.name.family or Patient.name.text SHALL be present) then this profile complies with the IP patient profile.			
Patient: Animal	This profile defines how to represent an Animal as subject of care in FHIR for the purpose of this guide. This is used to identify the species when a specimen is collected from an animal			
Practitioner (EU base)	This profile specifies how the HL7 FHIR Practitioner resource should be used for conveying commonly used concepts in the European context.			
Practitioner (EU core)	This profile sets minimum expectations for the Practitioner resource common to most of the use cases.			
PractitionerRole (EU base)	Role (EU base) This profile specifies how the HL7 FHIR PractitionerRole resource should be used for conveying commonly used concepts in the European context.			
PractitionerRole (EU core)	(EU core) This profile sets minimum expectations for the PractitionerRole resource common to most of the use cases.			



## **Laboratory Report**









## **Laboratory Report**



https://build.fhir.org/ig/HL7/uv-lab-rep-ig/

https://hl7.eu/fhir/laboratory/

https://build.fhir.org/ig/hl7-eu/laboratory/

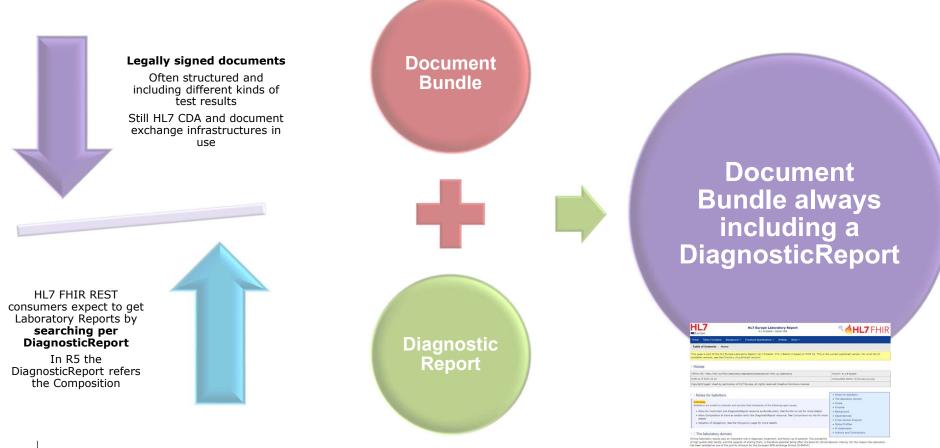






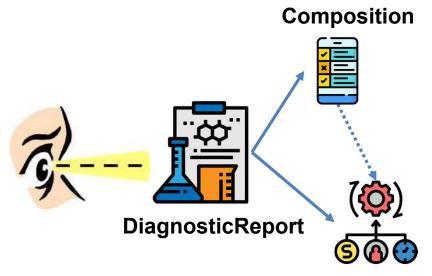


#### **Balancing different requirements**





## **The Laboratory Report**



A Lab **report** is always **represented by** a **DiagnosticReport.** This resource always refers a Composition

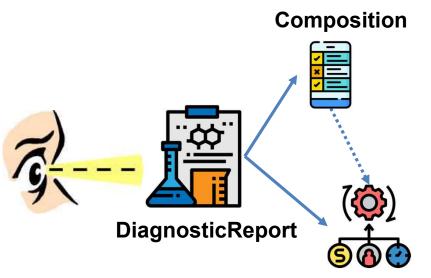
The **Composition defines** the report **structure** (it might be just a single section) and it acts as an "index" for all the used resources



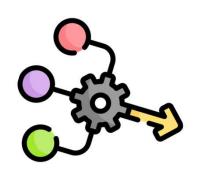


Other Resources

## **The Laboratory Report**



The **Composition defines** the report **structure** (it might be just a single section) and it acts as an "index" for all the used resources



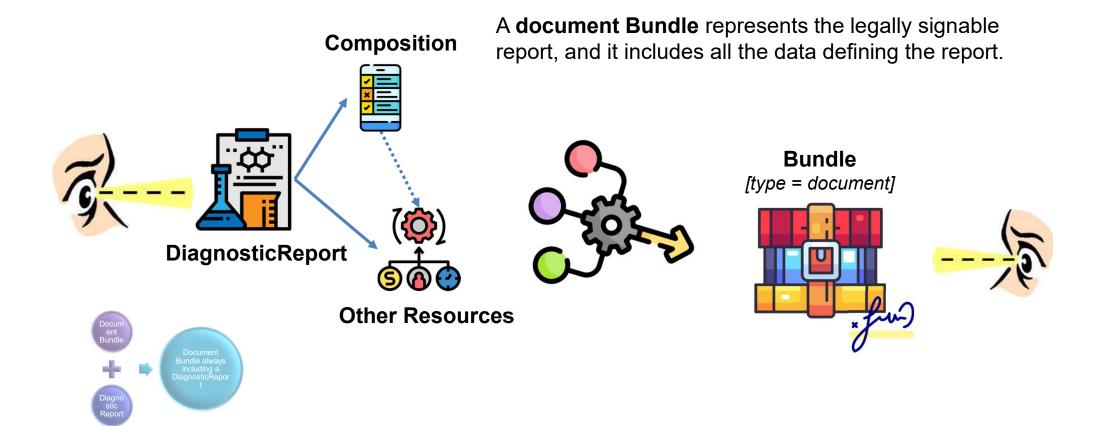




It is the mean for assembling the report as a document (document Bundle)



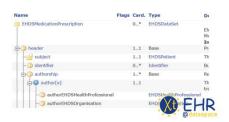
## **The Laboratory Report**

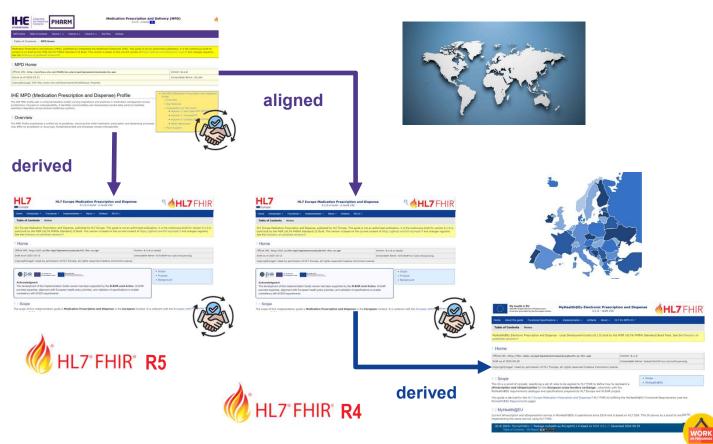




















HL7°FHIR° R5 https://profiles.ihe.net/PHARM/MPD/







HL7°FHIR° R5 https://hl7.eu/fhir/mpd









HL7°FHIR° R4 https://hl7.eu/fhir/mpd-r5



#### In Scope

#### **Prescription** for

- a medicinal product
- issued by a health professional
- for a patient
- to be dispensed by a pharmacy.

#### **Dispense** of

- a medicinal product
- by a pharmacy,
- including online pharmacy,
- o to a natural person
- based on a prescription.

#### **Declining a dispense**

#### **Out of Scope**

- Hospital use (in scope for IHE MPD)
- Workflow (in scope for IHE MPD)
- Reimbursement
- Prescription list
- Non-medication
- Requests to administrating devices



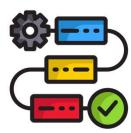
#### Situations addressed

- Multi-item prescriptions, single-item dispenses
- Indication (Optional)
- Additional health information not on prescription
- Extensions on Medication to allow detailed description of the product
- Flirting with ISO IDMP to facilitate data flow from medicines agencies
- Flexible dosing information
- Flexible use of code systems

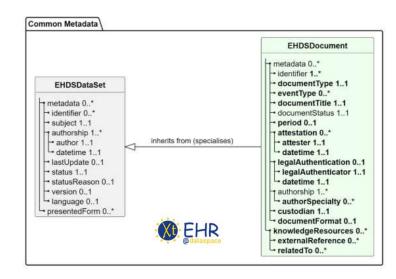


## Not documents, but always structured



















Hospital Discharge Report



















This guide is derived for the HL7 FHIR IG fulfilling the MyHealth@EU Functional Requirements (see the MyHealth@EU Requirements page)





On Going



https://hl7.eu/fhir/hdr



My health @ EU effeatin Digital Service Infrastructure A service provided by the European Union	MyHealth@Eu Hospital D 0.0.1 - qa-previer	<b>HL7</b> FHIR		
Home Table of Contents About this guide HL	7 EU HDR IG ⊞ Functional Specifications ▼	Concept Maps - Arti	facts Downloads	
Table of Contents Home				
MyHealth@Eu Hospital Discharge Report - Local	evelopment build (v0.0.1) built by the FHIF	t (HL7® FHIR® Standa	rd) Build Tools. See the Directory of published	
1 Home				
Official URL: http://fhir.ehdsi.eu/hdr/Implementatio	Version: e.e.1			
Draft as of 2024-10-14		Computable Name: MyHealthEuHospitalDischargeReportig		
Note Obligations have been added to this version of the their usage. For more details about obligations please refer to	Scope     MyHealth@EU     Design choices     Navigating the profiles     Dependencies			
1.1 Scope  Specify a set of rules to be applied to HL7 FHIR to European cross-borders exchange, coherently	Cross Version Analysis     Global Profiles     IP statements			

https://fhir.ehdsi.eu/hdr/ https://build-fhir.ehdsi.eu/hdr/



#### Flexible Section Structure

- "Flat structure" as a reusable section library.
- Sections can be organized flat or nested, based on institutional requirements.
- Key principles:
  - A few required sections.
  - Open slicing: implementers can add more top-level sections.
  - Sub-sections allowed, with few exceptions.
- This flexibility ensures:
  - Local adaptability
  - Standardized content model
  - Consistency across implementations



#### **Section Entry Optionality**

- Supports varied document maturity levels:
  - Structured
  - Text-only
  - Unstructured
- Intries in sections *are not mandatory*, but strongly recommended to promote:
  - Structured data
  - Better interoperability
  - Higher data quality
- Obligations in the guide help implementers align with interoperability goals



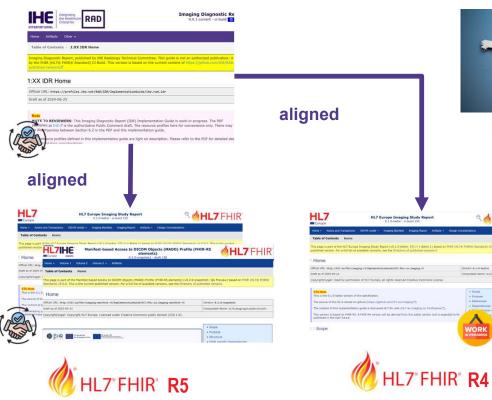
## **Imaging Study Report**















4 ML7 FHIR



36



## **Imaging Study Report**







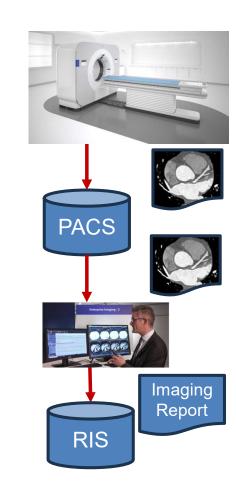
- https://hl7.eu/fhir/imaging-r5 (ballot)
- https://hl7.eu/fhir/imaging-r5/0.1.0-snapshot1 (post-ballot snapshot)





## **Imaging workflow**

- Imaging is generated by imaging modalities
- The result is a DICOM Imaging Study
- The Imaging Study is stored in a PACS
- The Radiologist reads the Imaging Study from the PACS and writes an **Imaging Report**.
- This is typically stored in the RIS/EHR.



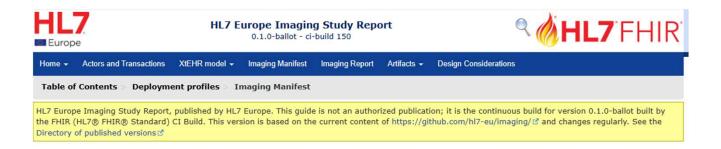


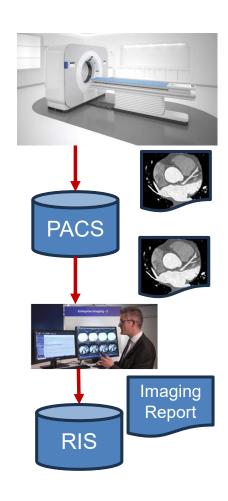
**Courtesy of Bas van den Heuvel** 

### **EHDS and Imaging Documents**

- HL7 FHIR Imaging Manifest that holds the information required to access the imaging data (data from the PACS).
  - → Moved to the new on-develop IHE MADO profile
- HL7 FHIR Imaging Report that holds the Imaging Report (data from RIS).

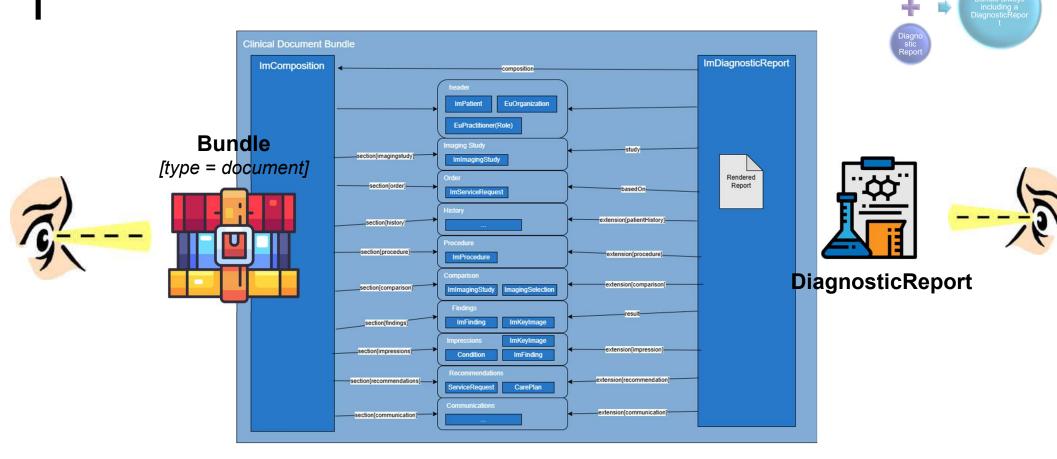
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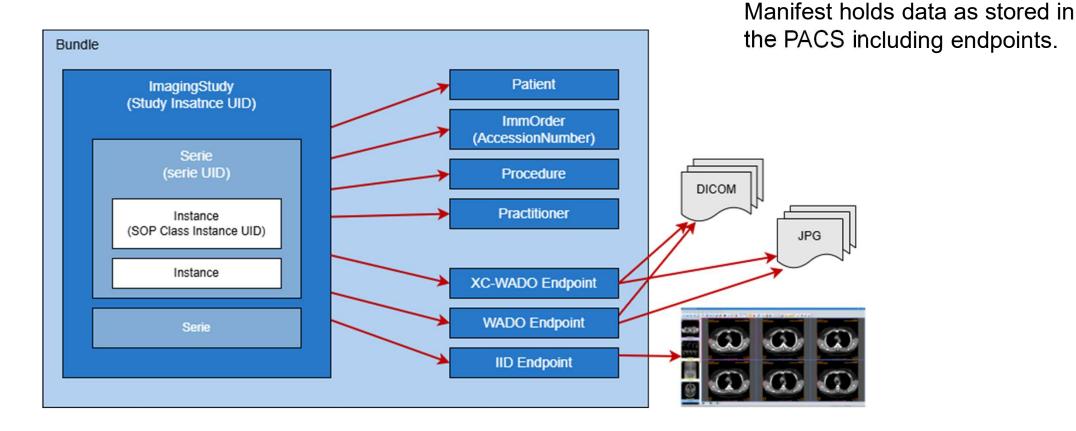


# **Imaging Report**



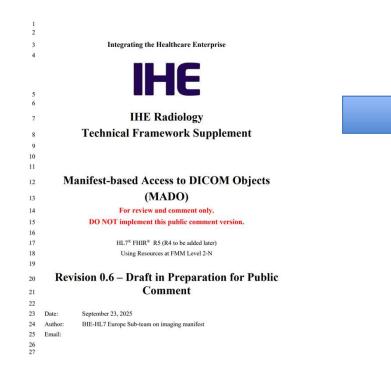


# **Imaging Manifest**





# **Imaging Manifest**





https://hl7.eu/fhir/imaging-manifest-r5

#### https://euridice.org/index.php/mado/



# **Euridice = HL7 Europe + IHE Europe**

- EURIDICE stands for **Eu**ropean **I**nteroperability Specifications for **Di**gital Solutions in Health**care**.
- EURIDICE is a joint HL7 Europe and IHE-Europe initiative, focused on creating well-architected and implementable specifications for EHDS.





### **Patient Summary**



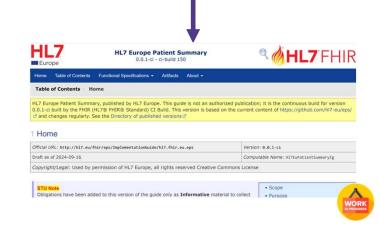


















### **Patient Summary**



https://hl7.org/fhir/uv/ips/ https://build.fhir.org/ig/HL7/fhir-ips



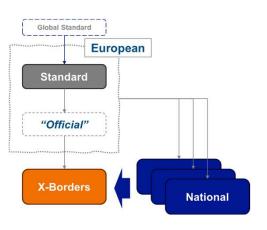
https://build.fhir.org/ig/hl7-eu/eps





### **HL7 FHIR IGs overview**





	Patient Summary	Laboratory Results	Hospital Discharge Report	ePrescription eDispensation	Medical Imaging and reports	BASE
Global Standard				( <b>E</b> )	(42)	
European Standard	WORK					
European "Official"	IF	IF	IF	IF	IF	IF
European X-border			×	WORK WPROJESS	×	



# Legenda - HL7 FHIR IGs overview

	For future consideration		Ballot
	Starting		Ballot Reconciliation
WORK W Proposass	Work In Progress		Publication Pending
×	QA Preview		Published
		IF	If needed





#### Join us



Periodic Virtual Meetings



- F2F meeting @ HL7 Europe WGM
  - 1-5 December 2025. Cologne





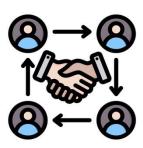
# Join us: virtual meetings



Base and Core				
EPS	Friday 10-11 CE(S)T - Weekly			
HDR				
Laboratory	Monday 18-19 CE(S)T - Weekly (FHIR)	Friday 13-14.30 CE(S)T – Bi-Weekly (Semantic)		
MPD	Thursday 16-17 CE(S)T – Bi-Weekly			
Imaging	Tuesday 11-12 CE(S)T – Weekly (Main)	Thursday 13-15 CE(S)T Weekly (Manifest subgroup)		



#### Join us



- Periodic Virtual Meetings
  - Send an email to <u>info@hl7europe.org</u>
  - europe channel chat.fhir.org
  - HL7 Calendar (https://www.hl7.org/concalls/)





HL7 Europe Working Group Meeting Cologne, Germany 1-5 December 2025



hl7europe.org

for more information

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### Highlights



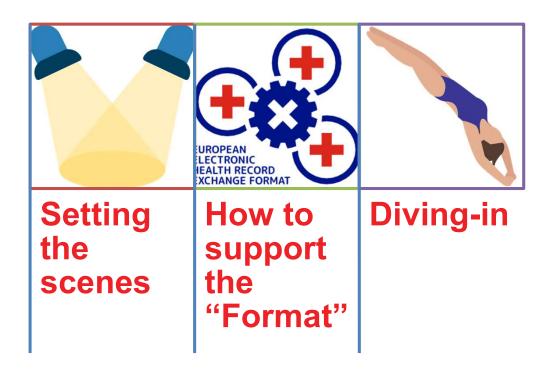
HL7<sup>®</sup> FHIR<sup>®</sup> Specifications for the EHDS

Hands-on and Tutorials
Testing and Refinement
Networking with Experts
HL7 Europe Initiatives and
Projects

# HL7 Europe



# Agenda

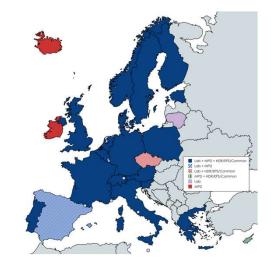




#### **Collaborative Development in Motion**



- The result of a highly participatory, multistakeholder process spanning the European health ecosystem.
- Laboratory Report: 113 distinct participants
  from 22 countries (including USA) and EC
  Solution Providers [average ~30 attendees]
- MPD: 114 distinct participants from 26 countries (including USA) and EC Solution Providers [average ~30 attendees]
- HDR/EPS/Core: 180 distinct participants from 24 countries (including Sri Lanka, United Arab Emirates, Saudi Arabia and USA) and EC Solution Providers [average ~35 attendees]









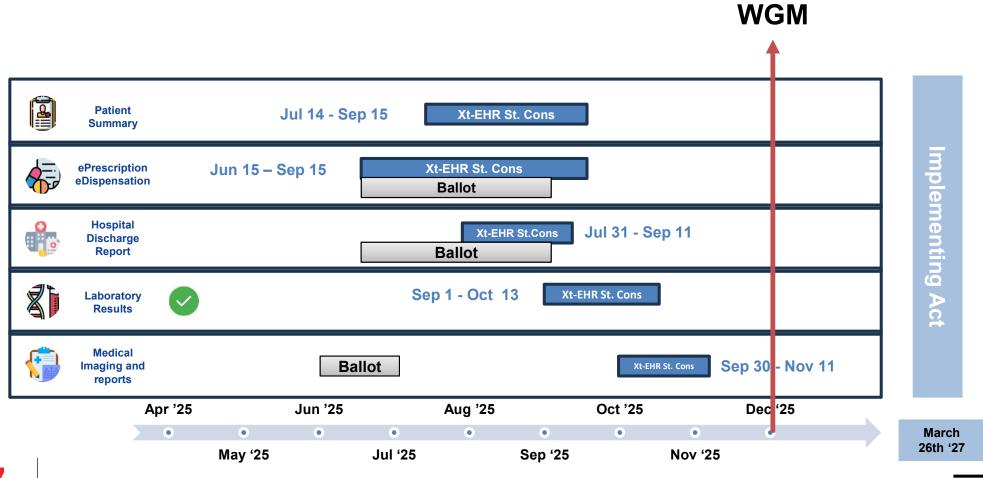


# HOW TO SUPPORT THE "FORMAT"





#### **Timeline**





**HL7 EU**