Render or Surrender – how to deal with human text in FHIR

Kai Heitmann, Hynek Kružík

HL7® Europe

Working Group Meeting
1-5 December 2025
Cologne, Germany

Shaping the Future of FHIR® in Europe

Challenges and Achievements

- We had already some sessions on this topic
- Thread introductory presentation in Madrid: FHIR and human text by René Spronk
- Visualization with vi7eti https://vi7eti.net, CDA and FHIR "text"
- Requirement to regulate “human text” on national level
- **This time objective: a white-paper recommendation that finally makes it way into the EU CORE specification!**

How to visualize Example Instances

- **Visualize HL7 Example and Test Instances (vi7eti)**
- pronounced /viːˈsɛtiː/

- A joint activity coming
  - from the Gravitate Health Project (electronic medicine product information ePI)
  - from xSHARE toolbox (D3.3)

How to visualize Example Instances

- Electronic Medicinal Product Information (ePI)
- HL7 Europe Laboratory Report (EU-Lab)
- International Patient Summary (IPS)
- HL7 Europe Hospital Discharge Letter (HDR)
- ...

Thessaloniki xShare Project meeting

- Demonstrator for the xShare Yellow Button
- Synthetic IPS
- Used by Patient
- Visualized
- Shared

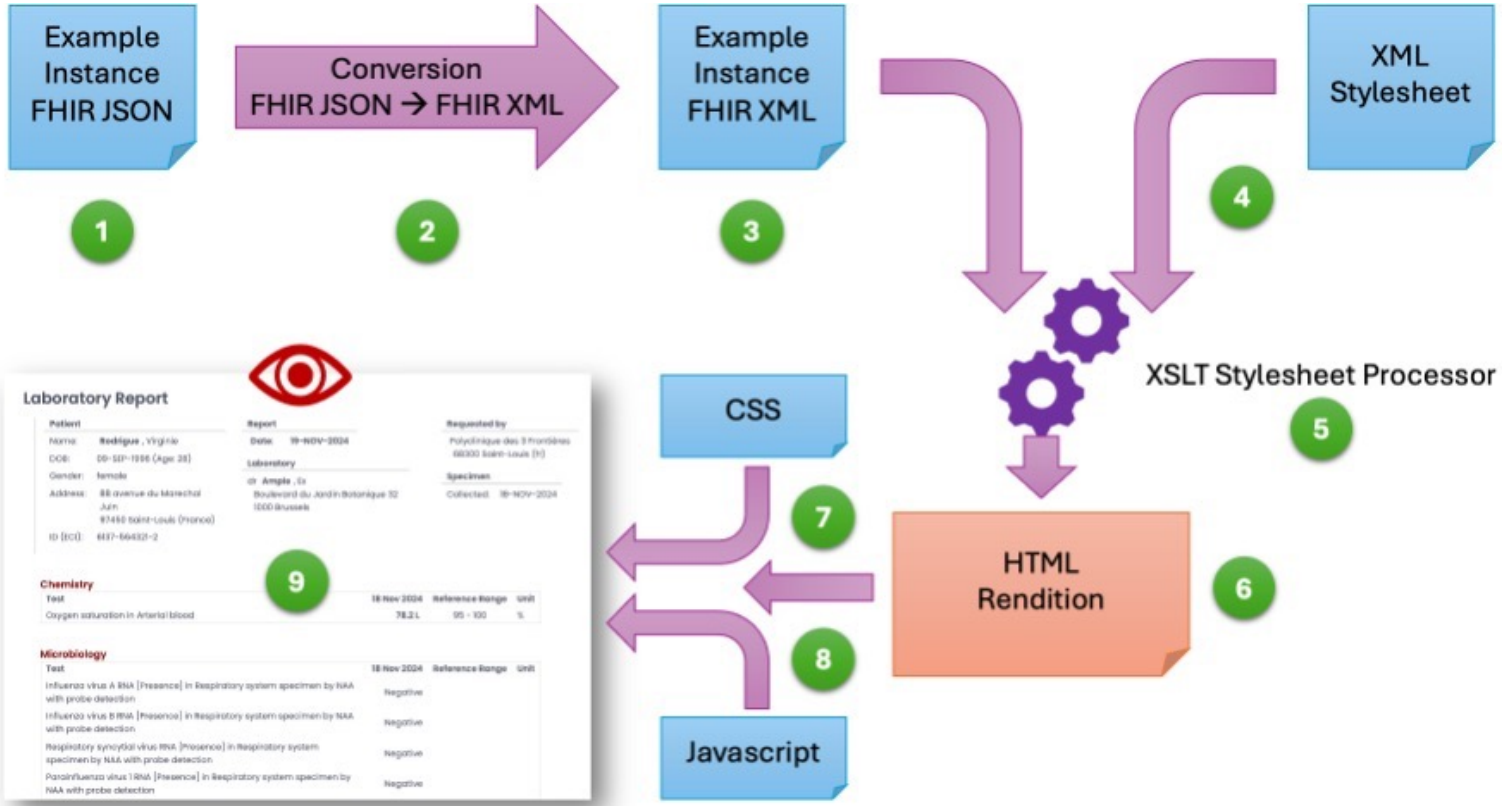
HL7 Europe

Thessaloniki xShare Project meeting

- Demonstrator for the xShare Yellow Button
- Synthetic IPS
- Used by Patient
- Visualized
- Shared

HL7 Europe

vi7eti


Example Instance FHIR JSON
Conversion FHIR JSON → FHIR XML
Example Instance FHIR XML
XML Stylesheet
1
2
3
4
XSLT Stylesheet Processor
5
CSS
HTML Rendition
6
7
8
Javascript
9
Laboratory Report
Chemistry
Microbiology

HL7 Europe

Welcome to vi7eti

Visualize HL7 Example and Test Instances

This site – contributed by HL7 Europe – is a **reference implementation** of the **vi7eti stylesheets** that come out of the xShare and Gravitate Health projects, that shows and demonstrates Visualization of Example and Test Instances based on HL7 CDA or HL7 FHIR specifications (implementation guides).

SEE TOPICS

Reference Tools for four(+) topics

Electronic Medicinal Product Information (ePI)

Visualized Example and Test Instances for the Electronic Medicinal Product Information (ePI) based on the FHIR Implementation Guide

Visit

European Laboratory Report

Visualized Example and Test Instances for the HL7 Europe Laboratory Report (EU-Lab) based on the FHIR Implementation Guide

Visit

International Patient Summary (IPS)

Visualized Example and Test Instances for the International Patient Summary (IPS) based on the FHIR Implementation Guide

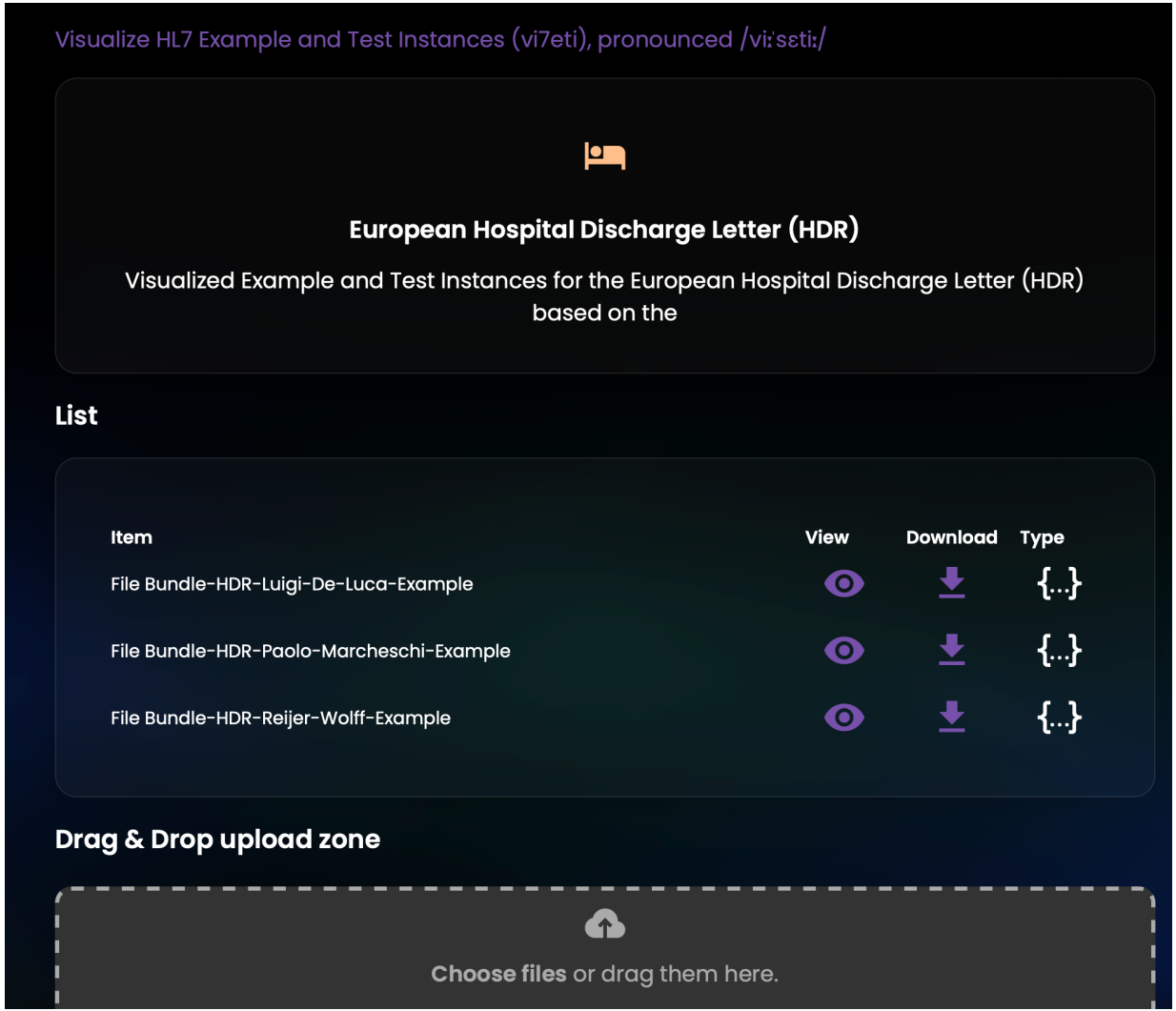
Visit

European Hospital Discharge Letter (HDR)

Visualized Example and Test Instances for the European Hospital Discharge Letter (HDR) based on the

Visit

Reference Tools for four(+) topics



HL7 Europe

Rendition Example

Hospital Discharge Report

Patient		Author	Hospital Discharge Report	
Name:	**De Luca**, Luigi	dr **Zucchero-Combattente**, Augusto	**Casa di cura Villa S. Giuliana**	
DOB:	30-SEP-1966 (Age: 58)		37128 Verona (it)	
Gender:	male		Report Date:	**29-APR-2025**
ID:	3332-386800-1		Hospital Admission:	01-APR-2025
			Hospital Discharge:	10-APR-2025

Admission evaluation

Mr. Luigi De Luca, a 57-year-old male, was admitted on 1st April following a pre-diabetic episode characterized by episodes of fatigue, polyuria, and increased thirst. Recent routine blood tests showed elevated fasting blood glucose and HbA1c levels that required further investigation.

When Mr De Luca arrived in the morning we recorded a fasting blood glucose level at 180 mg/dL. His HbA1c level was 7.8%. He seemed to be dehydrated, so that he immediately was sent to the ward for a full breakfast and fluid substitution.

Family History

Mr. Luigi has a family history of diabetes (type 2, mother and maternal grandmother).

Vital signs

Vital signs	1st April	10th April
Body weight	109 kg	108 kg
Body height	177 cm	
Blood Pressure	155 / 95 mmHg	150 / 90 mmHg

Tobacco use

HL7 Europe

Example

- Created by SYNDERAI method
- Demographics
- Lab Categories
- Measurements (Codes)
- Values, Units
- Ranges

Laboratory Report

Patient

Name: **Palmer** , Silvana
DOB: 04-FEB-1957 (Age: 68)
Gender: female
Address: Gosposka ulica 35
3330 Mozirje (Slovenia)
ID (ECI): 4929-255056-0

Report

Date: **19-NOV-2024**

Laboratory

dr **Ample** , Ex
Boulevard du Jardin Botanique 32
1000 Brussels

Requested by

Zdravstveni dom
3305 Vransko (si)

Specimen

Collected: 18-NOV-2024

Chemistry

Test	18 Nov 2024	Reference Range	Unit
Oxygen saturation in Arterial blood	**80.6 L**	95 - 100	%

Microbiology

Test	18 Nov 2024	Reference Range	Unit
Influenza virus A Ag [Presence] in Upper respiratory specimen by Rapid immunoassay	Not detected		
Influenza virus B Ag [Presence] in Upper respiratory specimen by Rapid immunoassay	Not detected		

Microbiology Panel

Test	18 Nov 2024	Reference Range	Unit
SARS-CoV-2 (COVID-19) RNA panel - Respiratory system specimen by NAA with probe detection	Detected		

HL7 Europe

ELGA and CDA

- Instructions to build text

Hämatologie

Blutbild

Analyse	Ergebnis	Einheit	Referenzbereiche	Interpre
Leukozyten	**26**	**G/l**	**4-10**	**+**
Thrombozyten	165	G/l	150-360	
Erythrozyten	5.39	10^3/L	4.60-6.20	
Hämoglobin	16.0	g/dl	14.0-18.0	
Hämatokrit	**49.7**	**%**	**43.0-49.0**	**+**
MCH	29.7	pg	27.0-33.0	
MCV	92.2	fl	85.0-95.0	
MCHC	32.2	g/dl	28.0-33.0	
Akt.Lymphoz.rel.mi.	7	%	0-10	

Geringgradige Leukozytose, seit letzter Kontrolle gestiegen.
Verringerung der Thrombozytenzahl im selben Zeitraum.

Spezimeninformation		*<table> pro Spezimen eine Zeile <tr></tr>*		
		Sollte ein Befund aus mehreren Sections bestehen, wird die Spezimeninformation ausschließlich in einer eigenen Section angegeben und als erste Section geführt. Generell gilt, dass die Angabe von Informationen zu Proben/Spezimen/Material vorgeschrieben ist.		
1	Material-ID	*O*	*<td></td>*	Identifikator der Probe
2	Probenentnahme	*R*	*<td></td>*	Zeitpunkt der Probebentnahme, muss nicht angegeben werden bzw darf „unbekannt“ sein. Format: dd.MM.yyyy hh24:mi (4.4.5.3.3.4)
3	Untersuchtes Material	*R*	*<td></td>*	Materialart [R] (4.4.5.3.3.7) und Entnahmeort [O] (4.4.5.3.3.5) (Freitext ist zulässig)
4	Probenentnahme durch	*O*	*<td></td>*	Für Probenentnahme zuständige Person und ggf Organisation [O] (4.4.5.3.3.6)
5	Probeneingang	*R*	*<td></td>*	Probeneingang im Labor, Format: dd.MM.yyyy hh24:mi
6	Bemerkung Labor	*R*	*<td></td>*	Allfällige Bemerkungen zur Probenqualität sollen angegeben werden

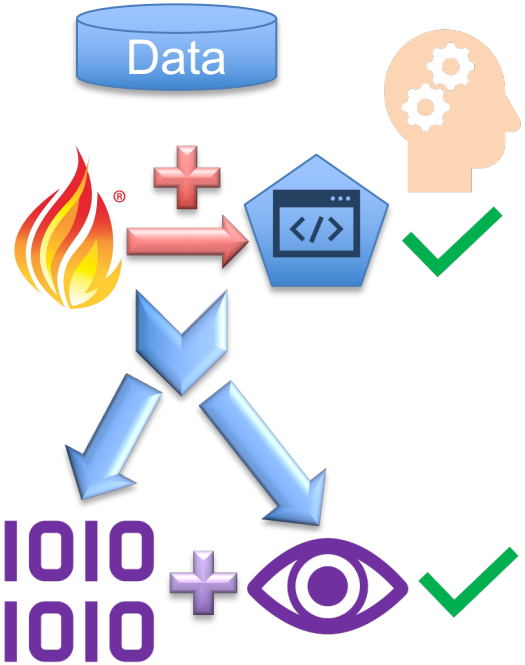
HL7 Europe

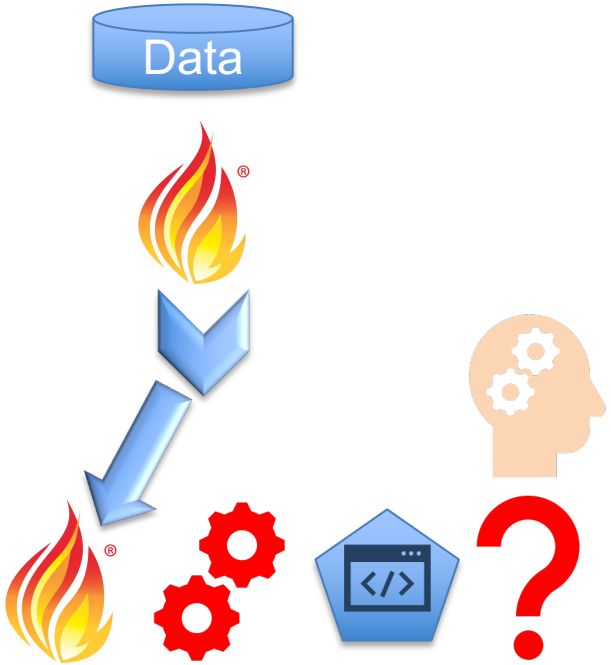
Humanoid Robot Petition

How and when to create the Human Text

Source/
Doer

Receiver/
Viewer





Questions, Discussion

How to handle / generate FHIR human text, e.g. in *section.text*, only place?

Methodology: how to define, constrain and test human text

Requirement to regulate “human text” on National Level? On EU Level?

Do we need a constraint section in all IGs about human text or even an human text IG?

Thank you

Topics

- Multiple Languages
- Must have a fall-back
- Source reponsibility
- Receiver option
- Hide/show data
- What is the original (like CDA)
- Code display populated
- Multiple places for text .text .note extn *narrative extn
- Conversion template library