

Interoperability Assets for Patient Summary Components: a Gap Analysis

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Patient Summary? Patient Summary!

- ▶ A Patient summary is a **standardized set of basic medical data** that includes the most important clinical facts required to ensure safe and secure health care.
- ▶ Presented as a **concise clinical document** this information is applicable and relevant both in **unexpected**, as well as in **expected healthcare** contacts.

Patient Summary? Patient Summary!

- ▶ But what is such a **standardized set of basic medical data?**
- ▶ The Trillium II Task 2.1 **“Interoperability Assets for Patient Summary Components: a Gap Analysis”** wanted to find an answer

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. The shapes are primarily triangles and polygons, creating a dynamic, layered effect. The text is centered in a clean, sans-serif font.

Trillium II Deliverable 2.1 in a nutshell

Deliverable 2.1

- ▶ Assembling Interoperability Assets for Patient Summary Components
 - ▶ Questionnaire
 - ▶ Topic Matrix
- ▶ Activities for the "gap analysis"
- ▶ Details

Activities

► Gap Analysis

Activity	National/Regional	Country
THL Finland	National	FI
Kaiser Permanente	Organizational/National	US
Pilot in Greece	National	GR
Liaison letter	National	FR
ELGA	National	AT
Agence Santé	National	LU
SPMS	National	PT
Ticalut Foundation	Regional (Catalonia)	ES
Italy	National	IT
German "Patient Summary" (Arztbrief)	National	DE
Dutch Clinical Building Blocks (Nictiz)	National	NL
National Shared Health Summary and Event Summary	National	AU
HL7 International Patient Summary	International	UV
EU Guidelines	European cross-border	EU
FHIR resources (for topic matrix only)	International	UV

Questionnaire: Scope, Purpose, Use Cases

- ▶ Scope
 - ▶ Unplanned care (90%)
 - ▶ „For the patient“ (70%)
- ▶ Operationalization
 - ▶ On Demand (100%)
- ▶ Contains
 - ▶ Only relevant parts or by rules (75%)

Topic Matrix

- ▶ Has impact on subsequent tasks of the Trillium Project
 - ▶ Choice of details...
 - ▶ List of Components

Topic	Count
Medication (active)	9
Problems/Medical History	7
Allergies/Intolerances	7
Implanted devices	4
Risks	3
Diagnoses	3
Immunization	3
Procedures (major)	1

Table 2: Most valuable topics in a Patient Summary (from the survey), N=12

Topic Matrix

► Components and details (in the Matrix)

Topic: Allergies/Intolerances

AllergyIntolerance

Topic: Medications

MedicationStatement

Medication

Substance

Topic: Immunization

Immunization

Observation

Topic: Results: Laboratory/Radiology/Pathology

DiagnosticReport

Specimen

ImagingStudy

Topic: Problems

Condition

Topic: History of Past Illness

Topic: History of Procedures

Procedure

Topic: Medical Devices / Implants

DeviceUseStatement

Device

Topic: History of Pregnancy

Topic: Plan of Treatment

CarePlan

Topic: Encounters

Encounter

Topic: Family History

FamilyMemberHistory

Topic: Social History

Topic: Advance Directives

Topic: External Observation Media

Topic Matrix

D2.3-D2.6

► Hitlist

- Allergy / Intolerance
- Condition / Problem
- Procedure
- Medical History
- Medication Statement
- Immunization



Topic	Description	Included in PS	Planned
Allergy / Intolerance	Allergy or Intolerance (generally: Risk of adverse reaction to a substance)	93%	🚩
Condition	Detailed information about conditions, problems or diagnoses	93%	🚩
Procedure	An action that is being or was performed on a patient	86%	
Medical History	History of Past Illness	82%	
Medication Statement	Record of medication being taken by a patient including definition of Medication	79%	
Immunization	Immunization event information and adverse reactions	68%	🚩
Encounter	An interaction during which services are provided to the patient	57%	🚩
CarePlan	Healthcare plan for patient or group	54%	
Substance	A homogeneous material with a definite composition	50%	
Device Use Statement / Device	Record of use of a device and details about the device	50%	🚩
History of Pregnancy	Pregnancy, Estimated Delivery Date	46%	
Diagnostic Report	A Diagnostic report - a combination of request information, atomic results, ..	43%	🚩
Social History	Smoking, Drug use, Alcohol, Occupation, Diet	37%	
External Media	Reference to External Observation Media	33%	
Imaging Study	A set of images produced in single study (one or more series of references images)	29%	
Family Member History	Information about patient's relatives, relevant for patient	21%	🚩
Advance Directive	Classification / Reference	17%	
Specimen	Sample for analysis	14%	🚩

Subsequent Trillium II Deliverables

- ▶ **D2.2** Configuration Canvas for patient summary component libraries
- ▶ **D2.3** Medications and Implantable Devices
- ▶ **D2.4** Vaccinations Library
- ▶ **D2.5** Allergies and Intolerances Library
- ▶ **D2.6** Problems and Procedures Library
- ▶ **D2.7** Patient Summary Implementation guidance

Topic Matrix Details (FHIR®=Gold Standard)

MedicationStatement

status	active completed entered-in-error intended stopped on-hold	55%
category	Type of medication usage	25%
medication[x]	What medication was taken	82%
effective[x]	The date/time or interval when the medication was taken	90%
dateAsserted	When the statement was asserted?	11%
informationSource	Person or organization that provided the information about the taking of this medication	42%
taken	y n unk na	11%
reasonNotTaken	True if asserting medication was not given	0%
reasonCode	Reason for why the medication is being/was taken	0%
reasonReference	Condition or observation that supports why the medication is being/was taken	0%
note	Further information about the statement	36%
dosage	Details of how medication is/was taken or should be taken	73%

Topic Matrix Details (FHIR®=Gold Standard)

Substance

status	active inactive entered-in-error	0%
category	What class/type of substance this is	33%
code	What substance this is	56%
description	Textual description of the substance, comments	50%
instance	If this describes a specific package/container of the substance	13%
ingredient	Composition information about the substance	25%

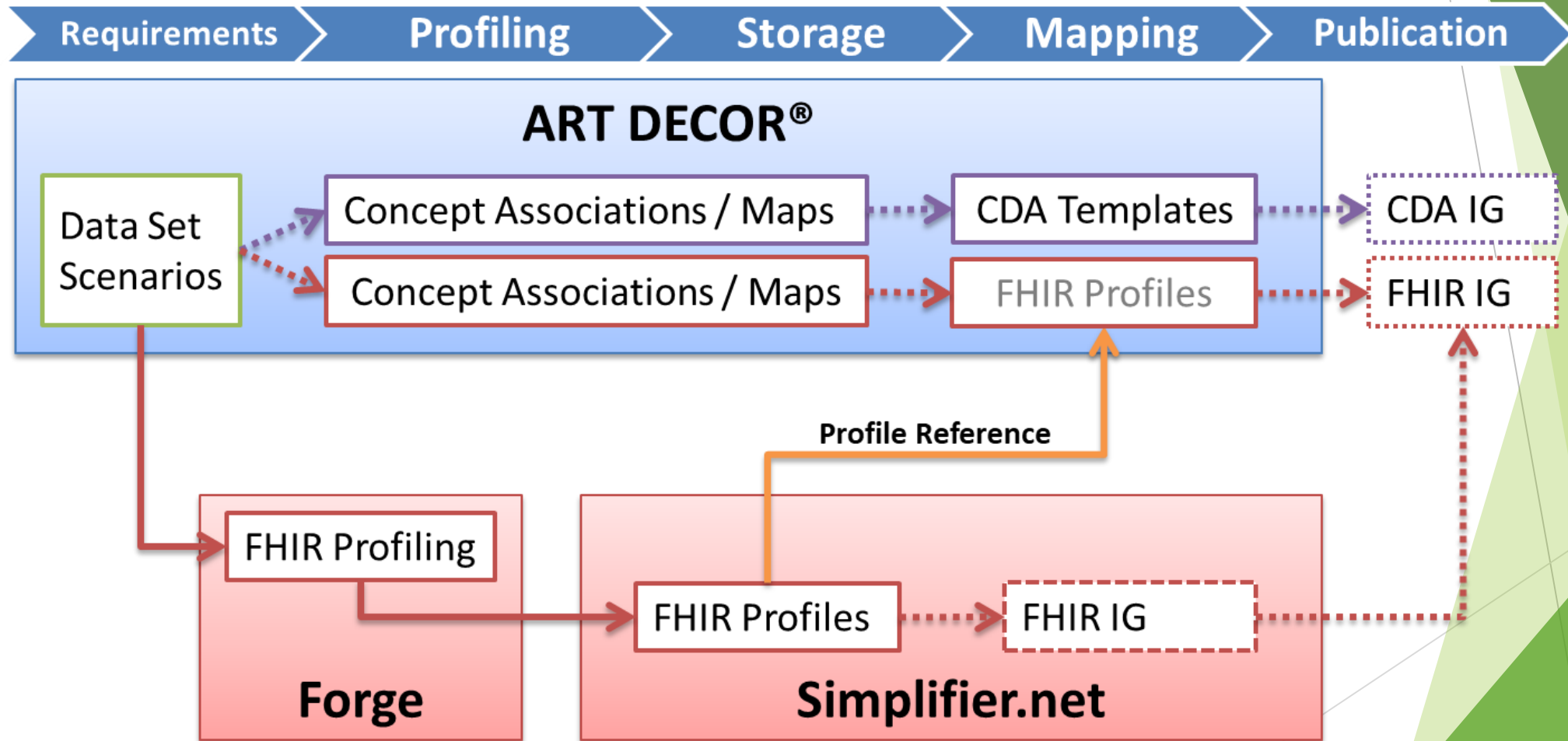
► Value Sets / Terminologies

Substance Category	Category or classification of substance
Substance Code	Substance codes

Tooling aspects of Trillium II

- ▶ ART-DECOR®: Dataset, Scenario, Terminology, Linkage to FHIR Profile
- ▶ Forge: Furore FHIR Profile Editor
- ▶ Simplifier.net: FHIR Profile Host, Definition Repository
- ▶ Github: Versioning, Issue Management?
- ▶ Trifolia: FHIR Profile Host

Tools concert



Development cycle

Figure Legend

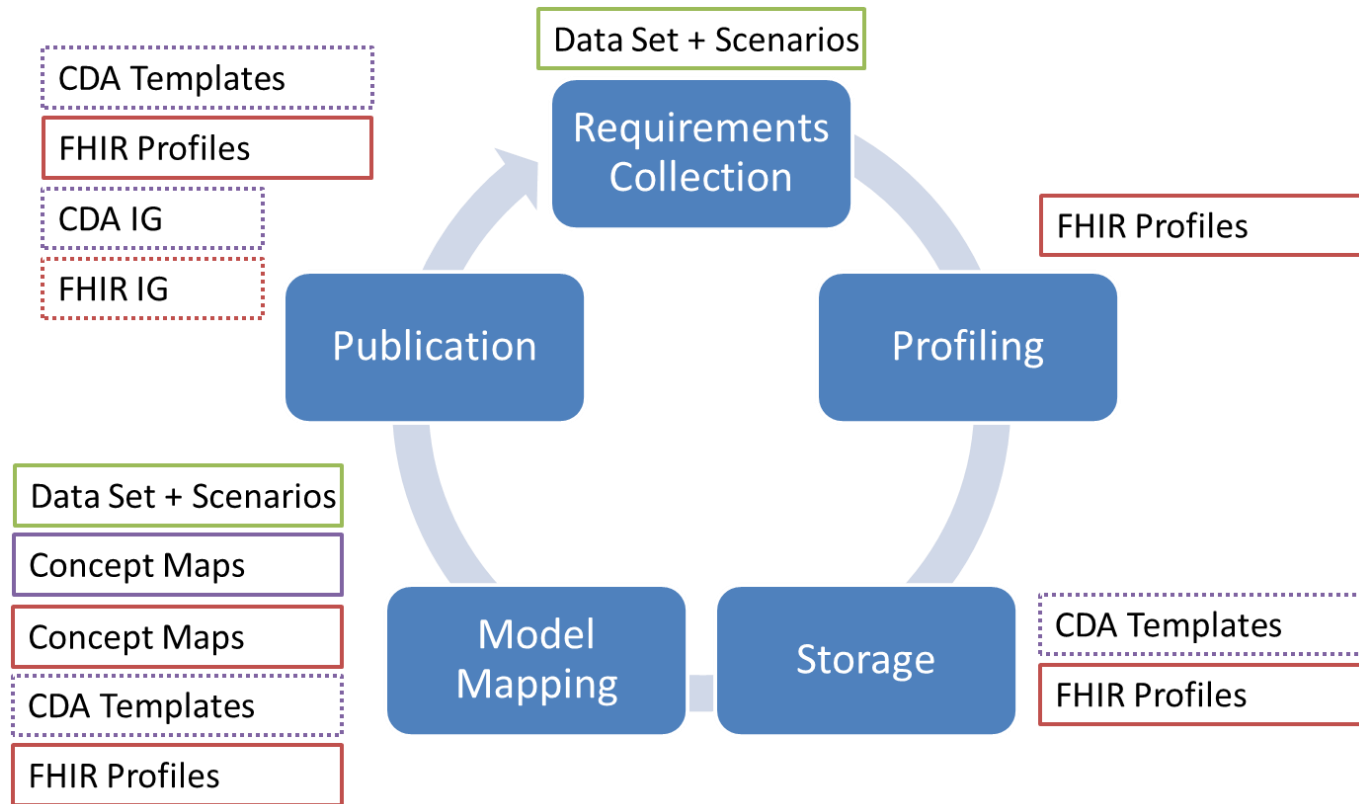
Implementation Independent

CDA track

FHIR track

Not a Trillium II deliverable

Trillium II deliverable



Conclusions

- ▶ The practical use of patient summaries components was investigated using a **questionnaire** and interviews to develop a **topic matrix**.
- ▶ Actual implementations are mostly in a pilot phase and do not operate under a clear administrative, operational, and legal framework.
- ▶ Moreover, in most cases the richness of the HL7 FHIR resources for the patient summary building blocks are not used.

Conclusions

- ▶ The investigation raises the question whether a **constrained lean patient summary specification** would **accelerate adoption** of patient summaries in the daily practice.

Thank you for your patience

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