HL7 Germany

## ESPERIENZE INTERNAZIONALI:

# HOW HL7 GERMANY GOES FHIR AND BEYOND…

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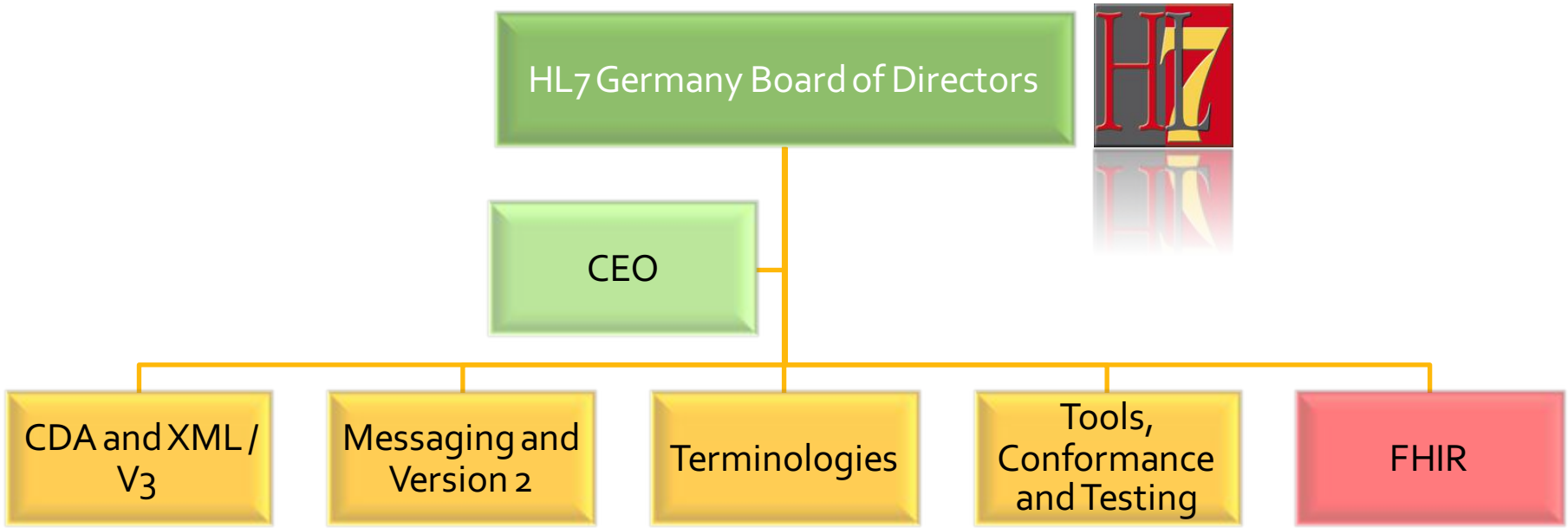
I° HL7 Italia FHIR Workshop : potenzialità e prospettive comuni, Florence
4 dicembre 2015

# Agenda

- FHIR Structures in Germany
  - Technical Committee: a Strategy and a Task List
  - HL7: Three Generation of Standards!
  - Tooling – now and in the Future
- FHIR's diabolic components
  - Critical Factors and Criticism
- Conclusion

# Technical Committees

- Board of Directors drives and supervises the Technical Committees



# FHIR Technical Committee

- Information and Education
- Community Formation
- Meetings and Work Groups
- Create and maintain Profiles and Value Sets
  - Connect-a-thons
  - Infrastructure
  - Tools and Best Practice
- Bring FHIR into Politics, Science and Industry
- International Representation / Reports

# Information and Education

- Website Top Topics
- Tutorials at our Annual Meetings
- Hack-a-thons
- Videos (hl7.tv)
- Presentations at other meetings

# Information and Education

- Calm down your membership
  - “Don‘t kick the other standards out of the door”
  - …warn, encourage… and show Best Practices
- Expectation Management
- Migration Strategies
- Pilot Projects
- Blessing and curse: New and young generation of App builders – with no medical background at all

# HL7-Standards-Family

- Version 2.x
  - Messages (1987..)
  - v2.xml (2003..)
- Version 3
  - Messages (1995..) and Services
  - **Documents = Clinical Document Architecture CDA (1999..)**
- **FHIR** (Fast Healthcare Inter-operability Resources, 2012..)

# Interoperability Paradigms

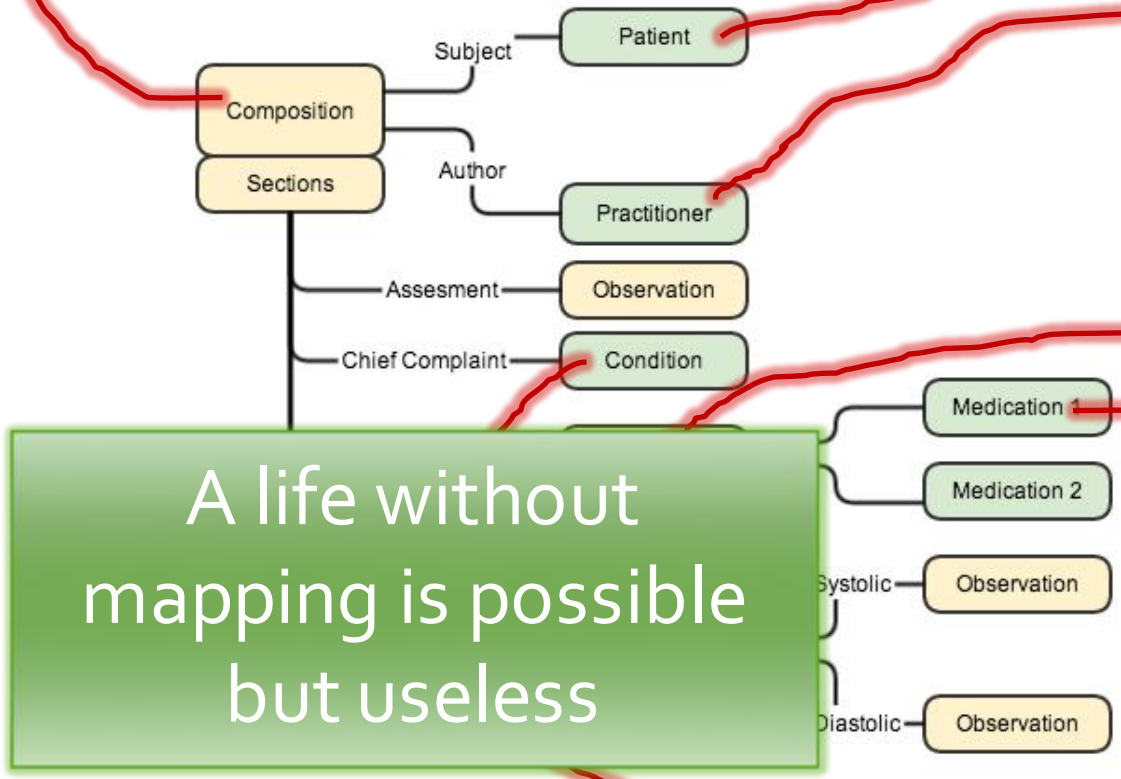
- REST
  - Core of FHIR, with GET and POST etc.
- Documents
  - Like CDA, Bundles of Resources
- Messages
  - Like v2 und V3, Bundles of Resources
- Services
  - Service Oriented Architecture
- Also important – Formats: XML vs JSON

# Convergence of Problems/Solutions

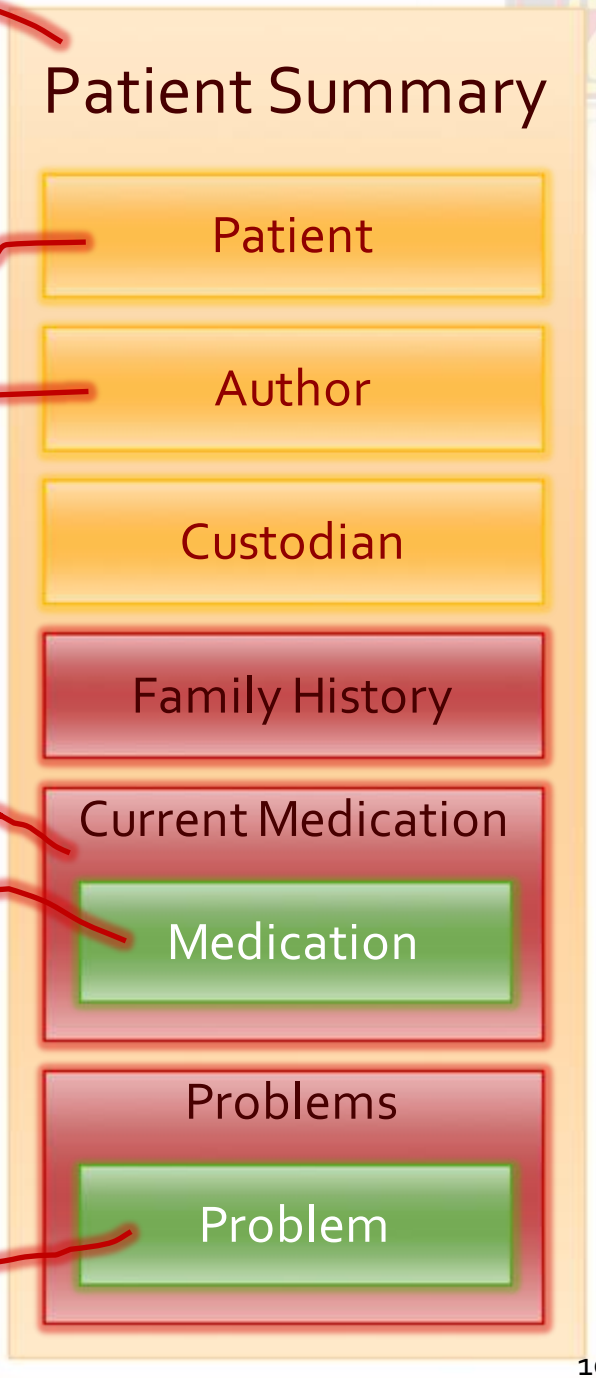
| HL7 v2 | CDA | FHIR |
|---|---|---|
| Segments | Model (V3) | Resources |
| Datatypes<br>HL7 v2 | Datatypes<br>HL7 R1.1 | Datatypes<br>Partially HL7 R2 / ISO 21090 |
| Profile | Templates | Profile |
| Z-Segments | Informal Extensions | Featured Extensions |
| Machine only | Human/ Machine | Human/ Machine |
| Ad-hoc Coverage | 100% Coverage | 80% Coverage |

# Convergence of Problems/Solutions

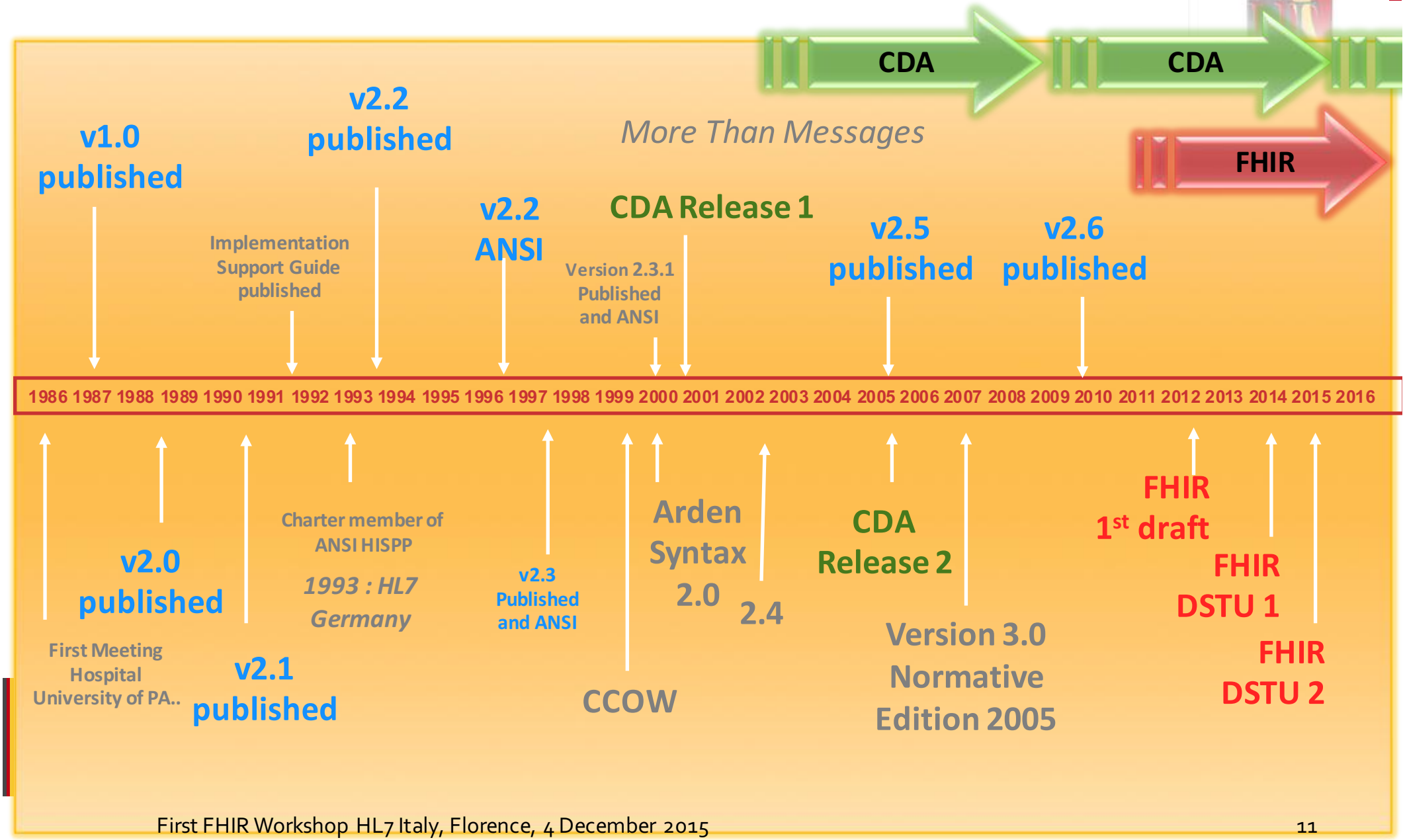
- Templates / Profile




A life without mapping is possible but useless



# What happens when?



# Community Formation

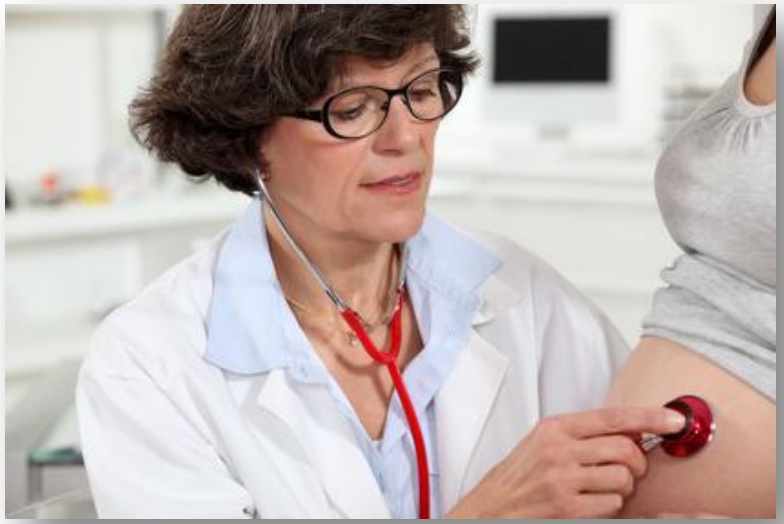
- BLOG, Community Mailing List, Twitter, Facebook, “smotare con bierra”

# FHIR Profiles + Value Sets

- Creation
  - German Profiles
  - German Datatypes
  - German Extensions
  - German Value Sets
- Maintenance
  - Registry for profiles, extensions and value sets
  - Multi-Purpose Tooling (Terminology Servers, Forge, ART-DECOR)

# ART-DECOR in 4 bullets (1)

- ...is an open-source tool and a methodology for various **multidisciplinary** stakeholders of healthcare information exchange



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# ART-DECOR in 4 bullets (2)

- ...supports comprehensive **collaboration of team members** within and between governance groups
- ...allows separation of concerns and different views on one **single documentation for different domain experts**
- ...supports **creation and maintenance of HL7 templates** (DSTU), value sets, data sets and more

# ART-DECOR main objective

- One of the main objectives
  - Separation of concerns towards a comprehensive specification
  - Different views on one single documentation
    - With changing focus on different artifacts
    - For different domain experts

# Overview ART-DECOR®

# ART-DECOR®

- Used in Germany for
  - Creation and Maintenance of CDA-related Definitions
    - Templates
    - Value Sets
  - Datasets (e.g. functional view on a diagnosis, an allergy, a procedure)
  - Terminology Reference and Service
  - Application Prototype Building
  - Building Block Repository (BBR)

# ART-DECOR templates

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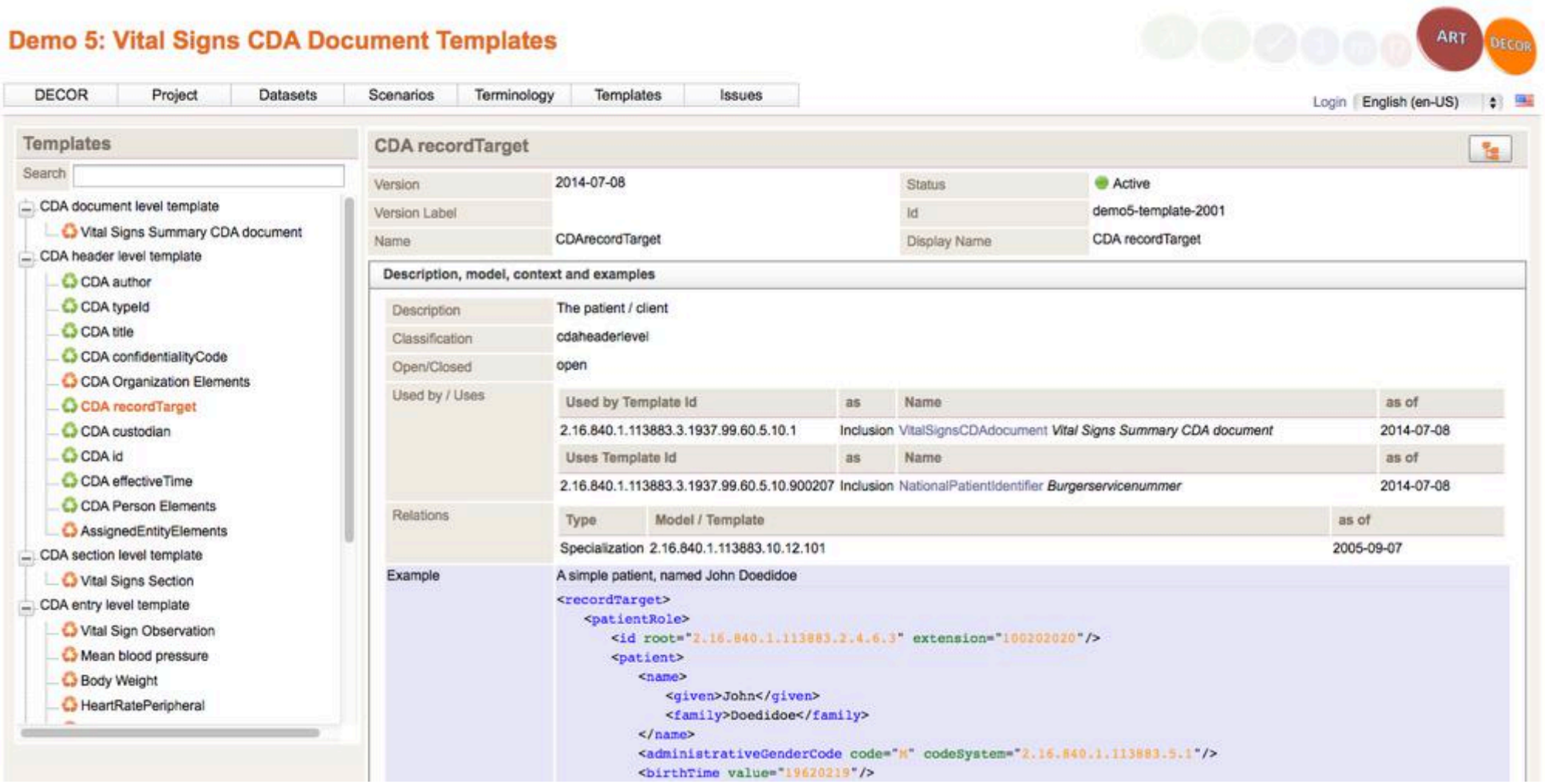
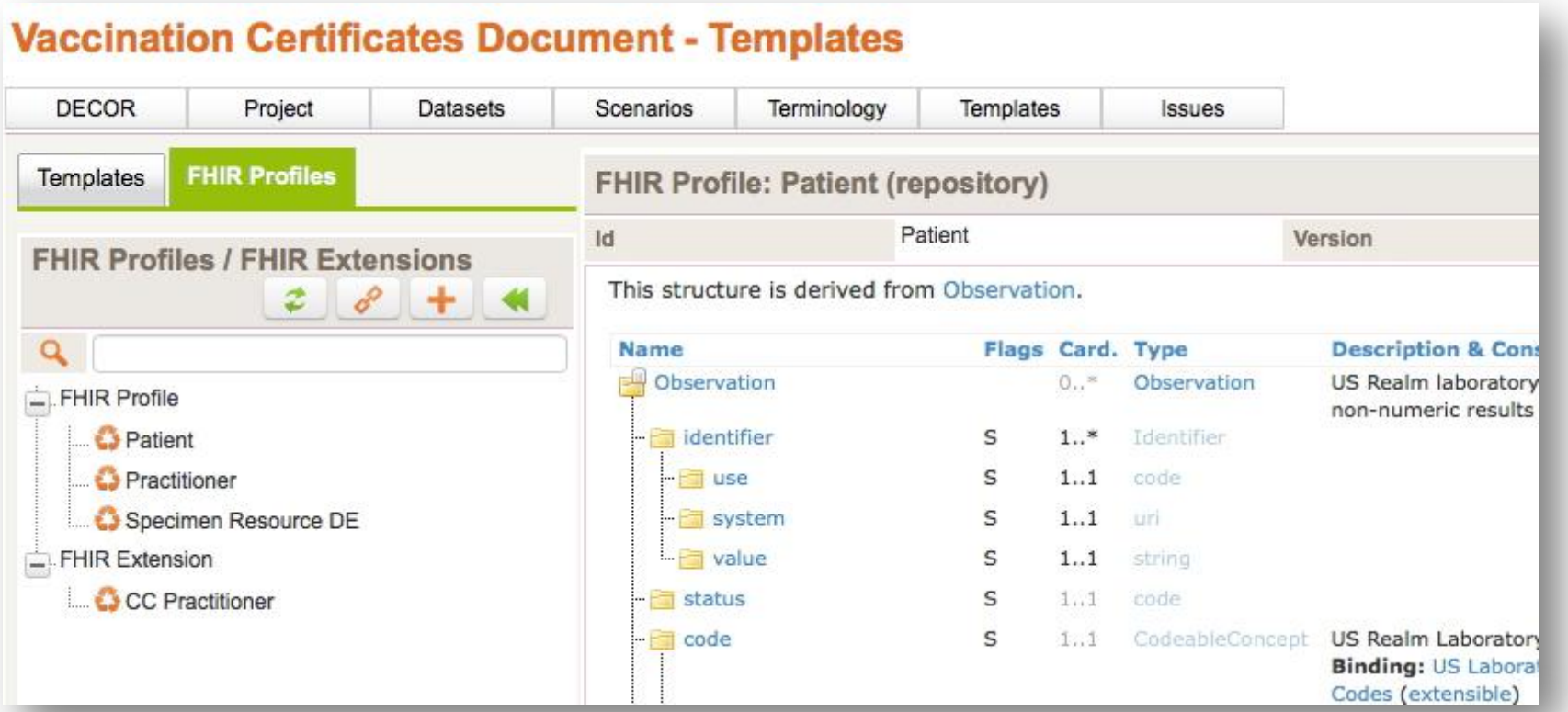


# ART-DECOR® and FHIR Support

- Terminology Services
- Profiles and Extension Registry



# ART-DECOR® Projects (some)

- International projects (mainly in Europe)
  - Austria (ELGA National eHealth programme)
  - Netherlands (national screening programme on bowel cancer)
  - Netherlands (Nictiz, multiple projects)
  - Norway (HL7, regional Health networks)
  - epSOS/EXPAND (European eHealth programme)
  - Germany (HL7, national eHealth programme)
  - HL7 Poland iEHR with CDA
  - European Templates and Value Set Repository (nascent)
  - IHE Profile and Value Set Repository (in development)

# ART-DECOR @ internet

- art-decor.org
  - Documentation
  - International site and international projects host
  - blog.art-decor.org etc.
  - Sourceforge
- decor.nictiz.nl
  - Dutch projects host
  - Documentation, specification

# FHIR Persons (DE)

- Simone Heckmann
  FHIR TC
  Lead

- CEO, BoD and other TC Leads

- Working Groups

# Politics, Science, Industry

- Bring FHIR into Politics, Science and Industry
- eHealth Law
  - Contact with Politicians
  - Position/Opinion Papers
  - Hearings
  - “Bundestag”
- Easier: Science, Industry – because we are better in reaching our members

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# Politics, Science, Industry

- HL7 Newsletter
  - DE, CH, AT, LU
- Press Releases HL7 Germany
- Opinion Papers with other organizations e.g. IHE, Vendor Associations etc.

# International Representation

- FHIR Connect-a-thons
- FHIR Developer Days
- Reports to membership
- Work with FHIR and tools to make it a better standard
- Re-think and re-fine concepts
- Identify threats

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# FHIR‘S DIABOLIC COMPONENTS

We are not yet there...

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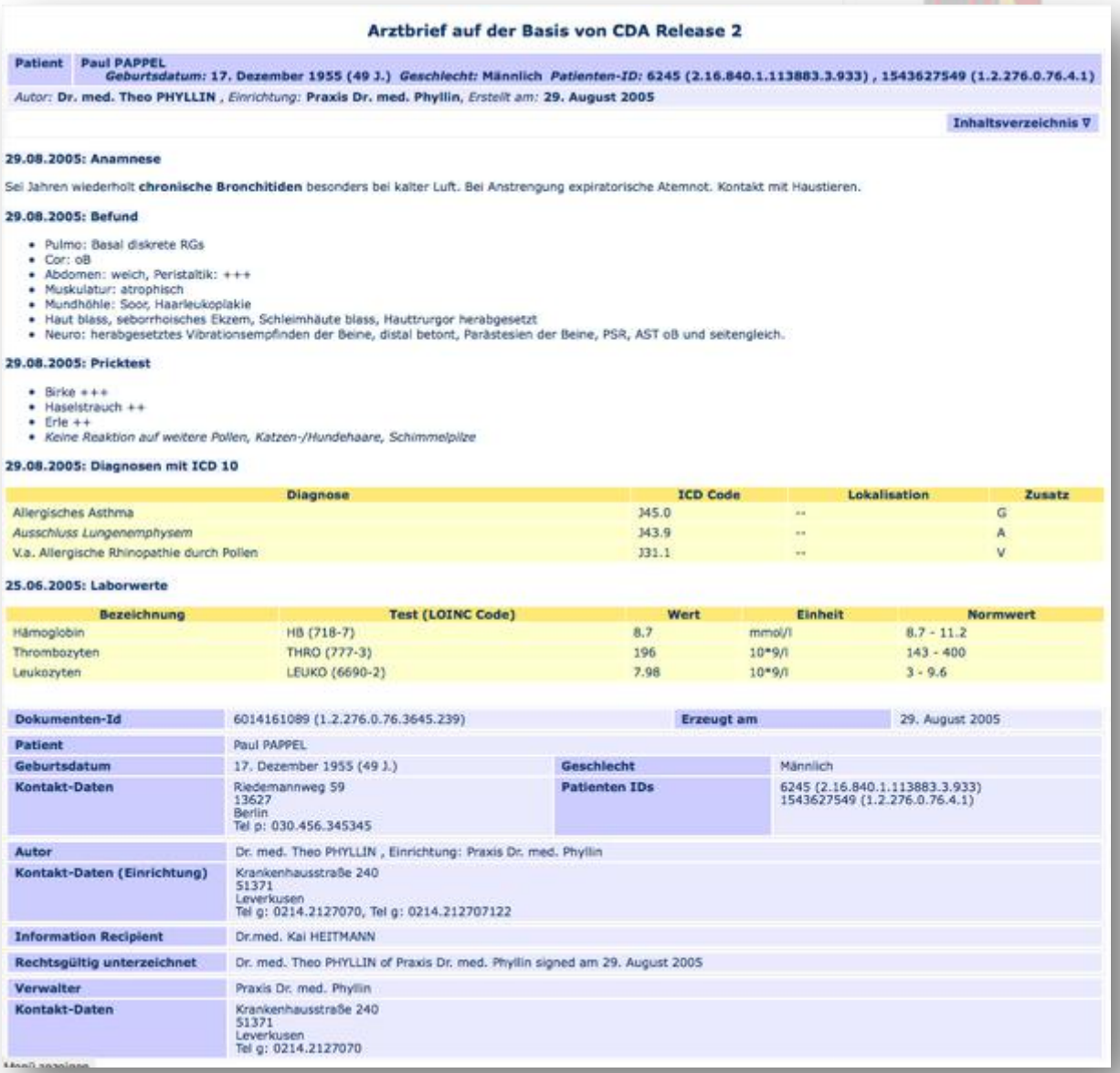
# Critical Factors and Critisism

- Instead of adoring the Modelers now adoring the Implementers
- 80/20 Rule
- Governance, Governance, Governance
- Health-IT is not complex because of the IT but because of Health
- Problems remain the same
  - What is an allergy?
- Many Problems to seen yet, yet to come

# Tooling and Support growing

- Beyond technical and semantical connectivity
- Users at frontends
- Document view



**Arztbrief auf der Basis von CDA Release 2**

**Patient** Paul PAPPEL
*Geburtsdatum:* 17. Dezember 1955 (49 J.) *Geschlecht:* Männlich *Patienten-ID:* 6245 (2.16.840.1.113883.3.933) , 1543627549 (1.2.276.0.76.4.1)

*Autor:* Dr. med. Theo PHYLLIN , *Einrichtung:* Praxis Dr. med. Phyllin, *Erstellt am:* 29. August 2005

Inhaltsverzeichnis ∇

**29.08.2005: Anamnese**

Sei Jahren wiederholt **chronische Bronchitiden** besonders bei kalter Luft. Bei Anstrengung expiratorische Atemnot. Kontakt mit Haustieren.

**29.08.2005: Befund**

- Pulmo: Basal diskrete RGs
- Cor: oB
- Abdomen: weich, Peristaltik: +++
- Muskulatur: atrophisch
- Mundhöhle: Soor, Haarleukoplakie
- Haut blass, seborrhoisches Ekzem, Schleimhäute blass, Hauttrurgor herabgesetzt
- Neuro: herabgesetztes Vibrationsempfinden der Beine, distal betont, Parästesien der Beine, PSR, AST oB und seitengleich.

**29.08.2005: Pricktest**

- Birke +++
- Haselstrauch ++
- Erle ++
- *Keine Reaktion auf weitere Pollen, Katzen-/Hundehaare, Schimmelpilze*

**29.08.2005: Diagnosen mit ICD 10**

| Diagnose | ICD Code | Lokalisation | Zusatz |
|---|---|---|---|
| Allergisches Asthma | J45.0 | -- | G |
| *Ausschluss Lungenemphysem* | J43.9 | -- | A |
| V.a. Allergische Rhinopathie durch Pollen | J31.1 | -- | V |

**25.06.2005: Laborwerte**

| Bezeichnung | Test (LOINC Code) | Wert | Einheit | Normwert |
|---|---|---|---|---|
| Hämoglobin | HB (718-7) | 8.7 | mmol/l | 8.7 - 11.2 |
| Thrombozyten | THRO (777-3) | 196 | 10*9/l | 143 - 400 |
| Leukozyten | LEUKO (6690-2) | 7.98 | 10*9/l | 3 - 9.6 |

| | | | |
|---|---|---|---|
| **Dokumenten-Id** | 6014161089 (1.2.276.0.76.3645.239) | **Erzeugt am** | 29. August 2005 |
| **Patient** | Paul PAPPEL | | |
| **Geburtsdatum** | 17. Dezember 1955 (49 J.) | **Geschlecht** | Männlich |
| **Kontakt-Daten** | Riedemannweg 59<br>13627<br>Berlin<br>Tel p: 030.456.345345 | **Patienten IDs** | 6245 (2.16.840.1.113883.3.933)<br>1543627549 (1.2.276.0.76.4.1) |
| **Autor** | Dr. med. Theo PHYLLIN , Einrichtung: Praxis Dr. med. Phyllin | | |
| **Kontakt-Daten (Einrichtung)** | Krankenhausstraße 240<br>51371<br>Leverkusen<br>Tel g: 0214.2127070, Tel g: 0214.212707122 | | |
| **Information Recipient** | Dr.med. Kai HEITMANN | | |
| **Rechtsgültig unterzeichnet** | Dr. med. Theo PHYLLIN of Praxis Dr. med. Phyllin signed am 29. August 2005 | | |
| **Verwalter** | Praxis Dr. med. Phyllin | | |
| **Kontakt-Daten** | Krankenhausstraße 240<br>51371<br>Leverkusen<br>Tel g: 0214.2127070 | | |

# Time Table for Tests

- Sept 2015: DSTU 2 published
- Jan 2016: DSTU 2.1 ballot
- Spring 2016: DSTU 2.1 published
- 2017: First Normative specification
- Additional releases every 12-18 months

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# CONCLUSION

# Conclusions: Strategy and Tasks

- Information and Education
- Community Formation, Meetings and Work Groups
- Create and maintain Profiles and Value Sets
  - Connect-a-thons, Infrastructure
  - Tooling and Best Practice
- Bring FHIR into Politics, Science and Industry
- International Representation / Reports
- Viva Italia! …but don't forget Europe

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# GRAZIE!
# THANK YOU!

Questions?

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