Interoperability in France

Thierry Dart

Interoperability

ANS

- ANS –Agence du Numérique en Santé - French e-health agency
- https://esante.gouv.fr / Thierry.dart@esante.gouv.fr
- Governmental agency, created in 2009 (old name: ASIP Santé)

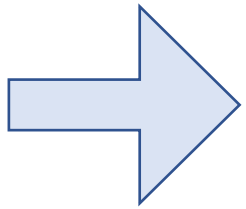
- **Mission 1 : regulate → French interoperability framework**
  - Member of IHE int./fr, HL7 int./fr
  - Connectathon monitors
  - French collaborative center for WHO / FIC terminologies
  - Loinc active member / translation
  - French Snomed CT NRC prefiguration

Why ? → four Levels of interoperability

Interoperability in France

- Foundational (Level 1): Establishes the inter-connectivity requirements
- Structural (Level 2): Defines the format, syntax and organization of data exchange
- Semantic (Level 3): Provides for common underlying models and codification of the data
- Organizational (Level 4): Includes governance, policy, social, legal and organizational considerations

https://www.himss.org/resources/interoperability-healthcare



National interoperability Framework

Tests and projectathon

Terminology center

Terminology server

National interoperability framework

Interoperability in France

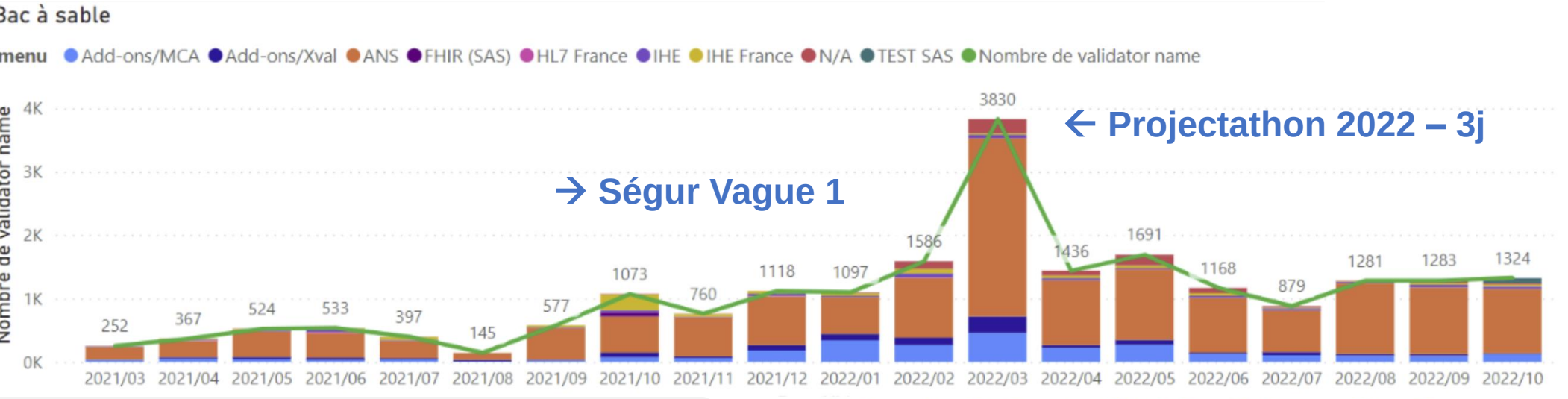
- Main profiles:
  - Sharing identity: IHE PAM-fr (Interop'Santé)
  - Sharing documents: IHE XDS, XDM, XDR, MHDs
  - CDA content: IHE XD-LAB, PRE, DIS, IPS/VSM, …
  - National profiles: Sharing vitals signs, Agenda, Image sharing
  - Standards: HL7-V2, CDA, FHIR, DICOM
  - https://industriels.esante.gouv.fr/produits-services/ci-sis-cadre-d-interoperabilite-des-systemes-d-information-de-sante
  - https://github.com/ansforge
  - https://simplifier.net/ci-sis
- Services
  - DMP – National repository of CDA
  - MES – Patient health data
  - MSSanté – MD secured e-mails
  - SAAS
  - …

Tests

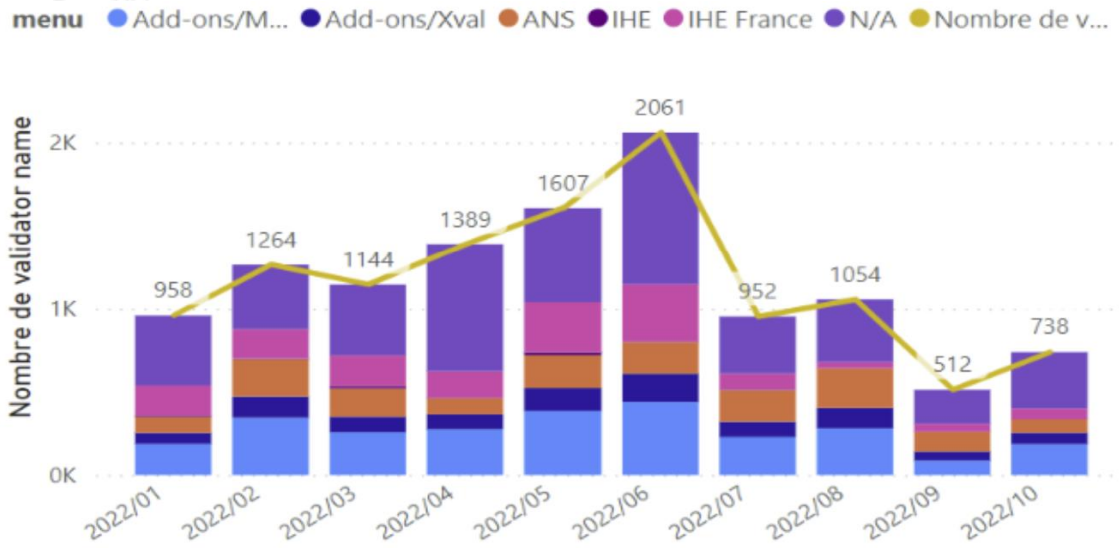
Interoperability in France

Tests and projectathon

> 3230 tests / month



« L'espace de test est devenu un outil indispensable pour la validation de nos CDAR2. Nous espérons qu'il va perdurer dans le temps. »



- https://industriels.esante.gouv.fr/produits-services/ci-sis-cadre-d-interoperabilite-des-systemes-d-information-de-sante/espace-de-tests-d-interoperabilite
- https://interop.esante.gouv.fr/

Projectathon ANS 2022

Interoperability in France

Tests and projectathon

- 27 vendors
- 120 persons
- 208 tests, 157 validated
- 4500 messages
- 3 days

Bilan

Satisfaction rate: **4,45 /5**

« Very good dynamics, we were able to carry out several tests with other editors. The monitors were challenging and allowed us to highlight the bugs on our products »

« Gazelle platform - Speed and availability of the monitors - The duration of the Projectathon - The explanations of the organizers (before the Projectathon and during the Projectathon) »

« Excellent idea to bring together all the participants and to give them the opportunity to test their products »

FRANCE22
PRÉSIDENCE FRANÇAISE DU CONSEIL DE L'UNION EUROPÉENNE

ParisSanté campus

Connectathon, Projectathon, JNI

Interoperability in France

Tests and projectathon

RENNES

25-29 SEPTEMBRE 2023

IHE EUROPE CONNECTATHON

SEPTEMBER RENNES 2023

Projectathon Interopérabilité

JNI Journées Nationales des Industriels

AGENCE DU NUMÉRIQUE EN SANTÉ

IHE INTERNATIONAL Making Healthcare Interoperable

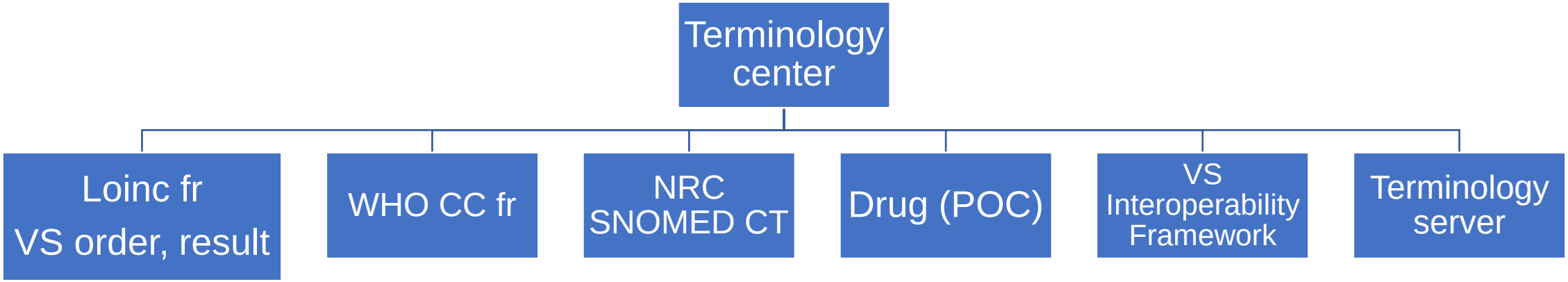
Interop'Santé Pour des systèmes d'information communicants HL7 IHE PN13

KEREVAL

Terminology center

Interoperability in France

https://industriels.esante.gouv.fr/produits-services/cgts-centre-de-gestion-des-terminologies-de-sante



Terminology server

Interoperability in France

http://smt.esante.gouv.fr

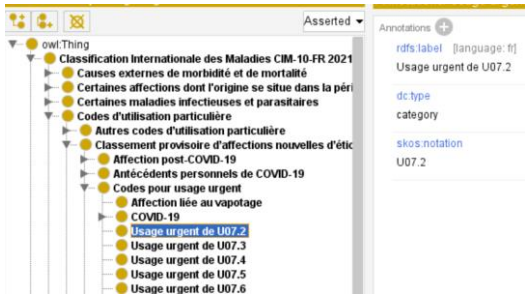
Objectives

- Standardisation
- Trusted area for publishing
- Support

Tools

- Meta-data
- Terminologies : linked data + FHIR
- Automatic translation – deeplearning
- POC Automatic mapping

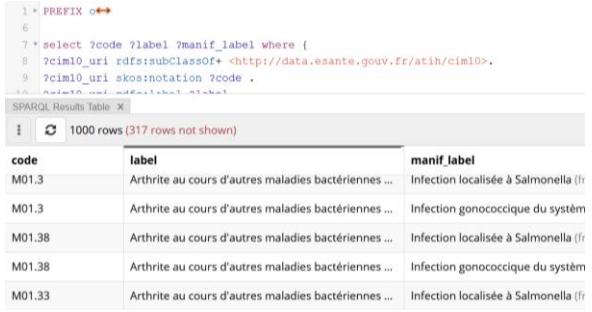
Semantic Web



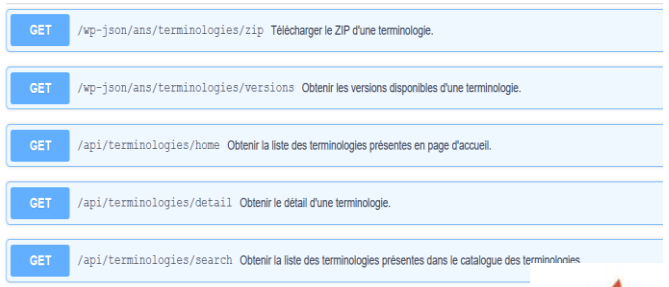
RDF file

Web site

SPARQL queries



API (FHIR in 2023)



FHIR

Terminology server

Interoperability in France

18 Terminologies (RDF/OWL)

http://smt.esante.gouv.fr

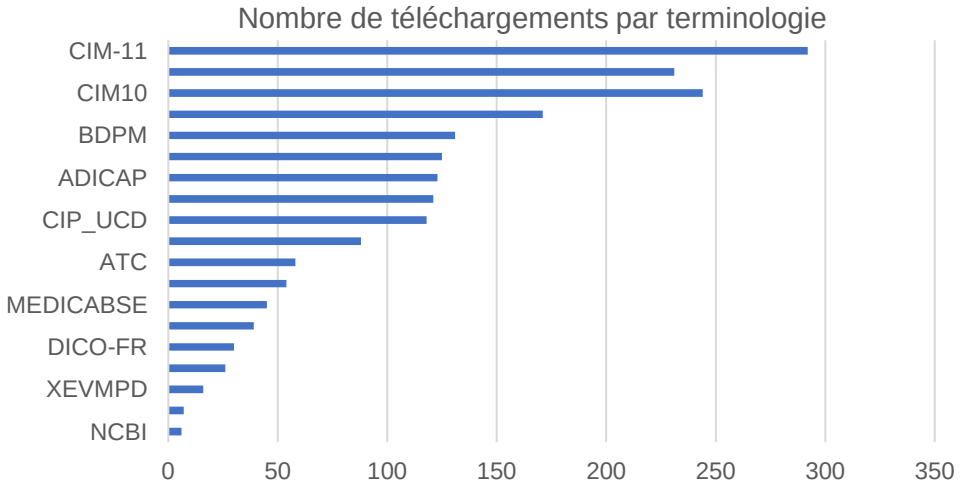
586 800 Concepts

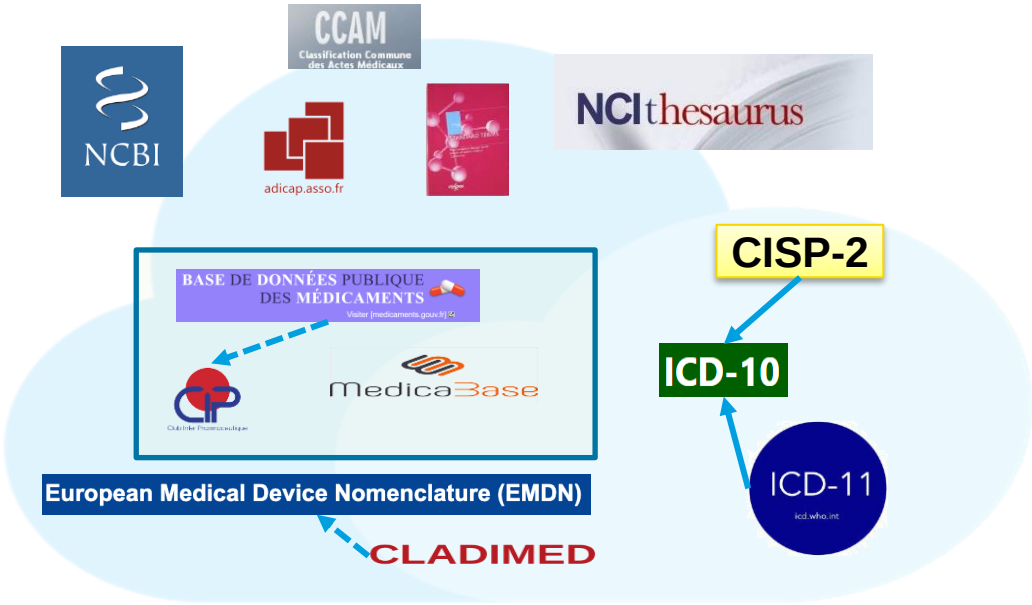
7 New Terminologies (2022)

+1900 Downloaded files (since 01/2022)

4

- Files RDF/OWL
- API
- SPARQL
- IHM



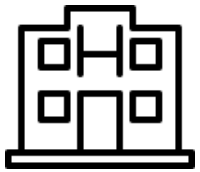


AGENCE DU NUMÉRIQUE EN SANTÉ

La transformation commence ici

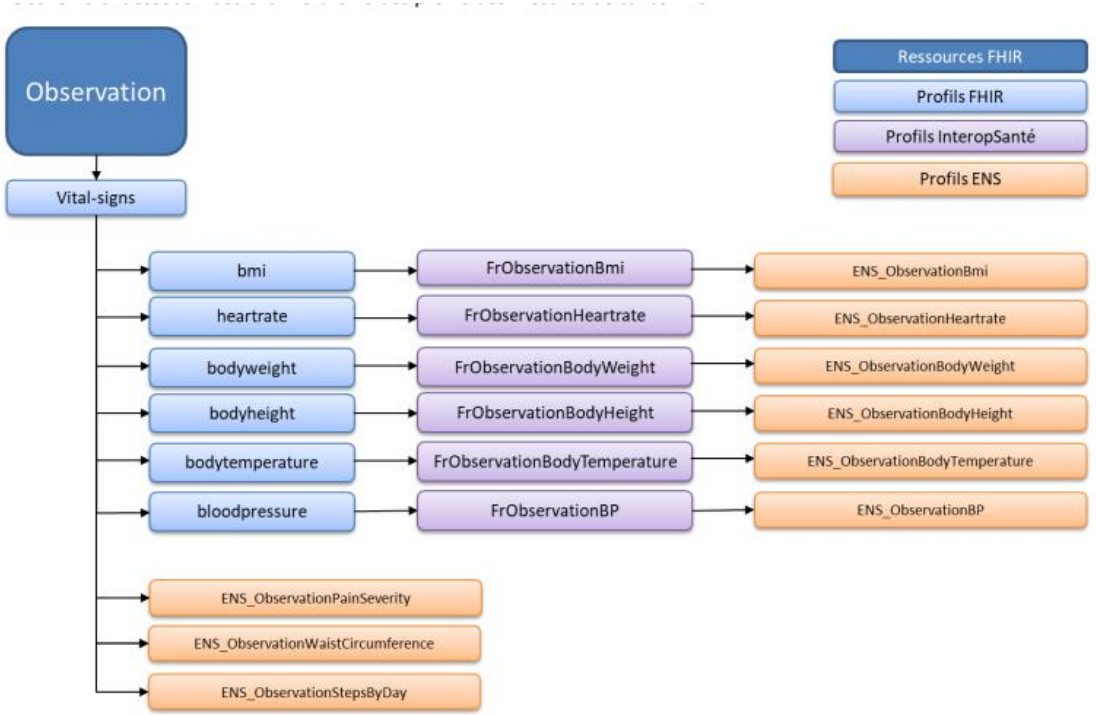
How ? → semantic + structure

Semantic interoperability (Level 3)



- ICD 10/11
- ICPC
- CIF
- LOINC
- SNOMED CT
- ATC
- …

Structural interoperability (Level 2)



FHIR

https://industriels.esante.gouv.fr/produits-et-services/ci-sis-cadre-d-interoperabilite-des-systemes-d-information-de-sante