IHE EUROPE EXPERIENCE DAY 13 SEPTEMBER 2022

National Image Sharing in France

Supported by SEGUR du Numérique program

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1. Discover ANS

Agence du Numérique en Santé (ANS)
The French eHealth Agency

Created in 2009, ANS has the responsibility of **promoting the development of shared information systems** and digital technologies in the health field in the national-wide.
ANS contributes to the **reinforcement of the efficiency of health policies** and to the **improvement of coordination, efficiency and quality of care.**

The Agency is a member of IHE int., HL7 int. and IHE France

Our 3 main roles:

- We regulate eHealth in France, improving digital performance through common regulatory and information-sharing standards.
- We operate major national e-programmes to make the public health service more efficient and cohesive.
- We promote and valorize all eHealth initiatives through stimulation, evaluation and support.

2. What is CI-SIS?
Interoperability Framework of Health Information Systems.

CI-SIS includes interoperability specifications with a nation-wide scope. These specifications constitute a standard in order to exchange information.
The CI-SIS is a set of specifications structured around a series of specific use cases.

CI-SIS has 3 layers :

- **Business layer,** specifies exchangeable business content and concepts;
- **Service layer**, specifies the data exchanges of the Business Layer
- **Transport layer,** specifies the transport of information in support of the Service Layer

The CI-SIS contains for each pane :

- **Functional spec** : Study of the need, business concepts of the use case. They are not constrained by the standards & profiles selection.
- **Study of profiles and standards :** study and selection of the most suitable standards
- **Technical Spec**: Explains how the technical spec uses the above selected standards for the identified use case

3. SEGUR program

The program « Ségur du Numérique en Santé » was created with the objective to **generalize a smooth and secure transfer of Health Data between health professionnals and patients** in order to better prevent and better cure.

This program will feed **Mon espace santé,** which allows **each citizen to oversee his health history** and be the main actor of his health

Historic funding

Historic Investment of 2 billions euros

- **1,4 billion** dedicated to the transfer of Health Data (across 3 years)
- **600 millions** dedicated to the medico-social sector (across 5 years)

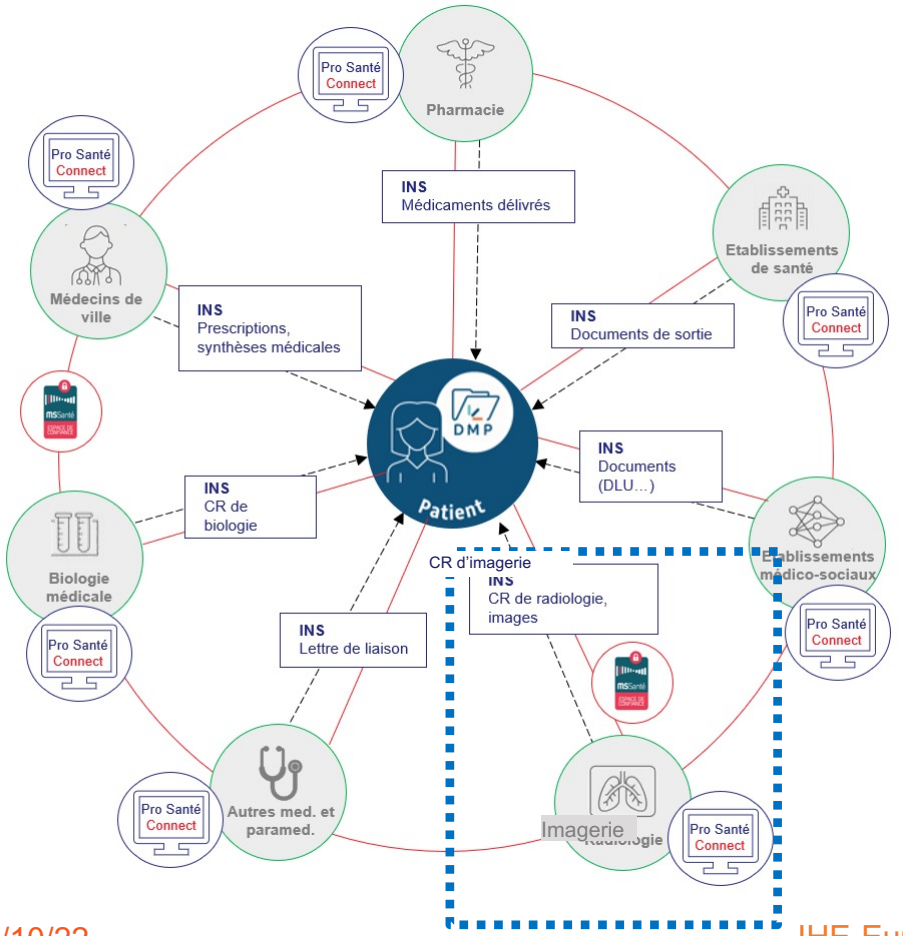
100% financed by the European resiliency and stimulus package.

A giant leap

From 10 millions to… 250 millions documents exchanged every year via the « DMP » (Shared Medical Record) and « MSSanté » (Secure Health e-mail) at the end of 2023.

3. SEGUR program

This program was built together by health professionnals and software vendors



Sub-Program	Structures involved
Medical Biology	• Laboratories of medical analysis (Ambulatory and hospitals)
Imaging	• Radiology & Nuclear Médecine Imaging Centers • Hospital Radiology Departments
General Practitionner	• All GPs and Specialists) • Health Centers
Heath Facility	• Public and Private facilities, Non-Profit facilites
Medico-social Facility	• All facilities mentioned in the article L. 312-1 du CASF
Pharmacy	• All pharmacies

4. The DRIM-M Project (Medical Imaging Distribution)

The DRIM-M Project refers to the Distribution of Medical Images produced by over 1000 PACS nation-wide.

The DRIM-M Project is supported all the main actors in Radiology and Nuclear Medicine in France.

Sponsors du projet Diffusion d'Imagerie Médicales

Focus on the DRIM-M Project:

This project focusses on the centralized access to image pointers (XDS-I DICOM KOS) in order to locate and view imaging exam from source PACS by Medical Professional's health records software through a standized interface.

This gateway functionnality called « **DRIMBox** »: **may be performed by an independant software in front of the PACS or directly by the PACS**. Each vendor choose the best way to implement a compliant « DRIMbox interface » on its product.

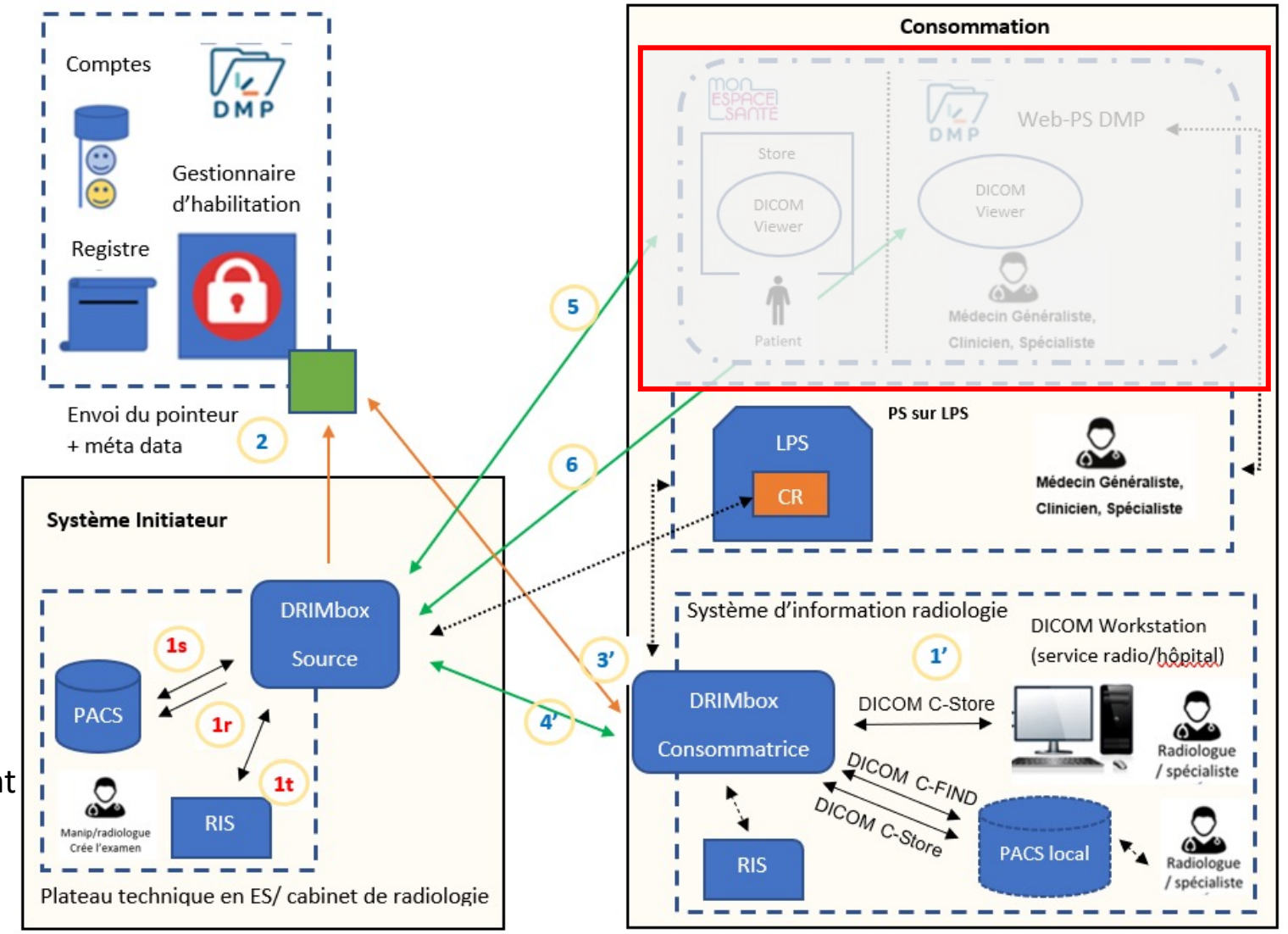
Such a DRIMbox has several functions :

- Feed the DMP with a DICOM Manifest (KOS) built from information coming from the PACS and the RIS (trigger by Report approval)
- Provide access to the PACS source imaging data by supporting image retrieve (DICOM WADO-RS) to remote Consuming DRIMbox installed on the remote RIS/PACS/DPI
- Provide an image display tool (hosted on the Source DRIMbox) to be accessed by any remote web browser using a Viewer DICOM Web ZFP.

The functionalities above rely on Specifications published in the National eHealth Interoperability Framework (CI-SIS). These are based on IHE Profiles (XDS, XDS-I, WIA, etc.) along with HL7 CDA R2 and DICOM Standard.

4.1. General Workflow of the DRIM-M Project

Existing



Next Phase

Current Phase

Current Phase

Légende :

1r, 1s, 1t: Transactions internes au système d'informations radiologie afin de construire le pointeur
2 : Alimentation du DMP
1'-3'-4' : Consultation des images par les radiologues et les spécialistes
5: Consultation des images par le patient via Mon Espace Santé.
6 : Consultation des images par le PS depuis le WEB-PS DMP

Points d'attention :

- Les transactions entre Mon Espace Santé et le DMP ne sont pas modélisées car internes au SI-DMP
- Seuls les examens accompagnés d'un CR validé alimenteront le DMP

Exigences (Macro-Environnement) :

Services MIE exigés :

- DMP mode AIR Simplifié
- Pro Santé Connect

Compatibilité DMP exigée pour la DRIMbox :

- DRIMbox DMP compatibilité CNDA (Alimentation et Consultation extension Imagerie)

Interopérabilité exigée :

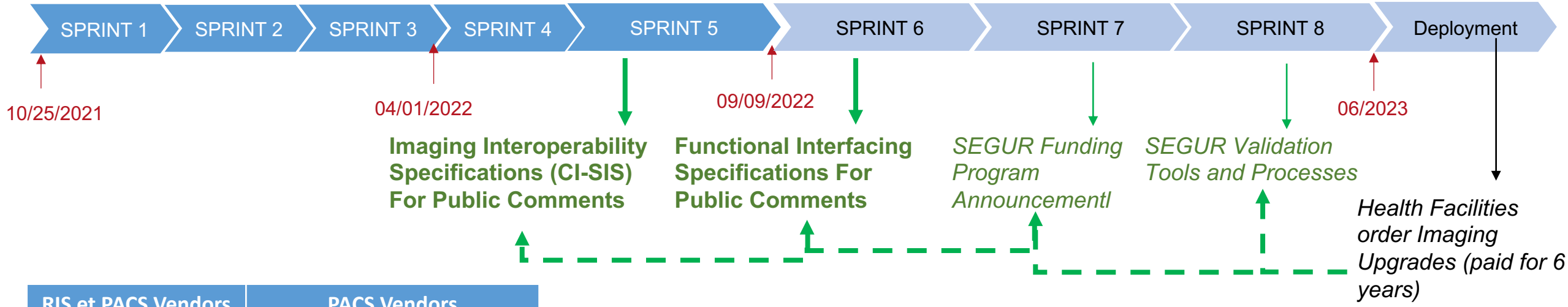
- HL7 v2
- DICOM
- IHE Technical Framework RAD

Hors Périmètre:

- Workflows de téléradiologie
- Processus d'astreinte et d'urgence

4.2. Context and organization of the DRIM-M project

The project is split in several spints (Agile methodology)



RIS et PACS Vendors	PACS Vendors
Evolucare	E-Media
EDL	GE
NEHS	Maincare
Softway Medical	Philips
Dedalus	Siemens
	Telemis
	XEFI
	Deeplink

The DRIM-M project regularly communicates, request input from the vendor and the radiology communities to wrtite the specifications

Link to the deliverables produced:

https://participez.esante.gouv.fr/project/volets-du-projet-de-diffusion-dimagerie-medicale-du-segur-du-numerique-en-sante/presentation/presentation

Link to the Imagery section of the SEGUR Program:

Radiologie, en savoir plus sur le Ségur du numérique en santé | esante.gouv.fr

5. IHE Profiles used in the DRIM-M Project

<u>Sharing Imaging Manifest:</u> From the DRIMbox Source to the National Patient Dossier (DMP).

DRIMbox source => Imaging Document Source

DMP => Document Repository et Document Registry

The DMP is based on the **XDS profile.** For the project's needs, the DMP is upgraded to the **XDS-I.b profile which allows image sharing**. The **RAD 68 transaction** allow to send the KOS to the DMP (Provide & Register)
Standard DICOM PS3.3: Key Object Selection Document (KOS). We chose the KOS that contains the image object references as a URL (Retrieve Location).
When the imaging Report is validated by the radiologist, using the Study Instance UID within the Report header (CDA R2 specified in CI-SIS) , the DRIMbox function builds the Imaging Medical Manifest (DICOM KOS) with the necessary XDS-I metadata and sends it to the DMP.

<u>Access Images:</u> Following access on the DMP to the KOS, a consuming DRIMbox access imaging from the Source DRIMbox.

DRIMbox Conso => Imaging Document Consumer

The DRIMbox Conso retrieves the KOS: **Transactions ITI-18, puis ITI-43** to retrieve the document (KOS).
One deviates from the XDS-I profile, by using **WADO-RS** instead of WADO-URI as WADO-RS is more flexible and is becoming widely used: the RAD 55 transaction is replaced by the **RAD 107** of the IHE **WIA profie.**
The DICOM viewer hosted by the consuming DRIMbox offers a single user interface to the viewing health professional
Note: A Source DICOM Viewer may also be accessed on the Source DRIMbox through a web call (Direct Link from the Report)

6. Deliverables in consultation phase

The following deliverables have been produced and are at the moment in consultation phase.

CI-SIS deliverables

Service layer :

Exchange functional specifications:

Pane 'Health Imaging Examination Sharing

Technical Specification :

Pane "Access to Health Documents in Imaging".

Business layer :

Content pane – References to the objects of an imaging exam:

CI-SIS Change Proposal

Service layer :

Technical specifications :

Pane "Health Document Sharing":

Link to the deliverables produced that are in consultation phase: https://participez.esante.gouv.fr/project/volets-du-projet-de-diffusion-dimagerie-medicale-du-segur-du-numerique-en-sante/presentation/presentation

7. Next steps (end 2022, beginning 2023)

Main coming actions within the DRIM-M project:

- **DRIMbox Functional Specifications.**

This is an architectural document which is comprised of the entire set of architectural requirements that the software editors will be asked to comply with.

These functional specifications contain the requirements of a basic DICOM viewerthat must be implemented by the software editors. They are aligned with commonly available open source DICOM viewers.

- **Test Tools and Test plans**

These test tools and test plans will be offered to vendors for their internal testing and used for formal validation for the product to reieve the SEGUR compliance label.

- **Test: proof of compliance to SEGUR requirements**

Thank you for your attention

Should you have any question, you may contact us

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