normand'e.santé

PRATIC : Telemedicine Services deployed in Normandy leveraging IHE

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SUMMARY

1. Normandy Region
2. Normandy Health Organization
3. The projects where IHE profiles are used
4. Regional services to share and archive imaging
5. Regional Teleradiology IHE connector
6. Conclusion

Region

Normandy Region

Normandy Region

Normandy health organisation

- One Regional Health Agency (ARS)
  - Mrs Christine GARDEL, Executive director of ARS
  - ARS is responsible for defining the regional e-health strategy and organizing its implementation (it's a regional authority).
  - 9th march 2018, The ARS publishes for consultation its PRS (Health Regional Plan).
  - The PRS describes the strategic plan, the organisation of the health services based on the national Health Strategy Plan:

GOALS :

- Include prevention throughout life
- Promote Health equality
- Develop an efficient and good quality of medical care
- Innovate to transform our system of health

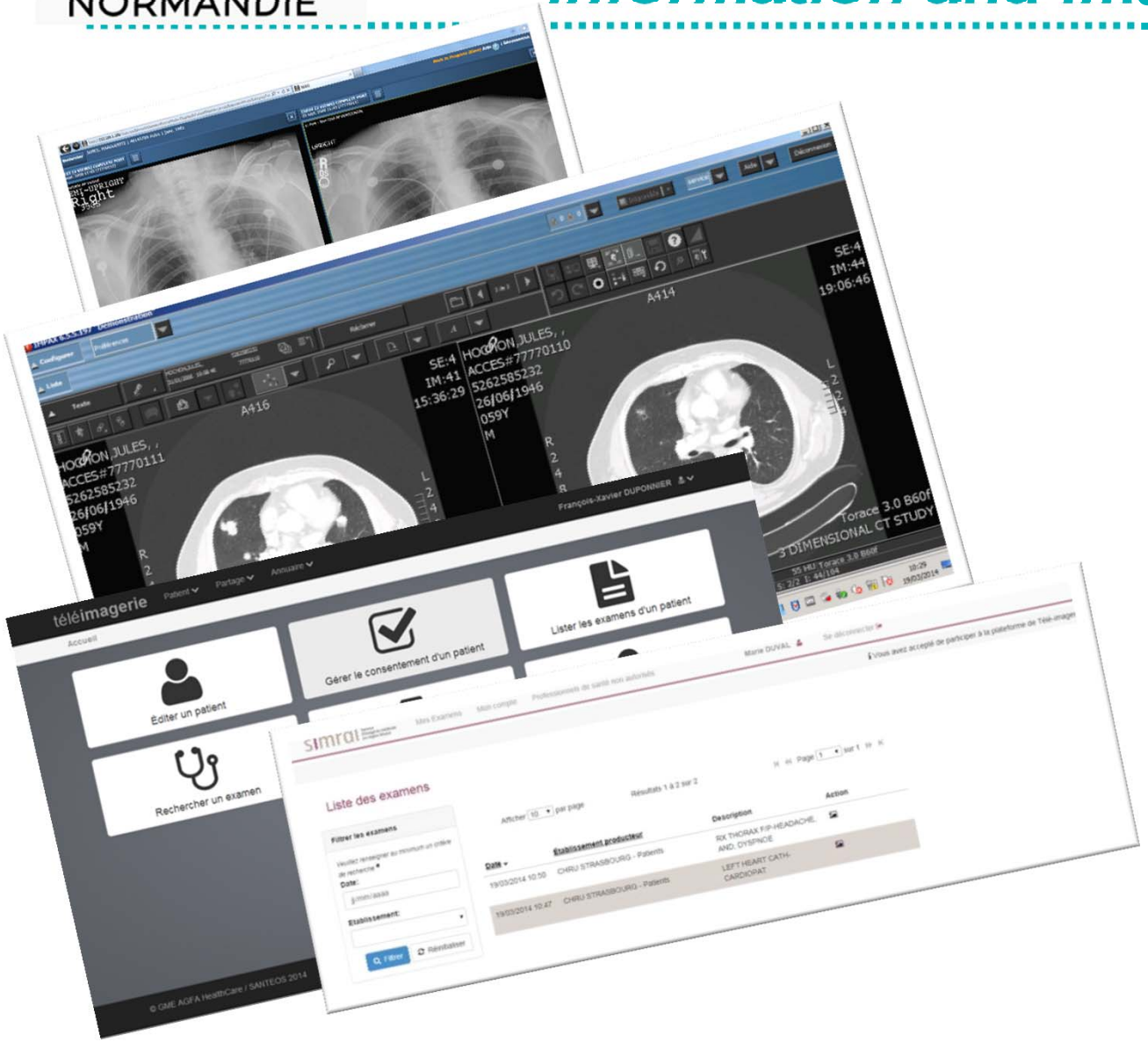
Normandy health organisation

- One organisation called Regional grouping support services for the development of e-Health (GRADes)
  - Mr Thierry LUGBULL, president of Normandy GRADes
  - The GRADes is an operational organisation, the operator of the ARS for the development and the implementation of the regional e-health strategy.
  - But it can also brings expertise to regional actors (public or private health structure)
  - I work in this GRADes as télémédecine project manager.

The projects where IHE profiles are used

- Shared clinical information and images
- Tele-radiology

Regional services to share and archive clinical information and images.

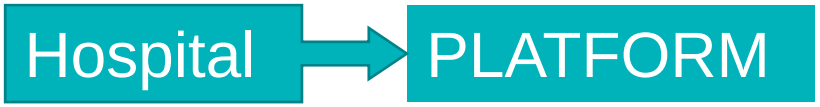


- Portal for patient and healthcare professionals
- Allows to share and archive images and reports between hospitals (patient consent is collected)
- The HP can use his own tools to vizualize the patient images
- Based on an XDS infrastructure : PIX/PDQ, XDS.b-i

Regional service to share and archive clinical information and images.

- Sharing and archiving are done in the central platform (the easiest way, it's a « all in one solution »), the hospital may subscribe to these 2 services ;
- Sharing is done in the central platform, but archiving is done in the hospital, the hospital subscribe to the sharing service only, case to study to send/receive imaging to/from the central platform :

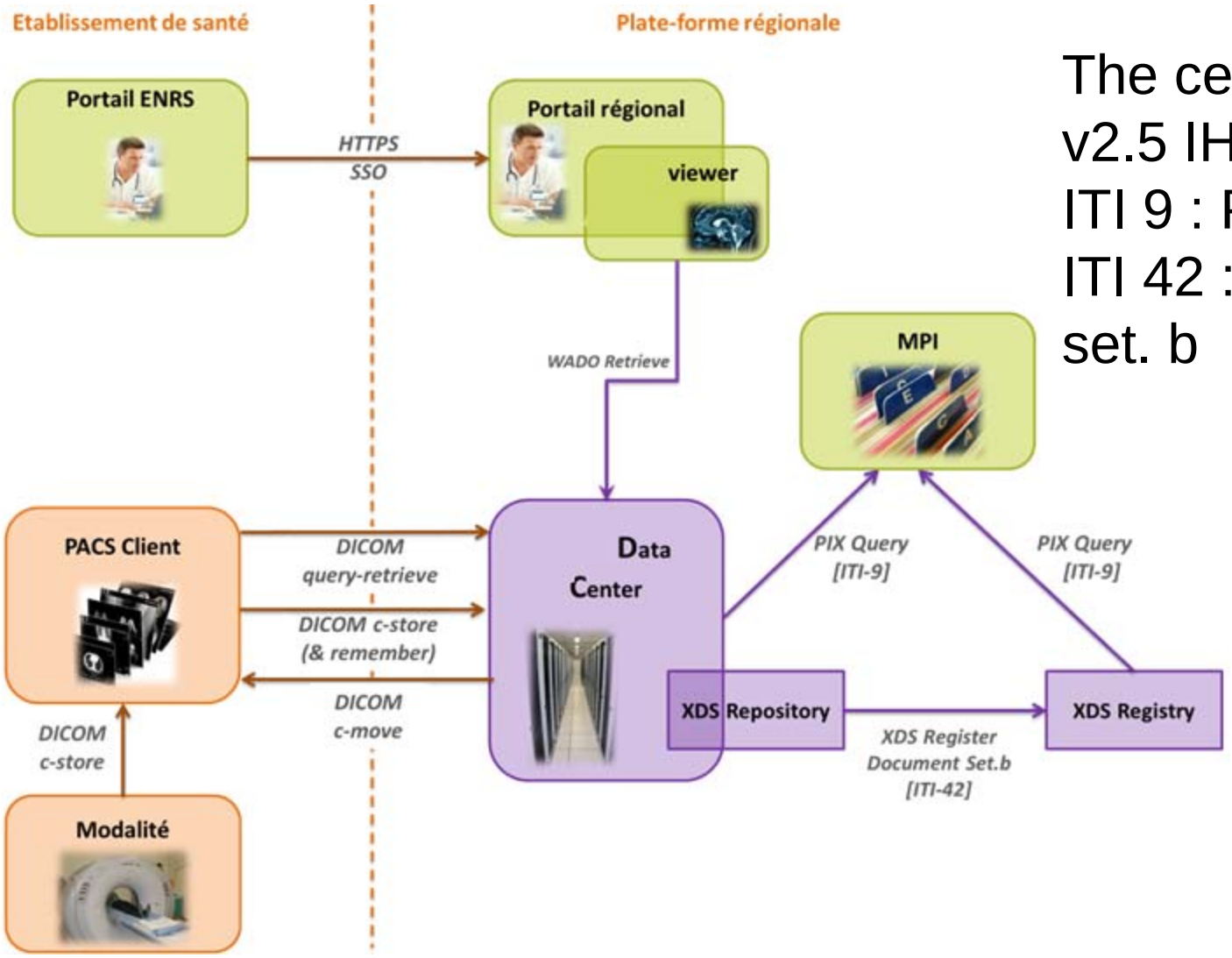
  - With PACS or VNA XDS compatible
  - With PACS or VNA not XDS compatible



  - WADO compatible
  - WADO not compatible

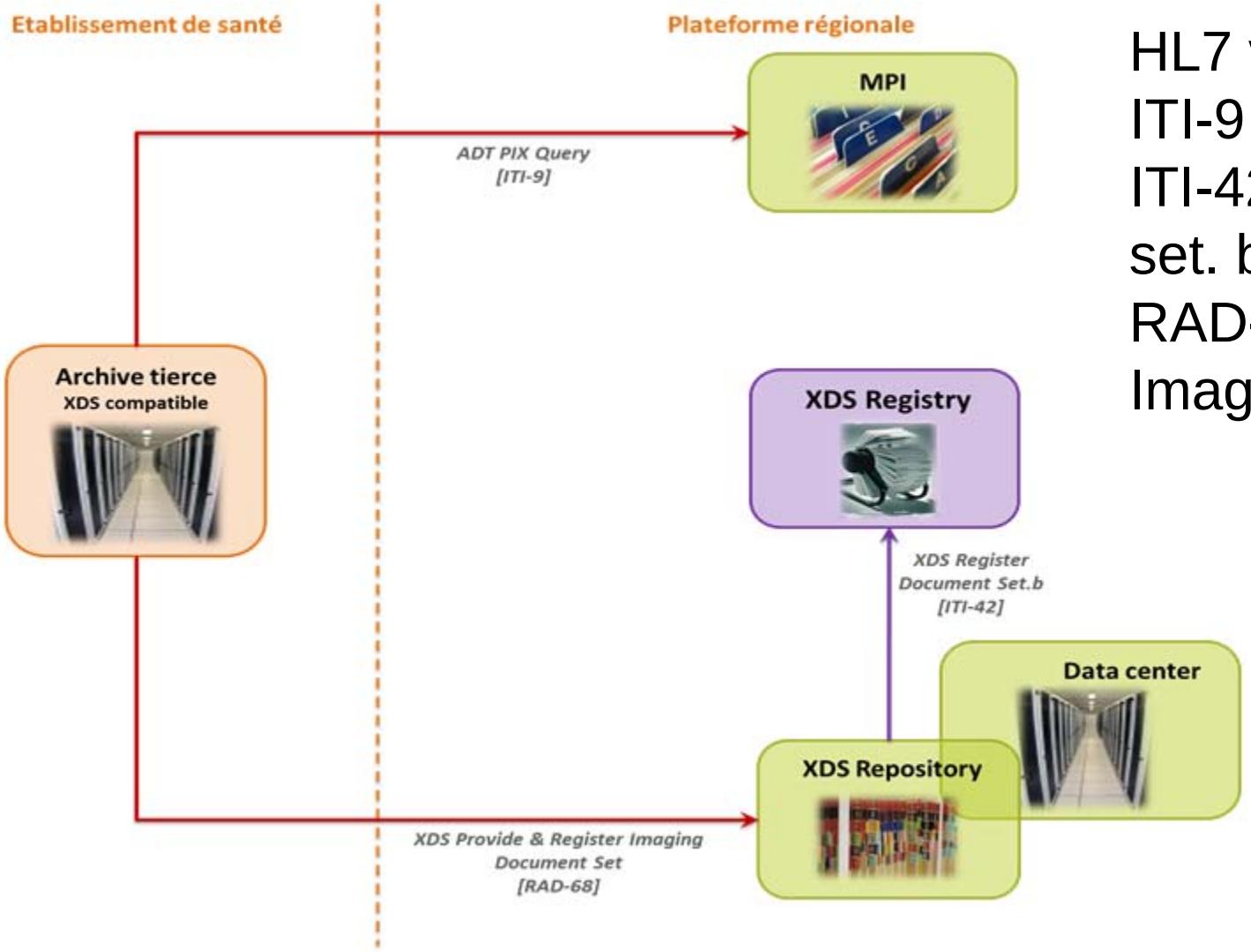
- The central platform is Based on an XDS infrastructure : PIX/PDQ, XDS.b-i but hospital HIS are not PIX compatible but PAM compatible

Sharing and archiving in central.



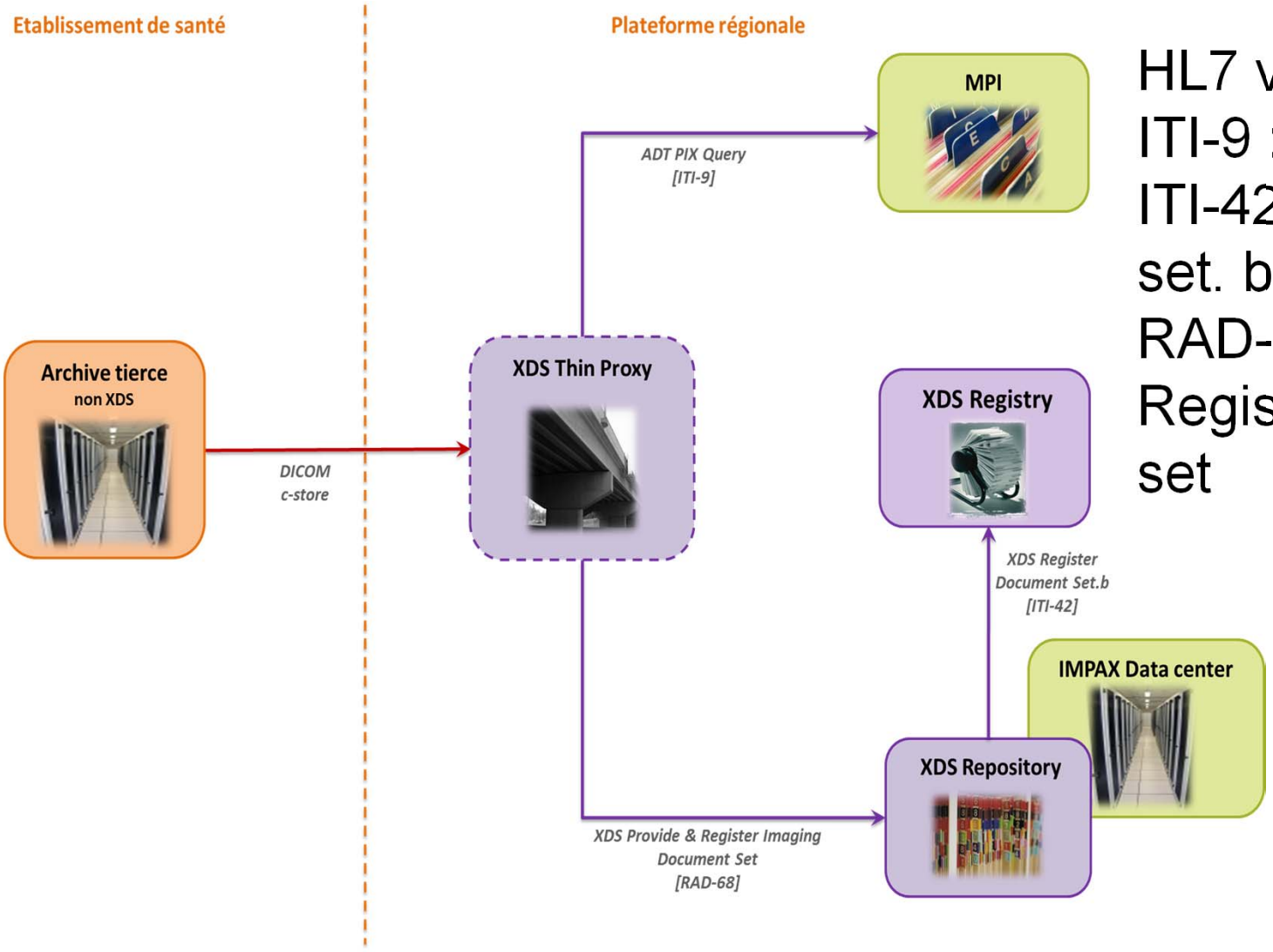
The central platform is HL7 v2.5 IHE PIX profile :
ITI 9 : PIX QUERY
ITI 42 : Register Document set. b

Sharing only in central, XDS compatible:



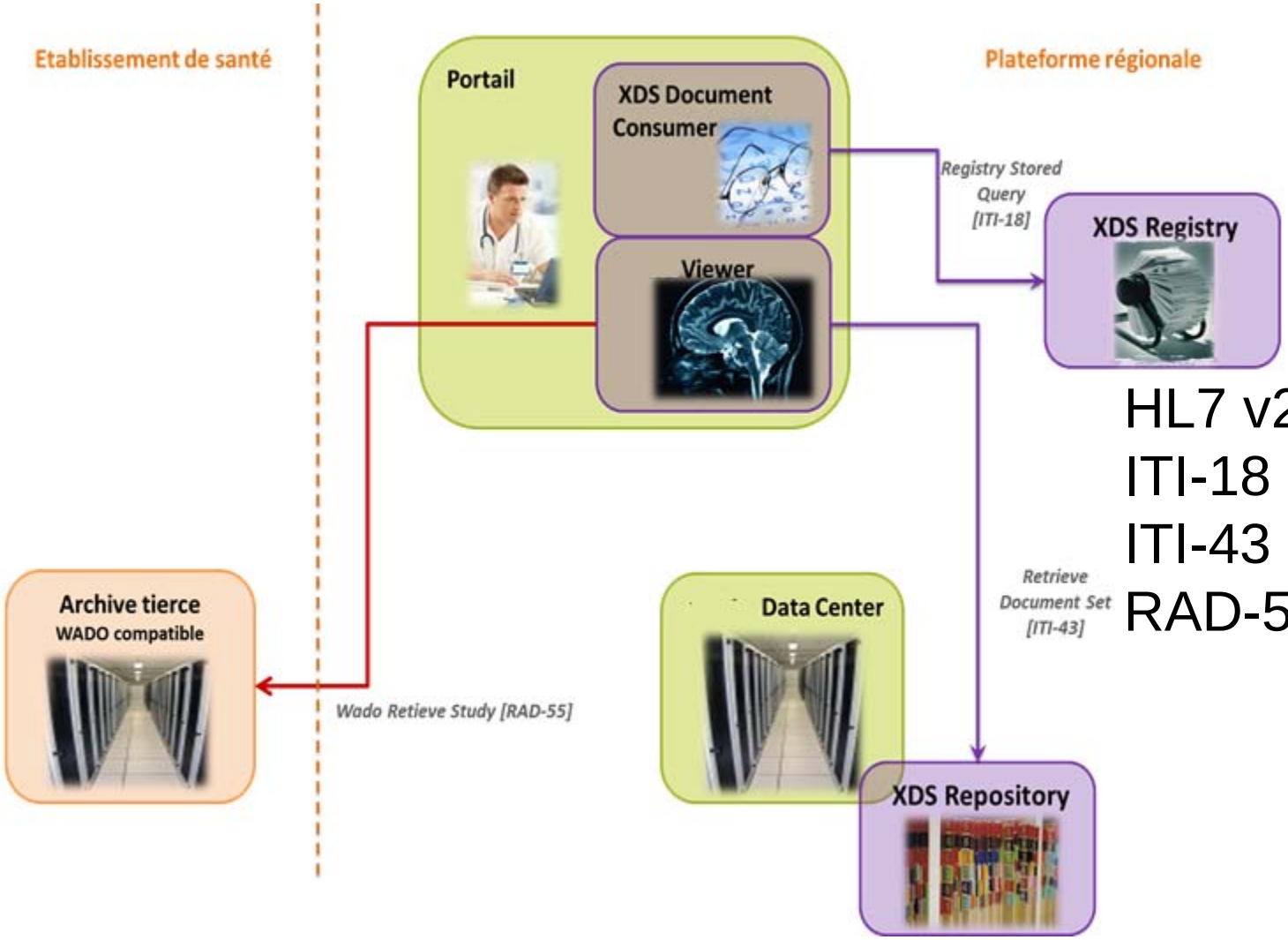
HL7 v2.5 IHE PIX profile :
ITI-9 : PIX QUERY
ITI-42 : Register Document set. b
RAD-68 : Provide and Register Imaging document set

Sharing only in central, not XDS compatible.



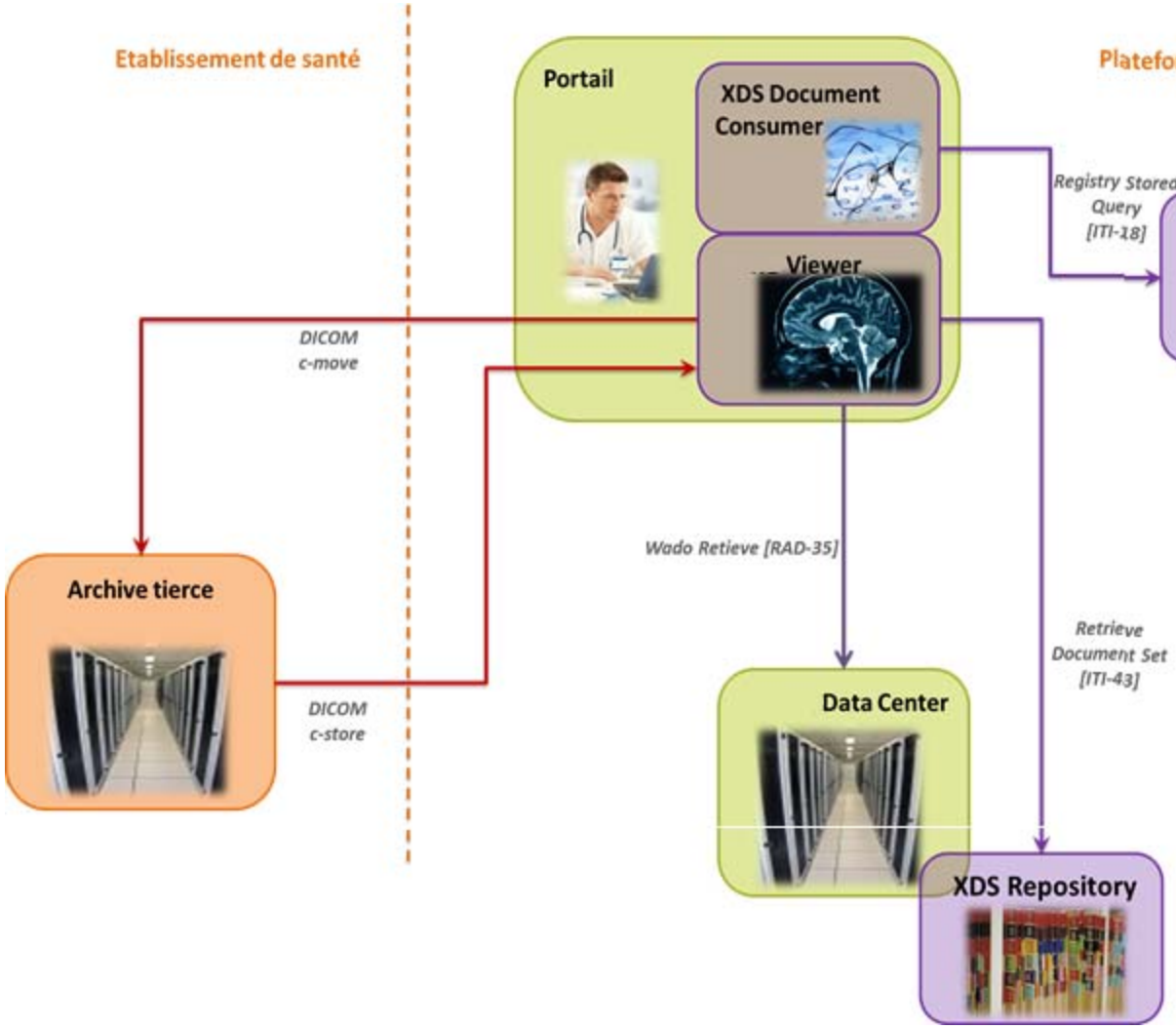
HL7 v2.5 IHE PIX profile :
ITI-9 : PIX QUERY
ITI-42 : Register Document set. b
RAD-68 : Provide and Register Imaging document set

WADO compatible.



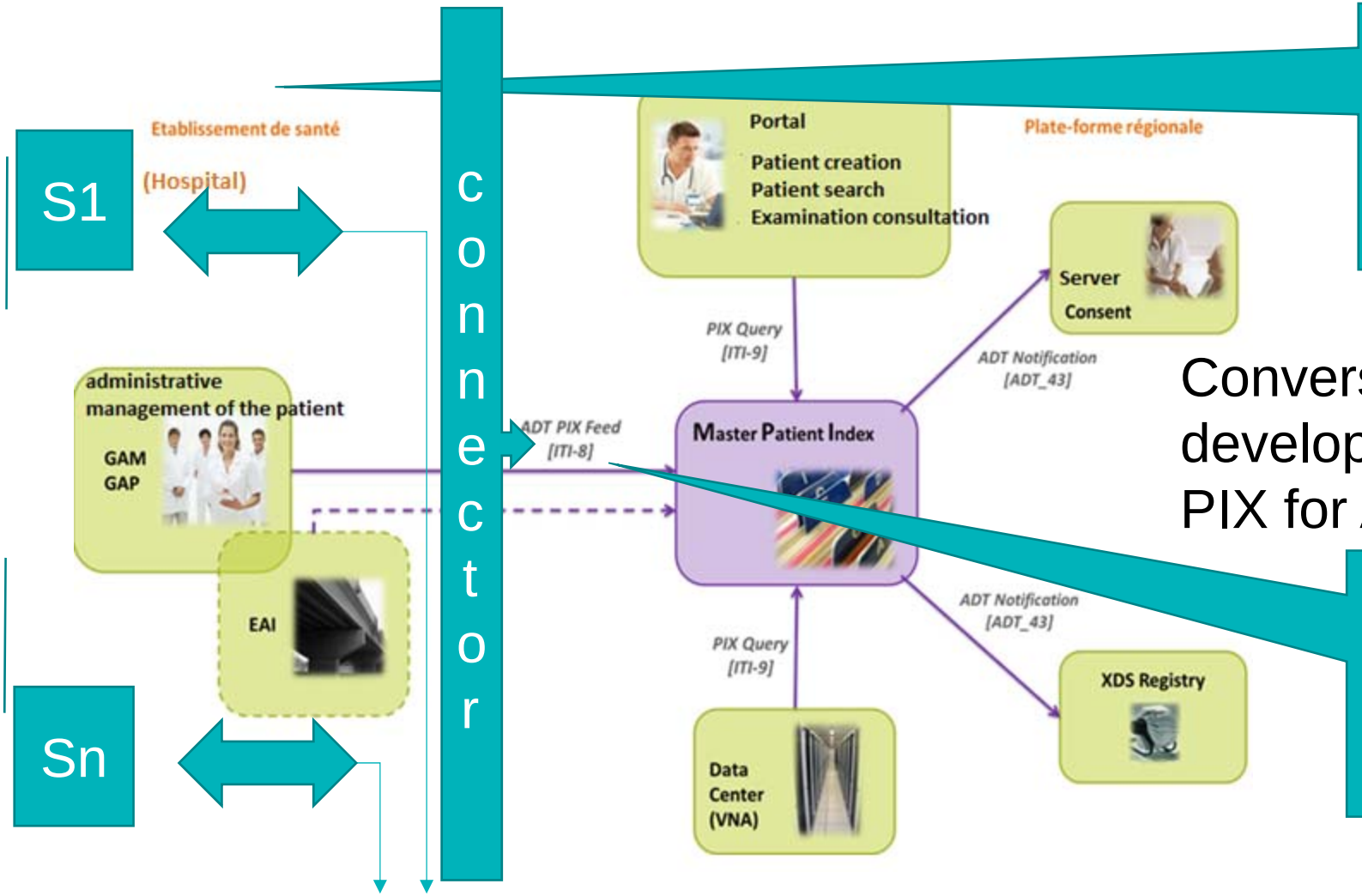
HL7 v2.5 IHE PIX profile :
ITI-18 : Registry Stored QUERY
ITI-43 : Retrieve document set
RAD-55 : WADO retrieve

WADO not compatible.



HL7 v2.5 IHE PIX profile :
ITI-9 : PIX QUERY
ITI-42 : Register Document set.b
RAD-68 : Provide and Register Imaging document set

Regional sofware : PIX compatible.
Hospital software : PAM compatible.



HL7 2.5 IHE PAM

ITI-30 (Patient Identity Feed)

- ADT^A28^ADT_A05 (create)
- ADT^A31^ADT_A05 (update)
- ADT^A40^ADT_A39 (merge)

Conversion Connector development from PAM to PIX for ADT requests

A01,A04,A05,A08,A40 = ITI 08, Patient Identity Feed, du profil IHE PIX, Patient Identifier Cross-Referencing

Internal Hospital development to transfert ADT PAM requests

Regional software : PIX compatible
Hospital software : PAM compatible.

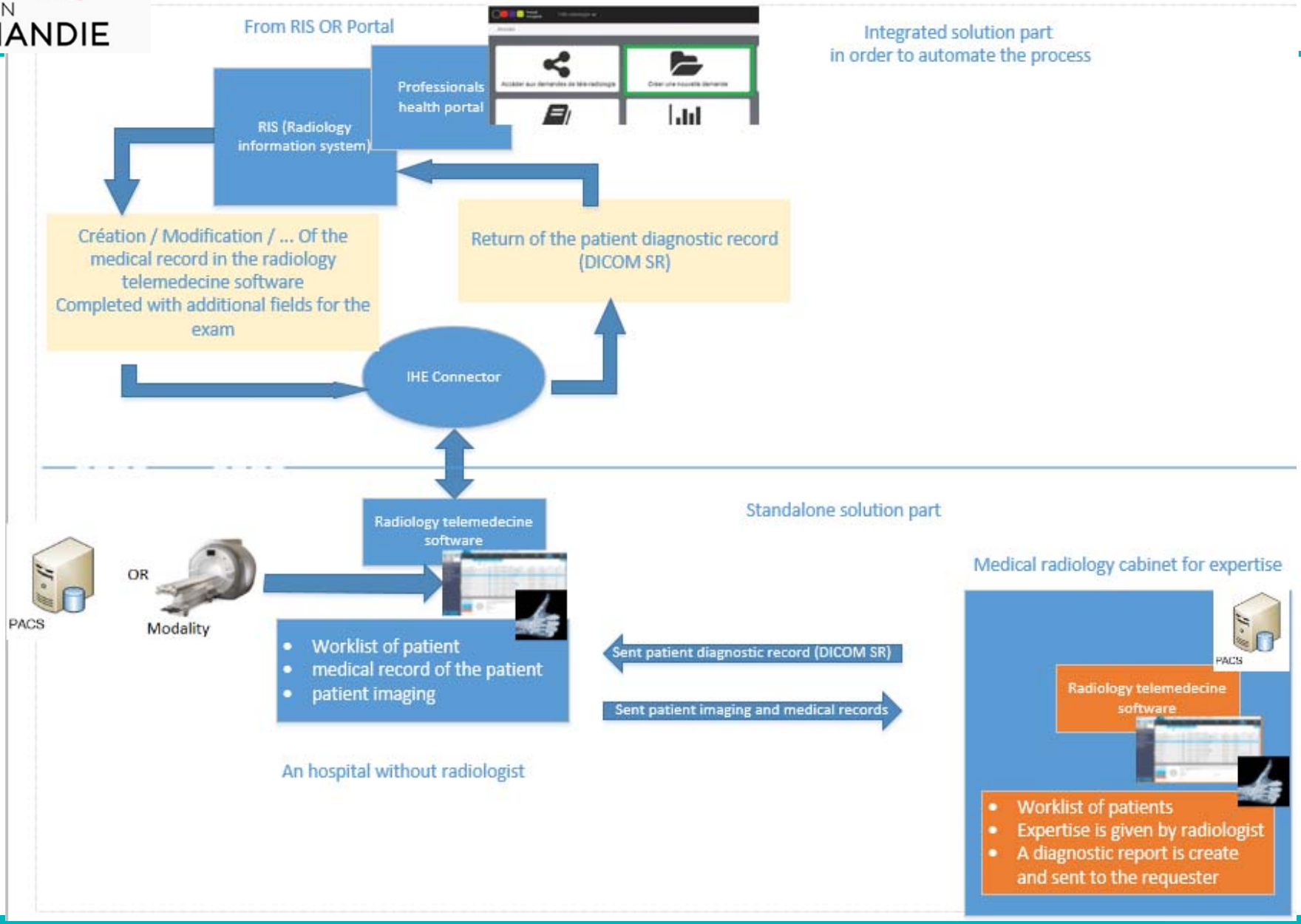
PAM		
ITI-30(Patient Identity Management = permet de véhiculer les "données démographiques et d'identification des patients")		
ADT^A28^ADT_A05	ADT^A31^ADT_A05	ADT^A40^ADT_A39
Création d'un nouveau patient	update patient information Mise à jour d'information du patient	merge = Rapprochement de deux dossiers patients

translation translation common

PIX				
ITI 08 (Patient Identity Feed)				
A01	A04	A05	A08	A40
admit patient Création d'un nouveau patient	register out patient	pre-admit of an in patient	update patient information Modification/Mise à jour d'information du patient	merge Rapprochement de deux dossiers patients

Conclusion: IHE has developed two profiles not compatible between them which lead to develop additional effort for integrating the HIS internally and inter enterprise.

Regional IHE connector in Teleradiologie



Regional IHE connector use-cases

Health record Management
ORM/OMG

Creation/Modification/Deletion complementary or optional fields
GOAL : Automate the creation of the patient's health record

DICOM meta-data parsing

Extraction of data from the DICOM imaging meta-data
Goal : update the patient's health record

Identity flow (ADT)

Forwarding patient identity from Health care administrative management of the patient
GOAL : Built a patient list

Multiple use-cases

management of the telemedicine report
ORU/MDM

- Return to the requester the report ;
- Return to the HIS of the expert site the report ;
- Return additional or replacement report if necessary.
- acknowledge receipt of the medical report to close the file

appointment management for the patient (SIU)

GOAL : Creation/Modification/ Deletion of appointment

Regional IHE interoperability requirements for specifications

1. IHE Technical Framework containing the required profiles.

2. Required profile (integration or content), described by the Technical Framework

3. The National extension of this Profile when existing.

4. Actor to implement the solution in the required profile

5. Option(s) of the actor that must additionally support the solution for the establishment

Regional IHE profile in Teleradiologie

Health record Management
ORM/OMG

IHE RAD Profile
Transaction RAD-2
(Placer Order Management)
Using ORM and OMG
Transaction RAD-3
(Filler Order Management)
Using ORM/ORR or OMG/ORG

Identity flow (ADT)

IHE PAM profile
ITI-30
(Patient Identity Management)
A28 (create) / A31 (update) / A30 (merge)

If necessary :
ITI-31
(Patient Encounter Management)

Multiple use-cases

management of the telemedicine report

- ORU (Unsolicited Transmission of an observation message)

Or

- IHE DRPT Profile (Displayable Reports) profile from cardiologie domain with MDM (Medical Document management) messages from CARD-7 transaction.

appointment management for the patient (SIU)

HL7 SIU (Scheduling Information Unsolicited)

eventually SRM (Schedule Request Message)

Conclusion

- Some difficulties that I met:
  - Not easy to navigate in the standard corpus with it's own expertise.
  - Among all the published documents, which one are up to date ?
  - The guides of recommendations help to answer to this question but sometimes they themselves are obsolete.
  - Interpretations of the standard by publishers do not facilitate interoperability.

- Thanks to IHE for it's job since many years : Putting coherence where there was none. Despite my difficulties, it's still easier than not having anything.

Questions ?

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