Solutions de gestion des données d'imagerie:exemples avec Shanoir, Archimed et Cati-DB

Michael Kain

Solutions de gestion des données d'imagerie: exemples avec Shanoir, Archimed et Cati-DB

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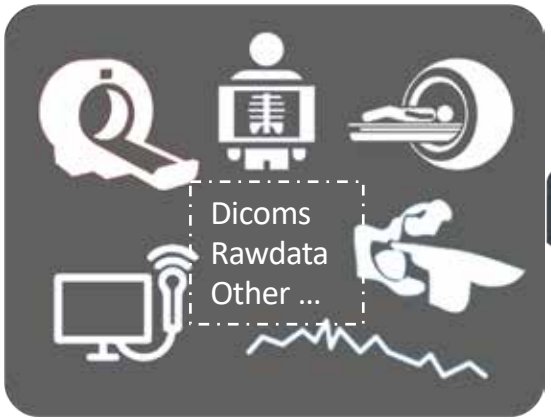
Bases de données en imagerie médicale

- Pour les études **multi**-centriques, cliniques et précliniques :
  - Images (brutes (DICOM) et derivées/traitées)
  - Meta-data associeés, par ex. time points, protocole d'étude etc.
- Dans un **environnement complexe**:
  - **Standards/formats** : DICOM, PACS, DICOM De-identification, Pseudonymization and **Anonymization**, **DICOMWeb**: WADO-URI, -WS or -RS, QIDO-RS, STOW-RS, NIfTI, NRRD, XDS, HL7 CDA, HL7 **FHIR**, **BIDS**, NIDM, Medical Health Records (DMP, EHR, PHR, openEHR) →**interopérabilité**
  - **Juridique** :
    - France: CNIL, « agrément HDS », ANSM
    - Europe: GDPR, applied on 25. May 2018
    - USA: HIPAA & Title 21 CFR Part 11 by FDA
  - **Sécurité** : cybersécurité et -attaques, serveur et hardware
  - **Besoins scientifiques** et **économiques**
- **Besoin** pour un hébergement professionel/industriel: -> FLI-IAM
- Bases de données: ArchiMed, CATI-DB, Shanoir, XNAT

❖ ArchiMed Platform

Et son environnement

Connecté à l'environement Clinique,



MRI

CT

ECG

ArchiMed

Pour la recherche et ses outils,

Desktop

DB

Workstation

Centralized 3D Viewer & Post Processing

Matlab / Python / Batch processing

Other research tools

... Multicenter

Centers

HTTPS + Encryption

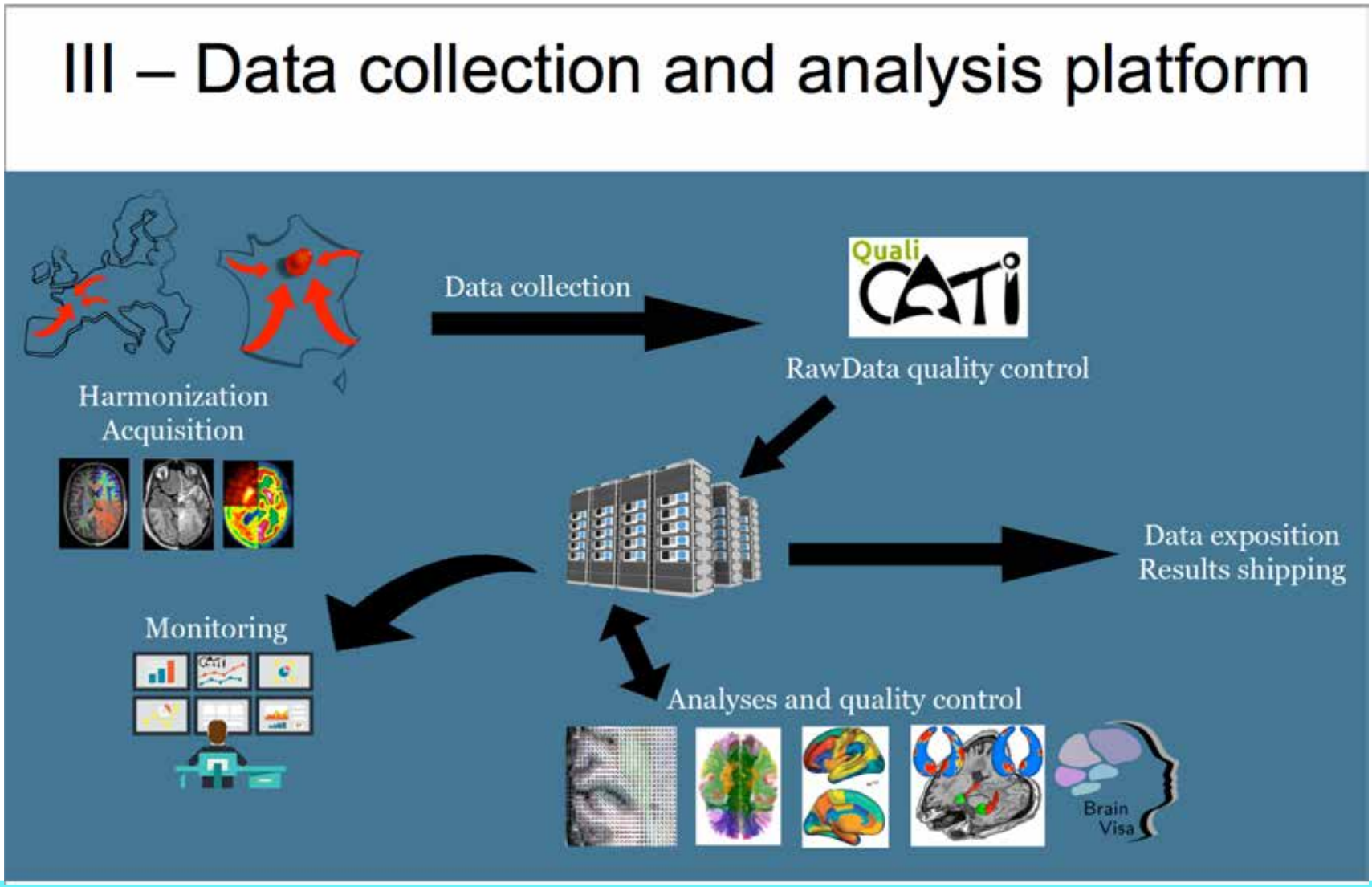
Eureka

Local Secured Copy

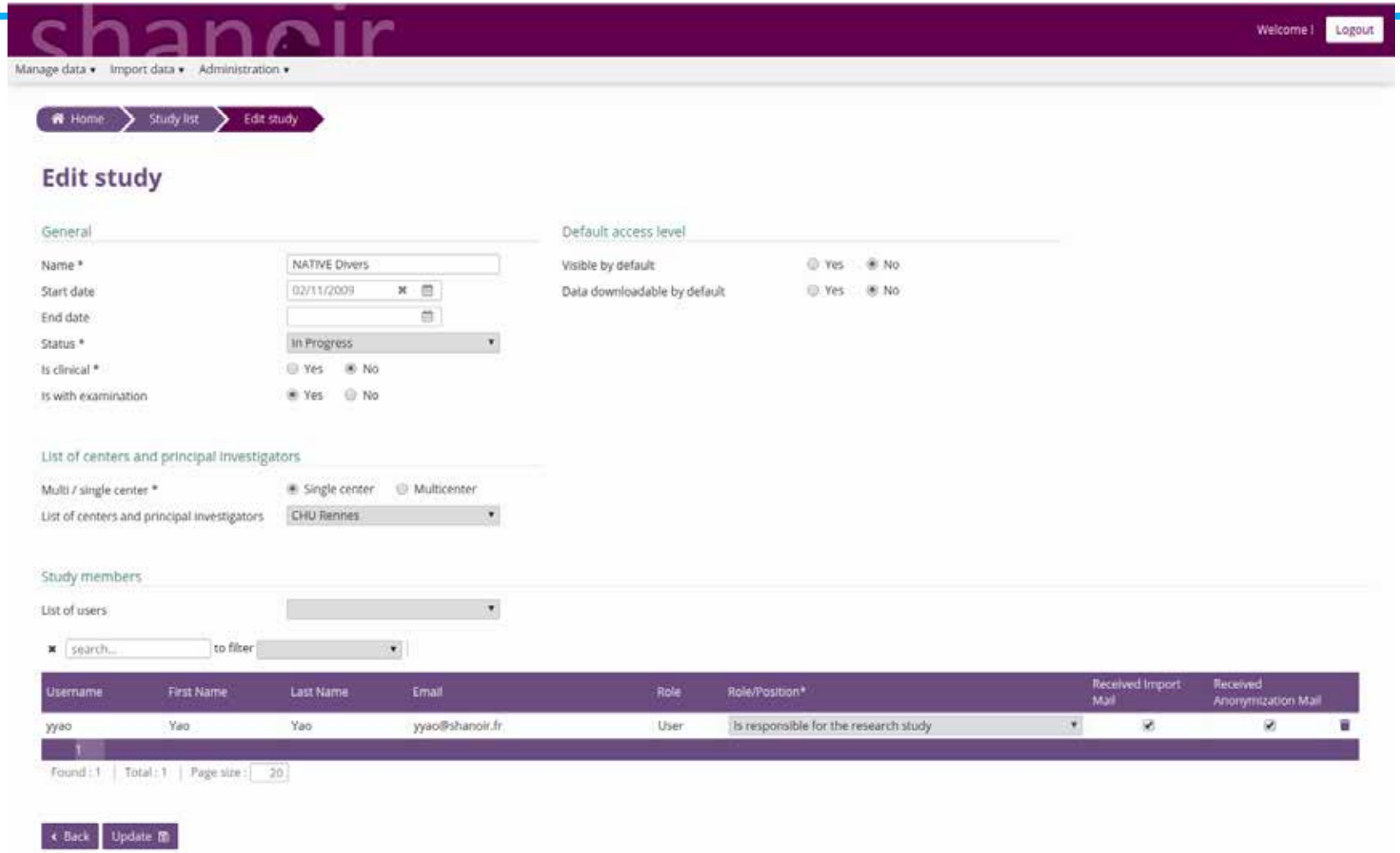
ArchiMed

CiC-IT

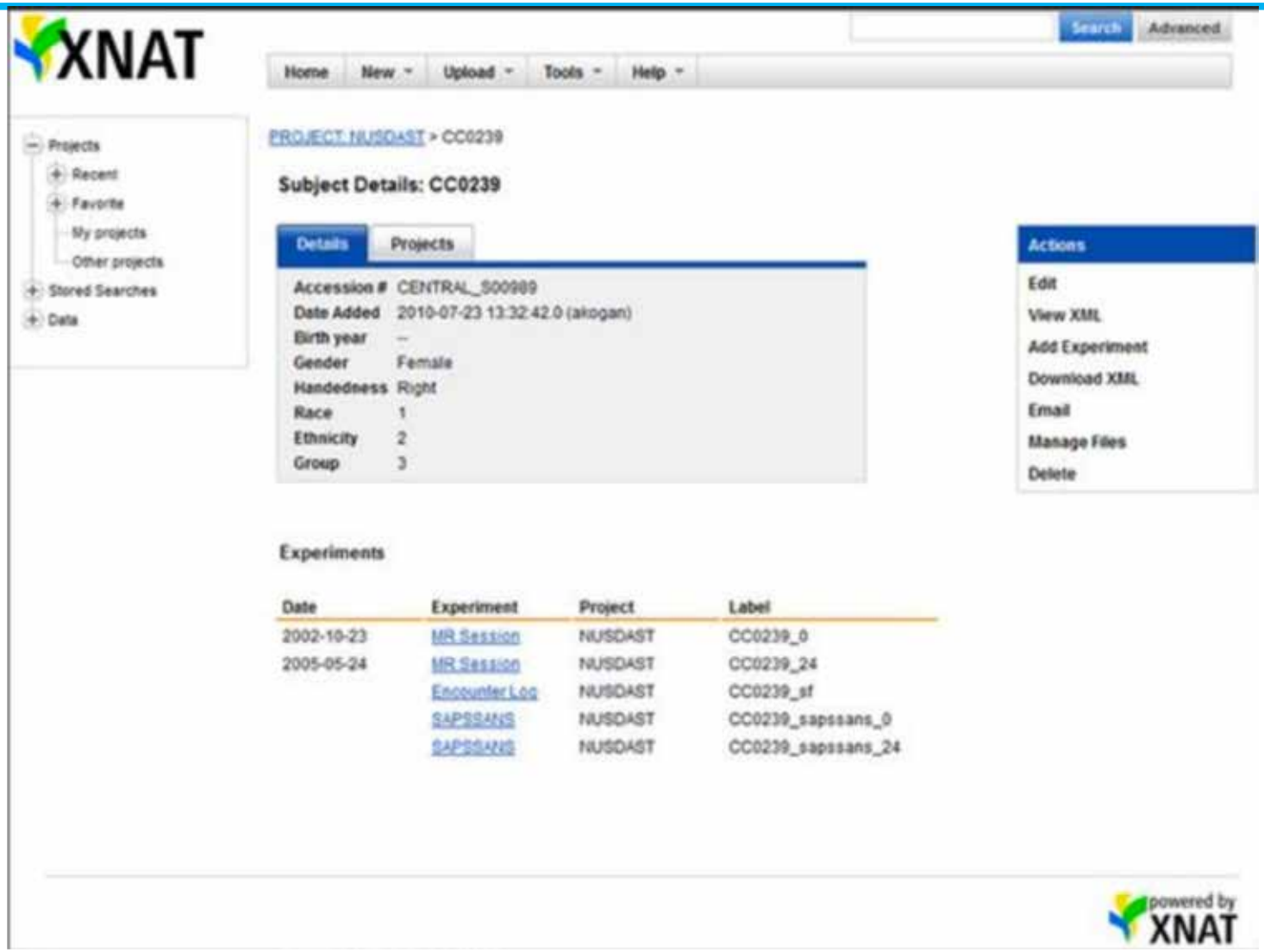
CATI-DB


III – Data collection and analysis platform
Data collection
Quali CATI
RawData quality control
Harmonization
Acquisition
Data exposition
Results shipping
Monitoring
Analyses and quality control
Brain Visa

Shanoir-NG, more on shanoir.org



XNAT


XNAT
Search
Advanced
Home
New
Upload
Tools
Help
Projects
Recent
Favorite
My projects
Other projects
Stored Searches
Data
PROJECT NUSDAST > CC0239
Subject Details: CC0239
Details
Projects
Accession # CENTRAL_S00989
Date Added 2010-07-23 13:32:42.0 (akogan)
Birth year –
Gender Female
Handedness Right
Race 1
Ethnicity 2
Group 3
Actions
Edit
View XML
Add Experiment
Download XML
Email
Manage Files
Delete
Experiments
Date
Experiment
Project
Label
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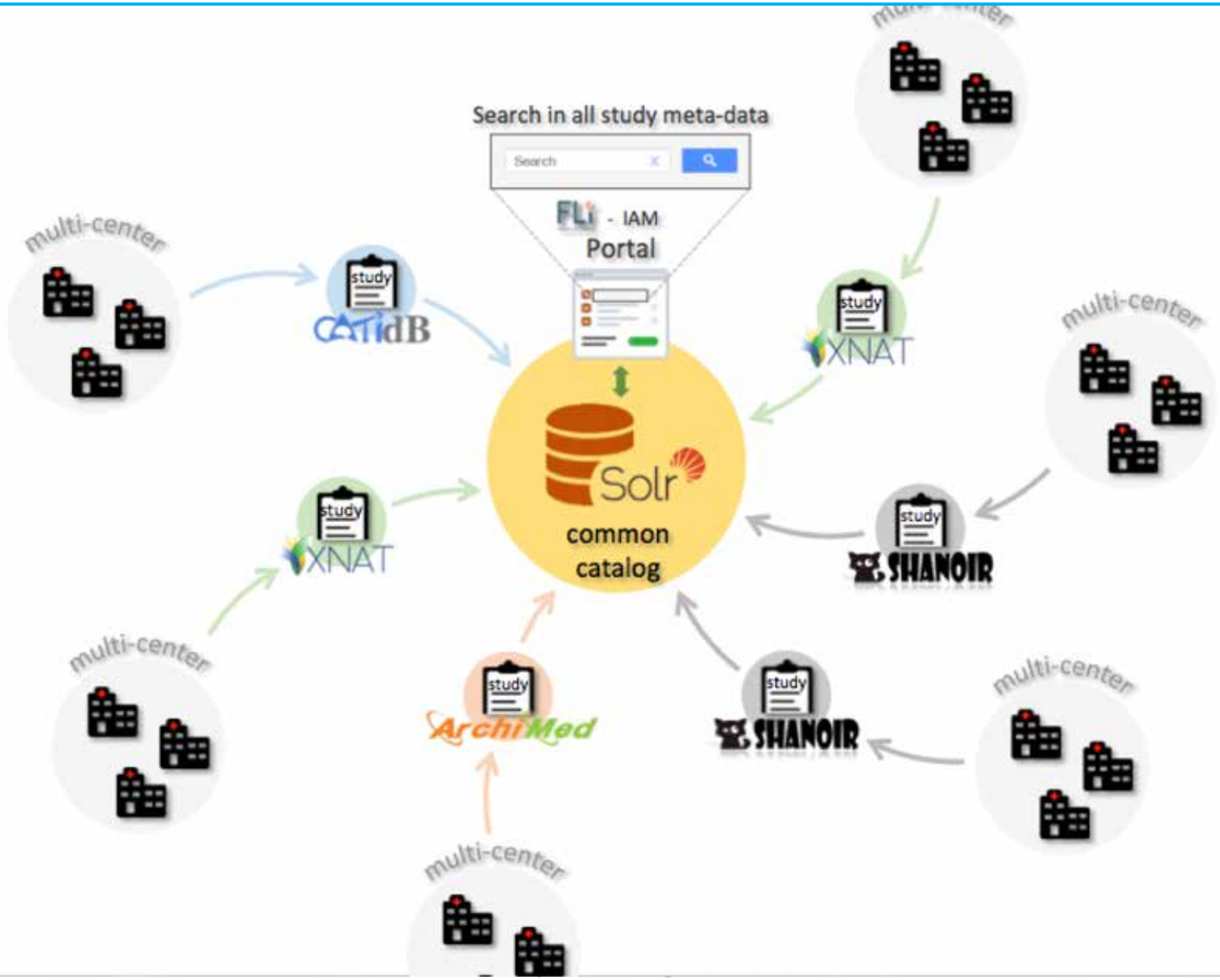
MR Session
NUSDAST
CC0239_0
2005-05-24
MR Session
NUSDAST
CC0239_24
Encounter Log
NUSDAST
CC0239_sf
SAPSSANS
NUSDAST
CC0239_sapssans_0
SAPSSANS
NUSDAST
CC0239_sapssans_24
powered by XNAT

Summary

Name	Who?	Concept/Model/Specials/Scenario?	Modalities?	Browser?	Links?	Open-Source?
ArchiMed	CIC-IT Nancy, Inserm	Centralized server, model most close to DICOM/PACS, Desktop client, PAAS	MRI, CT, XA	No	Site web CIC-IT	Not yet
CATI-DB	CATI Paris, CEA	Centralized File-system (NFS) with meta-data server, model oriented on processings, perfectly adapted and coupled into CATI infra, turn-key	MRI, PET/SPECT	No	https://cati-neuroimaging.com	Yes, register for access
Shanoir	Visages, Rennes, Inria	Centralized server Ontology based, Model remains fix, Web client, PAAS	MRI, PET, Bruker, EEG in 2019	Yes	http://shanoir.org	Yes 15.11.2018 On GitHub
XNAT	NRG Lab Wash., USA	Centralized server Schema based, Default model to customize, web client, PAAS	MRI, PET, CT	Yes	https://wiki.xnat.org	Yes On Bitbucket

FLI-IAM : Intégration of Data Management Solutions - Common catalog, search engine



Merci beaucoup pour votre attention!