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

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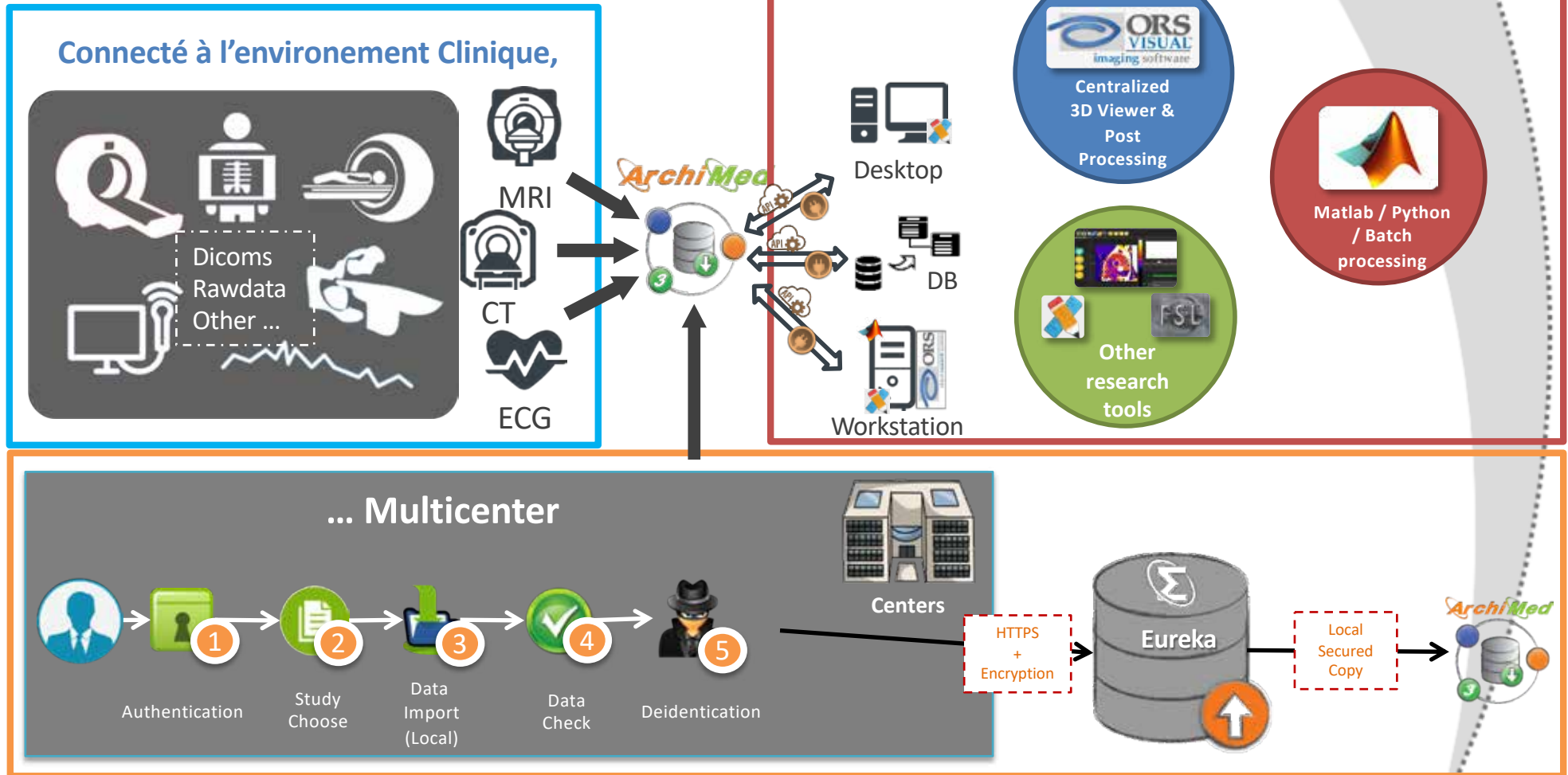
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Solutions de gestion des données d'imagerie: exemples avec Shanoir, Archimed et Cati-DB

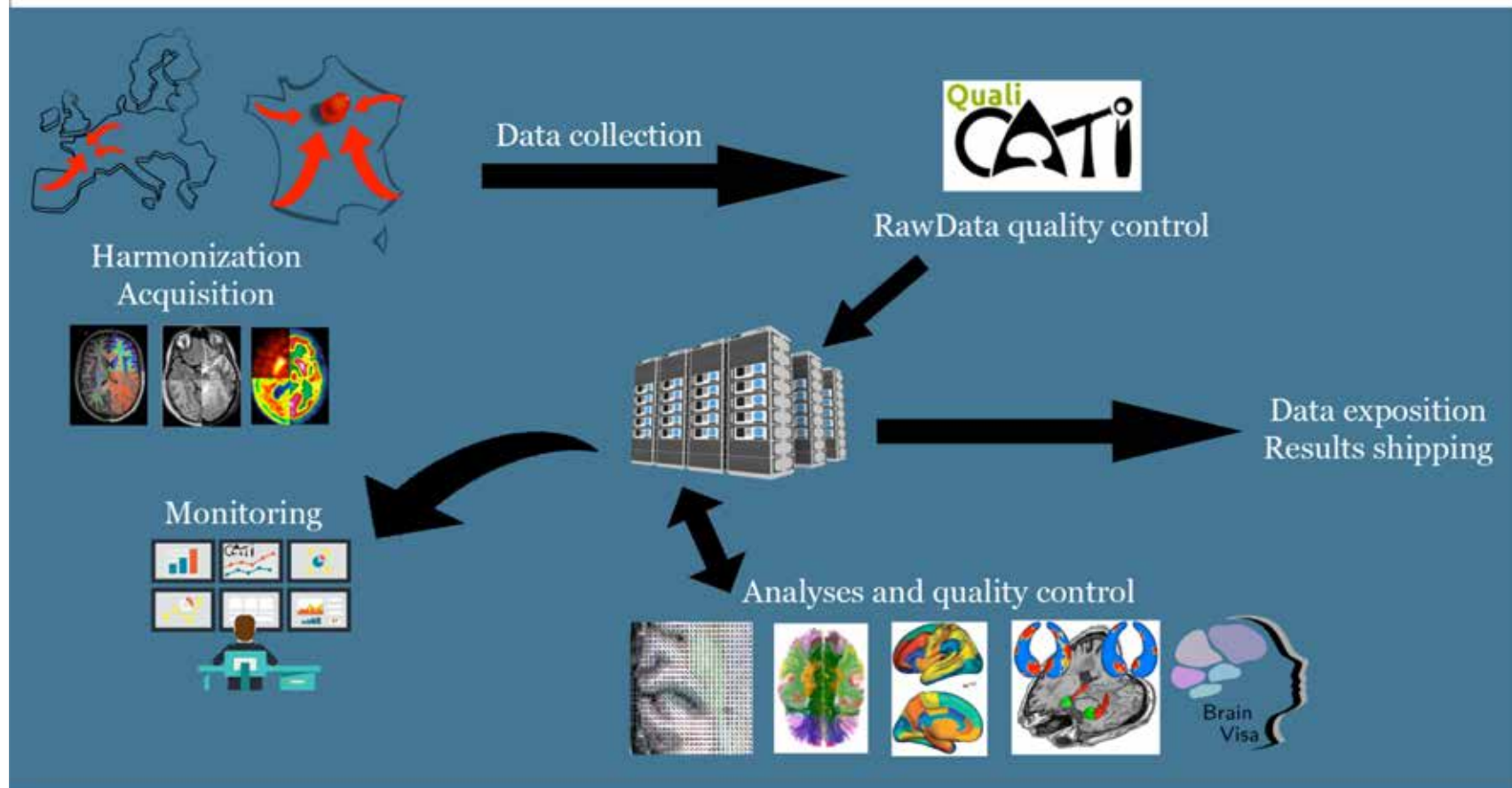
Michael KAIN, Inria Rennes

- Pour les études **multi**-centriques, cliniques et précliniques :
 - Images (brutes (DICOM) et dérivées/traitées)
 - Meta-data associés, 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 professionnel/industriel: -> FLI-IAM
- Bases de données: ArchiMed, CATI-DB, Shanoir, XNAT

Et son environnement



III – Data collection and analysis platform



The screenshot displays the 'Edit study' page in the Shanoir-NG application. At the top, there is a navigation bar with 'Home', 'Study list', and 'Edit study' buttons. The main content area is divided into several sections:

- General:** Fields for Name (*), Start date, End date, Status (*), Is clinical (*), and Is with examination. The 'Name' field contains 'NATIVE Divers', 'Start date' is '02/11/2009', and 'Status' is 'In Progress'.
- Default access level:** Radio buttons for 'Visible by default' and 'Data downloadable by default', both set to 'No'.
- List of centers and principal investigators:** Radio buttons for 'Multi / single center *' (set to 'Single center') and a dropdown menu for 'List of centers and principal investigators' showing 'CHU Rennes'.
- Study members:** A dropdown for 'List of users' and a search filter.
- Table of Study Members:** A table with columns: Username, First Name, Last Name, Email, Role, Role/Position*, Received Import Mail, and Received Anonymization Mail. One member is listed: 'yyao' (Yao Yao) with email 'yyao@shanoir.fr', role 'User', and role/position 'Is responsible for the research study'.

At the bottom, there are 'Back' and 'Update' buttons, and a status bar showing 'Found : 1 | Total : 1 | Page size : 20'.

XNAT

The screenshot displays the XNAT web interface. At the top left is the XNAT logo. A navigation menu includes 'Home', 'New', 'Upload', 'Tools', and 'Help'. A search bar is located at the top right. The main content area shows the breadcrumb 'PROJECT: NUSOAST > CC0239' and the title 'Subject Details: CC0239'. There are two tabs: 'Details' (selected) and 'Projects'. The 'Details' tab contains a table of subject information:

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

To the right of the details is an 'Actions' menu with options: Edit, View XML, Add Experiment, Download XML, Email, Manage Files, and Delete. Below the details is an 'Experiments' section with a table:

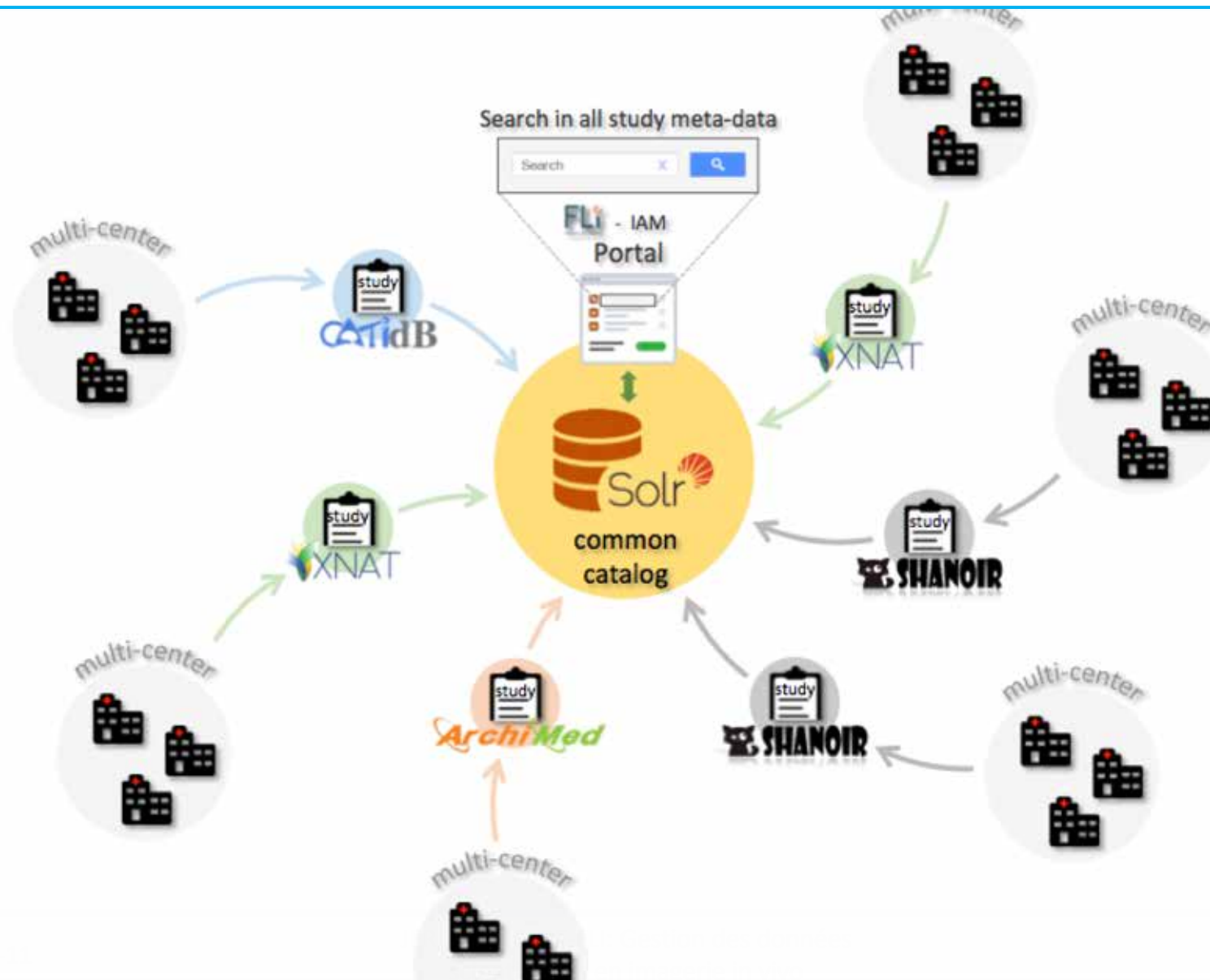
Date	Experiment	Project	Label
2002-10-23	MR Session	NUSOAST	CC0239_0
2005-05-24	MR Session	NUSOAST	CC0239_24
	Encounter Log	NUSOAST	CC0239_sf
	SAPSSANS	NUSOAST	CC0239_sapssans_0
	SAPSSANS	NUSOAST	CC0239_sapssans_24

At the bottom right, there is a logo for 'powered by XNAT'.

Summary

Name	Who?	Concept/Model/Speci als/Scenario?	Modali ties?	Brow ser?	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/SPE CT	No	https://cati- neuroimaging.c om	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.o rg	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.xna t.org	Yes On Bitbucket

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



Merci beaucoup pour votre attention!