Quels enjeux, quels besoins pour l'imagerie de population

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Animé par:
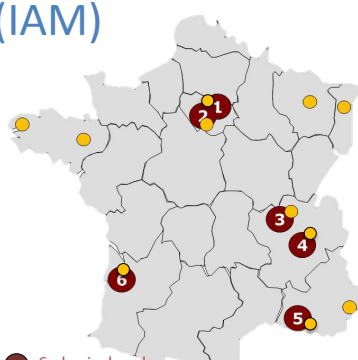Christian Barillot, Jean-François Chateil, Michel Dojat

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France Life Imaging (FLI): The *Information Analysis and Management* Node (IAM)
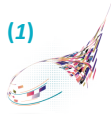
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6 physical nodes

+1 transversal node for Information Analysis and Management

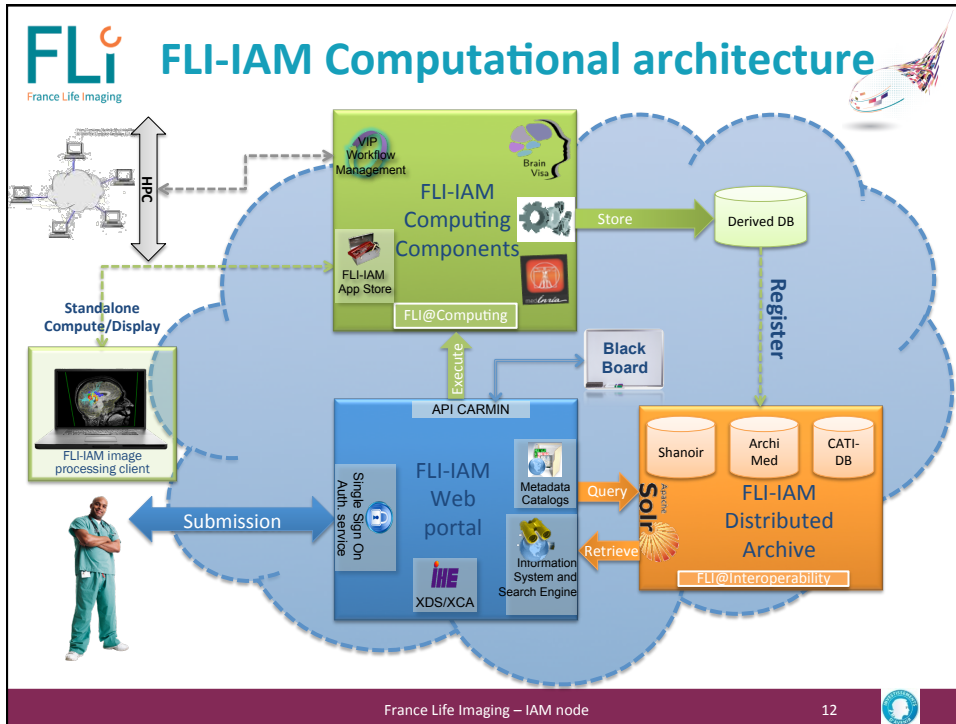## Information Analysis and Management - IAM (*1*)

- **Objectives of the Node:**
  - Specify and set up an hardware and software infrastructure for the management and processing of in-vivo images
  - Elaborate and implement usage scenarios of the infrastructure
  - Set-up an operational structure to operate the infra that can be self-funded from internal seed funding
  - **For**:
    - **The Clinician** : to conduct large and/or clinical and preclinical research studies involving new innovative in-vivo medical imaging and new innovative therapeutic procedures
    - **The Pharma**: to provide pharma and CRO companies high technological computational solutions in in-vivo imaging
    - **The medical imaging community** : to allow experimentation and validation of new innovative in-vivo imaging solutions
- **Strengths: Based on high technological expertise and experience from**
  - Medical Imaging Laboratories form the FLI regional nodes
  - Top national technological teams in medical imaging: INRIA (Rennes, Sophia), CNRS (ICUBE, I3S), INSERM (Brest, Nancy), bringing:
    - ArchiMed, CATI-DB, SHANOIR for data management solutions
    - BrainVisa, MedInria, VIP platform for medical image processing solutions
  - Large national clinical cohorts: CATI, OFSEP, …

Information Analysis and Management - IAM (2)

- **FLI-IAM : a two-Stages process**
  - Initial stage (2013-2016):
    - Set up of the infrastructure including specification of the needs of the various categories of users, the definition of the roadmap for the development and operation of the infrastructure
    - Pilot phase on a limited number of in vivo imaging application domains for clinical and preclinical research
  - Operational stage (2017 and onward):
    - Open call to select public/private management and exploitation providers of the developed infrastructure (including SME)
    - Extend the infrastructure to broaden the range of clinical and preclinical research application domains
    - Extend the range of software integration by providing open interoperability standards with conformal statements

FLI-IAM Computational architecture

FLI-IAM Usages Scenarios

1. **Software as a Service (SaaS) for "Clinical and preclinical research"**

    1. Subcontracting (turnkey) service:
        - Service PI clinician / researcher looking for "turnkey" solutions with outsourcing of the management of their project (provision of final results)
        - Typical example: CATI cohort

    2. Full Resource services for "Clinical and preclinical research"
        - Service for the Clinician, methodological investigator looking for a solution for a multicentre research project with shared access to data and processing solutions
        - Typical example: OFSEP cohort

2. **Platform as a Service (PaaS) for an Open ressource solution**
    - Open Resource solution that provides housing of data (DaaS) and processing pipelines defined for the needs of a large (open) community of users
    - Typical example: ADNI, image processing open challenges *(e.g. MICCAI/ISBI)*

3. **"Storage and Computing as a Service" (SCaaS) solution**
    - Clinician / researcher looking for basic hosting solution to their specific problems of storage, processing and exchange of image management services within a small group of collaborators.
    - Typical example: "A la Dropbox" secured service