NeuroLOG

TechLog 2007-2009
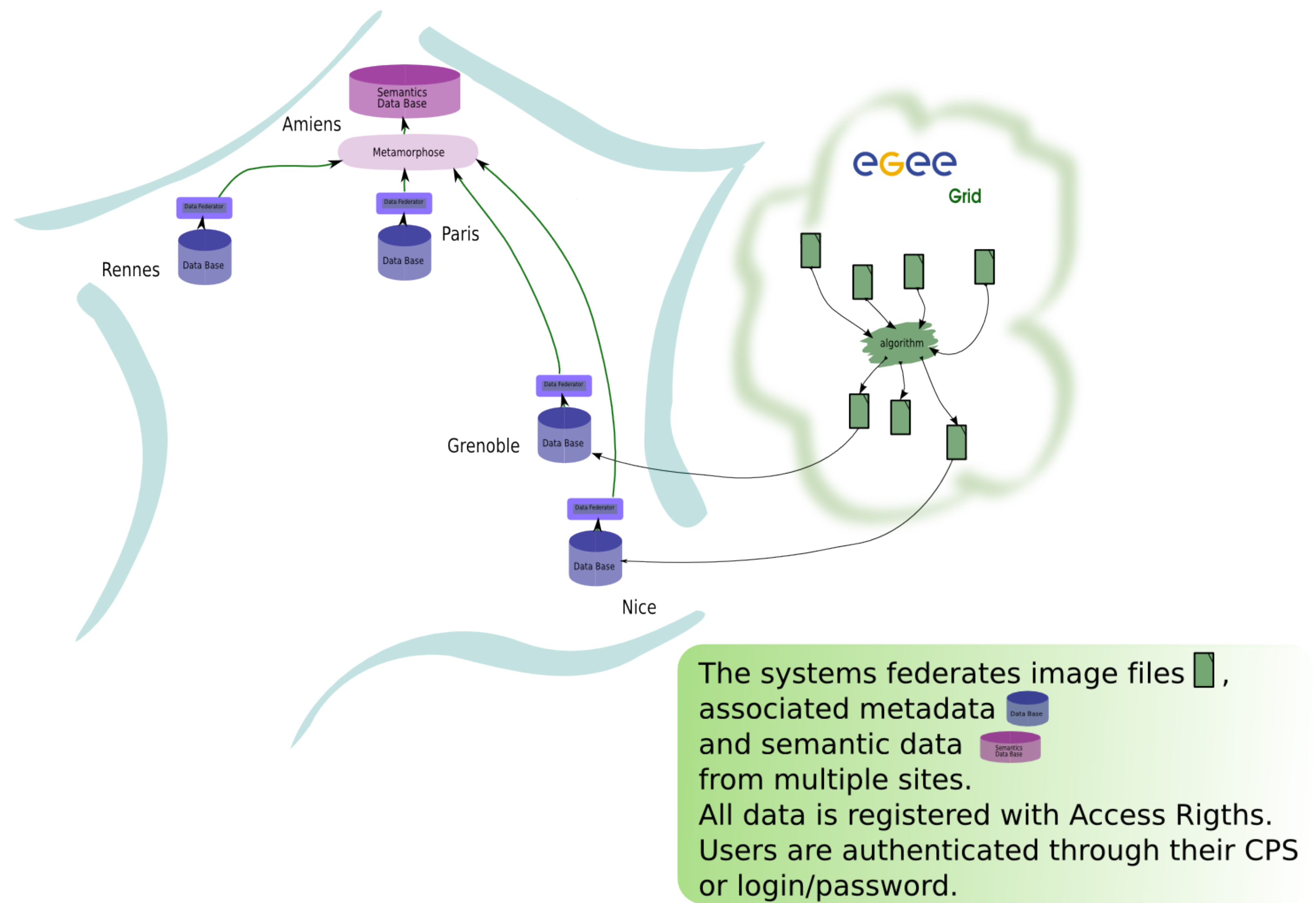
ANR-06-TLOG-024

AGENCE NATIONALE DE LA RECHERCHE

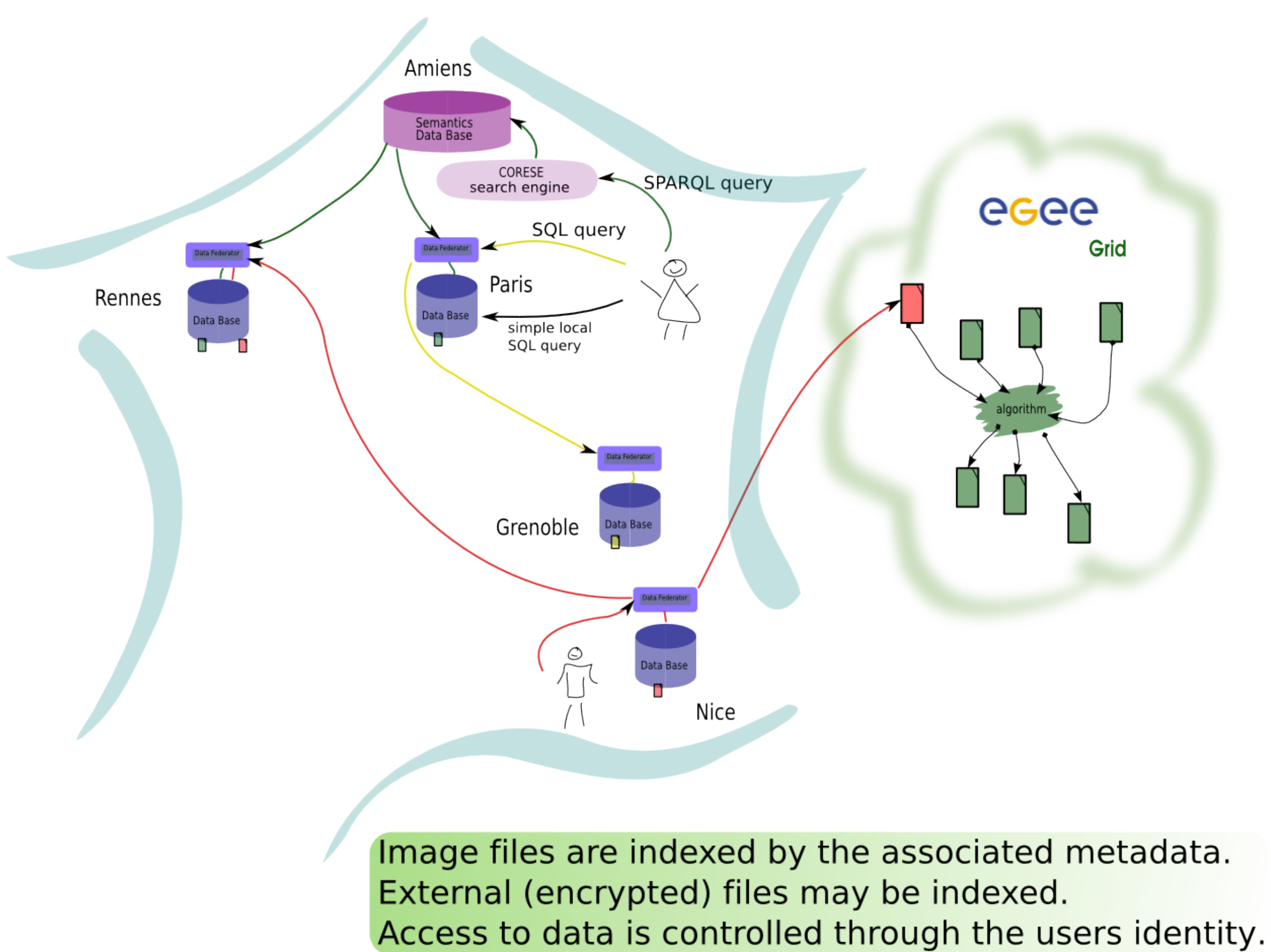## Software technologies for integration of process, data, and knowledge in medical imaging.

Project Objectives:

- Management and access to semistructured, heterogeneous and distributed medical data in an open environment.
- Ontology-based, heterogeneous and distributed processings on the grid.
- Access control and protection of private medical data.
- Control of workflows implied in complex computing processes on a grid infrastructure.
- Extraction and quantification of relevant parameters for different pathologies:
  - Multiple sclerosis
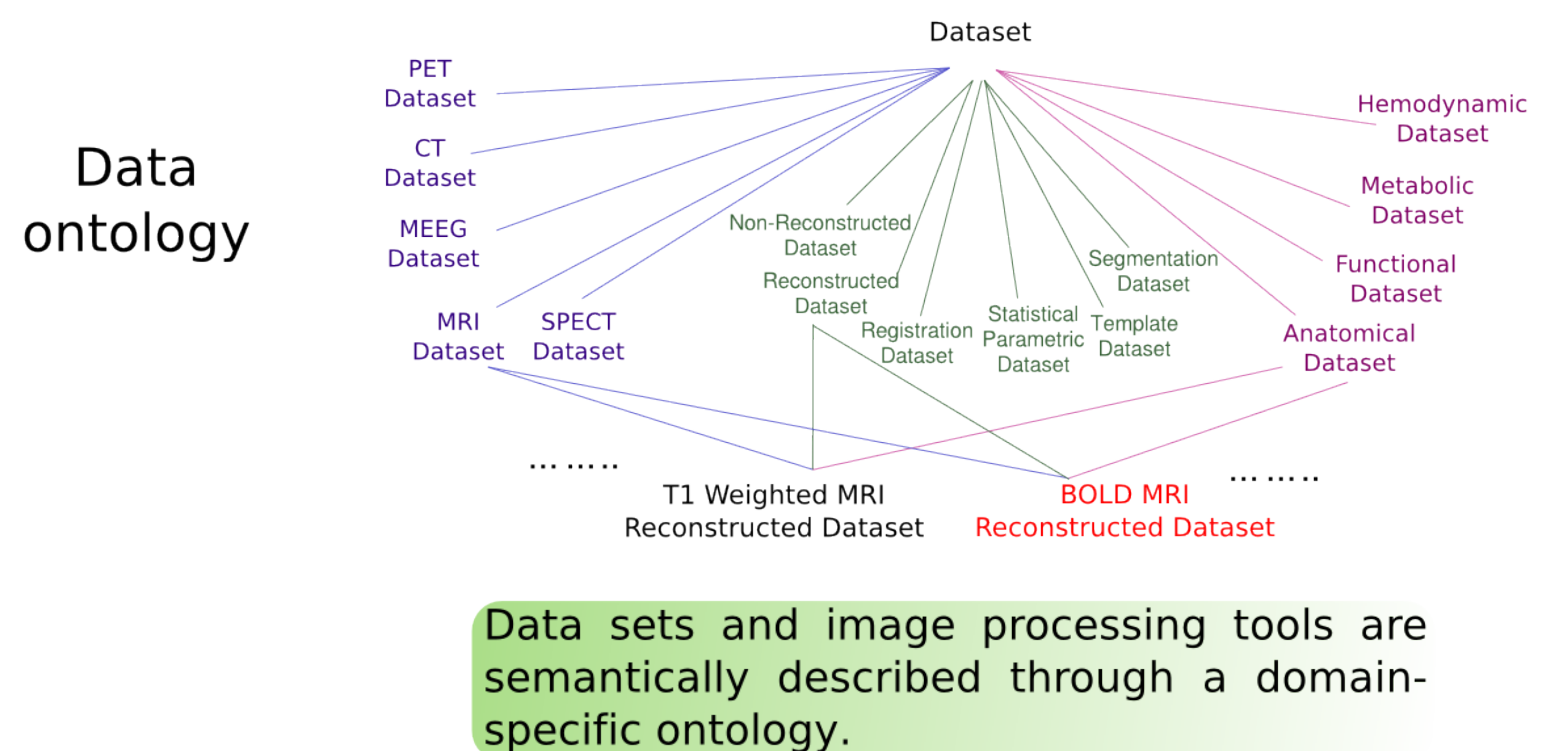 - Brain Vascular Stroke
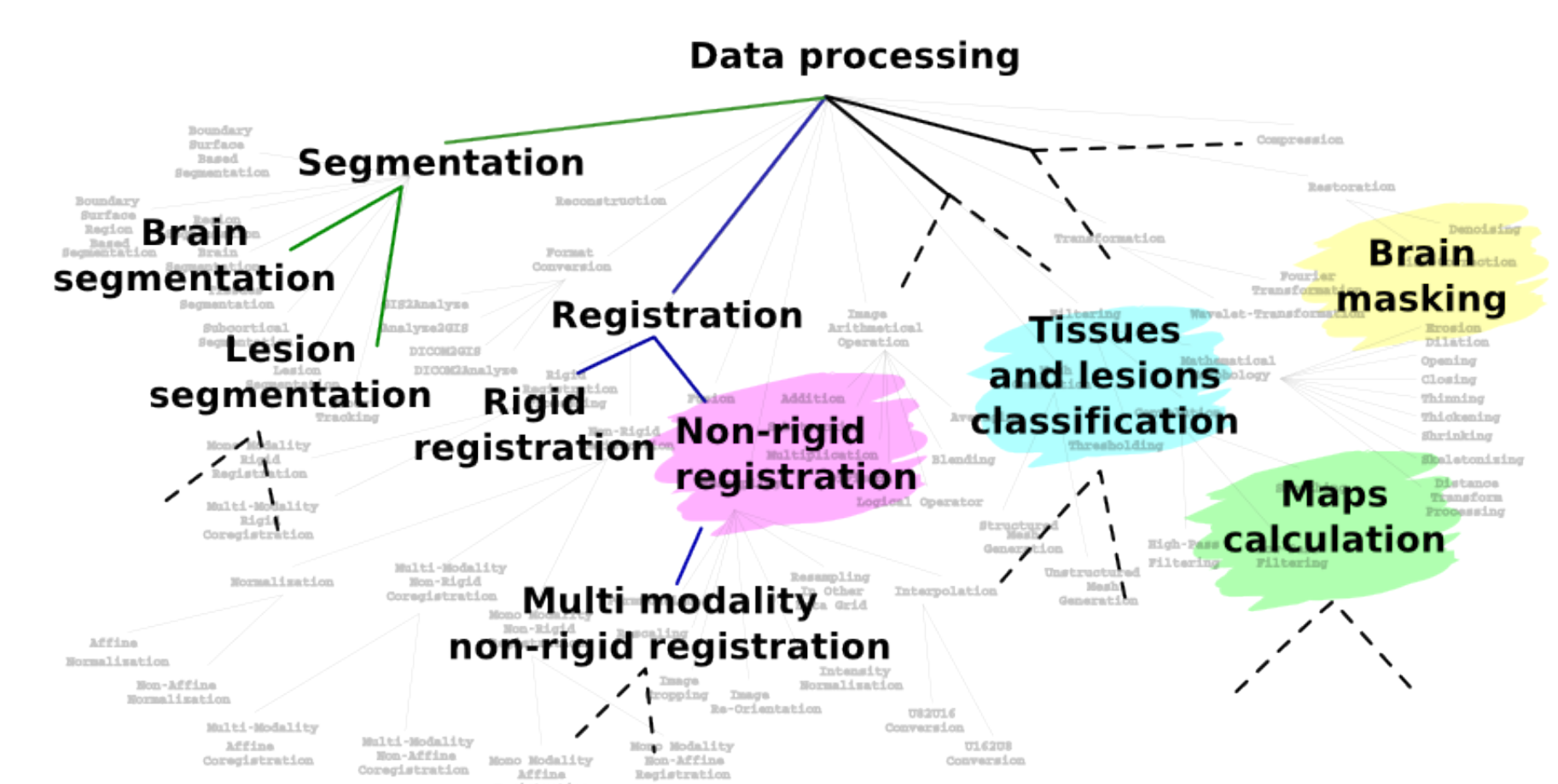 - Brain tumours

Registering data in NeuroLOG

The systems federates image files, associated metadata and semantic data from multiple sites.
All data is registered with Access Rigths.
Users are authenticated through their CPS or login/password.

Querying images and metadata

Image files are indexed by the associated metadata.
External (encrypted) files may be indexed.
Access to data is controlled through the users identity.

Semantic queries

Data ontology

Data sets and image processing tools are semantically described through a domain-specific ontology.

Processings ontology

Application workflows

Brain stroke
Tumour
Multiple sclerosis

local and temporary copies of images

workflow powered by MOTEUR

non-rigid registration
brain masking
tissues and lessions classification
maps calculation
back to the user
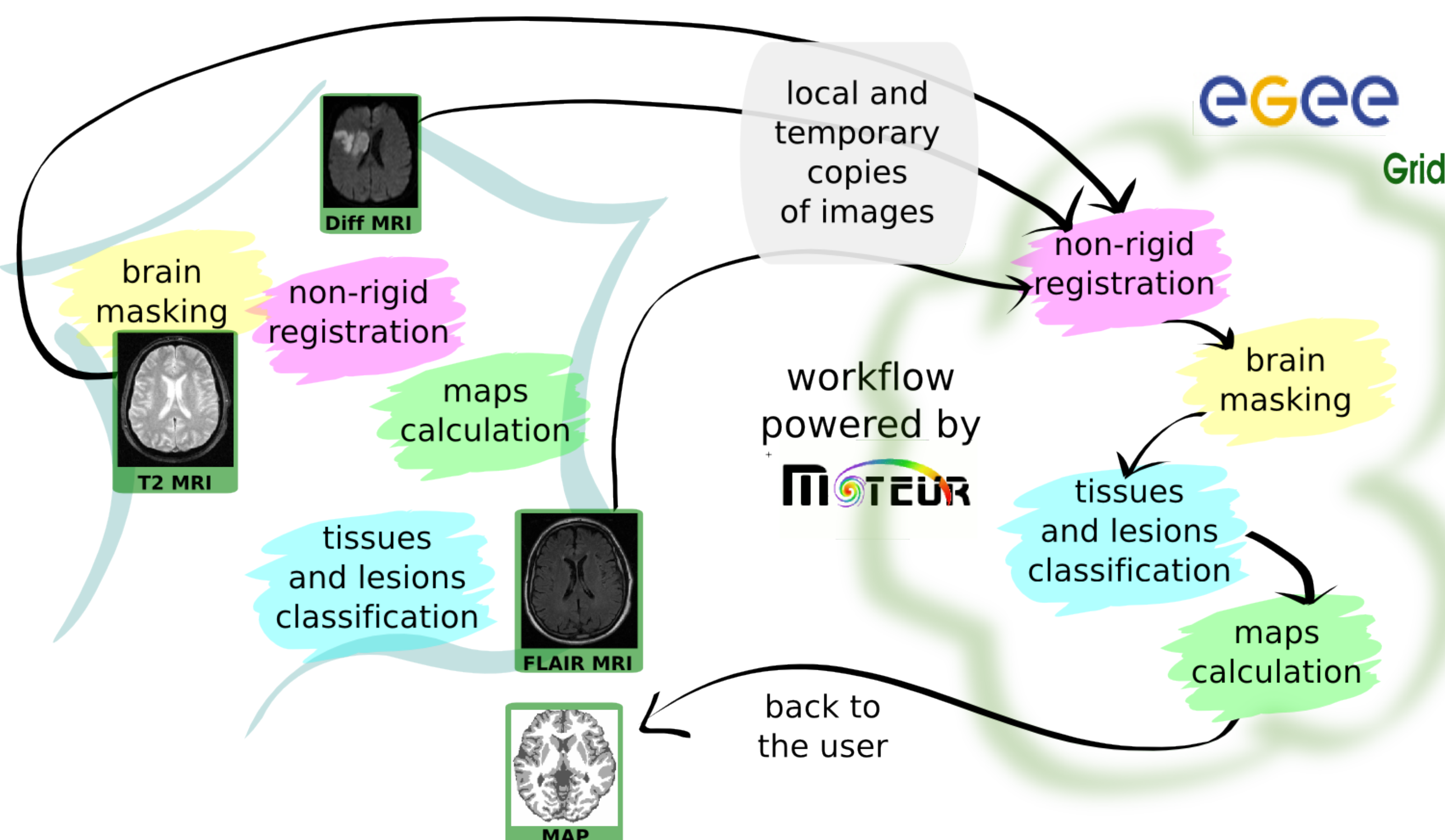
Partners

Three different competences :
- medical imaging
- databases and knowledge
- software technologies