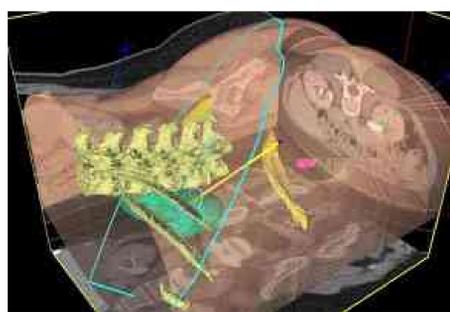


Leverage medical imaging algorithms through grid systems

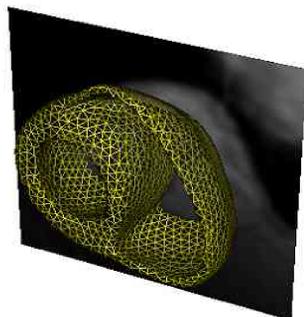
New grid services

Address some of the requirements of complex medical image processing and data manipulation applications

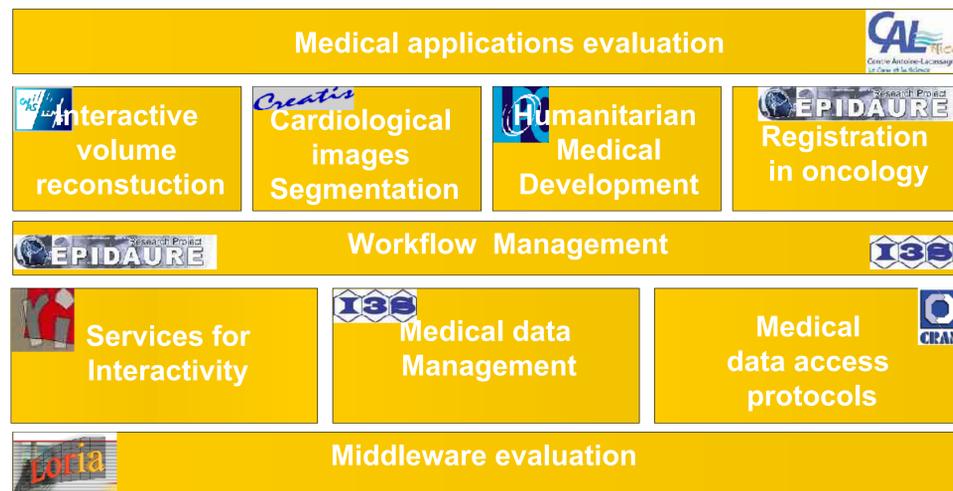


New medical image processing algorithms

Take advantage of grid infrastructure for compute and data intensive needs.



Organisation



- Inference et Apprentissage - PCRI
- LIMSI - CNRS STIC
- Tenon, St Anne - APHP & FMP
- AI Gorille - LORIA
- CRAN - U. Nancy & CNRS STIC
- CREATIS - CNRS STIC, INSERM
- LPC - U. Clermont & CNRS IN2P3
- EPIDAURE - INRIA Sophia
- RAINBOW-I3S CNRS STIC & U. Nice
- Centre Antoine Lacassagne
- Collaboration EGEE-LAL

- Grid models & middleware
- Medical Image processing & software
- Clinical Research
- Grid models & algorithms
- Image processing - compression
- Medical Image processing
- EGEE & Medical grids
- Image processing
- Software engineering - distributed
- Clinical Research
- EGEE

Collaborations



Research Areas

Scaling critical components of distributed systems

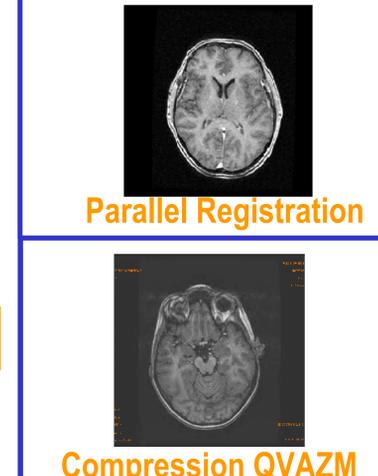
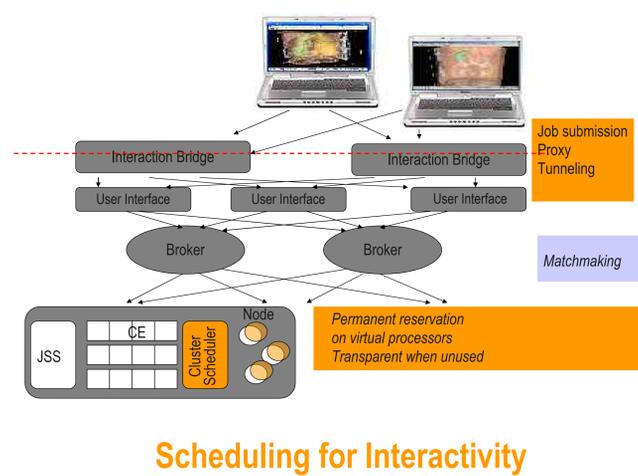
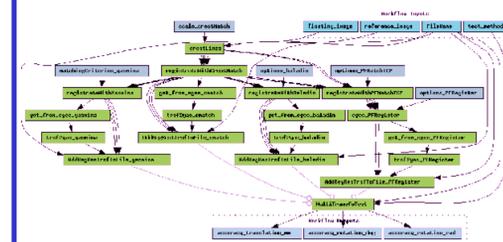
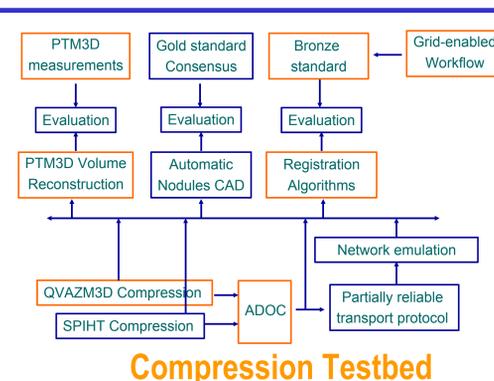
- Scheduling
 - Sharing resources across grid users with differentiated QoS
 - Workflow management: application performance
- Data & Metadata management
 - Interoperability between medical format standards and grid storage services
 - Security/privacy and medical requirements eg patient benefit

Adaptive storage and transmission

- Compression algorithms
- Network and user-adaptive compression: Intelligent remote data access - Data of Interest
- Interaction between compression and image processing

Medical imaging algorithms

- Parallel processing: 3D + time segmentation, non-linear registration
- Bronze standard evaluation



Grid Use Cases

Algorithm research and deployment

Availability of algorithms and datasets eases the development and validation of algorithms on shared datasets. Better accessibility for clinical use.

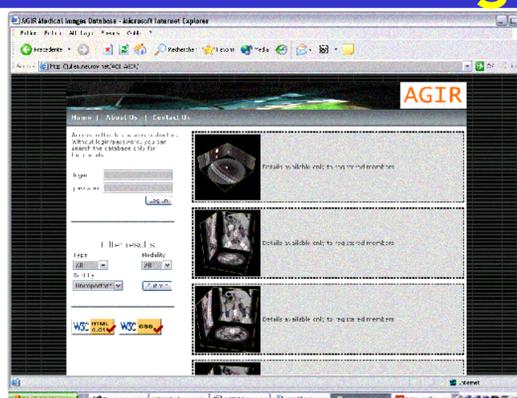
Image guided diagnosis and surgical planning

Combining the medical user expertise and the resource of the Grid in compute and data intensive tasks is a promising way to transfer experimental research to clinical practice.

Augmented reality

Pre-operative data, computed geometries, intra-operative images or the patient body itself can be combined to optimise a surgical intervention or therapy planning.

The Image Database



- More than 80 MR, CT or simulated images
- Mostly clinical
- Anonymization process compliant to SFR requirements
- Will be used by PHRC Transplantation d'Hépatocytes de Paris XI