

NA4 Medical Imaging

Geneva, September 26, 2006

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11:00 GATE (radiotherapy planing)

**11:10 3D MRI and PET simulation,
cardiovascular image processing**

**11:20 Medical Imaging Use Cases in Health-e-
child**

11:30 SEE++ strabismus surgery planing

**11:40 SPM-based early diagnosis of
Alzheimer's**

11:50 FreeSurfer-based brain image analysis

12:00 Biomedical infrastructure with P-GRADE

12:10 Medical Data Manager deployment

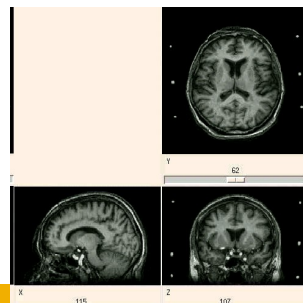
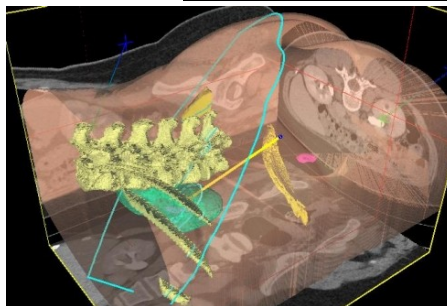
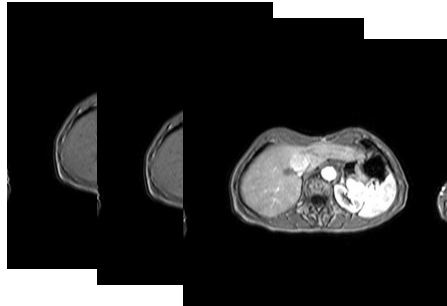
12:20 Wrap-up

12:30 Lunch

Production

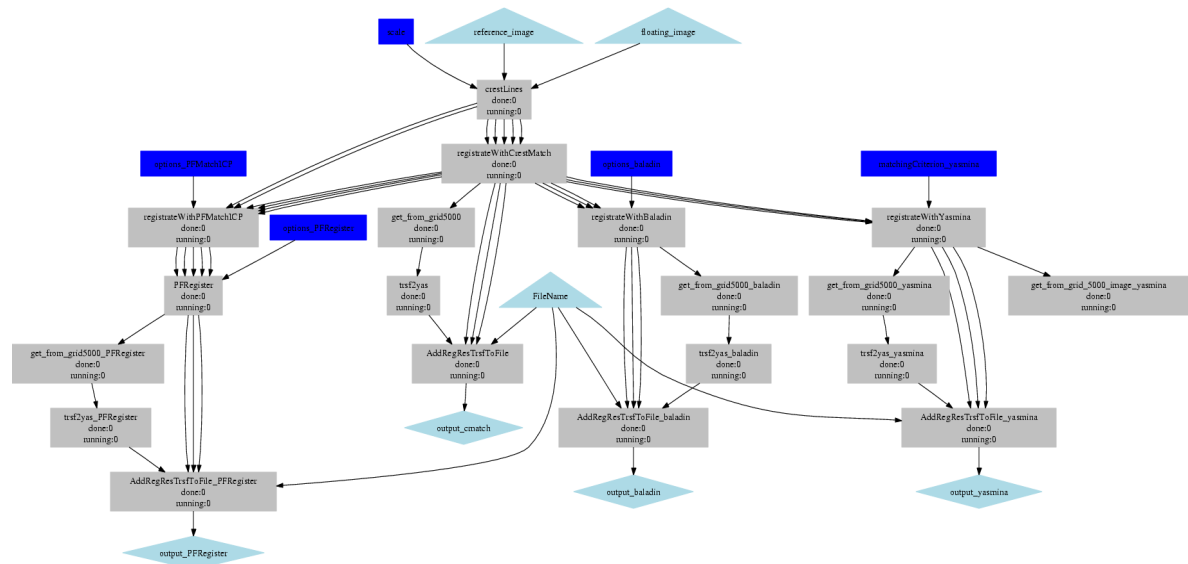
Being deployed
on EGEE

Services

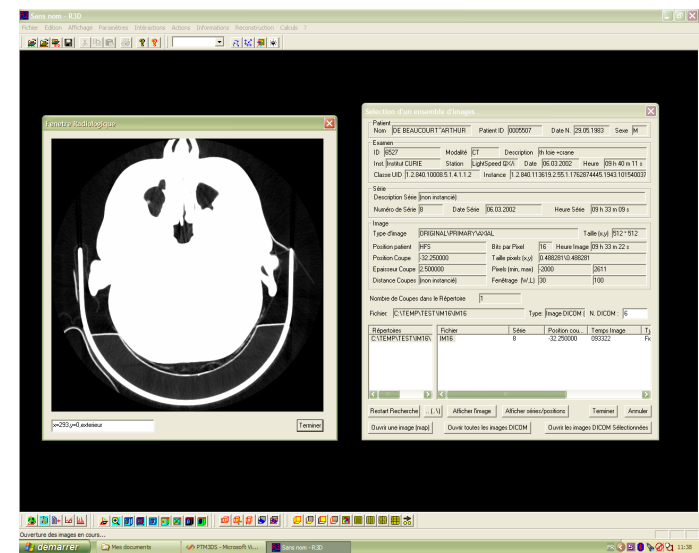
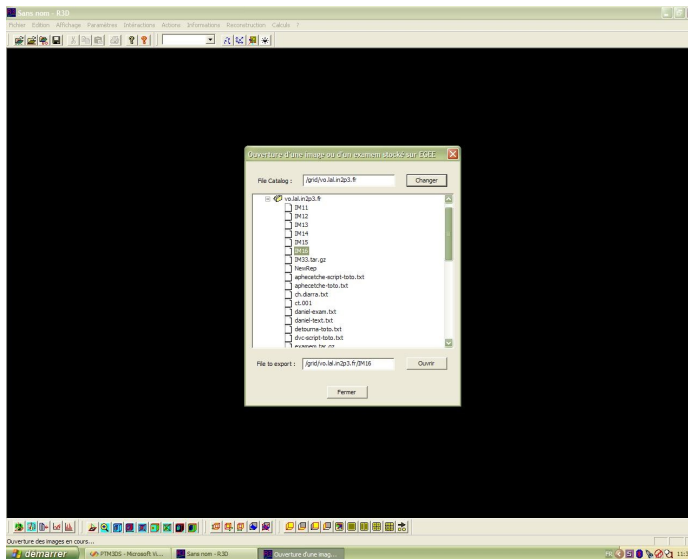


- **Clinical Decision Support System (UPV)**
 - Expert system for extracting clinically relevant knowledge from trained databases
- **Pharmacokinetics (UPV)**
 - Contrast agent diffusion study over time series of 3D images
- **GPTM3D (CNRS)**
 - Interactive volume reconstruction from large 3D data sets
- **Bronze Standard (CNRS)**
 - Workflow-based medical image registration algorithms assessment

- **Short Deadline Jobs**
 - Tackles the requirement of short and fast jobs
 - Two specific SDJ queues deployed (LAL, UPV)
- **Workflow management**
 - DAGMan supported by the EGEE middleware
 - MOTEUR service-based workflow manager



- **gPTM3D interface to grid file catalog**
 - File catalog content listing
 - Integrated in gPTM3D interface
 - Easy download and viewing



- **Web-based interface to medical image repository**
 - User friendly interface to upload/download image stacks

- **Data confidentiality**
 - Data security addressed through gLiteIO + Fireman (ACLs) + Hydra (encryption)
 - Only clients available in gLite3.0: gLiteIO, Fireman and hydra servers should be installed by the users
 - Limited security through GFAL + LFC
- **Interface to medical storage**
 - Using native medical image formats
 - Interfaced to hospitals Picture and Archiving and Communication Systems (PACS)
 - DICOM standard

- **Prioritization of jobs**
 - Need both efficient processing of short jobs and high priority jobs
 - Currently tackled through Short Deadline Jobs
 - More work on prioritization on-going in TCG WG
- **High level interfaces**
 - Many application-dependent portals
 - P-GRADE generic portal
- **Interactivity**
 - Implemented using outbound connectivity
- **Fine grain parallelism (MPI)**
 - MPI available through EGEE middleware