Projet Transversal VIP
Introduction et nouvelles

Sorina Pop
5ème Workshop VIP
19/11/2018
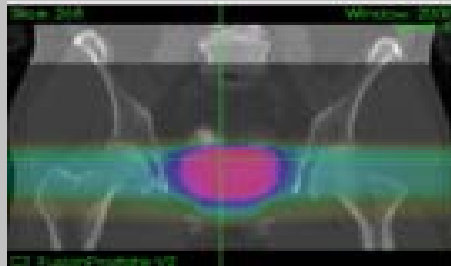
CREATIS | Medical Imaging Research Laboratory

www.creatis.insa-lyon.fr

https://vip.creatis.insa-lyon.fr

UNIVERSITÉ DE LYON

Web portal

Application as a service
File transfer to/from grid

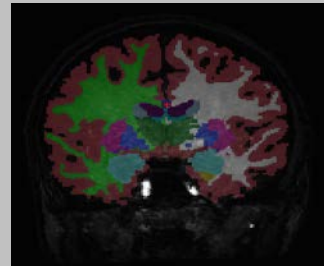**Scientific applications**

Cancer therapy simulation

Prostate radiotherapy plan simulated
with GATE(L. Grevillot and D. Sarrut)

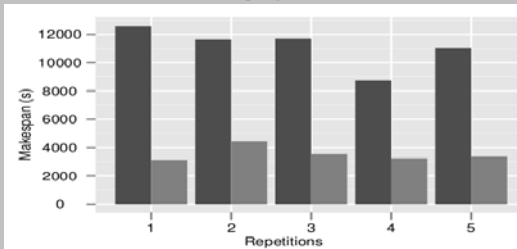**Image simulation**

Echocardiography simulated with
FIELD-II (O. Bernard *et al*)

Neuro-image analysis
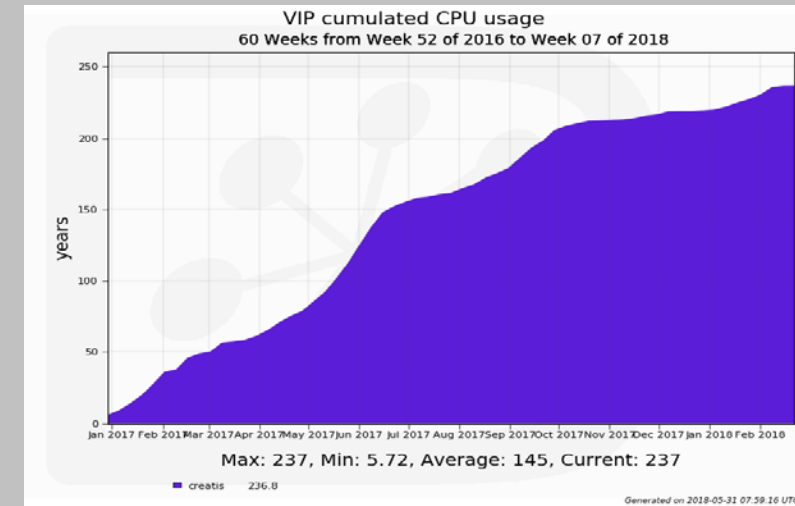

Brain tissue segmentation
with Freesurfer

**Modeling and optimization of
distributed computing systems**

Acceleration yielded by non-clairvoyant
task replication (R. Ferreira da Silva *et al*)

Infrastructure

Supported by EGI Infrastructure
Uses biomed VO (~65 sites in Europe and beyond)
VIP consumes ~**20 CPU years** every month

VIP cumulated CPU usage
60 Weeks from Week 52 of 2016 to Week 07 of 2018

Max: 237, Min: 5.72, Average: 145, Current: 237

France-Grilles

DIRAC

Users

1000+ registered users in June 2018
44 publications since 2011

2

Why use VIP?

- To get/give access to medical imaging applications

    - No need for installation on the users' side
    - Easy to use

- To share

    - Applications and data

- To get access to distributed computing and storage resources

    - « Free » of charge for research usage
        - Moral obligation to report publications using these resources

VIP transverse project latest actions

- **VIP software development**
  - VIP version 1.23 released on November 9th (https://github.com/virtual-imaging-platform/VIP-portal/releases/tag/1.23)
  - Support for URIs in inputs and outputs, support for single job Gate, added tags selection in application importer (GPUs)

- **VIP – Projet CAD Epilepsie**
  - CDD Pascal Wassong with Carole Lartizien (see presentation)

- **Integration of new applications**
  - CREATIS: CAD Neuro (CAD Epilepsy train and test)
  - Externe: GATE CL for OpenDose

- **User support on existing applications (Coil Caracterization, GATE, Freesurfer …)**

- **Communication**
  - Journées JCAD (Lyon) : Exploiting GPUs for medical imaging applications with VIP and Dirac
  - DI4R (Lisbone) -> Open Science for the Neuroinformatics community, Interoperability with Boutiques and CARMIN

- **Upcoming**
  - Publish VIP pipelines and data to open repositories (e.g., Zenodo) and get DOIs for an open and reproducible science
  - GPU usage (first use-case focused on epilepsy project with Carole L.)

National and international projects

- CNRS
  - INS2I platform support (until the end of the month)
  - NOEMI positition open
- FLI (France Life Imaging) – IAM node
  - Phase II – VIP services provided through INSAValor (long-term sustainability)
- Labex Primes WP5
  - Anchen Chai's PhD thesis -> simulation for data transfer optimization
- FG-SOL
  - Based on VIP, services to all French communities (beyond medical imaging)

- OpenAire Connect
  - European project, 11 parteners among which CNRS -> FLI -> Creatis
  - Facilitate adoption of OpenScience Publishing
    - VIP: publish experiments (with DOIs)

Programme

✓ Introduction et nouvelles de VIP (Sorina)

➢ Retour sur l'interfaçage VIP – Girder (Axel)

➢ Perspectives d'automatisation des traitements VIP depuis Girder (Frédéric)

➢ VIP, science reproductible et OpenAire Connect (Axel)

➢ Retour sur le projet CAD Epilepsie et l'exploitation de GPU à travers VIP (Sorina)

➢ Discussion sur l'utilisation des GPU à travers VIP : cas d'usage et solutions possibles

➢ Tour de table