

# Projet Transversal VIP

## Introduction et nouvelles

2<sup>ème</sup> Workshop VIP  
26/06/2017

# Programme

- 9h - Introduction et nouvelles de VIP, par Sorina Pop
- 9h20 - Intégration d'applications, par Pascal Girard
- 9h40 - Tractographie des nerfs crâniens, par Carole Frindel, Justine Bosc et Timothée Jacquesson
- 10h – Pause
- 10h20 - CreaAortaWall, par Eduardo Davila et Monica Sigovan
- 10h40 - Nouveaux usages de VIP à travers l'API, par Axel Bonnet
- 11h - Discussions

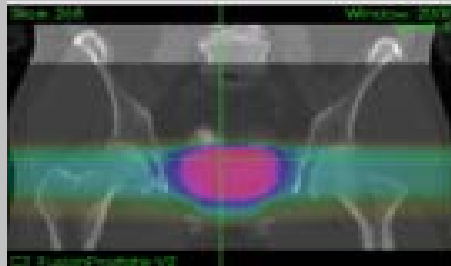
## Web portal

Application as a service  
File transfer to/from grid



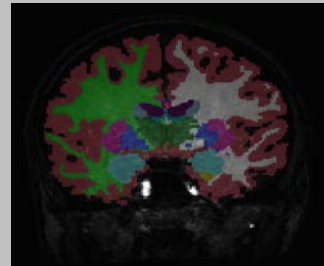
## Scientific applications

### Cancer therapy simulation



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

### Neuro-image analysis



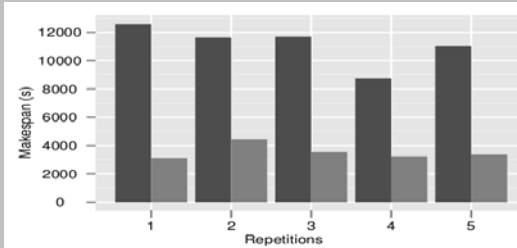
Brain tissue segmentation with Freesurfer

### Image simulation



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

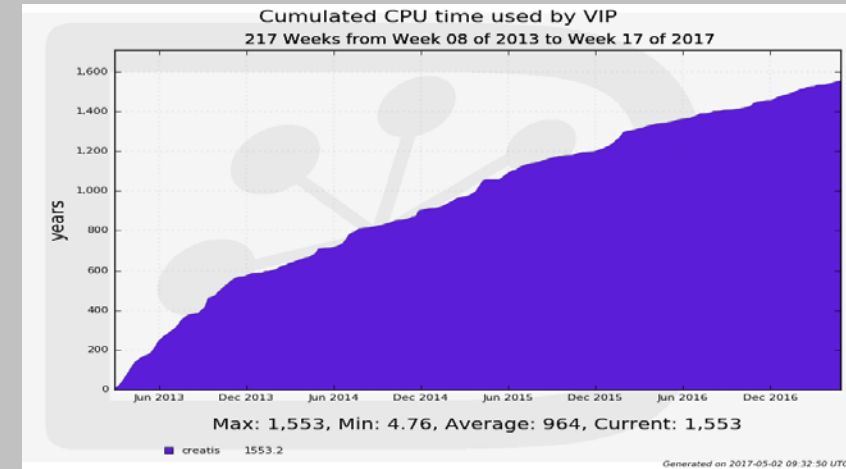
### Modeling and optimization of distributed computing systems



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)  
Available in **N4U (Neugrid)** portal  
VIP consumes ~30 CPU years every month



France-Grilles



DIRAC

## Users

1000+ registered users in June 2017

Most used robot certificate in EGI in 2012 (<http://go.egi.eu/wiki.robot.users>)

39 publications since 2011



## Why use VIP?

- To get/give access to medical imaging applications
  - No need for installation on the user's' 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

## People

### ■ VIP team

- Axel Bonnet, IR CNRS FLI
- Pascal Girard, IR CNRS FLI
- Frédéric Cervenansky, IR Université
- Sorina Pop, IR CNRS
- Naslaty Ali Kari, INSA-TC student (4 months internship)
- Qifan Zhang, INSA-IF student (2 months internship)

### ■ Creatis research teams' members

- <https://www.creatis.insa-lyon.fr/logs/mailman/transverse-vip/>

### ■ PhD student

- Anchen Chai (Labex Primes WP5)

### ■ External collaborations

- Tristan Glatard, Associated Professor at Concordia University, Montreal
- Frédéric Suter, CC-IN2P3

# VIP transverse project latest actions

## ■ VIP software development

- VIP version 1.21 released on June 23<sup>rd</sup> (<https://github.com/virtual-imaging-platform/VIP-portal/releases/tag/1.21>)
- API, API client and tests – 2 internships (see Axel's presentation)
- Support for Boutiques v4 (see Pascal's presentation)
- Bugs and features

## ■ Integration of new applications

- Tractography (see Carole's presentation)
- FLI applications

## ■ Support actions

- User support on existing applications (Coil Characterization, Odin, Freesurfer, file transfer synchro...)
- General advice (Docker, distributed computing)

## ■ Upcoming

- New applications accessing VIP through the API (see Eduardo's presentation)
- Access databases such as Creatis Human Heart DB through the API
- Access Cloud resources for applications with real-time requirements (Clément Daviller)

## National and international projects

- FLI (France Life Imaging) – IAM node
  - Application porting & API
  - Phase II – VIP commercial offer (long-term sustainability)
- Labex Primes WP5
  - Anchen Chai's PhD thesis -> simulation for data transfer optimization
- INS2I platform support
  - 12 PM (research engineer)
- FG-SOL
  - Based on VIP, services to all French communities (beyond medical imaging)
- OpenAire Connect
  - European project, 11 partners among which CNRS -> FLI -> Creatis
  - Facilitate adoption of OpenScience Publishing
    - VIP: publish experiments (with DOIs)

Thank you  
for your attention!

Questions ?