



Les VRE, les frameworks, l'accès aux ressources et l'interopérabilité dans le réseau de France Grille et EGI

Axel Bonnet ¹

Sorina Pop ¹

Frédéric Cervenansky ¹

Pascal Wassong ¹

Genevieve Romier ²

Tristan Glatard ³

¹ CREATIS; CNRS (UMR 5220); INSERM (U1206);
INSA Lyon; Université de Lyon

² CC-IN2P3, CNRS, Lyon

³ Concordia University, Quebec, Canada

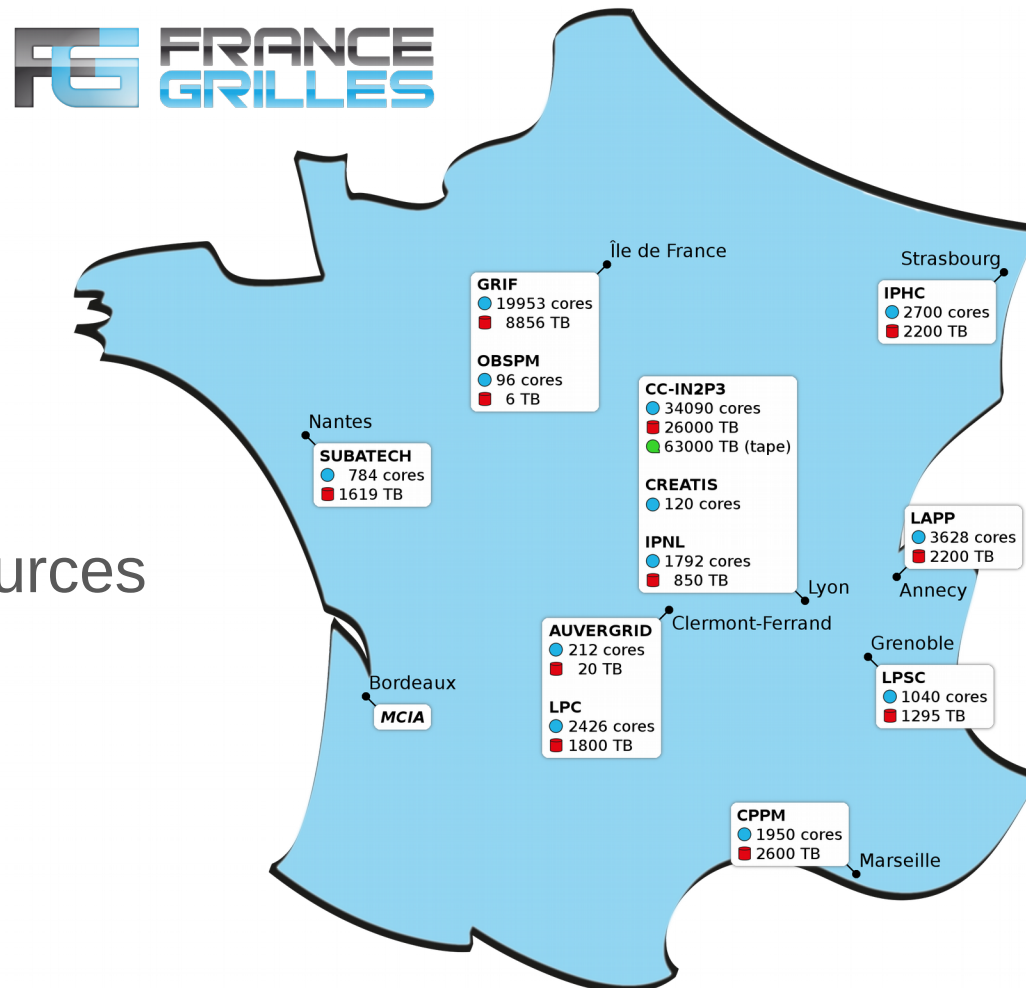
Plan

- France Grilles et EGI : les infrastructures
- France Grilles et EGI : les services
- Plusieurs exemples de VRE
- VIP et l'interopérabilité de plateformes

Plan

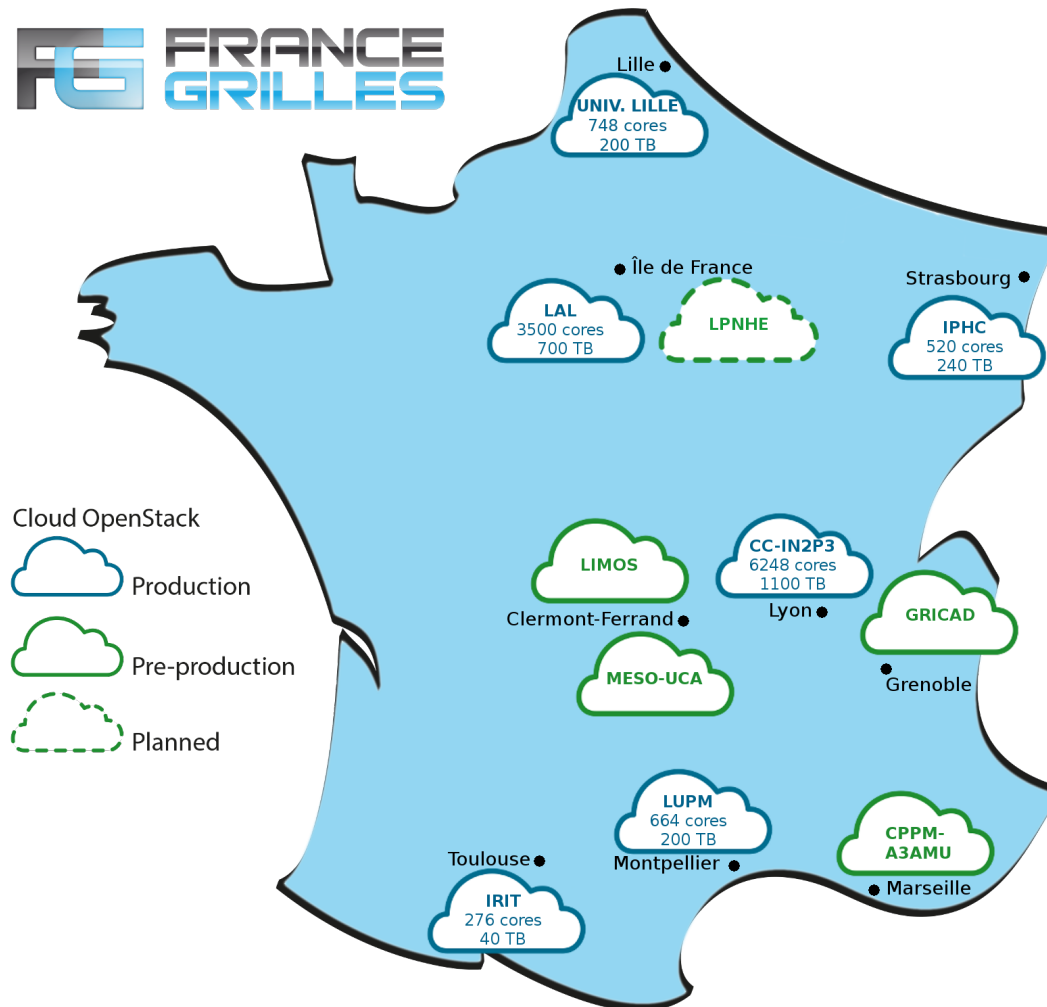
- **France Grilles et EGI : les infrastructures**
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France Grilles : infrastructures grille



- Grille HTC
- Fédération de ressources
- Environ :
 - 70 000 coeurs
 - 50 000 TB
 - 60 000 TB (tape)

France Grilles : infrastructures cloud



→ Fédération

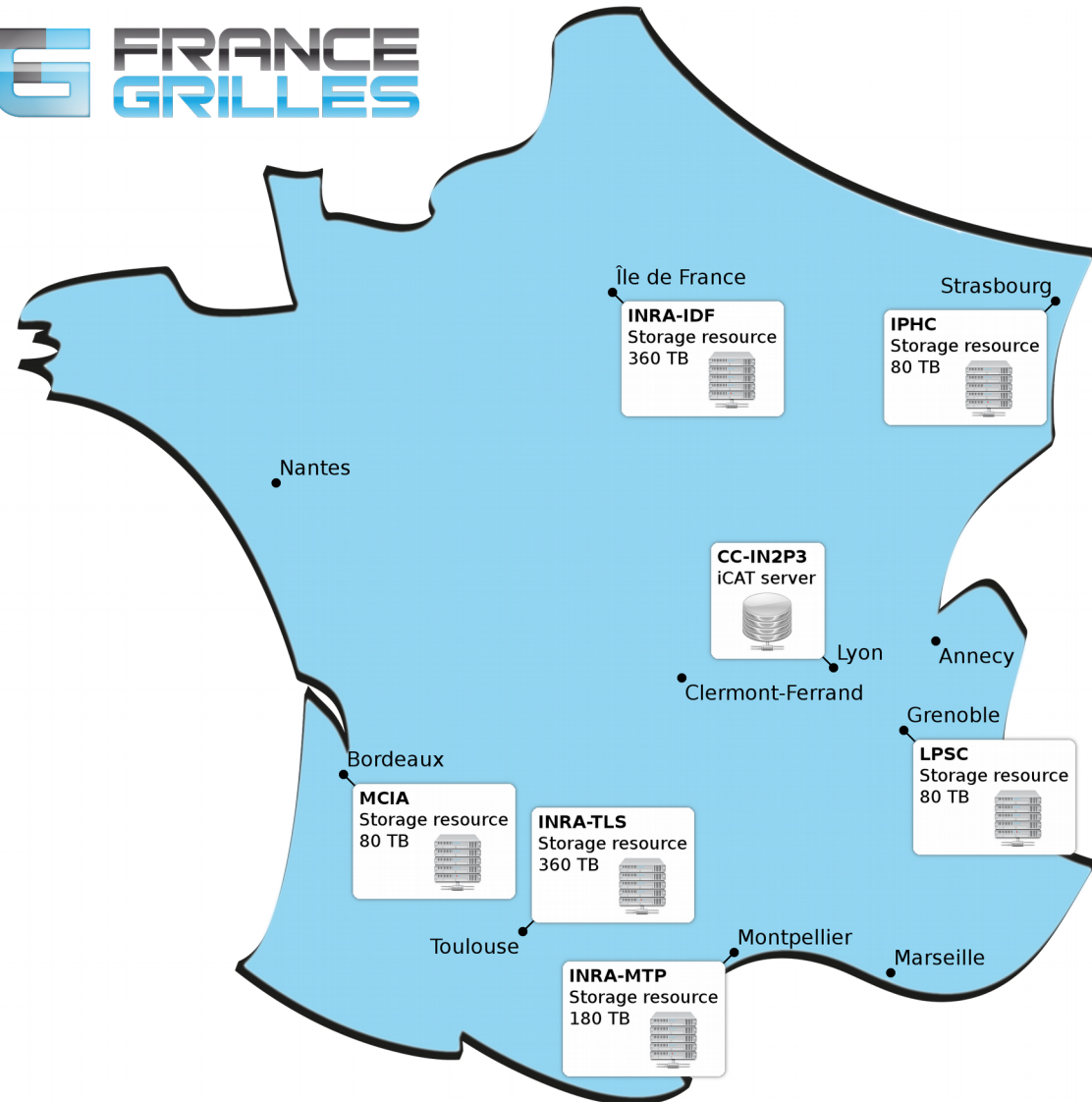
→ Environ :

- 10 000 coeurs
- 2 500 TB

France Grilles : infrastructures iRODS

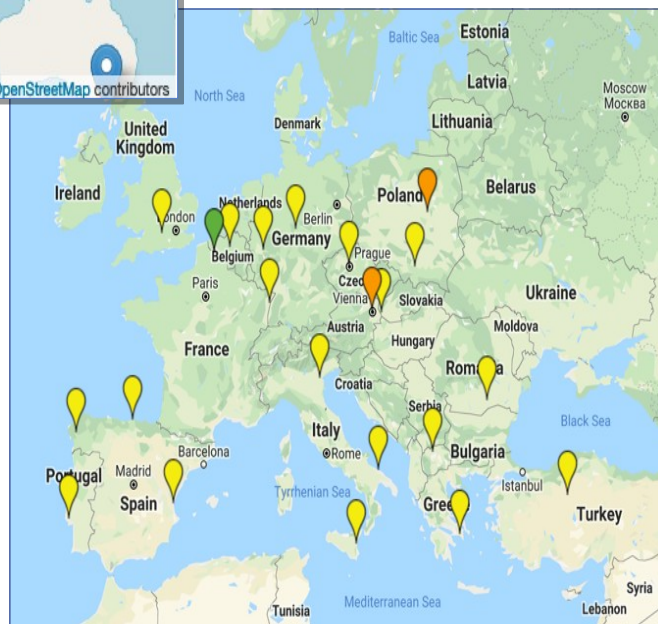


- Stockage distribué
- Environ :
 - 1 300 TB

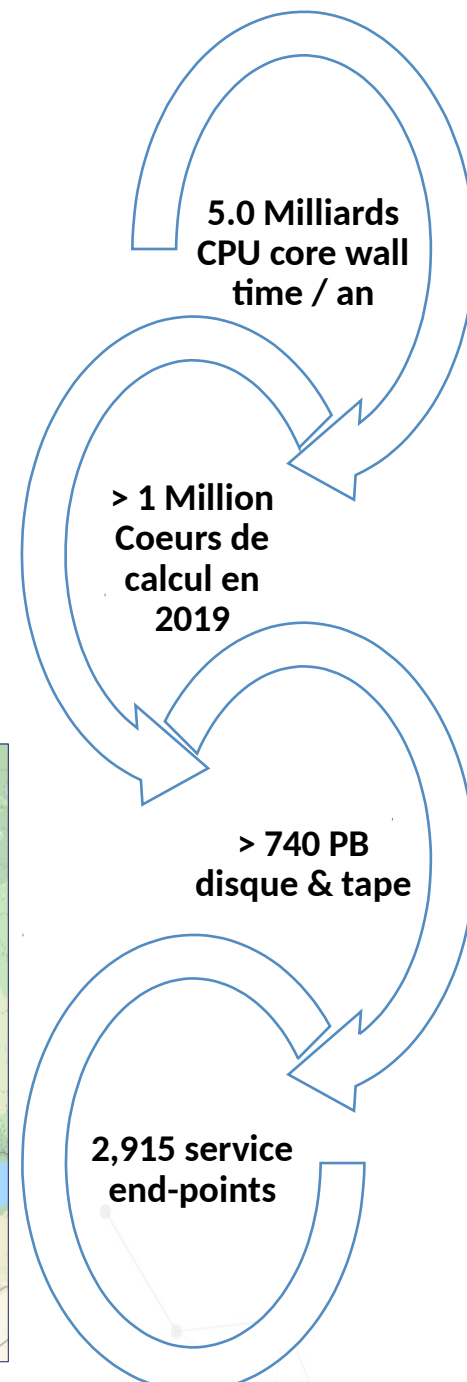




Centres de ressources



Fournisseurs de cloud



EGI est une fédération de > 250 centres de calcul et de stockage répartis à travers l'Europe et le reste du monde.

47 Pays

> 71,500 utilisateurs

3,000 Publications en accès libre en 2018

12 e-Infrastructures intégrées

31 collaborations de recherche de grande taille



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Les services France Grilles

- Services d'accès aux ressources
 - FG-DIRAC : pour la grille et le cloud
 - FG-CLOUD : pour le cloud
 - FG-IRODS : pour un stockage
- Autres services
 - Formation
 - Long tail of science : une VO nationale



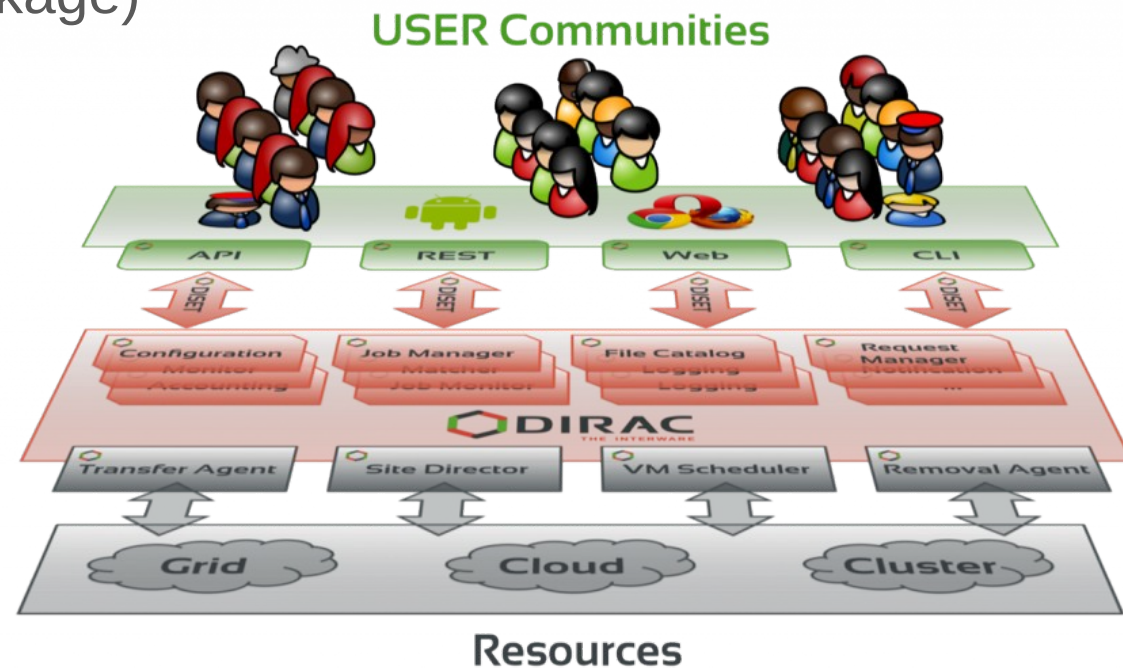
FG-DIRAC

→ DIRAC : Framework complet d'accès aux ressources (grille, cloud, stockage)

- Créer pour le LHCb
- Gestion des tâches et des données
- Utilisation WEB / API / CLI

→ L'instance FG-DIRAC

- Hébergé au CC-IN2P3
- Support de 20 VOs : Mutualisation du support
- Long tail of science : une VO nationale



FG-CLOUD

- Accès à une fédération de cloud IaaS
- Pour la VO France-Grilles
- Accès par DIRAC ou OpenStack

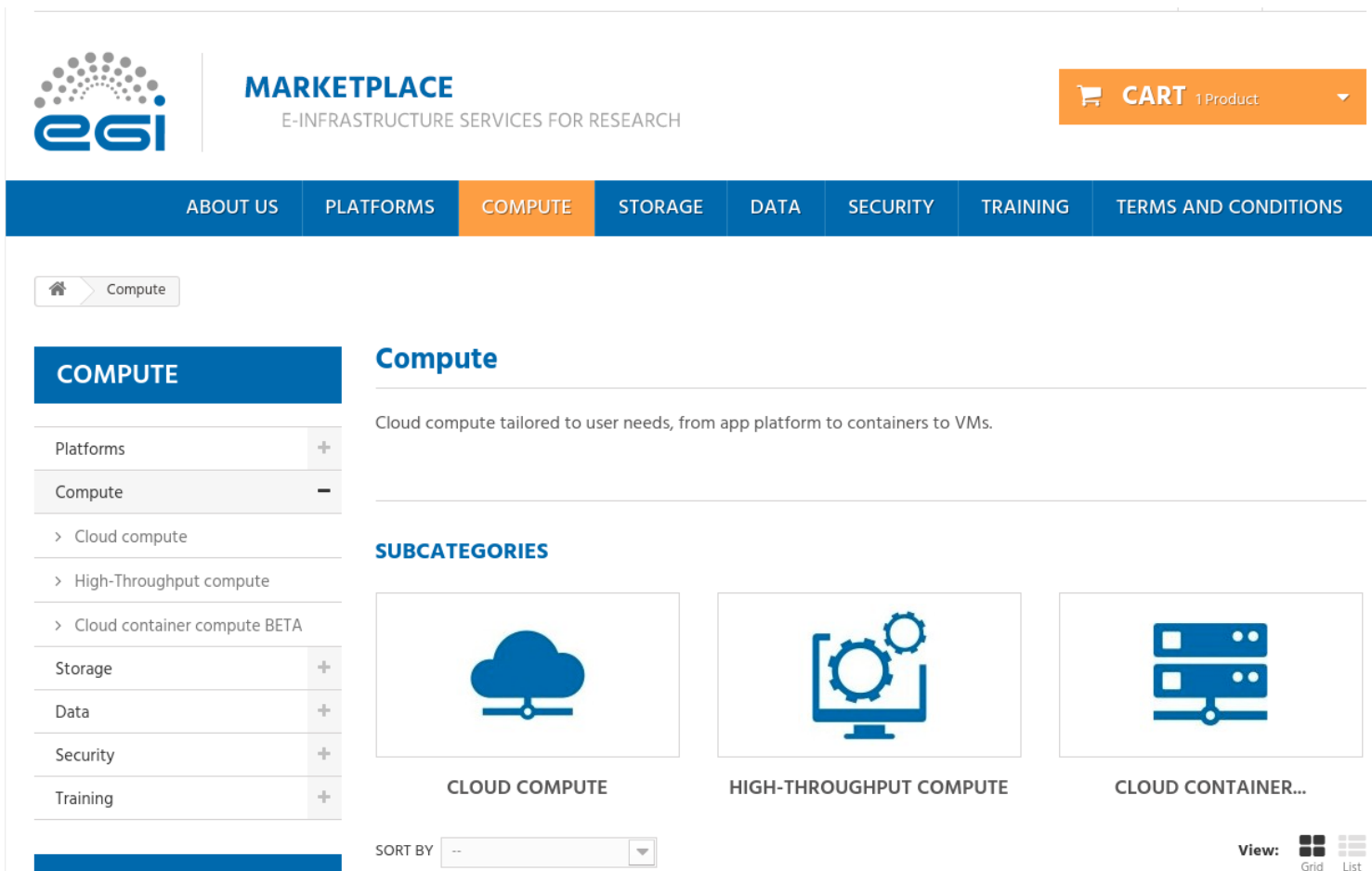
FG-IRODS

- IRODS : système de virtualisation de stockage
 - Uniformisation de stockages hétérogènes et distribués
 - Gestion de métadonnées
 - Workflows personnalisés / gestion des droits
 - Accessible par WEB / API / CLI / Client lourd / Montage réseau
- Instance FG-IRODS : utilisable par la VO france-grilles

The logo for iRODS features the word "iRODS" in a bold, sans-serif font. The letter "i" is a teal color, while the letters "R", "O", "D", and "S" are a dark grey color.














Accès aux ressources EGI

- Possible par FG-DIRAC, ou DIRAC4EGI
- Sinon par le marketplace EGI : <https://marketplace.egi.eu/>



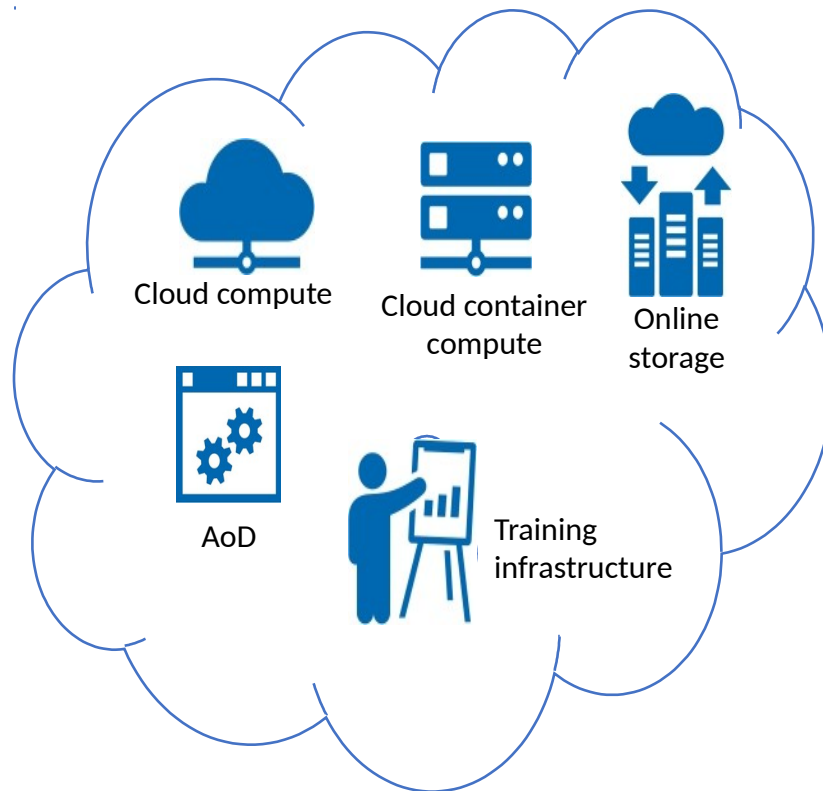
The screenshot displays the EGI Marketplace website interface. At the top left is the EGI logo, followed by the text 'MARKETPLACE' and 'E-INFRASTRUCTURE SERVICES FOR RESEARCH'. On the top right, there is a shopping cart icon labeled 'CART' with '1 Product' and a dropdown arrow. Below this is a navigation menu with tabs for 'ABOUT US', 'PLATFORMS', 'COMPUTE' (highlighted), 'STORAGE', 'DATA', 'SECURITY', 'TRAINING', and 'TERMS AND CONDITIONS'. A breadcrumb trail shows 'Home' and 'Compute'. The main content area is titled 'Compute' and includes a sub-header 'Cloud compute tailored to user needs, from app platform to containers to VMs.' Below this, there is a 'SUBCATEGORIES' section with three icons: 'CLOUD COMPUTE' (cloud icon), 'HIGH-THROUGHPUT COMPUTE' (monitor with gears icon), and 'CLOUD CONTAINER...' (server rack icon). On the left side, there is a sidebar menu with 'COMPUTE' selected, and sub-items for 'Platforms', 'Compute', 'Cloud compute', 'High-Throughput compute', and 'Cloud container compute BETA'. Below these are 'Storage', 'Data', 'Security', and 'Training' categories. At the bottom, there is a 'SORT BY' dropdown menu and a 'View:' selector with 'Grid' and 'List' options.

Liste des services EGI

Compute	Storage and Data	Training
 <p>Cloud Compute Run virtual machines on demand with complete control over computing resources</p>	 <p>Online Storage Store, share and access your files and their metadata on a global scale</p>	 <p>FitSM Training Learn how to manage IT services with a pragmatic and lightweight standard</p>
 <p>Cloud Container Compute BETA Run Docker containers in a lightweight virtualised environment</p>	 <p>Archive Storage Back-up your data for the long term and future use in a secure environment</p>	 <p>ISO 27001 Training Learn how to manage and secure information assets</p>
 <p>High-Throughput Compute Execute thousands of computational tasks to analyse large datasets</p>	 <p>Data Transfer Transfer large sets of data from one place to another</p>	 <p>Training Infrastructure Dedicated computing and storage for training and education</p>
 <p>Workload Manager BETA Manage computing workloads in an efficient way</p>	<div data-bbox="757 975 1327 1023"> <p>Security</p> </div> <div data-bbox="757 1062 1327 1142">  <p>Check-in BETA Login with your own credentials</p> </div>	
<div data-bbox="200 1110 746 1158"> <p>Applications</p> </div>		
 <p>Applications on Demand BETA Use online applications for your data & compute intensive research</p>		
 <p>Notebooks BETA Create interactive documents with live code, visualisations and text</p>		

Multi-cloud

- OpenStack
- OpenNebula
- Synnefo



Fonctions Complémentaires

- Identité Unique via Check-in
- Bibliothèque d'Appliance
- Découvertes de ressources
- Dashboard unique

Plan

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- **Plusieurs exemples de VRE**
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Exemples de VRE sur France Grilles et EGI

- Pourquoi des VRE ?
 - Intermédiaire entre les ressources et les utilisateurs
 - Abstraction des ressources
 - Portail dédiée à un projet / une communauté
- Plusieurs exemples à suivre

WeNMR / West-Life

- Biologie : interaction entre protéines et biomolécules
- Communauté très large (12 000 chercheurs)
- +15 portails d'accès spécifiques pour différentes applications
- Sur EGI : HTC, Cloud et GPU via DIRAC4EGI
- Containers avec u-docker

The WeNMR services portfolio

The image displays a collection of web portals for various WeNMR services. Each portal typically features a header with the service name and logo, followed by a navigation menu, a main content area with text and images, and a footer with contact information. Some portals show interactive elements like search bars or data tables. The services include:

- Xplor-NIH**: NMR GRID-enabled web portal.
- AMBER**: NMR GRID-enabled web portal.
- CYANA**: Web Portal.
- HADDOCK**: NMR GRID-enabled web portal.
- CS-ROSETTA**: NMR GRID-enabled web portal.
- MAXOCC**: WeNMR GRID-enabled web portal.
- MDD**: Web Portal.
- CCPN for e-NMR**: Web portal.
- TALOS**: e-NMR (GRID-enabled) web portal.
- GROMACS**: e-NMR (GRID-enabled) web portal.
- MARS**: Web Portal.
- 3DDART**: e-NMR (GRID-enabled) web portal.
- AnisoFIT**: WeNMR GRID-enabled web portal.
- Antechamber**: GRID-enabled web portal.

Credit : Alexandre Bonvin

http://haddock.science.uu.nl/enmr/services/HADDOCK2.2/

HADDOCK2.2

EOSC-WeNMR/West-Life web portal


[WeNMR home](#) [West-life home](#) [BioExcel home](#) [NMR services](#) [Support Center](#)


WELCOME TO THE WENMR/WEST-LIFE WEB PORTAL >>

This is the prediction interface to the HADDOCK docking program.
This interface is meant to be used with interface predictors that overpredict the interface, such as CPORT
Unfold the menus by clicking on the double arrows. Submit your job by providing your username and password and press submit.
For questions about the use of the HADDOCK portal please refer to: ask.bioexcel.eu

You may supply a name for your docking run (one word)

Name

First molecule 

Second molecule 

Structure definition

Where is the structure provided?

Which chain of the structure must be used?

PDB structure to submit No file chosen

or: PDB code to download

Restraint definition

Data to drive the docking


Please supply residues as comma-separated lists of residue numbers

Active residues (directly involved in the interaction)

Passive residues (surrounding surface residues)

Define passive residues automatically around the active residues

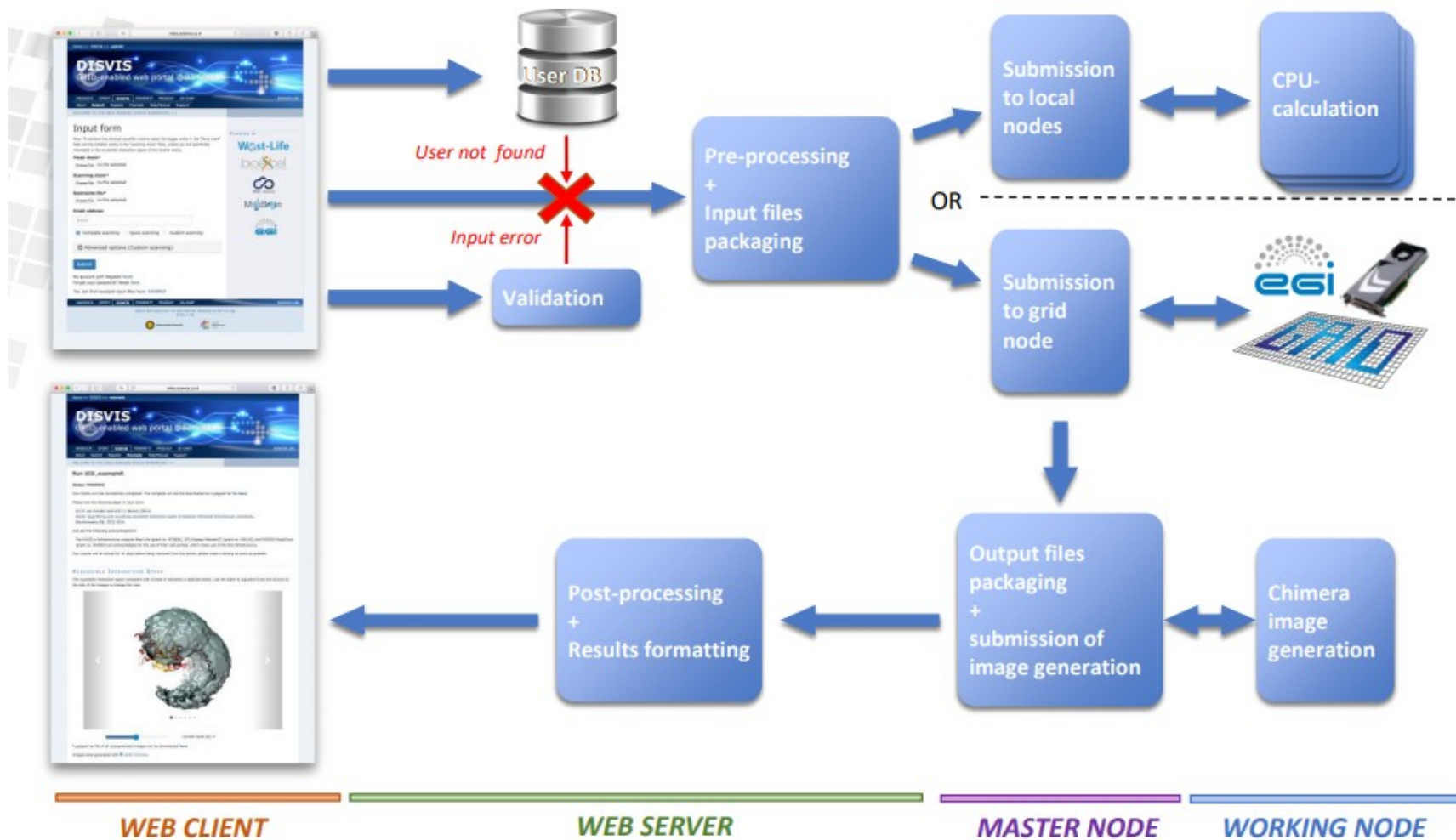
What kind of molecule are you docking?

Username and password or  [EGI Check-in](#) (You should be registered before)

Username

Password

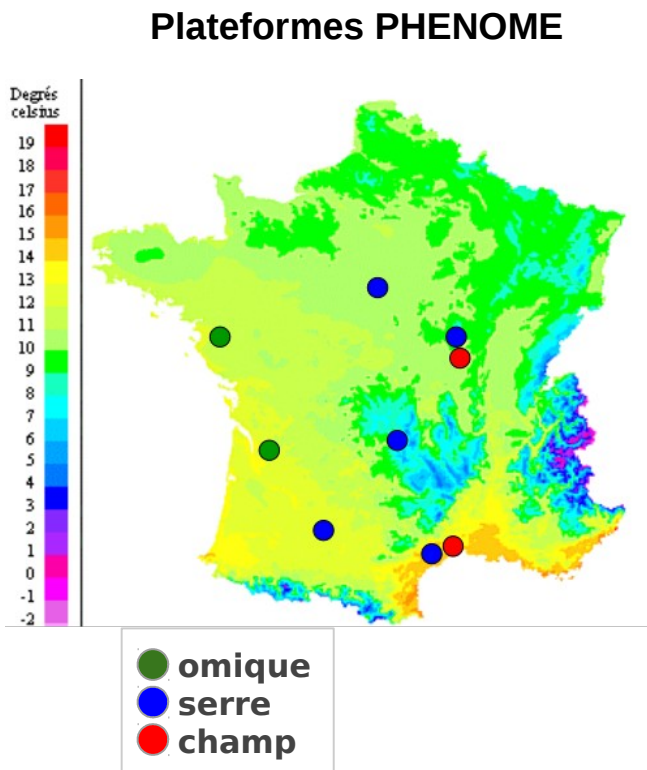
Architecture behind the portals


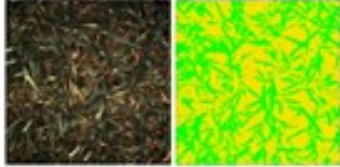



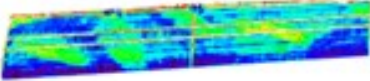

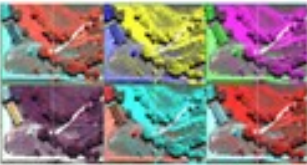

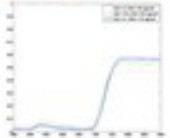


Credit : Alexandre Bonvin

4P – Projet PHENOME

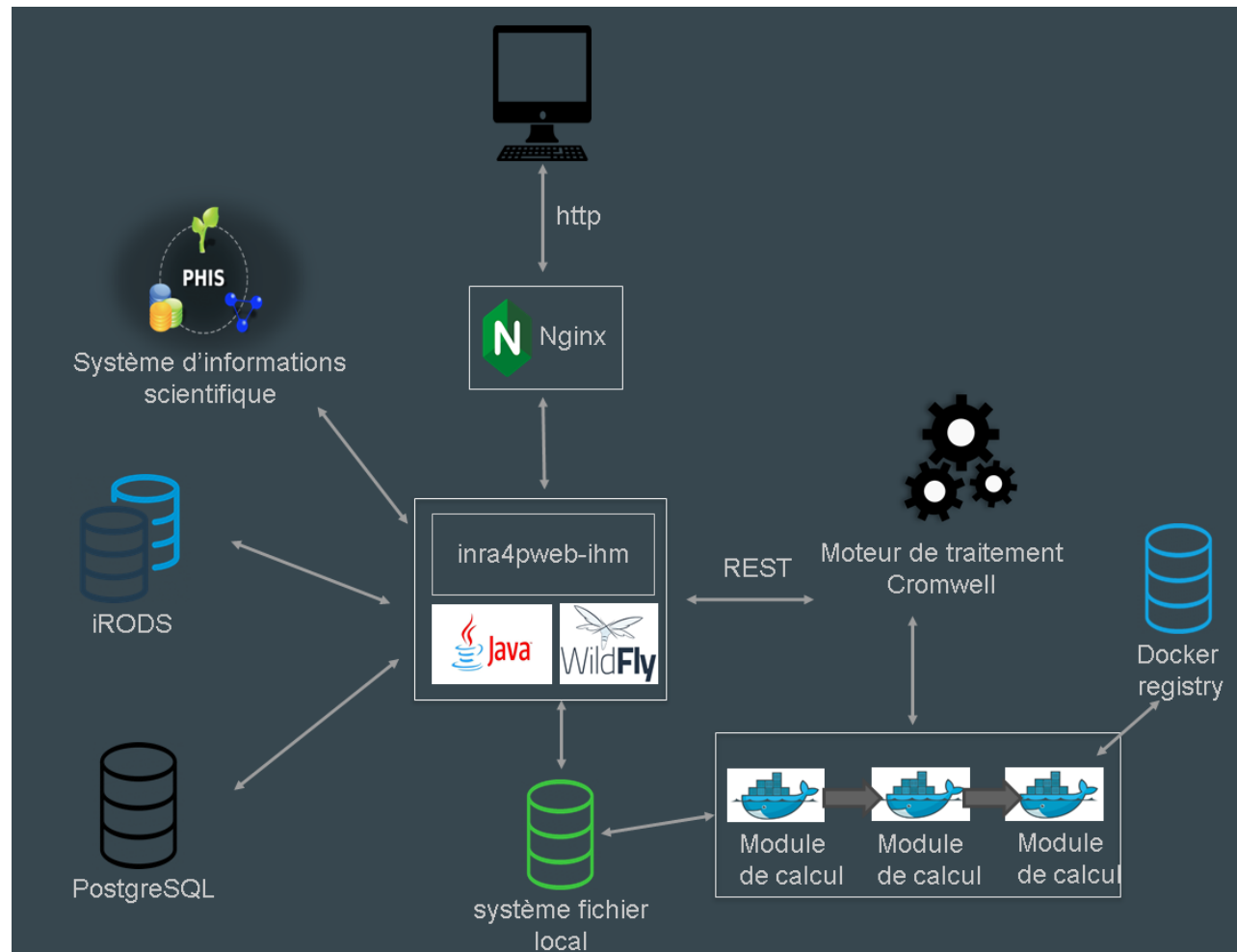
→ Plateforme de traitement des données phénotypage haut débit



			Utilisations
	Camera haute résolution/RVB		<ul style="list-style-type: none"> • Identification adventices • Enherbement • Taux de couverture verte • Développement foliaire • Comptage de plante • Dégâts de nuisibles • Biomasse, risque de verse
	LIDAR Mesure de distance et profondeur		<ul style="list-style-type: none"> • Structure • Port du couvert • Interception lumineuse • Expérimentation
	Caméra IR thermique		<ul style="list-style-type: none"> • Température de surface • Stress hydrique • Pilotage de l'irrigation
	Camera multispectrale		<ul style="list-style-type: none"> • Développement • Statut azoté/chlorophylle • Stress • Pilotage de l'azote
	Spectromètre		<ul style="list-style-type: none"> • Chlorophylle/statut azoté • Stress (hydrique, ...) • Développement • Composés de la plante

4P – PHENOME

- Utilise FG-iRODS et FG-Cloud (6 VMs)
- Traitements variés encapsulées dans des containers docker



Soil Height from RGB UAV from SfM algorithm

- Duplicate
- Process dataset
- Publish
- Archive
- Delete

Details Workflow

The configuration of your macro is complete. You can now publish and use it.
For more details, please refer to the online guide: [create a macro](#).



Module: [Phenoscript - Process](#)

Description:

Le module process permet d'exécuter de manière automatique un projet de photogrammétrie, Agisoft Photoscan dans notre cas.

Input dataset:

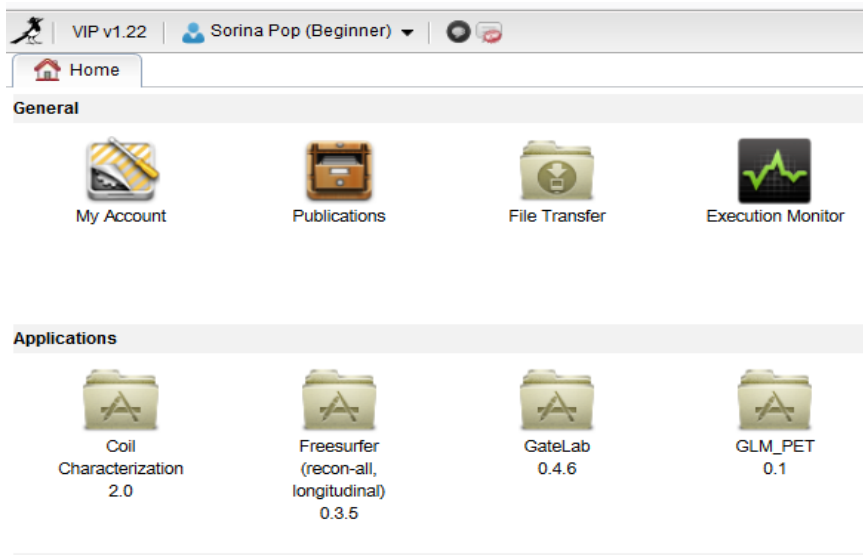
RGB Images

Add a data:

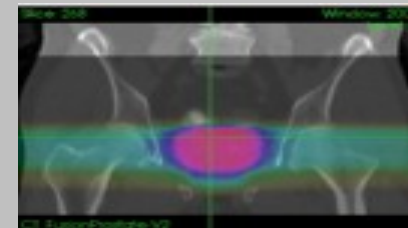
Dense Cloud (L1 - Drone)

Inputs	Source	Value
Camera profile file *	Phenoscript - Camera Profile -> Camera profile file	
Drone height *	RGB Images -> Drone height	
Export dense cloud	Manual	true
Export orthomosaics	Default value	false
GCP coordinates *	RGB Images -> GCP coordinates	
Photoscan settings	Manual	photoscan_settings_ms_dense_cloud.json Select file... Browse ...
Registered drone images *	Phenoscript - Filtration -> Filtered drone images	

The Virtual Imaging Platform



Cancer therapy simulation



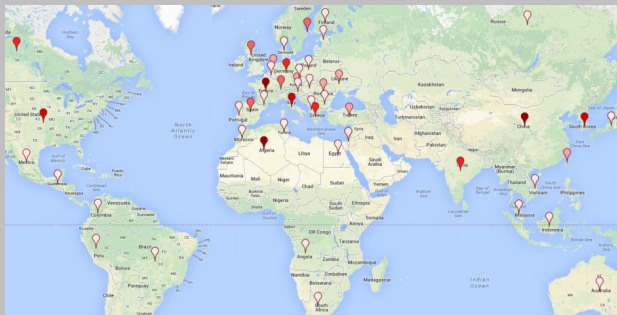
Prostate radiotherapy plan simulated with GATE(L. Grevillot and D. Sarrut)

Neuro-image analysis



Brain tissue segmentation with Freesurfer

1000+ registered users in October 2019
55 publications identified since 2011



Supported by EGI Infrastructure

Uses biomed VO (~65 sites in Europe and beyond)

230 cumulated CPU years utilized by VIP applications in 1 year



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

Home

General



My Account



Publications



File Transfer



Execution Monitor



Documentation



Gallery



Messages

Executions Timeline

✓	Untitled AdditionTest 0.9 11/07/2016 15:11	✕ ↻
✓	Untitled AdditionTest 0.9 11/07/2016 15:07	✕ ↻
✓	testauto2993 AdditionTest 0.9 10/10/2016 15:23	✕ ↻
✓	testauto6198 AdditionTest 0.9 10/10/2016 11:44	✕ ↻
✓	testauto1897 AdditionTest 0.9 10/06/2016 15:16	✕ ↻
✓	jj AdditionTest 0.9 10/05/2016 16:53	✕ ↻

Load more Execution

GateLab



GateLab
0.7.0

Neuroimaging



Freesurfer
(recon-all)
0.3.7

File Transfer

🐦 VIP v1.26 | 👤 Test Carmin (Beginner) ▼ | 🔌 🗨️

🏠 Home | 📁 Freesurfer (recon-all) 0.3.7 ✕

Freesurfer (recon-all) 0.3.7

i Documentation and Terms of Use

Execution Name*

image*
[image](#): a '.nii' or '.nii.gz' file containing the image to process, or a directory containing '.nii' or '.nii.gz' files to process.

List ▼

+
🔍

results-directory*
[results-directory](#): any directory of the VIP platform where you want your results to be stored. Your Home is private; group directories are shared in the group (read and write)

List ▼

+
🔍

options*
[options](#): any option string, to be appended to the recon-all command line. For instance: '-all'. **Important**: don't put spaces, use '_' instead. And put 'no' in case you don't want to use any option.

List ▼

+
🔍

license key*
[license key](#): your licence key file, required to make FreeSurfer operational. Get one from <https://surfer.nmr.mgh.harvard.edu/registration.html> and store it in your Home (private).

List ▼

+
🔍

📄 Saved Inputs

✂️ Examples

⚙️ Launch

📄 Save Inputs

VIP v1.26 | Test Carmin (Beginner) | Experiencing problems?

Home | Executions x | Untitled x

AdditionTest 0.9 launched on 2016-11-07 15:11:50.000000000

Execution Progress

100%

Execution completed!

Input Data	Output Data
<ul style="list-style-type: none"> Inputs <ul style="list-style-type: none"> results-directory <ul style="list-style-type: none"> /vip/Home number2 <ul style="list-style-type: none"> 333 number1 <ul style="list-style-type: none"> 6 	<ul style="list-style-type: none"> Outputs <ul style="list-style-type: none"> output_file <ul style="list-style-type: none"> /vip/Home/07-11-2016_15:11:53/output.txt

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Executions Timeline



Untitled

AdditionTest 0.9
11/07/2016 15:11



Untitled

AdditionTest 0.9
11/07/2016 15:07



testauto2993

AdditionTest 0.9
10/10/2016 15:23



testauto6198

AdditionTest 0.9
10/10/2016 11:44

File Transfer

Platform Files

/vip/Home

<input type="checkbox"/>	Name	Size	Modification Date
<input type="checkbox"/>	lorem_ipsum_2.txt	2.74 KB	2019-10-17 14:15:37

Pool of Transfers

Clear List

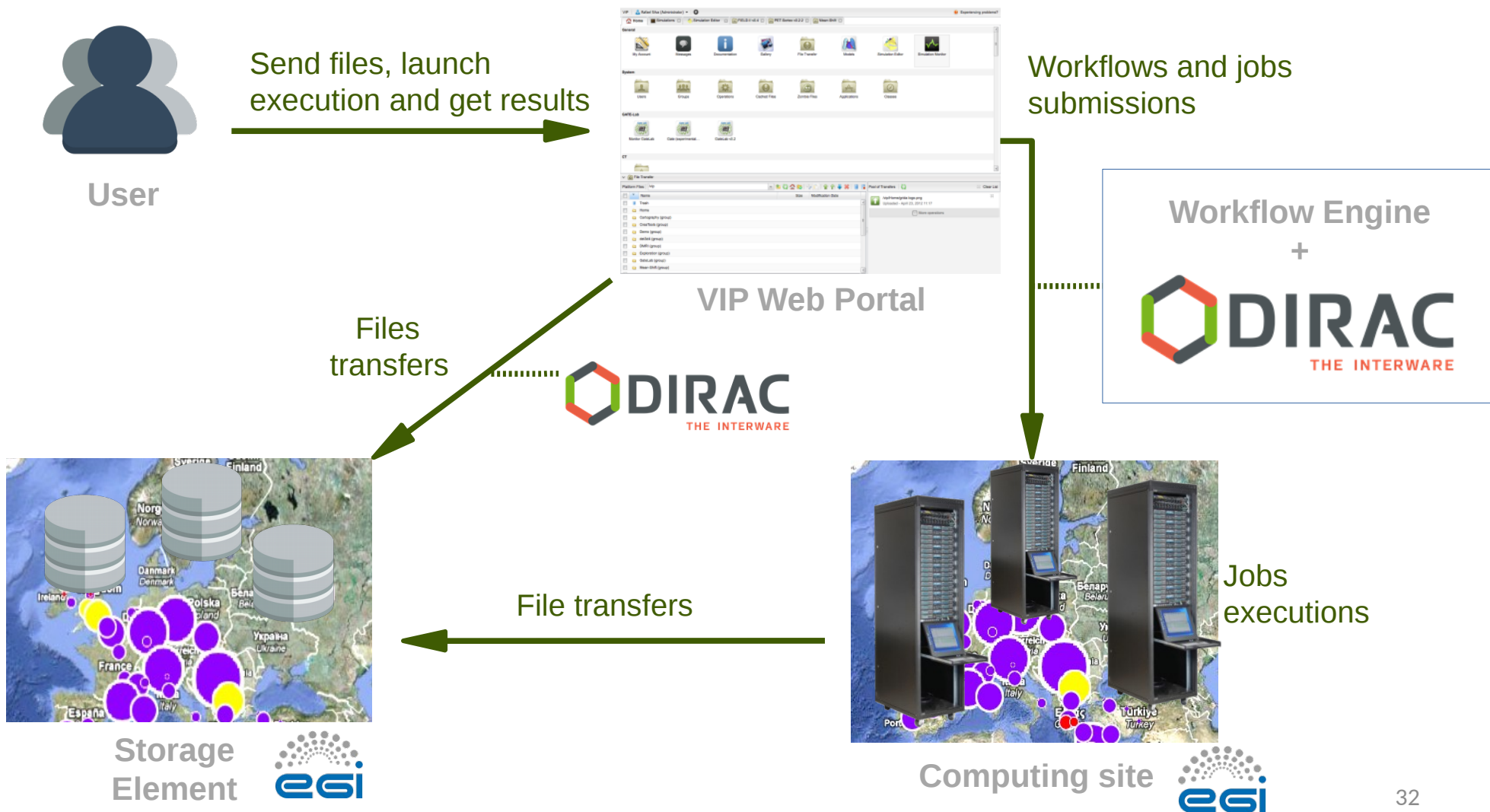


/vip/Home/lorem_ipsum_2.txt
Uploaded - October 17, 2019 16:15

VIP : Des besoins différents

- Des applications standards
 - GATE, Freesurfer
 - Execution massivement parallèle sur la grille EGI
- Des applications à partager ou à rendre visible
 - Projets locaux
 - Utilisation de containers (docker)
- Long tail of science
- Perspectives : GPU, Singularity, Cloud

VIP usage through the portal



Plan

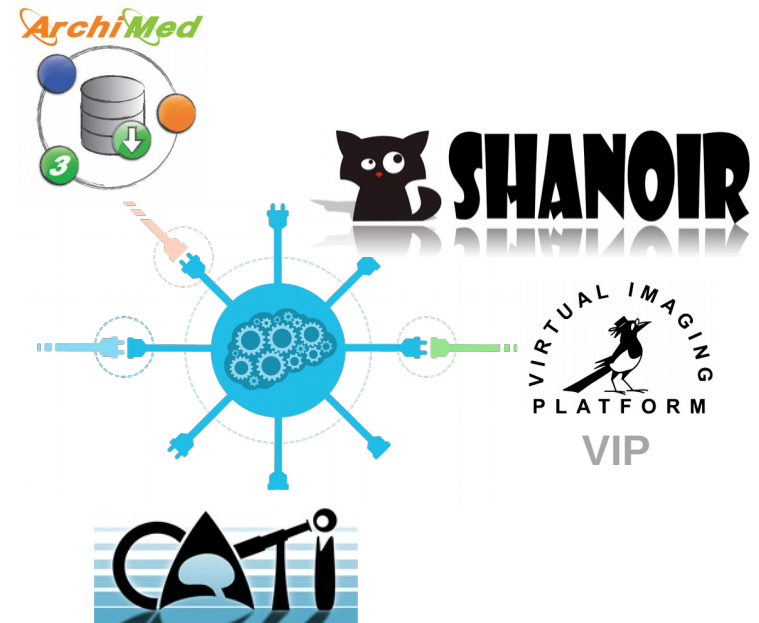
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- Plusieurs exemples de VRE
- **VIP et l'interopérabilité de plateformes**
 - ◆ **CARMIN - Processing**
 - ◆ **CARMIN - Data**
 - ◆ **Boutiques**

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 - ◆ **CARMIN - Processing**
 - ◆ CARMIN - Data
 - ◆ Boutiques

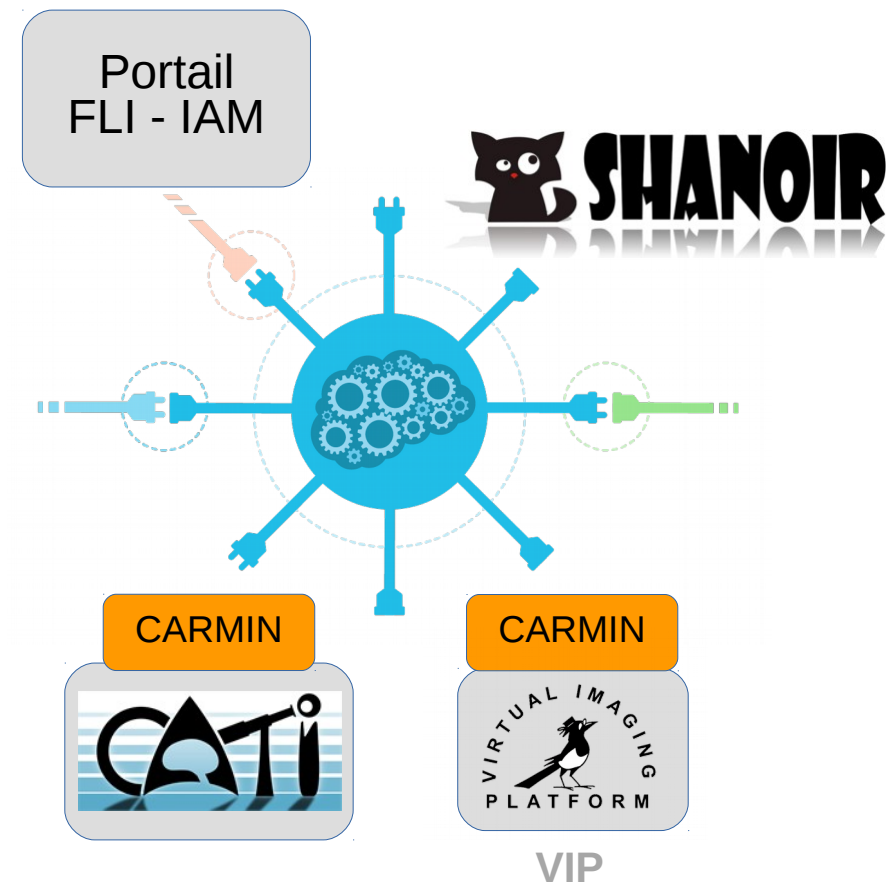
CARMIN - Origine

- Dans le cadre de FLI-IAM
- Une infrastructure nationale avec des plateformes
 - ◆ De calcul
 - ◆ De données
- Besoin d'un moyen de communication



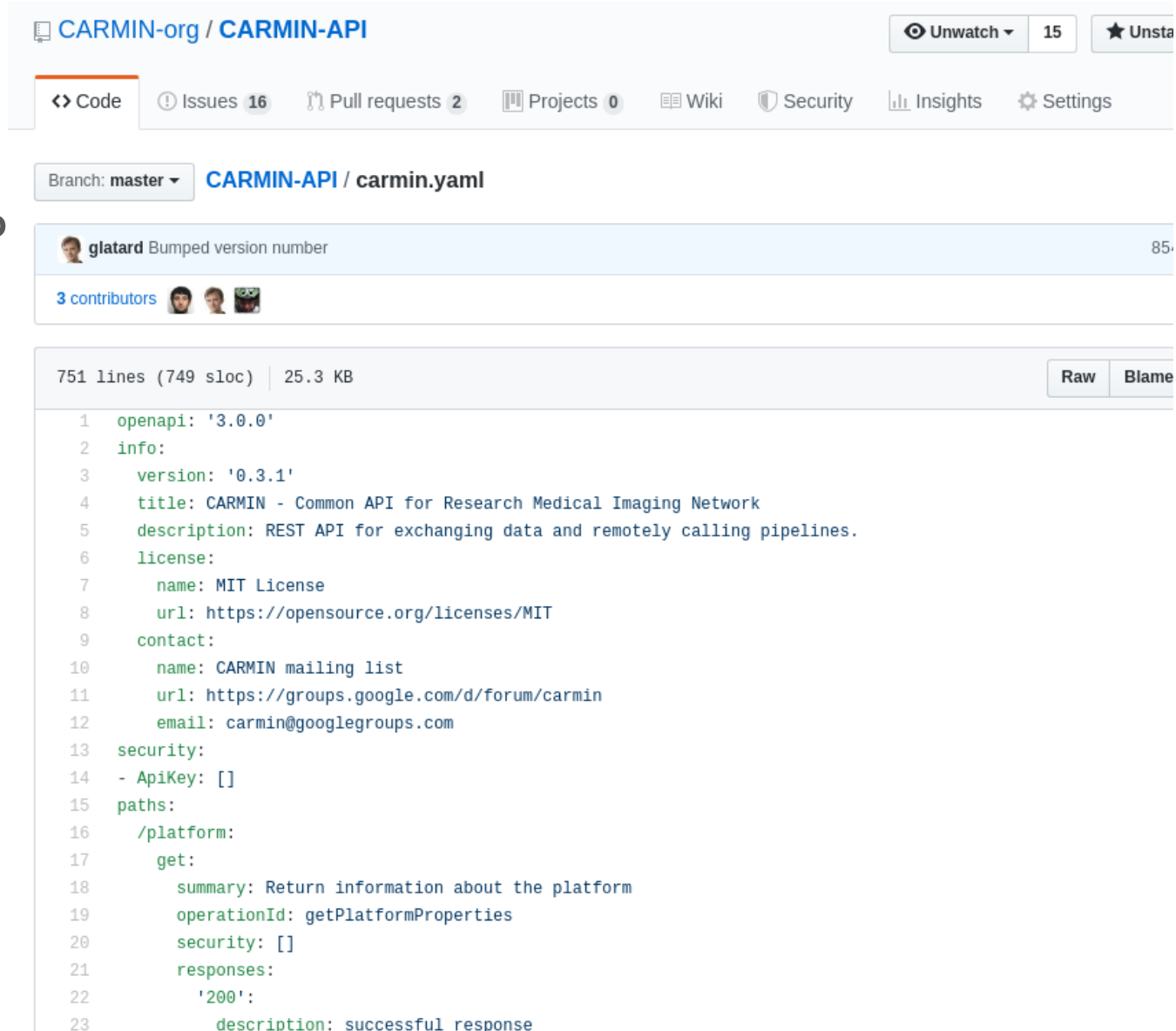
CARMIN - Origine

- Interface commune pour les plateformes de calcul
- Objectifs : Lancements de tâches depuis :
 - ◆ Un portail unique
 - ◆ Les plateformes de données
- Création de CARMIN



CARMIN – La spécification

- <https://github.com/CARMIN-org/CARMIN-API>
- Spécification interface
- Implémentation libre par les plateformes
- Au format YAML (OpenAPI)
- REST / HTTP



```
751 lines (749 sloc) | 25.3 KB
1  openapi: '3.0.0'
2  info:
3    version: '0.3.1'
4    title: CARMIN - Common API for Research Medical Imaging Network
5    description: REST API for exchanging data and remotely calling pipelines.
6    license:
7      name: MIT License
8      url: https://opensource.org/licenses/MIT
9    contact:
10     name: CARMIN mailing list
11     url: https://groups.google.com/d/forum/carmin
12     email: carmin@googlegroups.com
13  security:
14  - ApiKey: []
15  paths:
16    /platform:
17      get:
18        summary: Return information about the platform
19        operationId: getPlatformProperties
20        security: []
21        responses:
22          '200':
23            description: successful response
```

CARMIN - Contenu

→ Doc en ligne

→ CARMIN spécifie :

- Description de la plateforme
- Authentification (clé API)
- Liste et descriptions des pipelines (applications) et de leurs paramètres
- Lancement d'une exécution
- Gestion d'une exécution
- Historique des exécutions

GET	/platform	Return information about the platform
POST	/authenticate	Return the API key necessary to use the API.
GET	/executions	List some executions.
POST	/executions	Initialize an execution
GET	/executions/count	Get the number of the user's executions
GET	/executions/{executionIdentifier}	Get information about an execution
PUT	/executions/{executionIdentifier}	Modify an execution.
DELETE	/executions/{executionIdentifier}	Delete an execution
GET	/executions/{executionIdentifier}/results	Get the result files of the execution
GET	/executions/{executionIdentifier}/stdout	Get stdout of an execution
GET	/executions/{executionIdentifier}/stderr	Get stderr of an execution
PUT	/executions/{executionIdentifier}/play	Play an execution
PUT	/executions/{executionIdentifier}/kill	Kill an execution
GET	/pipelines	List pipelines
GET	/pipelines/{pipelineIdentifier}	Show the definition of a pipeline
GET	/pipelines/{pipelineIdentifier}/boutiquesdescriptor	Returns the Boutiques descriptor of the pipeline, if av

GET `/executions` List some executions.

List all execution Ids in the platform which are ordered in decreasing submission time. All the executions that were launched by the user must be returned. Return the executions with indexes ranging from offset to offset+limit-1. When studyIdentifier is present, all the executions that the user launched for this study must be returned.

Parameters

Name	Description
studyIdentifier string (query)	When present, all the executions the user launched for this study must be returned. studyIdentifier - When present, all the executions the user launched for this study must be returned.
offset string (query)	Index of the first execution to be returned. Defaults to 0. offset - Index of the first execution to be returned. Defaults to 0.
limit string (query)	Maximum number of executions to be returned. Defaults to the "defaultLimitListExecutions" property in the getPlatformProperties method if present, to 500 otherwise. limit - Maximum number of executions to be returned. Default: 500.

Responses

```
Pipeline ▾ {
  identifier*      string($ascii)
  name*           string
  version*        string($ascii)
  description      string
  canExecute      boolean
                  true if the user who requested the pipeline can execute it

  parameters      ▾ [PipelineParameter > {...}]
  properties*     > {...}
  errorCodesAndMessages > [...]
}
```

```
PipelineParameter ▾ {
  name*          string($ascii)
  type*          ParameterType string
                  Enum:
                  > Array [ 6 ]

  isOptional*    boolean
  isReturnedValue* boolean
  defaultValue   > {...}
  description    string
}
```


CARMIN – Avantages d'OpenAPI

- Successeur de swagger
- Large soutien dans l'industrie
- Compréhensible par l'homme et la machine
- Beaucoup d'outils disponibles :
 - ◆ Validation
 - ◆ Documentation
 - ◆ Génération de clients / serveurs



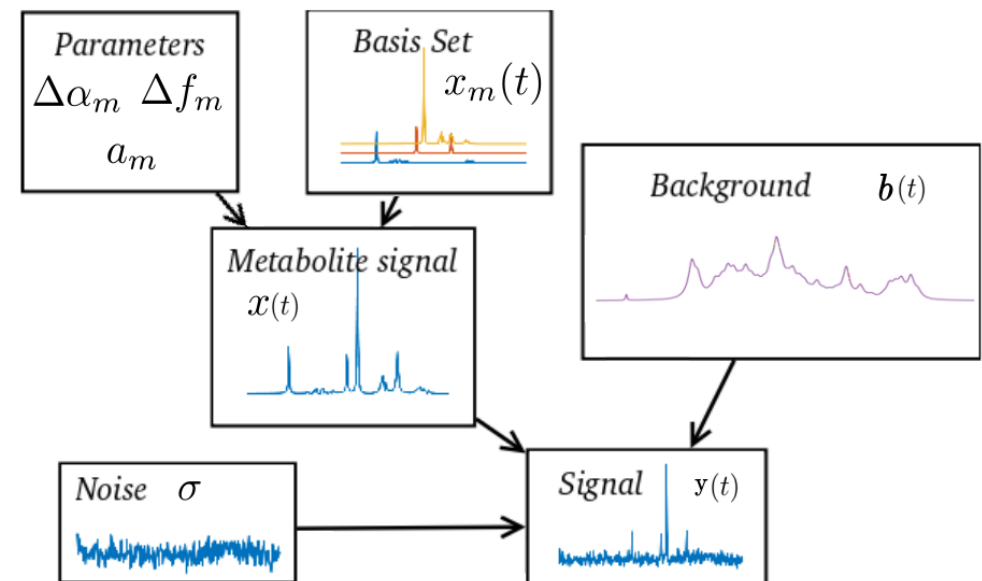
CARMIN – Evolution et futur

- Standard d'interface pour plateforme de calcul
- 3 plateformes à l'origine, plus aujourd'hui
- Open source, ouvert à de nouvelles plateformes
- En évolution



CARMIN – Résumé et exemple sur VIP

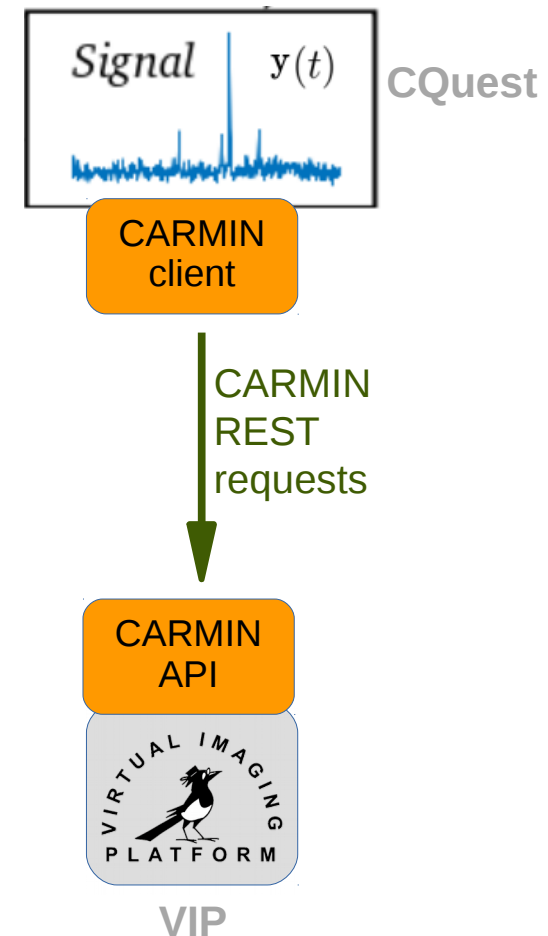
- CARMIN est une spécification d'API
- Permet l'interopérabilité d'une plateforme de calcul
- API commune à plusieurs plateformes : interopérabilité simplifiée
- Exemple : CQuest
 - ♦ GUI for signal quantification for Magnetic Resonance Spectroscopy



Crédit : H.Ratiney, CREATIS

CARMIN – Intéropérabilité VIP ↔ CQuest

- Ajout d'un client CARMIN en python
- Calculs déportés sur VIP
- Installation plus simple
- Utilisation simplifiées d'autres plateformes CARMIN
- Mais ... quid des transferts de fichiers ?



Plan

- France Grilles et EGI : les infrastructures
- France Grilles et EGI : les services
- Plusieurs exemples de VRE
- **VIP et l'interopérabilité de plateformes**
 - ◆ CARMIN - Processing
 - ◆ **CARMIN - Data**
 - ◆ Boutiques

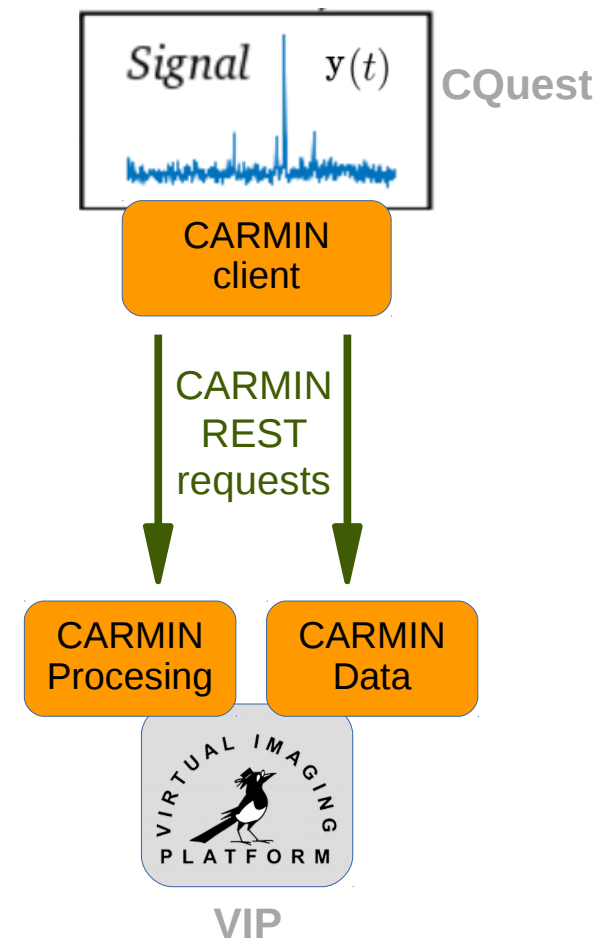
CARMIN – Data

- Nouveau module dans CARMIN
- Permet :
 - ◆ Téléchargement
 - ◆ Upload
 - ◆ Parcours des dossiers
- Identification par des chemins
- Implémentation libre par les plateformes

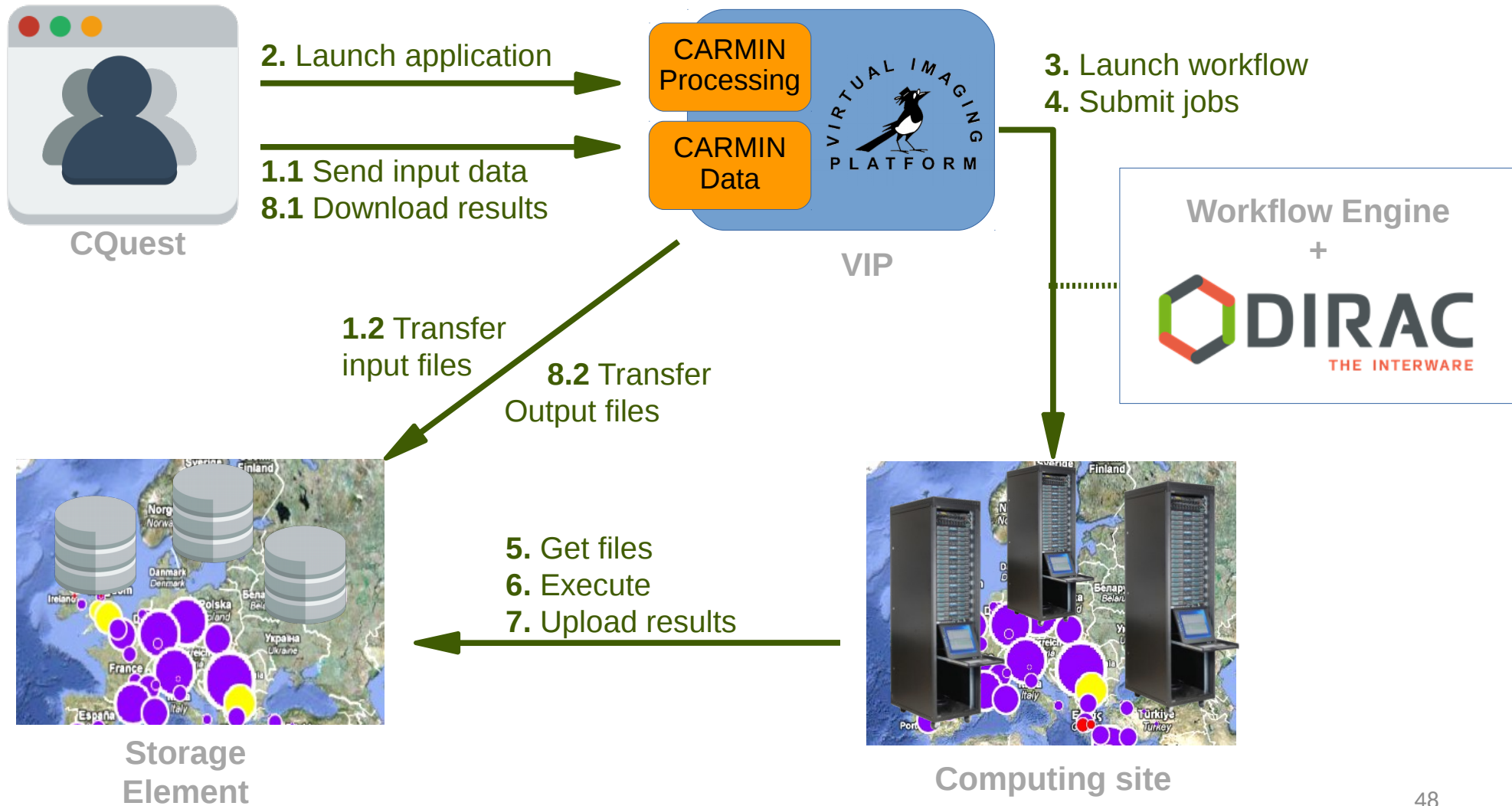
GET	/path/{completePath}	Get content or information for a given path
PUT	/path/{completePath}	Upload data to a path
DELETE	/path/{completePath}	Delete a path

CARMIN – Data dans VIP

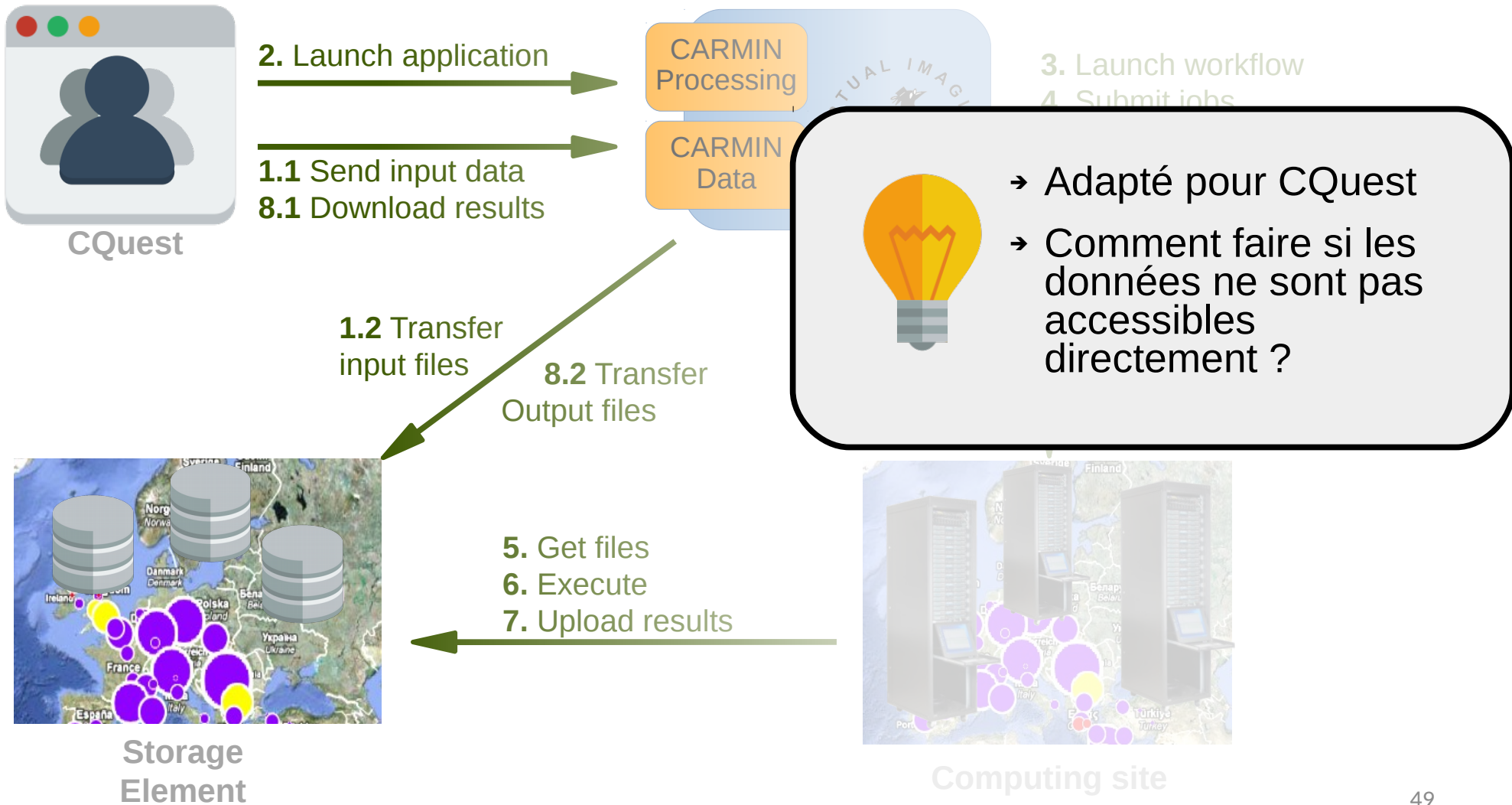
- Scenario complet d'une exécution
 - ◆ Envoie des inputs
 - ◆ Execution
 - ◆ Récupération des résultats
- Illustration sur CQuest



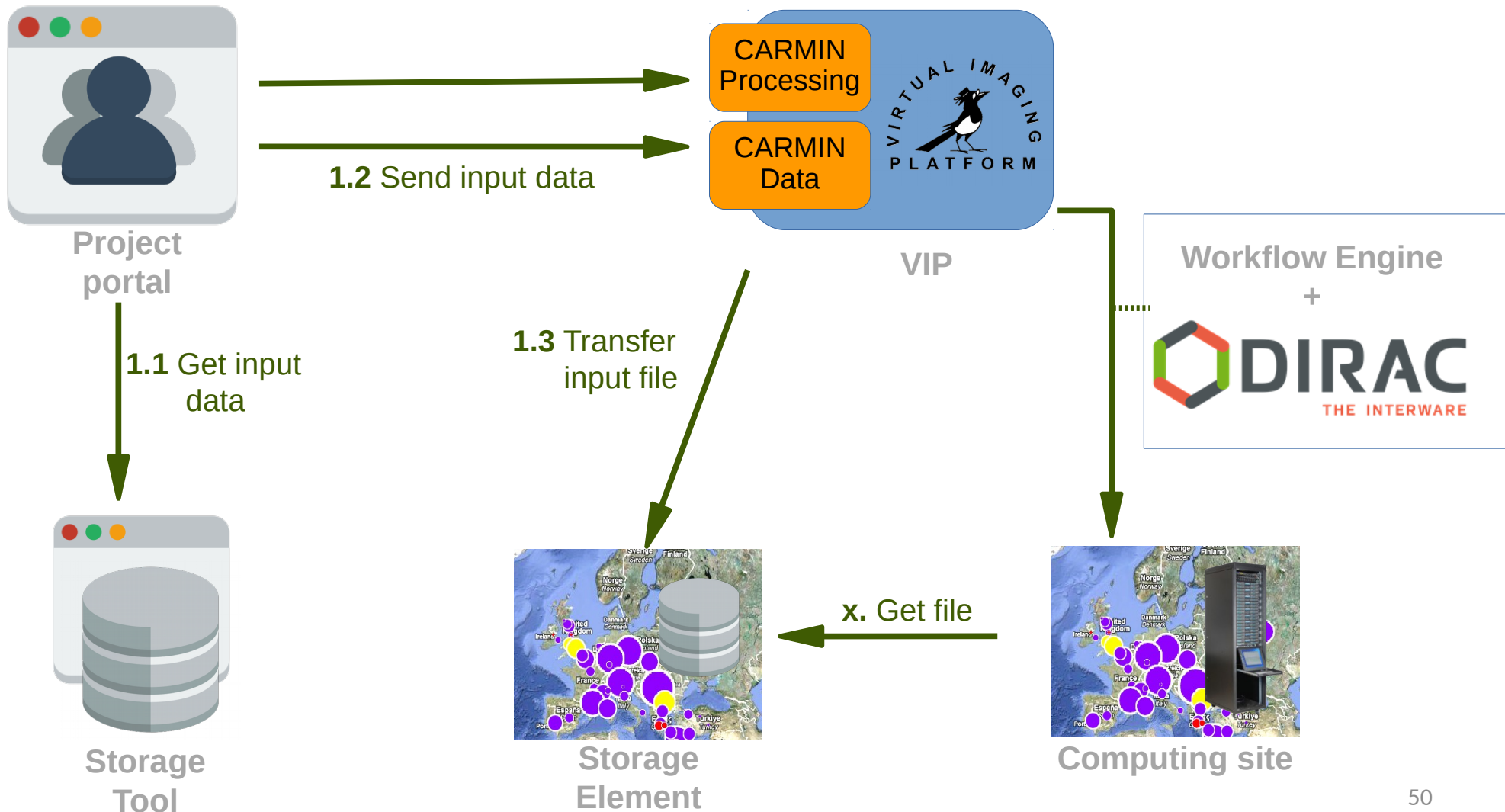
VIP : utilisation par l'API



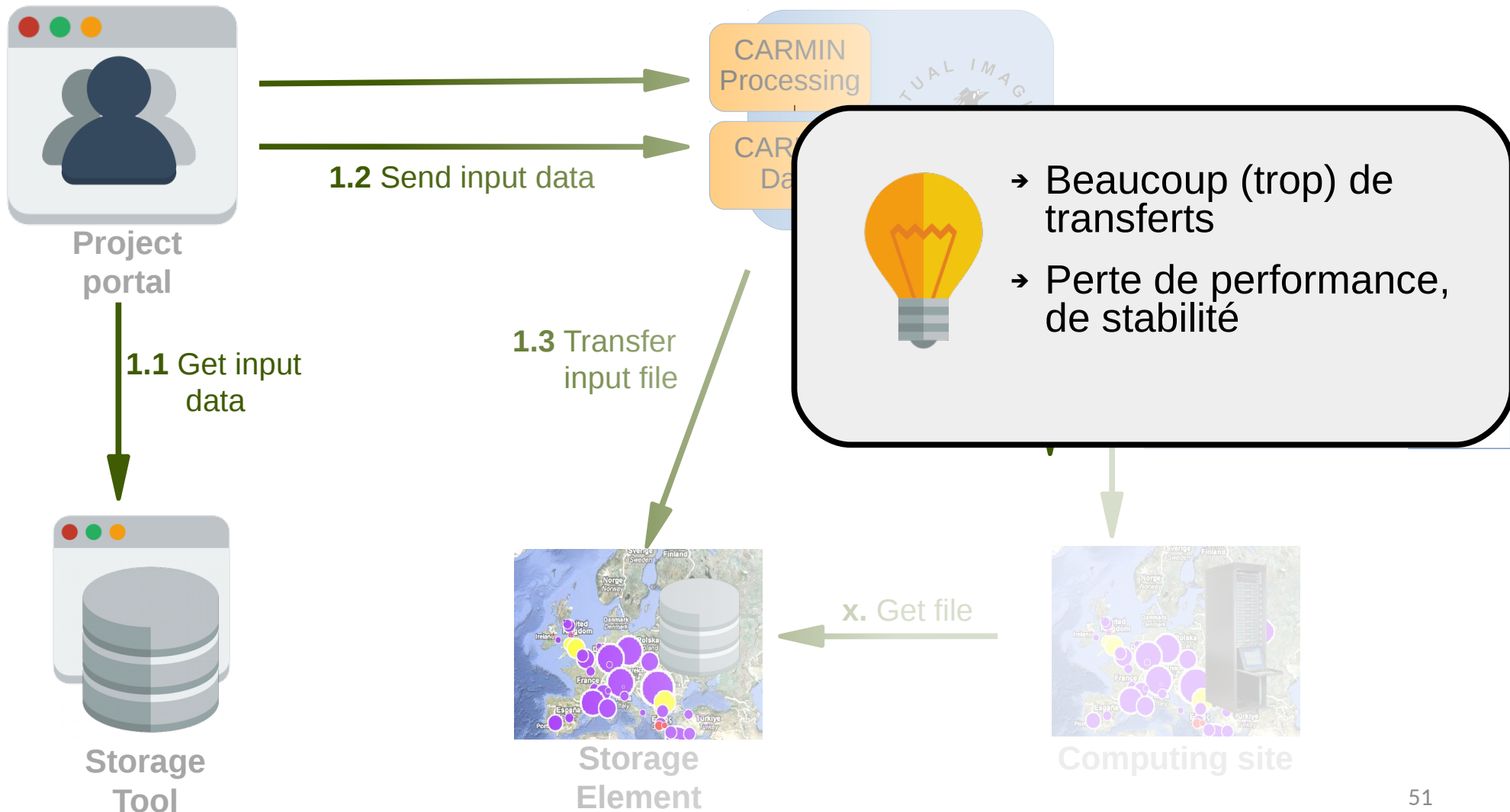
VIP : utilisation par l'API



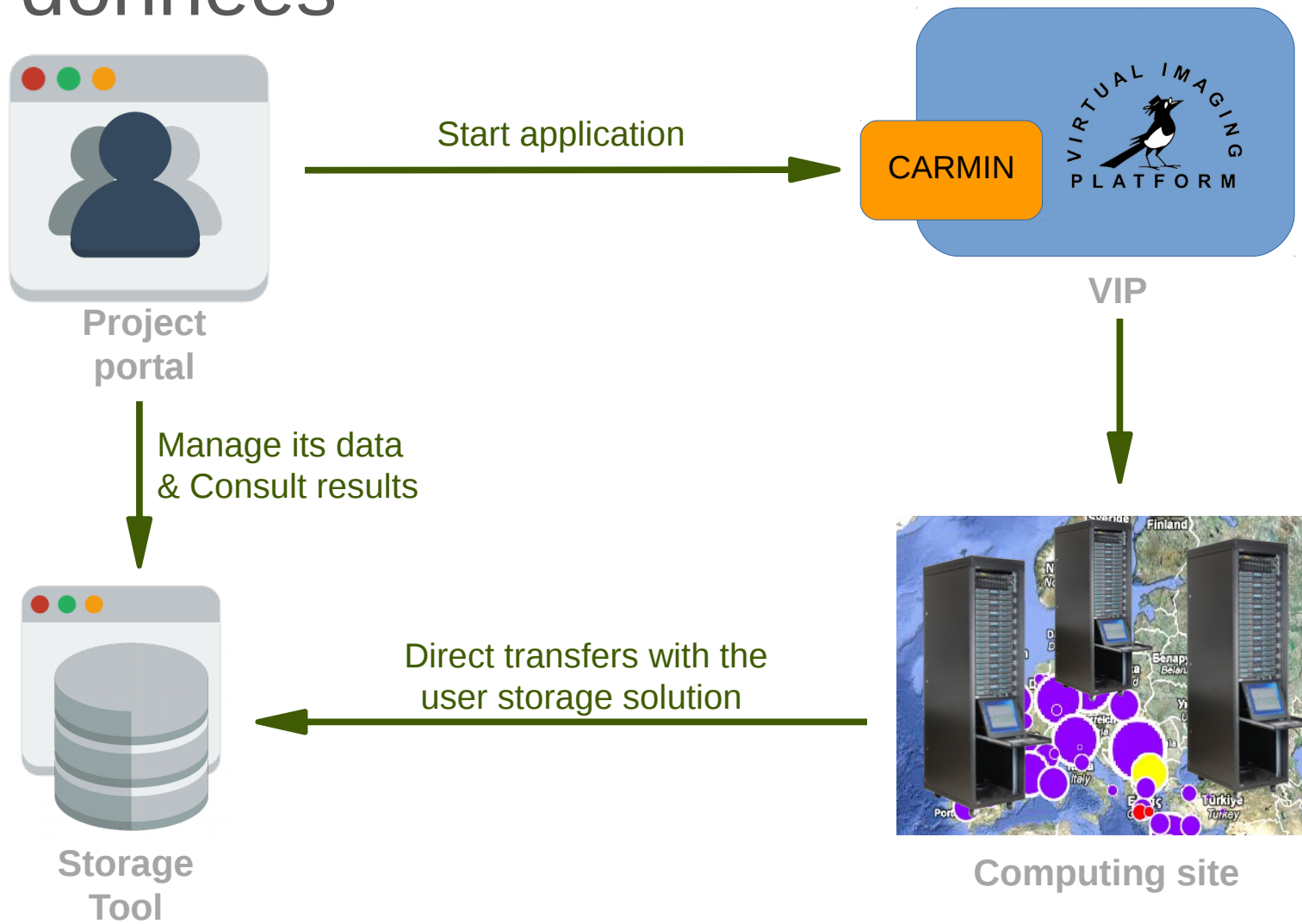
VIP : Limitation de CARMIN - Data



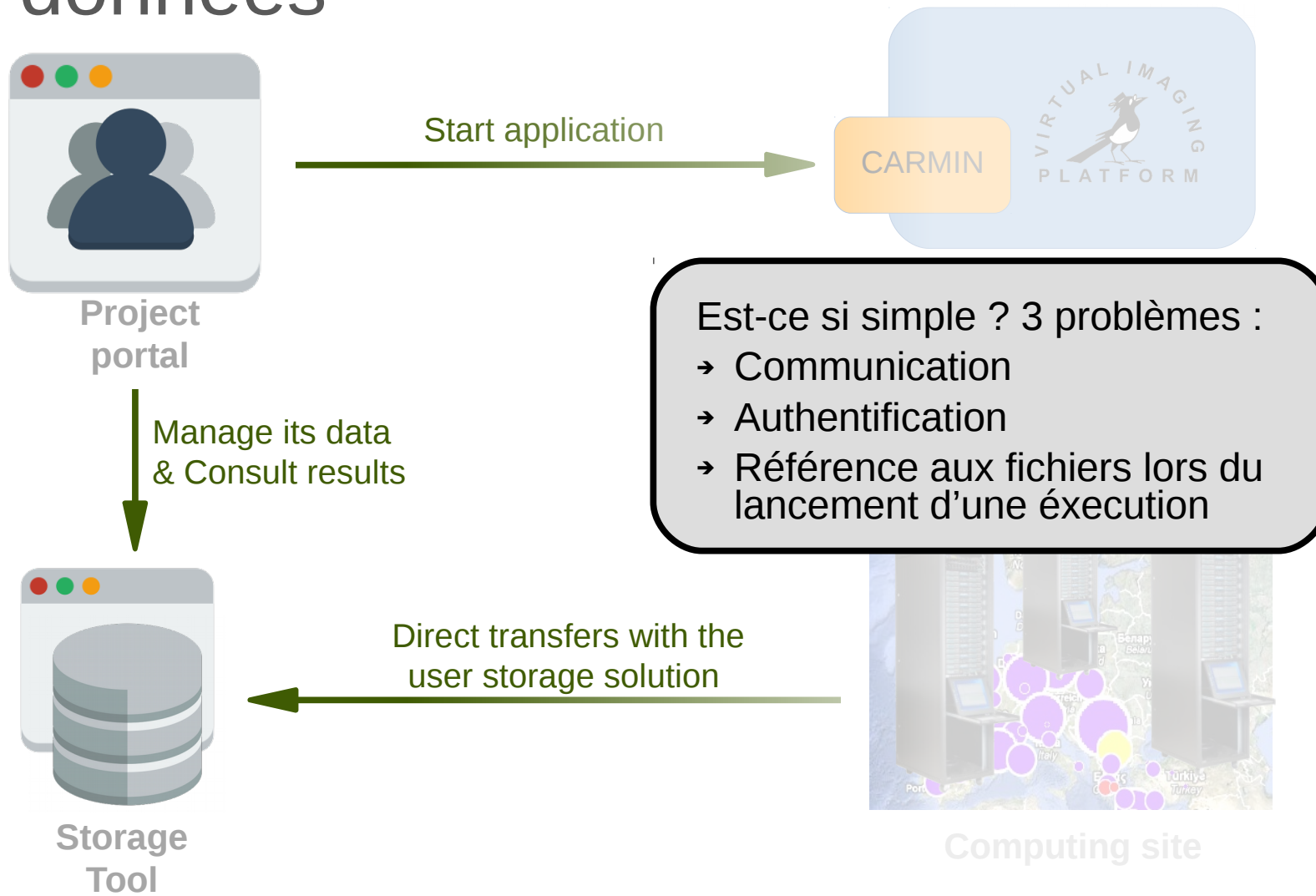
VIP : Limitation de CARMIN - Data



Solution : Intéropérabilité avec les plateformes de données

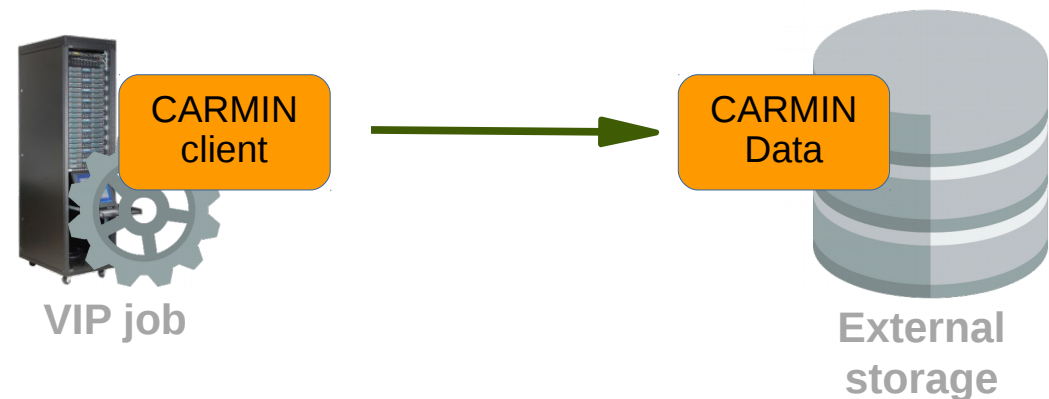


Solution : Intéropérabilité avec les plateformes de données



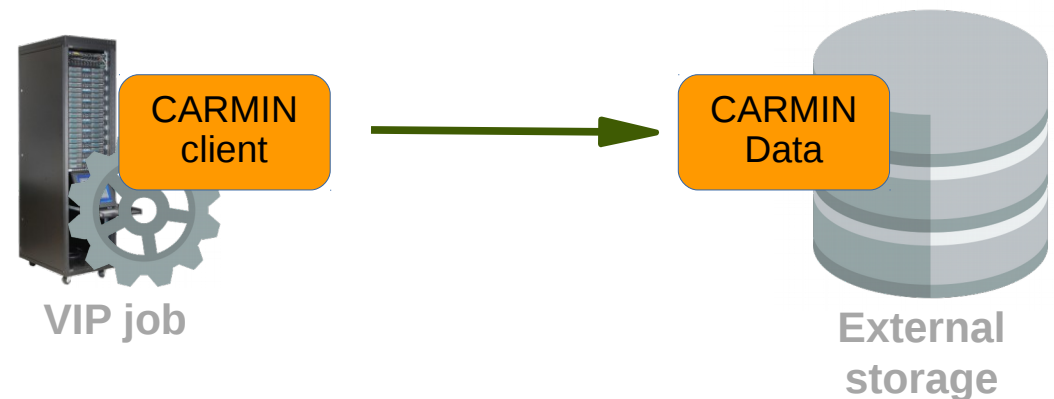
1^{er} problème : Communiquer avec la plateforme de stockage

- La plateforme supporte CARMIN - Data

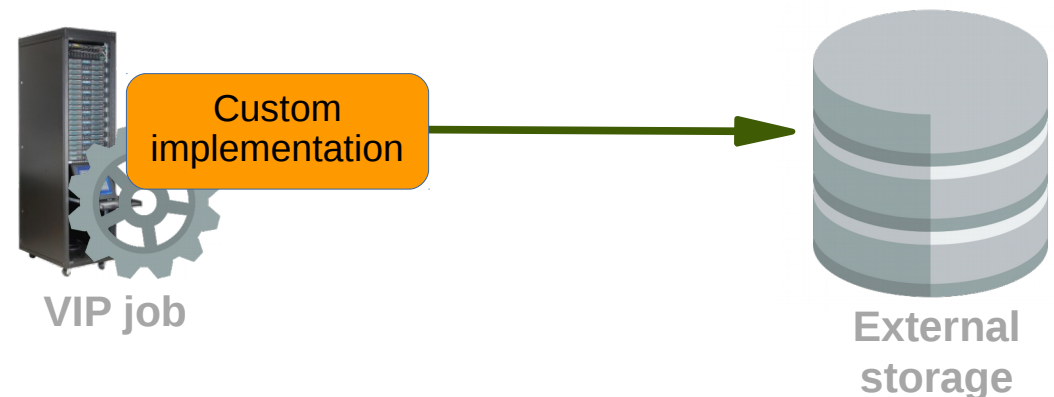


1^{er} problème : Communiquer avec la plateforme de stockage

- La plateforme supporte CARMIN - Data

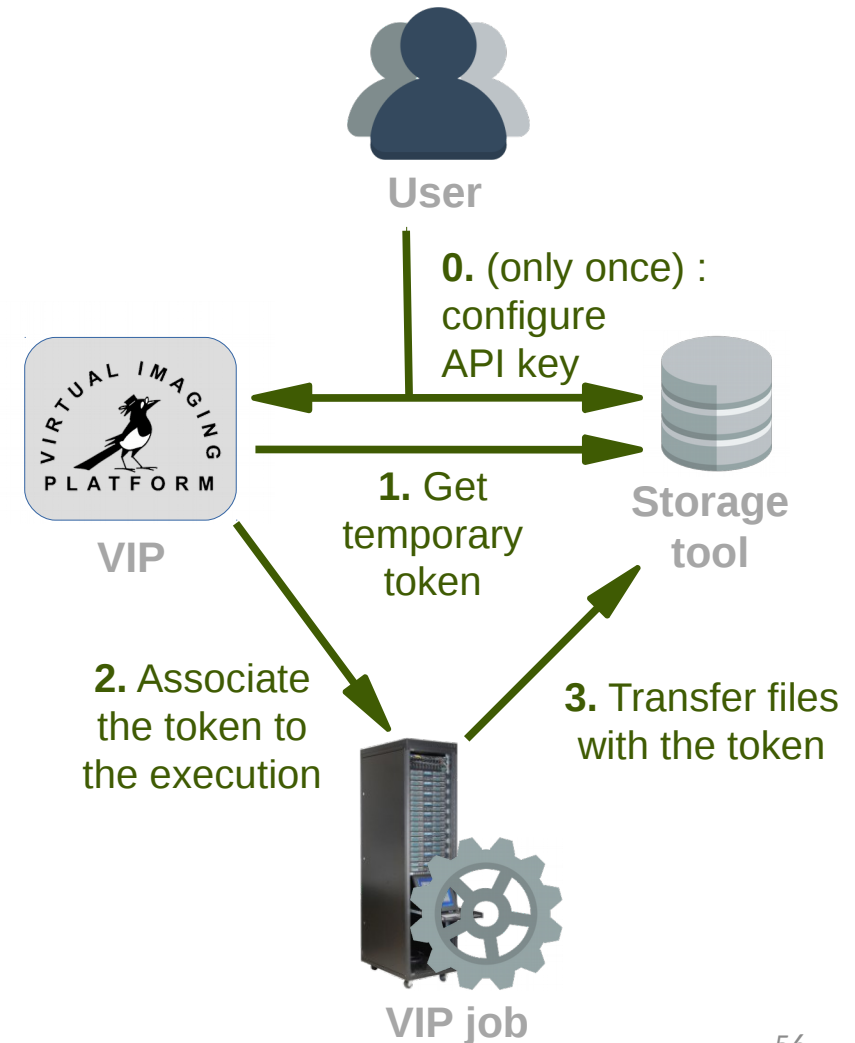


- Sinon, besoin d'une implémentation spécifique



2^{eme} problème : Authentification sur la plateforme de stockage

- Besoin d'accès au nom de l'utilisateur
- Délégation d'identité à 2 étapes (clé API + token)
- Pas possible avec toutes les plateformes



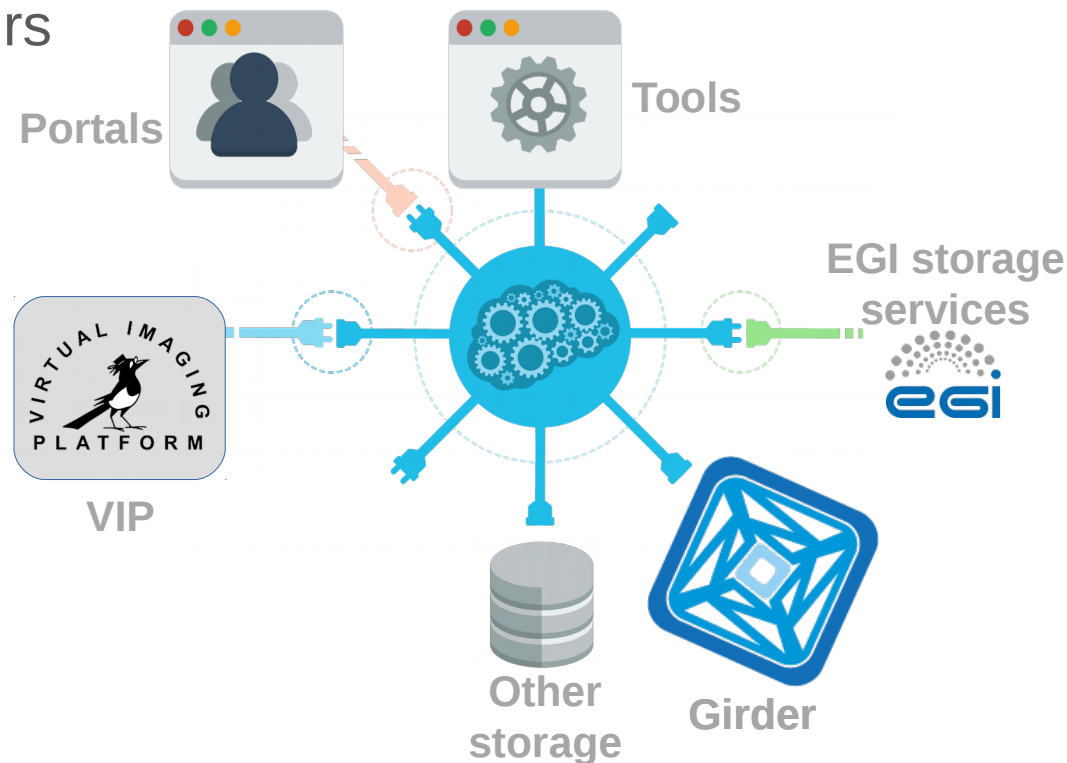
3^{eme} problème : Référencer des fichiers au moment du lancement

- Solution : Etendre CARMIN
 - ♦ Lister les plateformes externes supportées
 - ♦ Configurer ses accès sur cette plateforme
 - ♦ Référencer un fichier lors de la requête pour lancer une exécution

```
1 {
2   "name" : "JCAD Test",
3   "pipelineIdentifier": "GrepTest/2.0",
4   "inputValues" : {
5     "results-directory": "/vip/Home/out",
6     "file": "brainPerfusionGirder:5d945bd3b848ce091e4849fc",
7     "text": "mi"
8   }
9 }
```

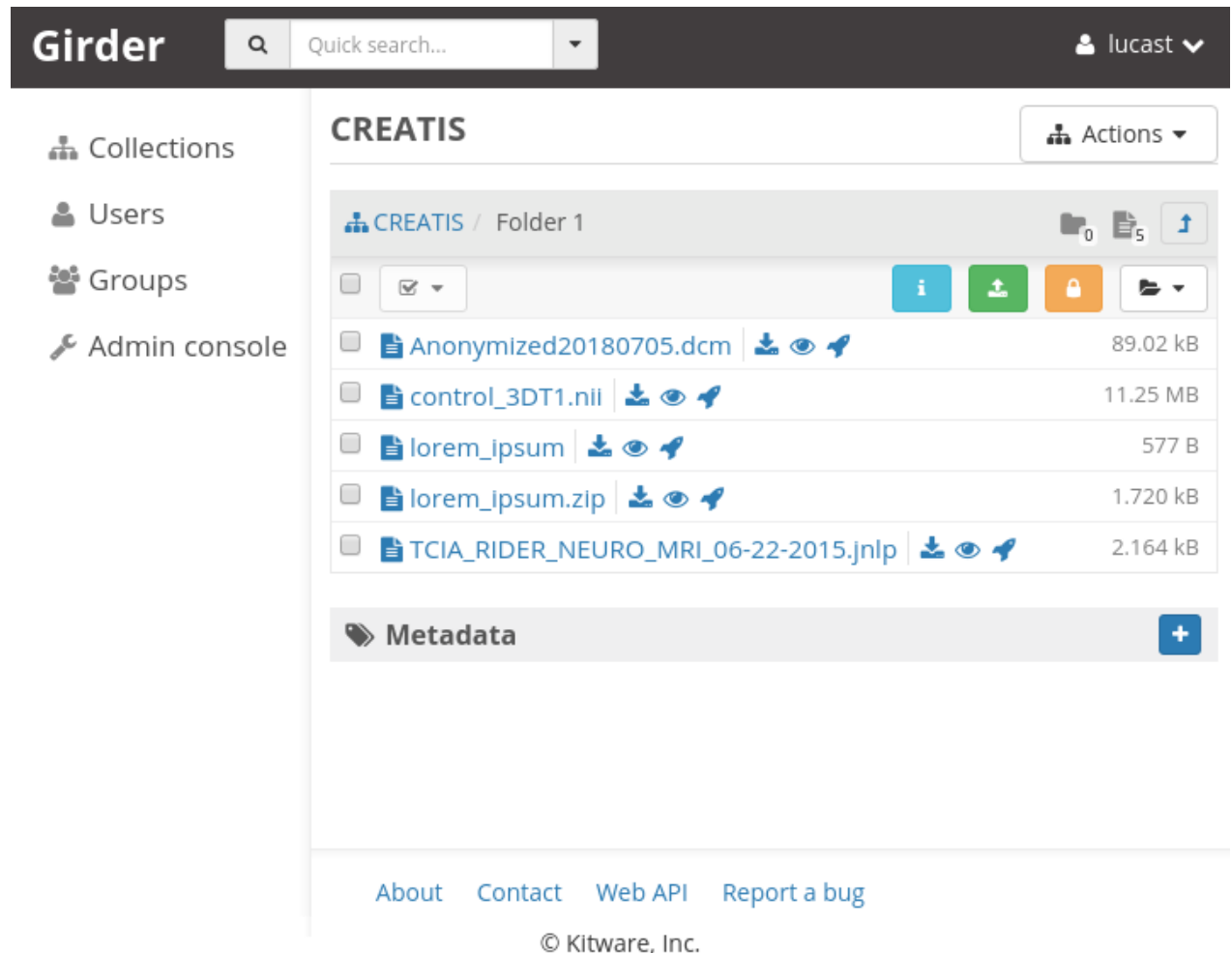
Conclusion CARMIN + Exemple

- CARMIN permet de gérer des exécutions
- CARMIN permet d'utiliser directement les entrepôts de données
- Permet la mise en place de réseaux de plateformes
- Travail en cours



CARMIN : Exemple de Girder

- Girder est un outil de gestion de données
- Générique, mais adapté pour le médical
- Extensible



Girder Quick search... lucast

CREATIS Actions

CREATIS / Folder 1

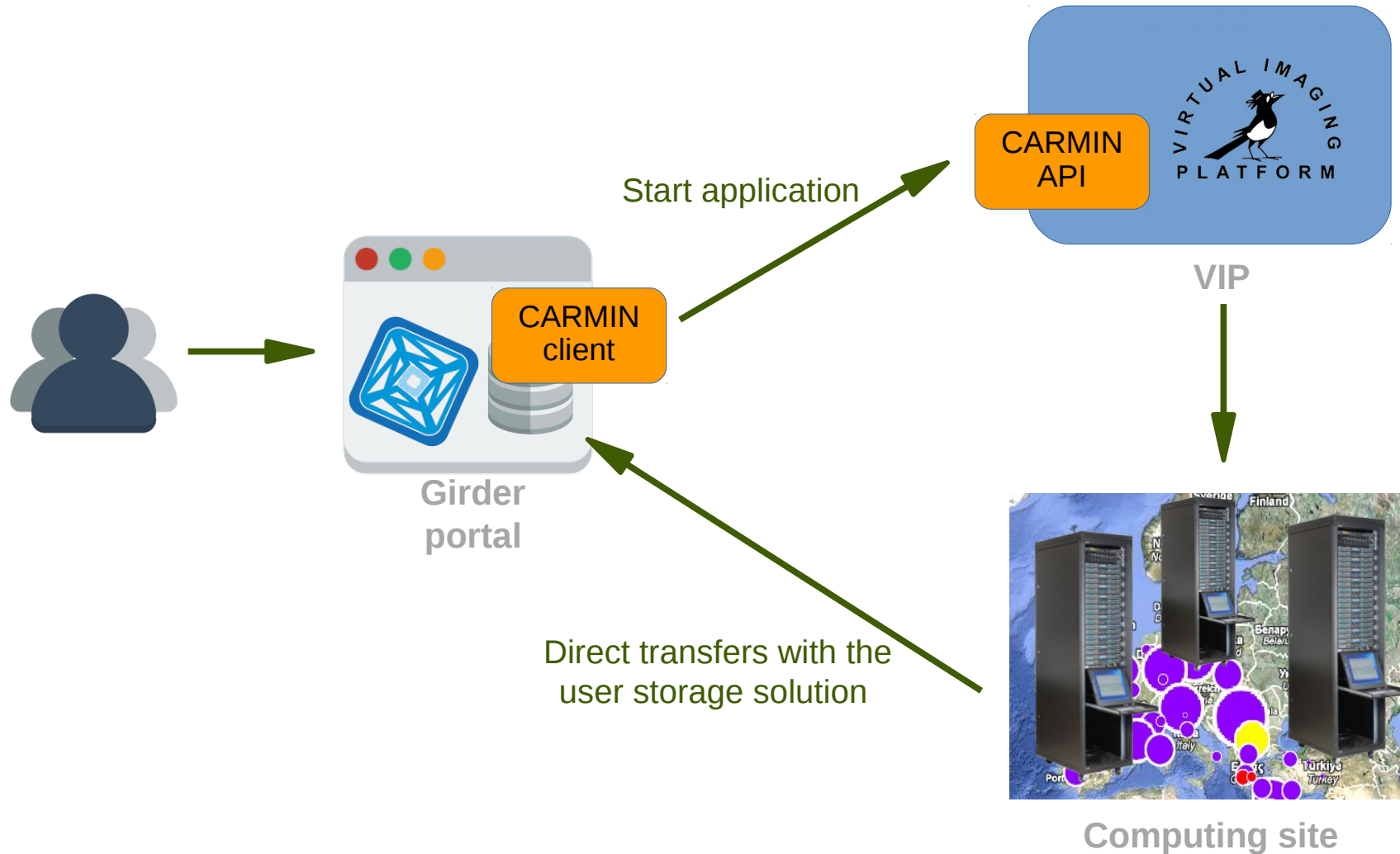
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Metadata +

[About](#) [Contact](#) [Web API](#) [Report a bug](#)

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CARMIN : Exemple de Girder



Plan

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- France Grilles et EGI : les services
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- **VIP et l'interopérabilité de plateformes**
 - ◆ CARMIN - Processing
 - ◆ CARMIN - Data
 - ◆ **Boutiques**

Boutiques : FAIR pour les logiciels

- Open-source : <http://boutiques.github.io/>
- Poster : https://figshare.com/articles/fair-pipelines-poster_pdf/8143241
- “Boutiques is a framework to make data analysis tools Findable Accessible Interoperable and Reusable (FAIR)”
- Fonctionnement :
 - ◆ Un fichier unique de description
 - ◆ Des outils
 - ◆ Zenodo



Le descripteur boutiques

- JSON Schema
- Fichier unique
 - ◆ Description complète
 - ◆ Cross-platform
- Contient :
 - ◆ Entrées
 - ◆ Sorties
 - ◆ Ligne de commande
 - ◆ Erreurs
 - ◆ Container
 - ◆ etc

Tool Properties

Property	Type	Required
author	string	Optional
command-line	string	Required
container-image	object	Optional
custom	object	Optional
description	string	Required
descriptor-url	string	Optional
doi	string	Optional
environment-variables	object[]	Optional
error-codes	object[]	Optional
groups	object[]	Optional
inputs	object[]	Required
invocation-schema	object	Optional
name	string	Required
online-platform-urls	string[]	Optional
output-files	object[]	Optional
schema-version	enum	Required
shell	string	Optional
suggested-resources	object	Optional
tags	object	Optional
tests	object[]	Optional

```
1  {
2    "author": "Greg Kiar <gkiar.github.io>",
3    "command-line": "python3.6 /opt/dipy_deterministic_tracking.py [DIFFUSION_IMAGE] [BVECS] [BVALS] [WHITEMATTER]",
4    "container-image": {
5      "image": "gkiar/dipy_deterministic_tracking:v0.2.0-fuzzy",
6      "index": "index.docker.io",
7      "type": "docker"
8    },
9    "description": "Pipeline for generating streamlines and creating connectomes from preprocessed diffusion images",
10   "environment-variables": [
11     {
12       "name": "VERIFICARLO_MCAMODE",
13       "value": "MCA",
14       "description": "Options for MCA mode include: MCA (full replacement of floating point operations with integer operations)",
15     },
16     {
17       "name": "VERIFICARLO_BACKEND",
18       "value": "QUAD",
19       "description": "Options for backend include: MPFR (GNU's multiple precision library), QUAD (uses gcc's quad precision)",
20     }
21   ],
22   "inputs": [
23     {
24       "description": "Image containing a stack of DWI volumes, ideally preprocessed, to be used for tracing",
25       "id": "diffusion_image",
26       "name": "diffusion_image",
27       "optional": false,
28       "type": "File",
29       "value-key": "[DIFFUSION_IMAGE]"
30     },
31     {
32       "description": "The b-vectors corresponding to the diffusion images. If the images have been preprocessed, the b-values should be set to 1.0.",
33       "id": "bvecs",
34       "name": "bvecs",
35       "optional": false,
36       "type": "File",
37       "value-key": "[BVECS]"
38     },
39     {
```


Boutiques : Zenodo pour partager

- Descripteur boutiques facilement déployable sur Zenodo
- Obtention de DOI
- Métadonnées enrichies
- Findable / Searchable / Accessible

The Zenodo logo is displayed in white lowercase letters on a solid blue rectangular background. The font is a clean, sans-serif typeface.

All versions

Access Right

- Open (1366901)
- Closed (25018)
- Restricted (1643)
- Embargoed (820)

File Type

- Pdf (779271)
- Jpg (340213)
- Png (163580)
- Zip (51527)
- Hdf5 (15058)
- Xml (10575)
- Docx (7885)
- Txt (4644)
- Gz (4546)
- Json (4205)

Keywords

Found 52 results.

< 1 2 3 >

Sort by:

Most recent
asc.

September 3, 2019 (v0.1.2) Software Open Access

animaMusicLesionSegmentation_v3

Francesca Galassi;

Compute MS lesion segmentation using a cascaded CNN. Uses preprocessed images from animaMSExamRegistration.

Uploaded on September 3, 2019

2 more version(s) exist for this record

View

September 3, 2019 (v0.1.2) Software Open Access

animaMSExamPreparation

Francesca Galassi;

Registers and pre-processes input images of an MS patient sequence onto a common reference.

Uploaded on September 3, 2019

2 more version(s) exist for this record

View

August 8, 2019 (v0.2.0-fuzzy) Software Open Access

Dipy Deterministic Tracking

Greg Kiar <gkiar.github.io>;

Pipeline for generating streamlines and creating connectomes from preprocessed diffusion images using Dipy. This tool is the boilerplate deterministic tractography provided within Dipy.

Uploaded on August 8, 2019

4 more version(s) exist for this record

View

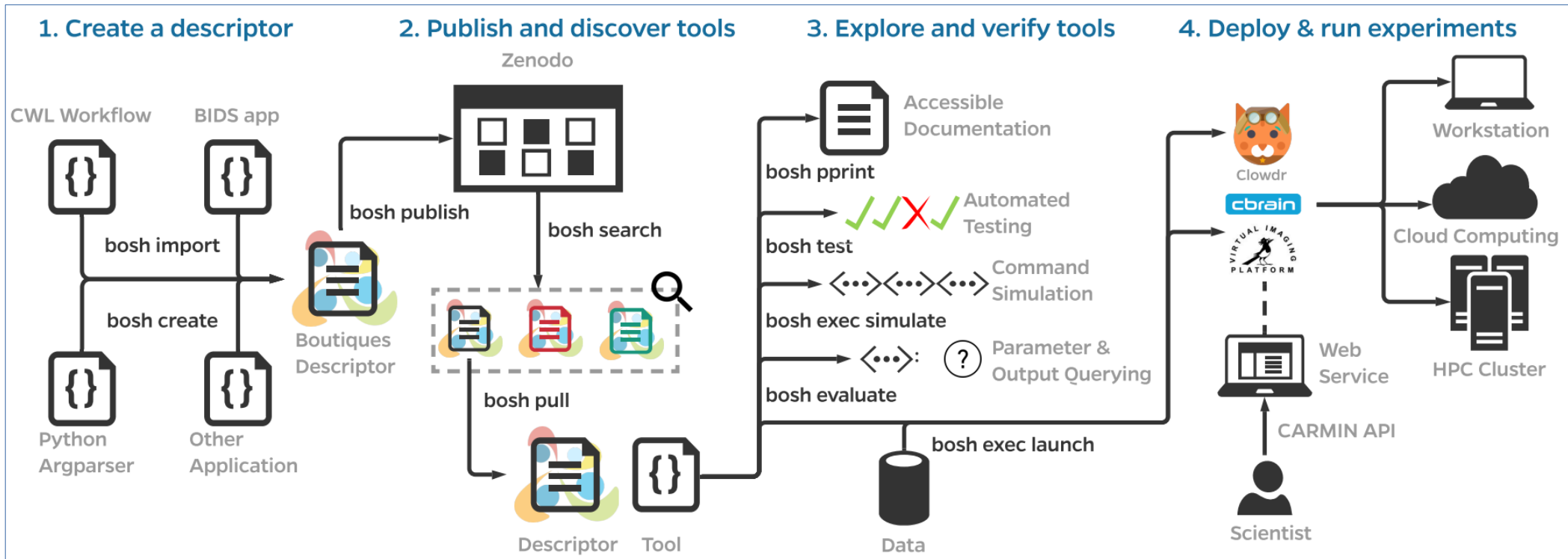
Boutiques : les outils

→ Package python

- “pip install boutiques”

→ Aide

- Création de descripteur
- Publication
- Recherche
- Lancement



Boutiques + VIP

- VIP utilise Boutiques comme format de représentation et de stockage d'une application
- Cela a permis de simplifier :
 - ◆ L'import d'application
 - ◆ Leur déploiement (docker)
 - ◆ Le lancement d'exécution
 - ◆ Publication sur Zenodo

Boutiques + CARMIN

- 2 technologies complémentaires
 - ◆ CARMIN permet la communication entre plateformes
 - ◆ Boutiques permet le partage d'applications
- Pour le moment :
 - ◆ CARMIN permet d'obtenir le descripteur Boutiques d'une application
- Dans le futur :
 - ◆ Possibilité de lancer une application via CARMIN à partir de son descripteur boutique (ou de son DOI)
 - ◆ Grand pas pour la reproductibilité

Merci pour votre attention !

Findable

1. Globally persistent records
2. Described with rich metadata
3. Searchable

We leverage **Zenodo [2]** to create DOIs for Boutiques descriptors which can be accessed via the Zenodo API.

Interoperable

1. Formalized and shared metadata standard
2. Metadata standards adopted are FAIR
3. Linking between objects where appropriate

CARMIN [3] and **Boutiques [4]** standards are used to describe and launch tools, either locally or through a RESTful API.

Accessible

1. Easily retrievable
2. Universal access
3. Persistent metadata beyond data lifetime

The retrievable tool descriptions contain **immutable** human- and machine-readable instructions for testing and launching each tool.

Re-Usable

1. Multiple accurate and relevant attributes
2. Clearly licensed
3. Meets minimum domain standards

Docker [5] and **Singularity [6]** virtualization enable re-runability across platforms and enclosed testing. Simulation and querying allow runtime evaluation.