

# PHENOME-EMPHASIS

<b>Short description</b>	<p>Towards an e-infrastructure for plant phenotyping</p> <p>Involved in EOSChub as a EAP.</p> <p>In recent years, technological progress has been made in plant phenomics (major improvements concerning imaging and sensor technologies). High-throughput plant phenotyping platforms now produce massive datasets involving millions of plant images concerning hundreds of different genotypes at different phenological stages in both field and controlled environments. Networks of sensors also measure environmental conditions in real time. The ongoing robotization of experimental processes foreshadows an explosion in the volume and complexity of the data produced by the different research facilities. There is a need for an integrated and federated solution for data management and data processing.</p>
<b>Type of community</b>	Thematic Services - Plant sciences, agricultural sciences
<b>Community contact</b>	Vincent Nègre, INRA – France, <a href="mailto:vincent.negre@inra.fr">vincent.negre@inra.fr</a>
<b>Interviewer</b>	
<b>Date of interview</b>	
<b>Meetings</b>	
<b>Supporters</b>	Shepherd: Nicolas Cazenave, CINES – France, <a href="mailto:cazenave@cines.fr">cazenave@cines.fr</a>

## User stories



### Instruction

Requirements are based on a user story, which is an informal, natural language description of one or more features of a software system. User stories are often written from the perspective of an end user or user of a system. Depending on the community, user stories may be written by various stakeholders including clients, users, managers or development team members. They facilitate sensemaking and communication, that is, they help software teams organize their understanding of the system and its context. Please do not confuse user story with system requirements. A user story is an informal description of a feature; a requirement is a formal description of need (See section later).

User stories may follow one of several formats or templates. The most common would be:

"As a <role>, I want <capability> so that <receive benefit>"

"In order to <receive benefit> as a <role>, I want <goal/desire>"

"As <persona>, I want <what?> so that <why?>" where a persona is a fictional stakeholder (e.g. user). A persona may include a name, picture; characteristics, behaviours, attitudes, and a goal which the product should help them achieve.

Example:

"As provider of the Climate gateway I want to empower researchers from academia to interact with datasets stored in the Climate Catalogue, and bring their own applications to analyse this data on remote cloud servers offered via EGI."

No.	User stories
US1	<p>As an IT architect, I contribute to provide an european e-infrastructure for high throughput plant phenotyping data management. Such an objective will not be possible without the support and services offered by EGI fundation.</p> <p>The open-source Phenotyping Hybrid Information System PHIS (Neveu et al. 2019 New Phytologist, 221: 588–601) has been proposed to organize these data and make them accessible and reusable to a larger scientific community.</p> <p>Three use cases have been proposed to explore which EGI services are the most appropriate to support an european plant phenotyping e-infrastructure.</p>

...	
-----	--

Use cases

Instruction

A use case is a list of actions or event steps typically defining the interactions between a role (known in the Unified Modeling Language as an actor) and a system to achieve a goal.

Include in this section any diagrams that could facilitate the understanding of the use cases and their relationships.

Step	Description of action	Dependency on 3rd party services (EOSC-hub or other)
UC1	<div> <div>First pilot</div> <div> </div> <div> <p>The PHIS information system and the Galaxy environment will be deployed on <b>EGI virtual machines</b>. The storage layer is based on the existing <b>FranceGrilles iRODS</b> infrastructure. An authentication layer based on the <b>EGI check-in service</b> and a computing layer provided with the <b>EGI Notebooks service</b> will be added.</p> </div> </div>	
UC2	<div> <div>Second pilot</div> <div> </div> <div> <p>Compared to the previous pilot <b>the storage layer is based on the B2SAFE service</b> supported by the EGI infrastructure.</p> </div> </div>	

UC3	<h3>Third pilot</h3> <p>Compared to the previous pilot the <b>storage layer is based on the Data Hub service</b> supported by the EGI infrastructure.</p>	
-----	---	--

# Requirements


## Technical Requirements






**Instruction**

- Requirement number: Use numbers RQ1, RQ2, RQ3, ...
- Requirement title: Use a short but descriptive title. Use the same title in the Jira ticket 'Summary' field
- Link to requirement JIRA ticket: Open a ticket in <this JIRA queue <https://jira.eosc-hub.eu/projects/EOSCWP10/issues/EOSCWP10-4?filter=allopenissues>> (click on 'CREATE' button in the middle-top of JIRA)
- Source use case: Refer back to the use cases above (UC1, 2, ...)

Requirement number	Requirement title	Services	Link to Requirement JIRA ticket	Source Use Case
Example	EOSC-hub to provide an FTS data transfer service		<div>  EO            SC            WP            10-            21            -            Jira             </div>	UC1

<b>RQ1</b>	Deploy virtual machines : CESNET-MCC (or other sites if more performant), vo.emphasisproject.eu: 1VM ; 4CPUs with 32GB RAM; 80GB of storage for the system + 100GB of additionnal storage (Mongodb)	EGI cloud compute	 E OSCS O-702 - Jira .	UC1
<b>RQ2</b>	Install PHIS information system on the VMs	PHIS team		UC1
<b>RQ3</b>	Connect iRODS data with PHIS IS	PHIS team		UC1
<b>RQ4</b>	Deploy Jupyter Notebook : community-deployment for notebooks for 4 concurrent users (2 vCPUs cores, 4GB of RAM and 40GB of storage per notebook)	EGI	 E OSCS O-703 - Jira .	UC1
<b>RQ5</b>	Data available in Notebooks	PHIS team		UC1
<b>RQ6</b>	Deploy Galaxy environnements 4 concurrent users	Galaxy.eu	 E OSCS O-704 - Jira .	UC1
<b>RQ7</b>	Provide persistent identifier to the data	B2HANDLE EUDAT /GRNET	 E OSCS O-705 - Jira .	UC1
<b>RQ8</b>	Federated authentication should be integrated within PHIS IS.	check-in EGI /GRNET	 E OSCS O-706 - Jira .	UC1

<b>RQ9</b>	Deploy virtual machines : CESNET-MCC (or other sites if more performant), including support with B2HANDLE vo. emphasisproject.eu: 1VM ; 4CPUs with 32GB RAM; 80GB of storage for the system + 100GB of additional storage (Mongodb)	EGI cloud compute	 E OSCS O-709 - Jira .	UC2
<b>RQ10</b>	Install PHIS information system on the VMs	PHIS team		UC2
<b>RQ11</b>	Provide 10TB of storage in B2SAFE	B2SAFE – EUDAT /CINES  + other location for replication ?	 E OSCS O-710 - Jira .	UC2
<b>RQ12</b>	Connect PHIS IS with B2SAFE	B2CONNEC T – EUDAT /Juelich  PHIS team		UC2
<b>RQ13</b>	Deploy Jupyter Notebook : community-deployment for notebooks for 4 concurrent users (2 vCPUs cores, 4GB of RAM and 40GB of storage per notebook)	EGI	 E OSCS O-711 - Jira .	UC2
<b>RQ14</b>	Provide persistent identifier to the data	B2HANDLE EUDAT /GRNET	 E OSCS O-712 - Jira .	UC2
<b>RQ15</b>	Data available in Notebooks	PHIS team		UC2
<b>RQ16</b>	Deploy Galaxy environnements  4 concurrent users	EGI	 E OSCS O-713 - Jira .	UC2

RQ17	Provide virtual machines : IN2P3-IRES vo.emphasisproject.eu - 1VM for PHIS IS; 4CPUs with 32GB RAM; 80GB of storage for the system + 100GB of additional storage (Mongodb) - Oneprovider VM with 8 vCPU, 32GB RAM with SSD	EGI cloud compute	<div>  E          OSCS          O-714          - Jira          .       </div> <div>  E          OSCS          O-715          - Jira          .       </div>	UC3
RQ18	Install PHIS information system on the VMs	PHIS team		UC3
RQ19	Provide 10TB of storage in EGI DataHub	EGI	<a href="https://jira.egi.eu/browse/EOSCSO-719">https://jira.egi.eu/browse/EOSCSO-719</a>	UC3
RQ20	Support to Connect PHIS IS EGI DataHub	EGI		UC3
RQ21	Provide persistent identifier to the data	B2HANDLE EUDAT /GRNET	<div>  E          OSCS          O-717          - Jira          .       </div>	UC3
RQ22	Deploy Jupyter Notebook : community-deployment for notebooks for 4 concurrent users (2 vCPUs cores, 4GB of RAM and 40GB of storage per notebook)	EGI	<div>  E          OSCS          O-717          - Jira          .       </div>	UC3
RQ23	Data available in Notebooks	PHIS team		UC3
RQ24	Deploy Galaxy environnements 4 concurrent users	EGI	<div>  E          OSCS          O-718          - Jira          .       </div>	UC3

