RÉPUBLIQUE FRANÇAISE
Liberté
Égalité
Fraternité

INRAE

OpenSILEX : User guide

January 2024
Version 1.2.0

Summary:

Introduction:

a. What is OpenSILEX and FAIR data?

Research data is becoming increasingly complex and needs to evolve to meet the scientific challenges of today and tomorrow. The information systems available to research communities must therefore be able to handle this complexity and also meet the requirements of open and replicable science.

OpenSILEX was developed in response to these challenges. It is an **open source software suite designed to create information systems for managing experimental data.** It is a set of tools for storing, adding, modifying and visualizing data. In the spirit of open science, OpenSILEX is driven by ontologies and implements the FAIR principles for data - Findable, Accessible, Interoperable and Reusable. Its architecture allows it to handle large volumes of complex, heterogeneous data.

OpenSILEX is derived into several implementations corresponding to specific scientific communities. For example, **PHIS is the implementation dedicated to high-throughput plant phenotyping. Sixtine and ENVIBIS are two other implementations dedicated to plant experimental units at INRAE and to decontamination and the environment, respectively.**

These implementations are deployed as one or more **instances** used by one or more user groups. In other words, an **installation of the information system on a server for a specific community** is an instance.

OpenSILEX allows you to **highlight your data obtained from experiments** and ensures that they are reusable later for **meta-analyses**.

b. Who is the target audience for this guide?

This guide is intended for all users of OpenSILEX, across all implementations and instances. Its purpose is to provide an understanding of the basic workings of OpenSILEX in order to enable users to manage their data in the most efficient way. This guide **does not cover the use of the REST API** and therefore does not address the automation of data transfers.

c. Guide structure.

This guide is structured into several sections which focus each on a specific functionality. Each section can be read independently of the others. For an initial reading however, it is recommended to consult the entire document in order. This proceeding is advised because **the information system follows a general practical approach**. For example, before declaring an experiment, one must have declared its structure and project.
It is strongly recommended to follow the user guide while having access to an open instance. If you wish to print this guide, it is preferable to do so in color and high quality as it contains screenshots of the interface. It is advisable to use the digital version of this document to take advantage of various links.

Definitions:

a. General vocabulary applicable to all instances.

User: Person or software with an account on one of the OpenSILEX instances. Each user is associated with a role (administrator, guest, etc.). A user is associated with a profile that manages access to different functionalities.

Profile: Configuration of rights on different components of OpenSILEX for one or more users. Only administrators have access to the profile configuration.

User Group: A group of multiple users, each associated with a profile valid for that group.

Example: Jean is assigned to the **'Guest'** profile in the **'Team 1'** group, and also to the '**Experimentation Manager'** profile in the **'Team 2**' group. Jean will then only have viewing rights for experiments carried out in Team 1, but he will have full rights (operation declaration, data consultation, addition of metadata and documents, etc.) in experiments of Team 2.

Organization: An organization is a group of individuals organized within a community, an organization, an institute, a department or a research unit, etc., with leadership, human resources, operational guidelines and financial provisions. These organizations may themselves be part of other organizations or networks. Organizations may be located in places with a specific address or geographical coordinates.

Project: Within the context of research projects or scientific programs, a project is defined as a set of studies carried out by a group of partners responsible for experiments in one or more local infrastructures.

Experiment: Within the scope of research projects or scientific programs, an **experiment** aims to acquire knowledge about an often complex phenomenon in order to test a hypothesis or to study different scenarios on the evolution of the phenomenon. It is a structured approach to control a set of parameters and to measure their effects so as to understand the phenomenon. Experiments mobilize an experimental device (installation, instruments, and methods) to observe physical entities involved in the evolution of the phenomenon. These entities act as scientific objects of the experiment. The experimental setup can be linked to factors (controlled parameters of the experiment).

Facility: A facility comprises a team of scientific personnel capable of conducting a specific type of experimentation. The team designs and implements experiments using various available environmental installations (greenhouses, plots, growth chambers, etc.). Typically, the facility is responsible for data production.

Device: A device is an electronic or mechanical device used to measure or control a property of an object.

Scientific Objects: Scientific objects are observable physical entities which are identified individually. These entities are involved in the evolution of a complex phenomenon. Scientific objects are characterized and observed in an experimental setting, allowing the verification of a hypothesis or a better understanding of the phenomenon under study. This is achieved by studying the effects induced by varying the conditions (treatment, temperature, irrigation, etc.) which are associated with scientific objects.

Annotation: A note or a comment made to better understand the data, applicable to any element of the system.

Variable: A variable is a common characteristic of a set of entities involved in an experiment. The value of this characteristic varies among the entities. This value is derived from an observation, a measurement, a simulation, or a calculation performed on an individually identified entity (site, scientific object, plot, etc.) under certain conditions (measurement method, aggregation level, etc.). For example, the variable "tree circumference" is measured on the trunk (a part of the scientific object) of a tree identified using a forestry compass at a height of 1.30 meters. Another example is the variable "wind speed", measured on the wind entity by a weather station at an identified site using an anemometer.

Germplasm: A germplasm encompasses genetic resources, including seeds, tissues, and DNA sequences, preserved to facilitate animal and plant breeding, conservation initiatives, agricultural practices, and various research applications. Traceability of a germplasm is achieved through an accession that has a unique identifier. By providing essential and comprehensive information for the identification of a living organism, a germplasm serves to characterize the organism. Please note, that during experiments, it can happen that scientific

objects that are living organisms are described by germplasms, which can have minimal descriptions (species or genus) or, conversely, very detailed ones (accession, lineage).

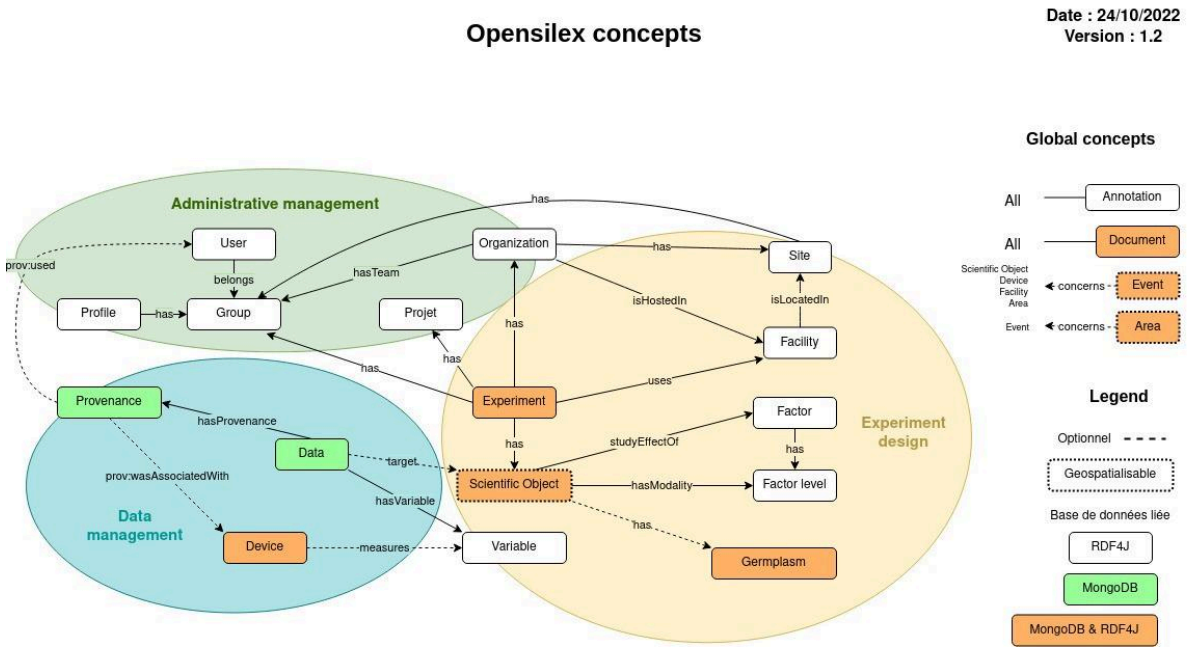
Provenance:
A provenance serves as the origin of a dataset, providing essential details regarding its creation, including the where, when, by whom, how, and for what/whom aspects. It allows users to maintain transparency and traceability in data sources.

Events: Events include temporal entities like processes, actions, or manifestations of phenomena that occur during (or even ahead) scientific experiments. They directly impact or relate to the studied phenomenon. Events can be categorized as controlled (e.g., irrigation, fertilization), uncontrolled (e.g., hail, frost, pests), or studied (e.g., flowering, senescence).

Factor: In an experimental approach, a factor corresponds to an input parameter related to the scientific object (e.g., the gender of a living organism) or the experimental device (e.g., greenhouse temperature). Factors are selected variables aimed at determining their relationship with an observed phenomenon. The goal in an experiment is to understand how various values of the factor (modality) impact the observed phenomenon.

Example:
Within my experiment, I aim to alter the daily water supply to 3 tomato plants. The selected factor is **irrigation**, with different **levels**, namely 0mm/day, 2mm/day, and 5mm/day.

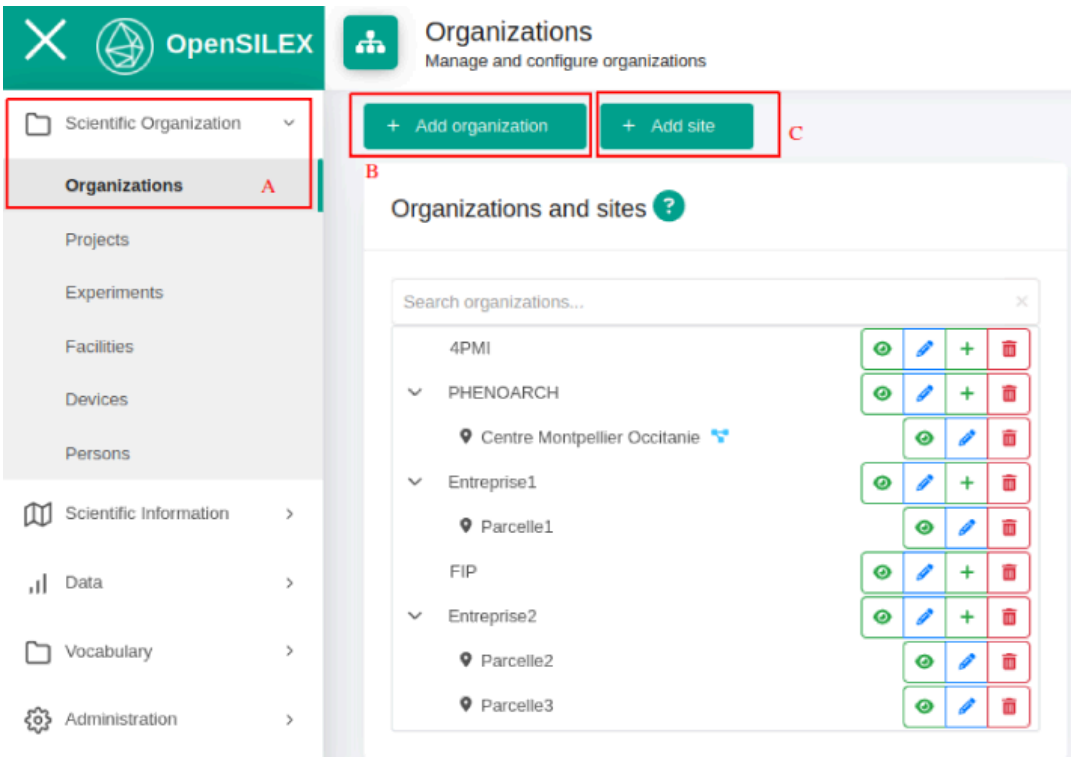
URI: A URI, or Uniform Resource Identifier, is a short string of characters used to uniquely identify a resource within a physical or abstract network. The syntax follows an Internet standard specifically designed for the World Wide Web, ensuring a standardized approach to resource identification.



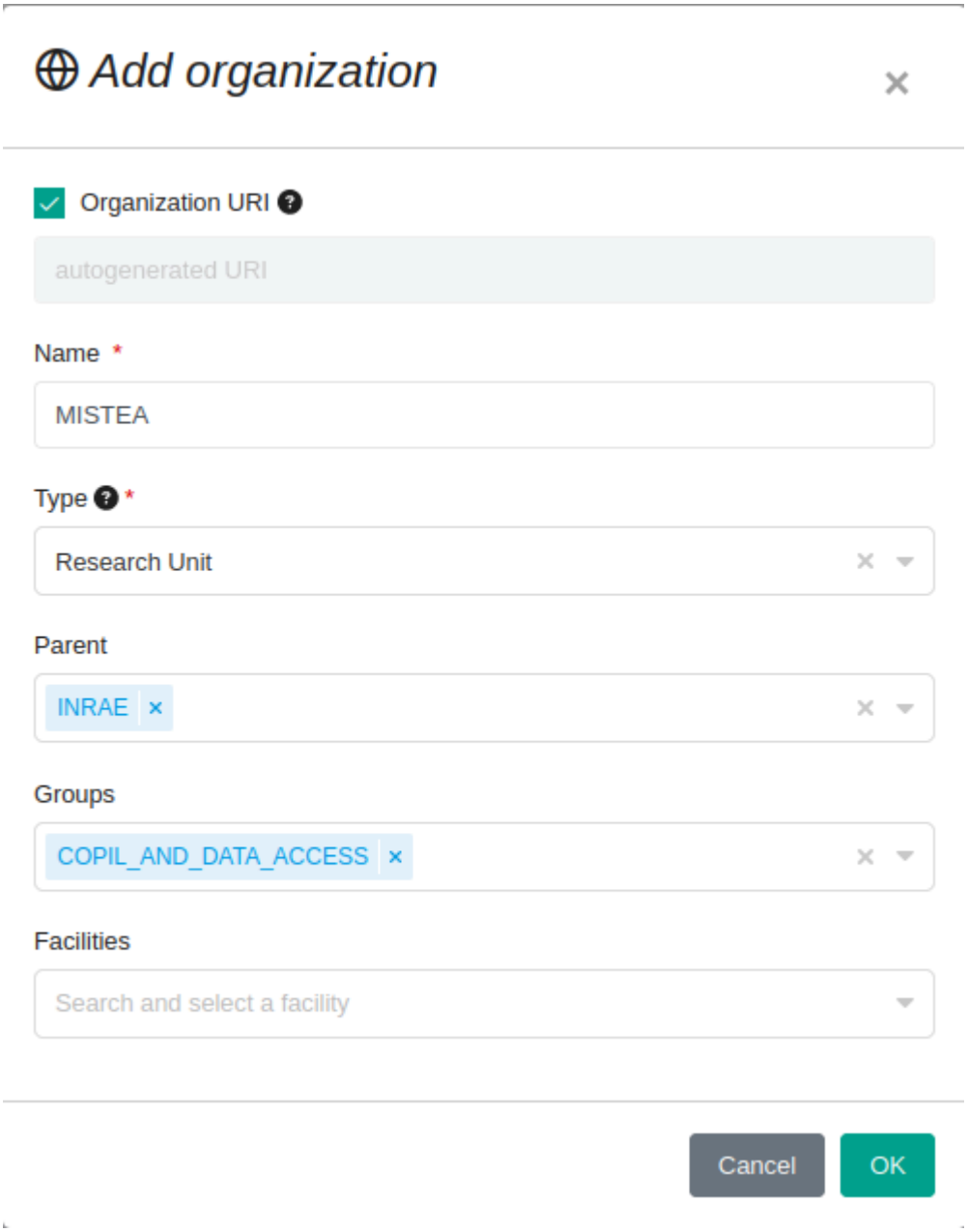
I - I would like to describe my organization and my project :

I.1 - I would like to provide information specific to my organization and/or an experimental site.

You may consider linking your experiment to an **Organization**. Before proceeding, ensure it **hasn't already been declared** - perhaps by a colleague - and, if absent from the organization list, initiate the declaration process yourself.

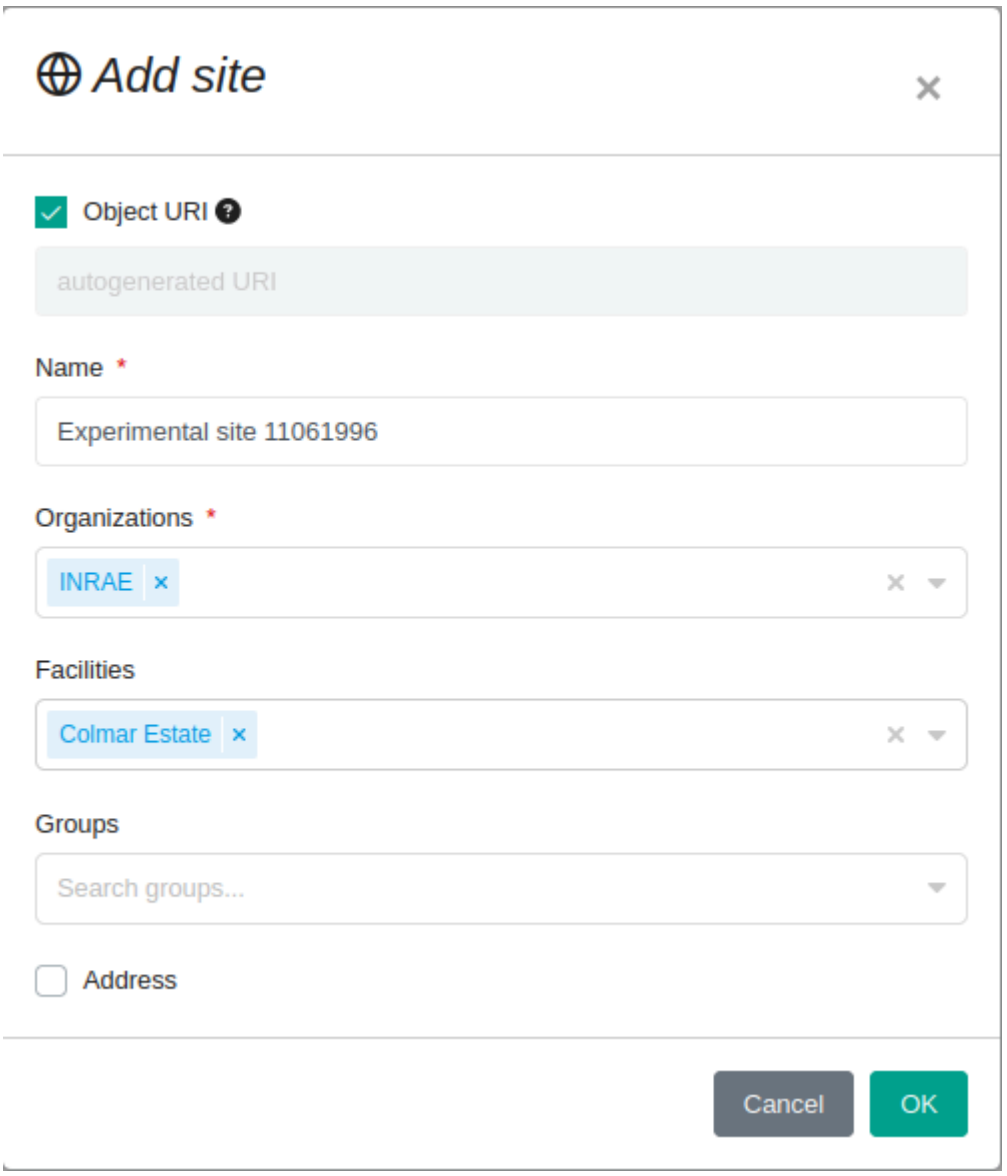


To declare your organization and site, navigate to the **Scientific Organization** tab, then go to the **Organizations** sub-tab (A). To add your organization, click + Add organization (B). A window will then open:



At this window level, you can enter various elements identifying the organization you want to declare. These elements encompass the organization's name, its type, a parent structure, facilities, and a user group having access to the structure's experiments. Only the name and type of an organization are mandatory. In the example above, we declare an organization named MISTEA, an INRAE research unit.

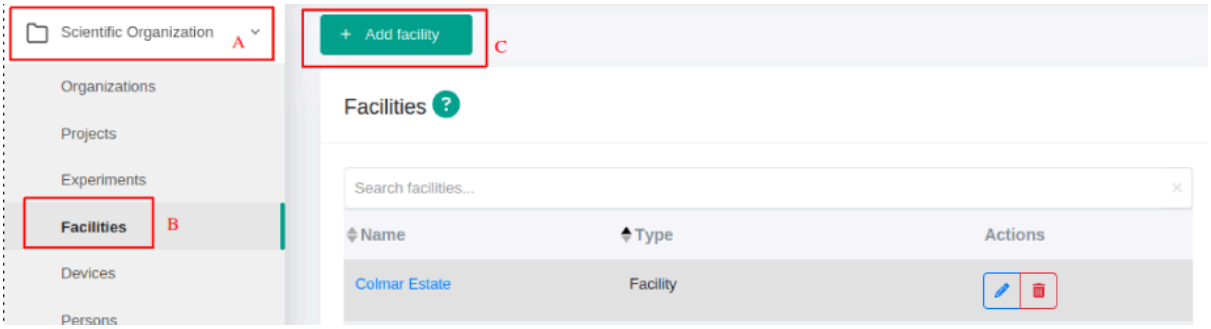
Once done, you can declare a site. To do so, please click on + Add site (C). A window will then appear:



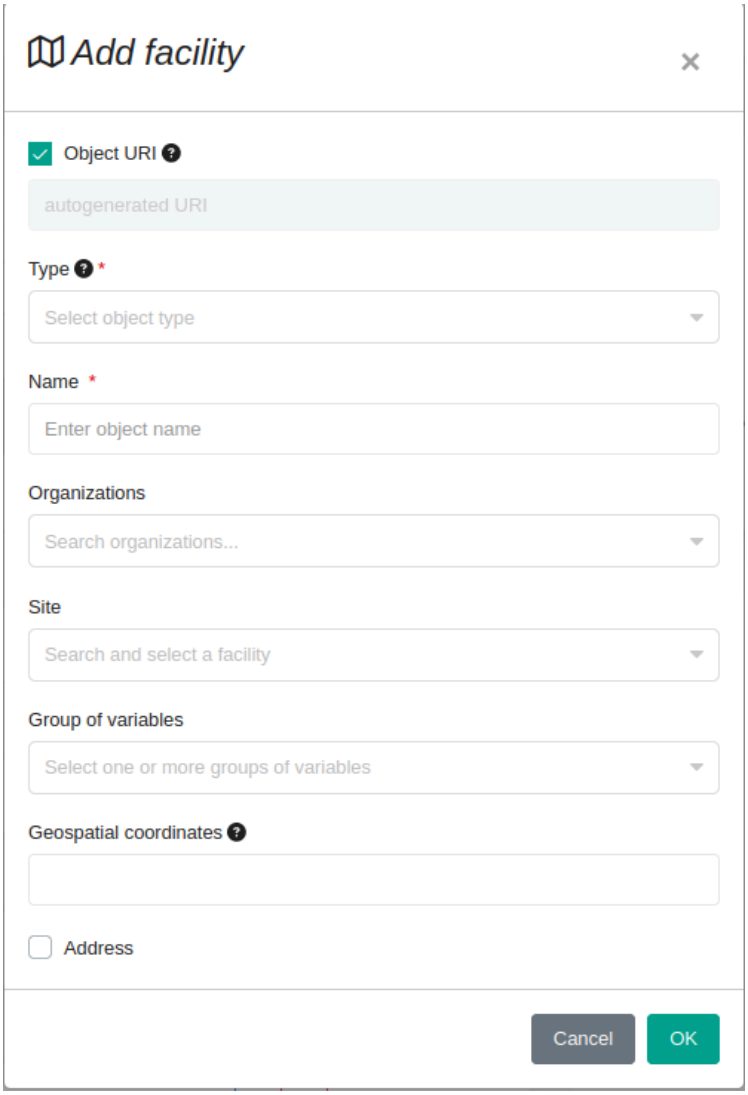
You can then enter the name, the organization to which the site belongs, and one or more facilities present at the site. For enhanced accuracy, it is encouraged to input the precise address of the site by checking the *Address* checkbox.

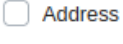
I.2 - I would like to provide information specific to facilities.

In order to declare a facility, it is necessary to navigate to the **Scientific Organization** tab (A), then to the **Facilities** sub-tab (B). To create a new facility, press the button + Add facility (C).



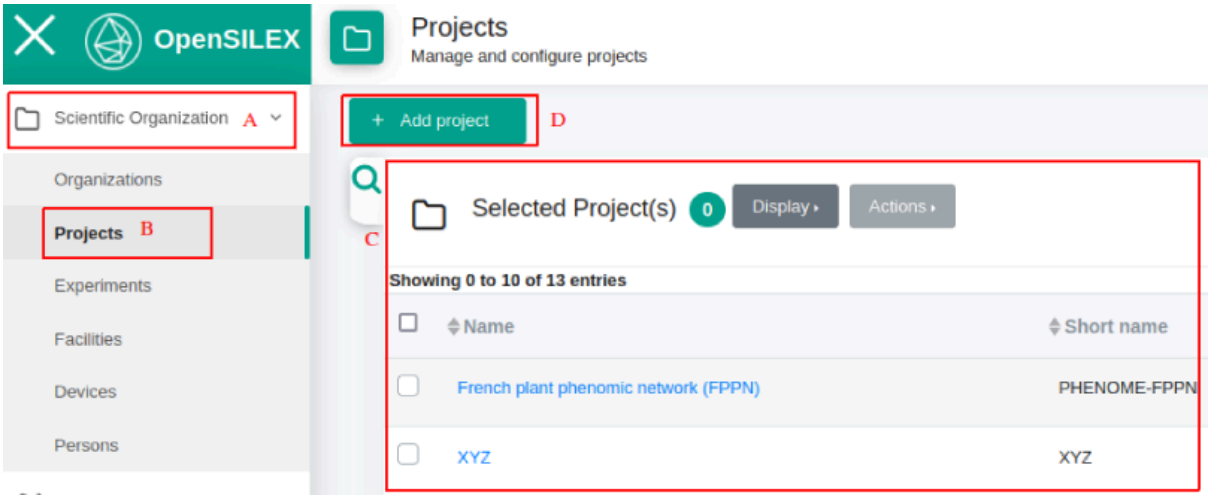
This triggers the display of the following window:



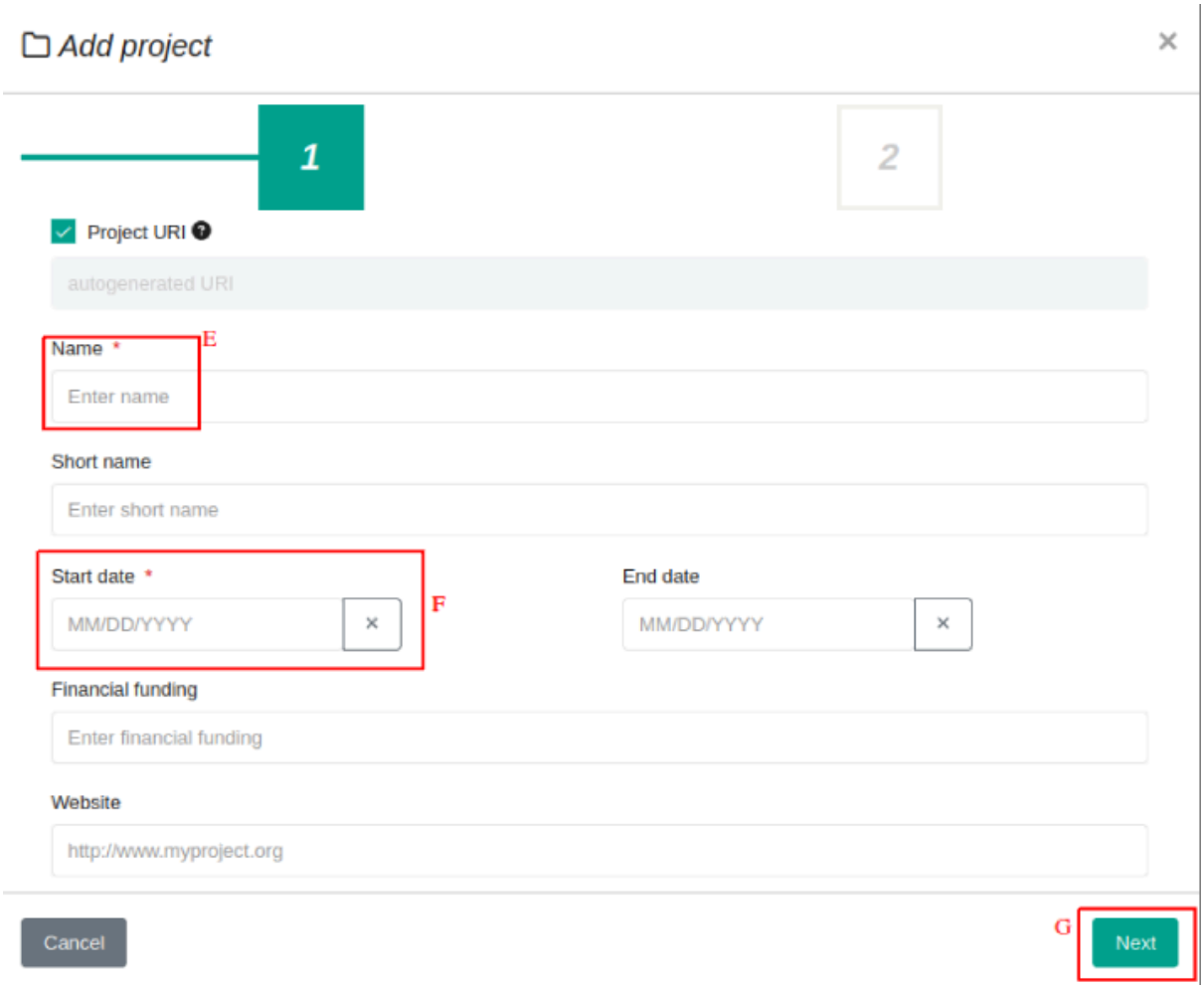
You can then enter the facility **type**, such as an agricultural plot or a greenhouse. Subsequently, you can enter the **name**, the organization and the site to which the facility belongs. To ensure greater precision, it is recommended to enter the exact address of the site by selecting the *Address*  checkbox.

I.3 - I would like to provide information specific to my project.

In order to declare a project, it is necessary to navigate to the **Scientific Organization** tab (A), then to the **Projects** sub-tab (B).



You can then view the declared projects to which you have access (C), and you can declare a new project by pressing + Add project (D). This prompts the opening of the following form:

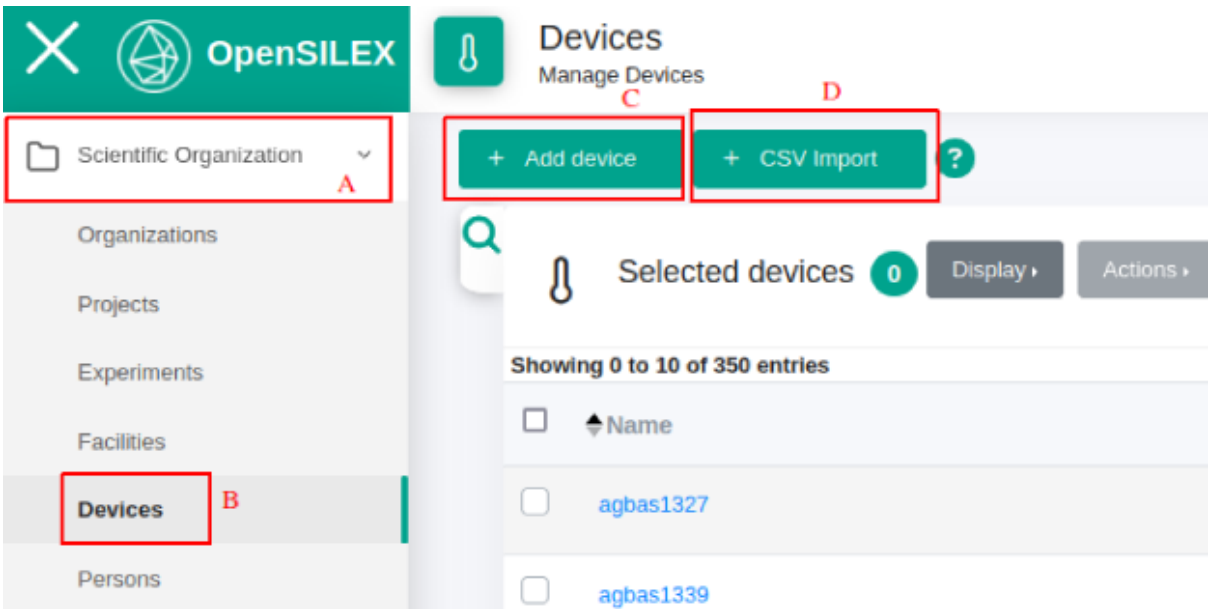


The form is divided into two parts. In the first part, the *Name* (E) and the *Start Date* (F) of the project are mandatory. Once this part of the form is completed, you can press *Next* (G). The second part of the form allows you to declare additional information related to the project such as the persons involved in (coordinator, supervisor), the objective of the project and a description of the project.

I.4 - I would like to provide information specific to devices.

If you have devices for data acquisition, measurement, calculation, or storage, you should provide information about that device. This will allow you later on to associate each data with a device, for example, through a **Provenance**.

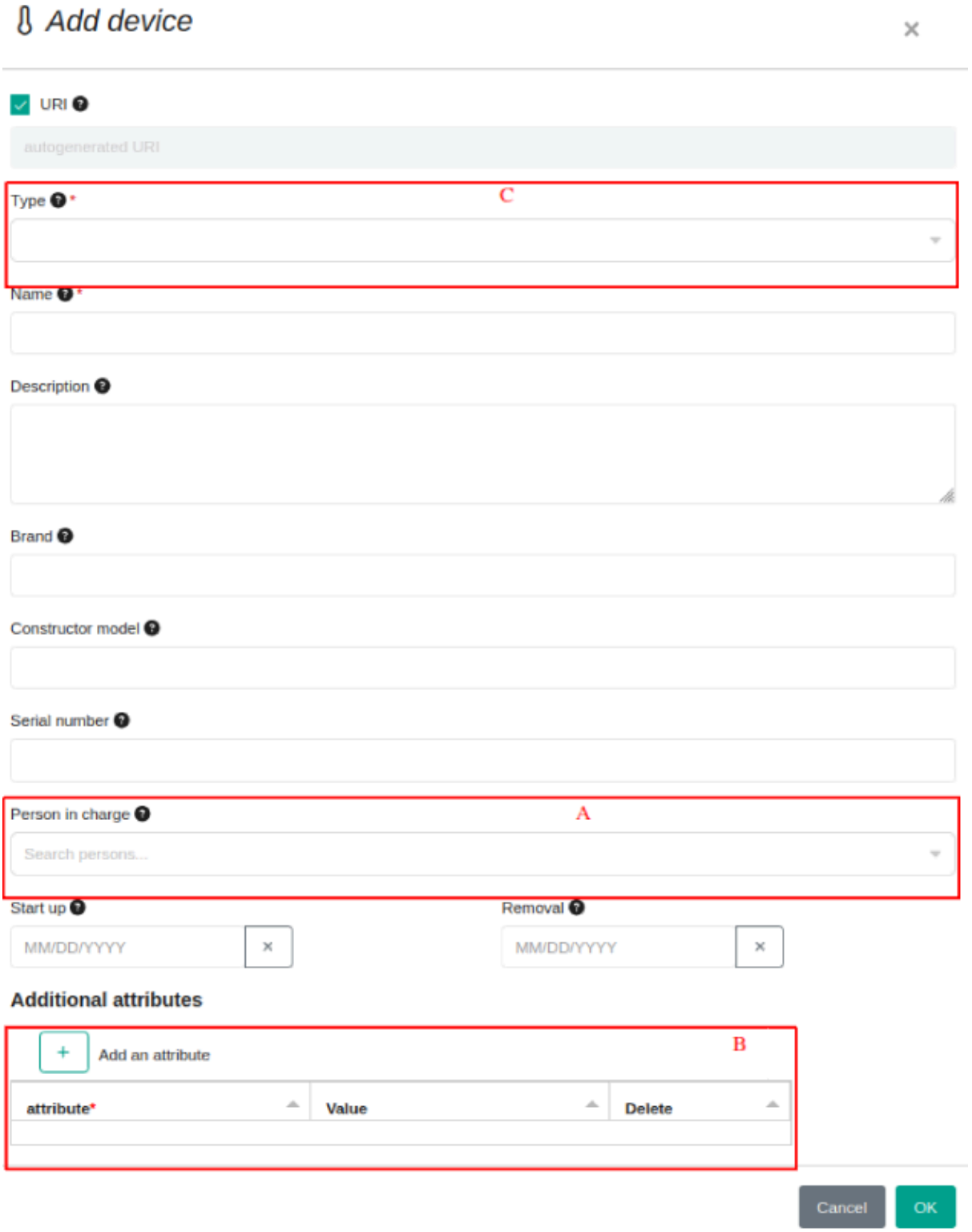
To declare a new device, you must navigate to the **Scientific Organization** tab (A) and then to the **Devices** sub-tab (B).



As displayed above, there are two ways to register a device. You can either declare your devices one by one clicking on button + Add device (C). Or, you can declare all your devices at once through a CSV file using button + CSV Import (D).

I.4.1 - I want to add a device.

To declare a device, you can press the button (C). After doing so, a form will be displayed:

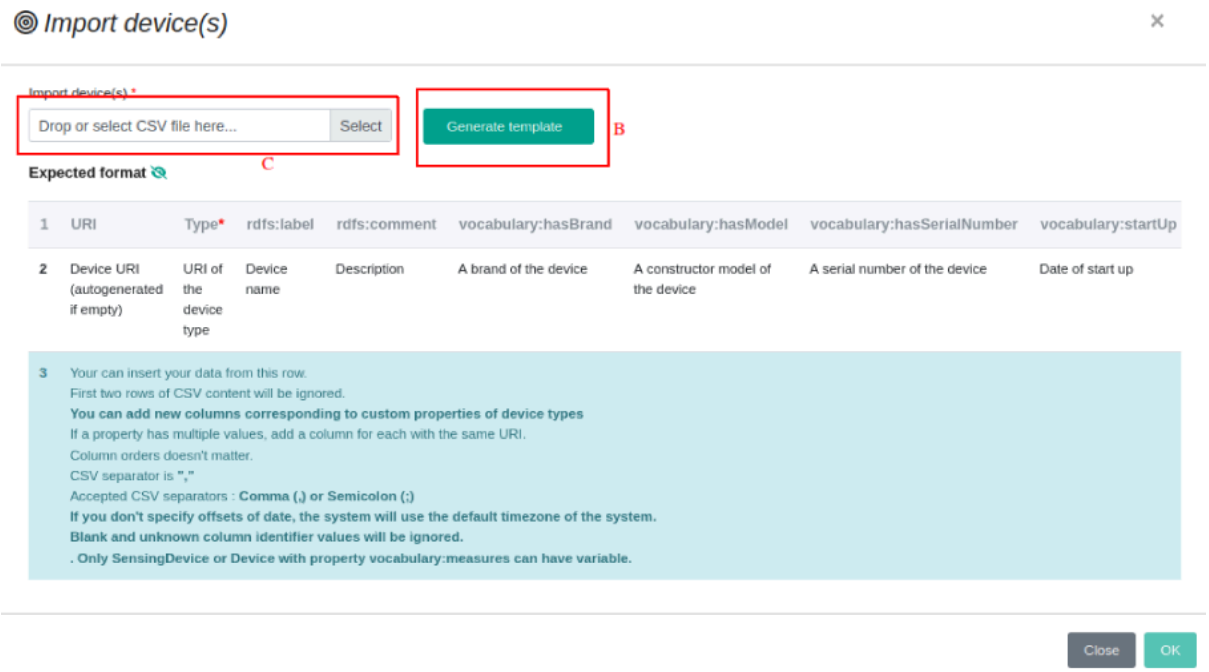


You can then provide all the information related to your device. It is important to note that the *Person in charge* (A) must have been previously declared in the system. The additional

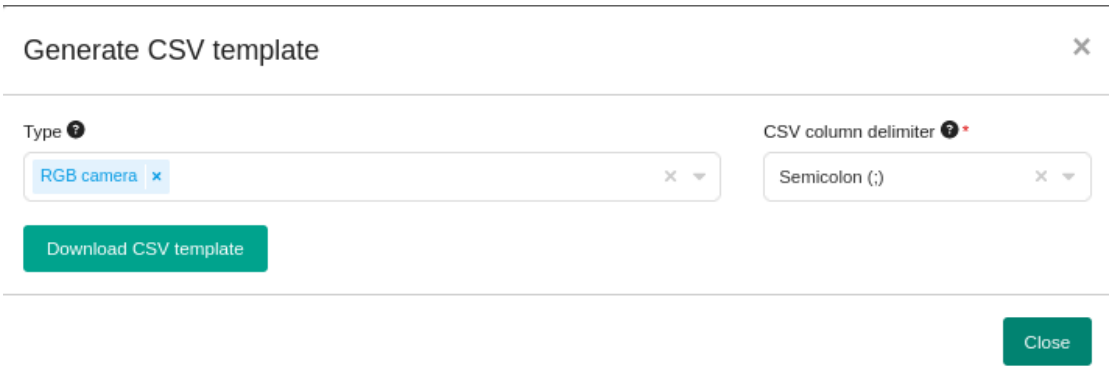
attributes (B) allow you to include fields that may vary from one device of the same type to another. An example of such an attribute could be the age or the number of repairs.
The dropdown list **Type** (C) allows you to select the type of the imported device. For example, you can import a camera or a thermometer. If your device type is not already declared in the system, you can register the device type yourself. To do this, refer to this section of the guide.

I.4.2 - I would like to import all my devices via CSV import.

If you have a large number of devices, you can declare them using the CSV import feature. To do so, press the button + CSV Import on top of the page for importing your devices. A window will then pop up:



If you do not have a completed CSV yet, please download the provided template by clicking on Generate template (B). This will open another window, enabling you to select the device type you want to import:



You can then choose the device type you want to declare in the system. In the following, we will download the device template in order to import several RGB cameras. If your device type is not already registered in the system, you can declare the device type yourself. To do this, please refer to this section of the guide.

After downloading and opening the CSV file, it appears like this:

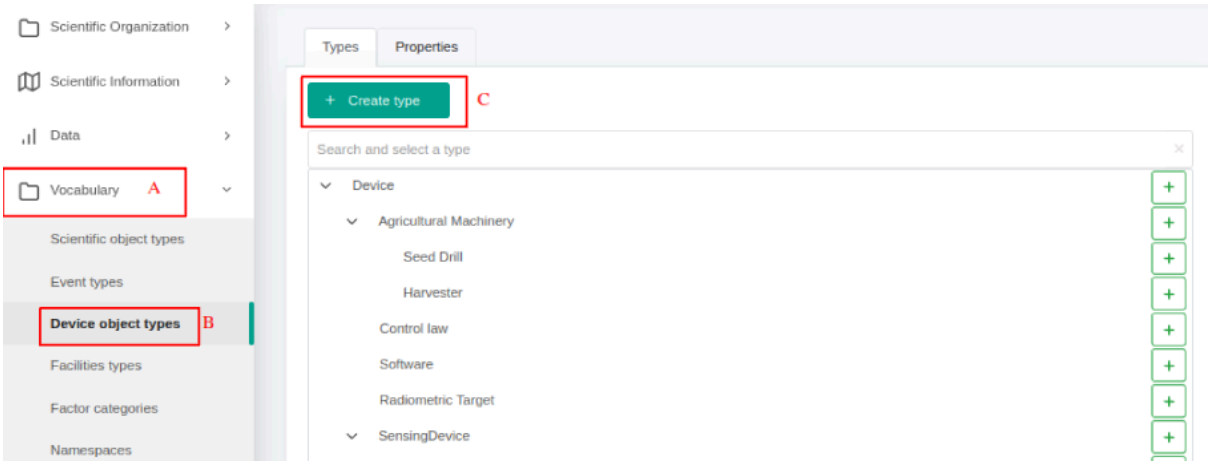
	A	B	C	D	E
1	uri	type	rdfs:label	vocabulary:removal	vocabulary:hasModel
2	Device URI (autogenerated if empty) Required : no. Example : http://opensilex.org/id/device/rasperry_pi_4B	URI of the device type Required : no. Example : vocabulary:SensingDevice	Property name : Nam Data type : Short strir Property description : Required : yes Example : Opensilex	Property name : Remo Data type : Date Property description : Required : no Example : 2022-01-01	Property name : Mode Data type : Short strir Property description : Required : no Example : Opensilex
3		vocabulary:RGBCamera			
4					
5					
6					
7					
8					
9					

F	G	H	I	J	K
vocabulary:hasSerialN	vocabulary:hasBrand	vocabulary:startUp	rdfs:comment	vocabulary:measures	vocabulary:ha
Property name : Seria Data type : Short strir Property description : Required : no Example : Opensilex	Property name : Bran Data type : Short strir Property description : Required : no Example : Opensilex	Property name : Startu Data type : Date Property description : Required : no Example : 2022-01-01	Property name : Desc Data type : Short strir Property description : Required : no Example : Opensilex	Property name : measures Data type : Variable (URI) Property description : Variable measured by the device Required : no This column can be present multiple time to define multiple values	Property name Data type : Property desc Required : no

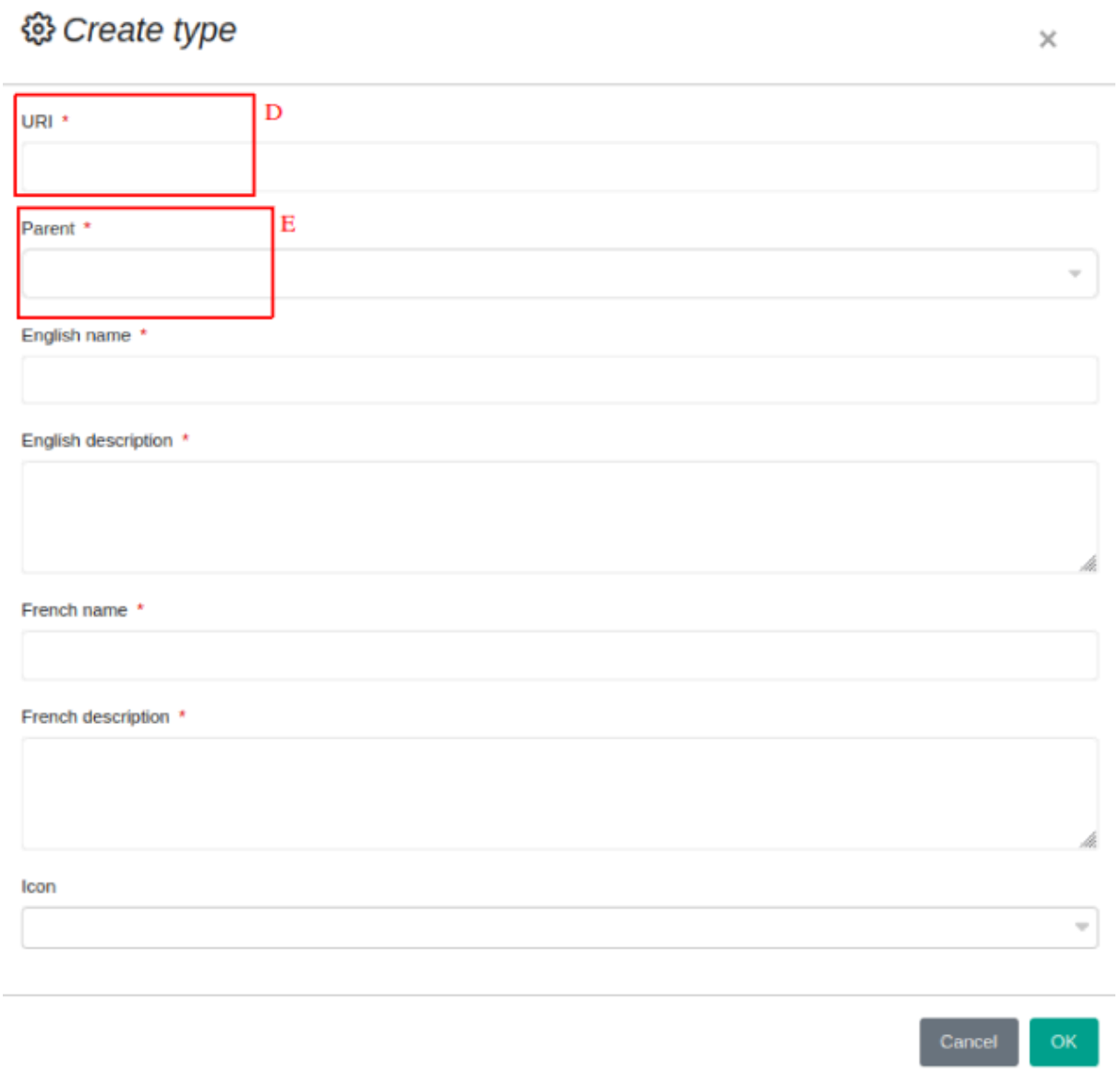
In this example, the only mandatory column is C, describing your device's name. Some columns depend on the chosen device type. The second line of the CSV file lists the mandatory columns to be filled. An example of a completed CSV file is provided in Appendix 1 of this guide.

I.4.3 - I would like to declare a new device type.

If you have the necessary user rights, you can declare a new device type in the system yourself. To do so, go to the *Vocabulary* tab (A) and then to the *Device types* sub-tab (B).



To create a new device type, press + Create type (C) to open a form:

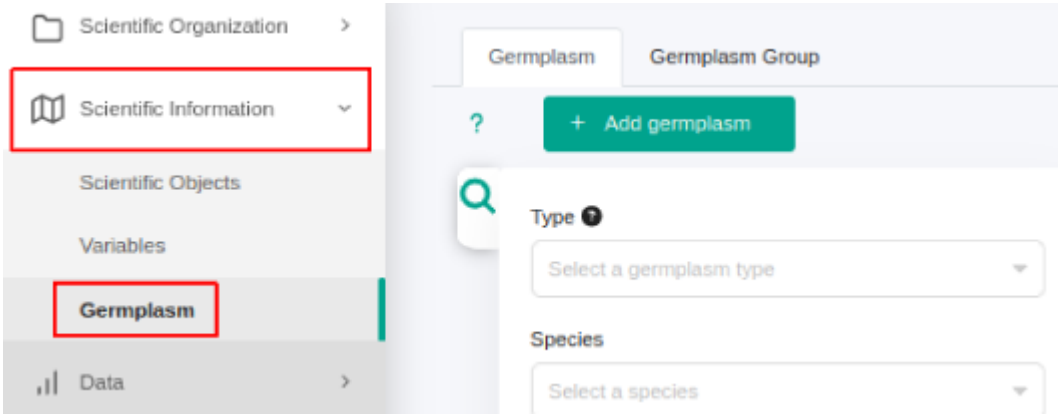


In this form, you will need to provide the **URI** (D) for the device type. **It is highly recommended to reuse an existing URI.** You can use ontology web portals such as AgroPortal, BioPortal, etc. Domain-specific ontologies also exist, such as Vitis Ontology, Plant Ontology, CropOntology, etc. Subsequently, you can assign a **Parent** (E) to your device type. For example, the *infrared camera* type has the *camera* type as its parent. Finally, you have to assign a name and a description to your type.

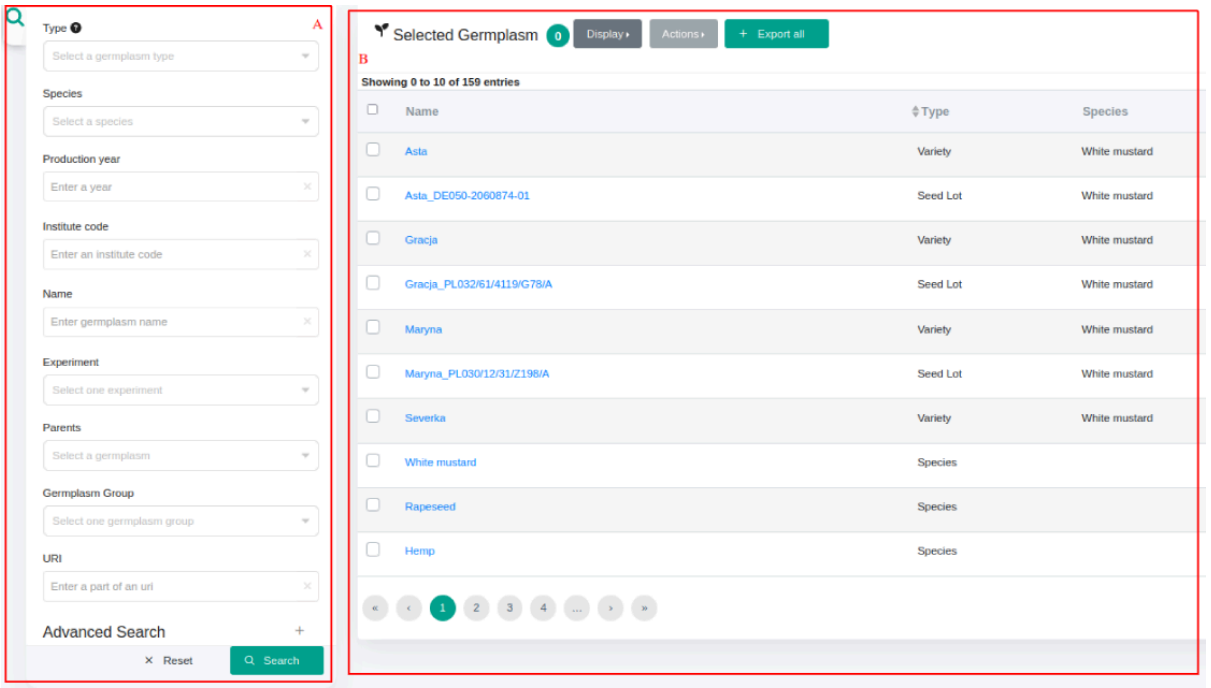
II - I would like to create a new germplasm:

II.1 - I would like to make sure that my genotype is not already declared in the system.

Before declaring a new variety, clone, or species in the system, **it is strongly advised to ensure that it has not already been declared on your instance or a resource instance.** For some communities, shared resource instances exist with common elements such as variables. To check which germplasms are already present in the system, go to the **Scientific Information tab** (A) and then to the **Germplasm** sub-tab (B).



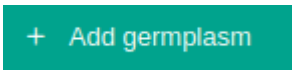
You will then see the following:



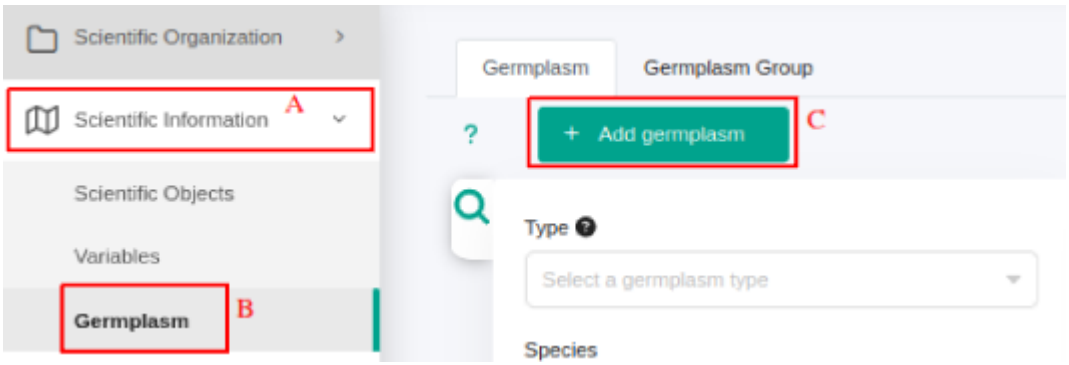
A list of fields (A) will appear which allows you to filter the available genotypes based on their properties such as the institute that created this variety, its species, its name, its type (clone, variety, ascent, ...). Once the criteria have been entered and the *Search* button has been pressed, the results of the germplasm filter are listed on the right (B).

II.2 - I would like to describe a new genotype in OpenSILEX.

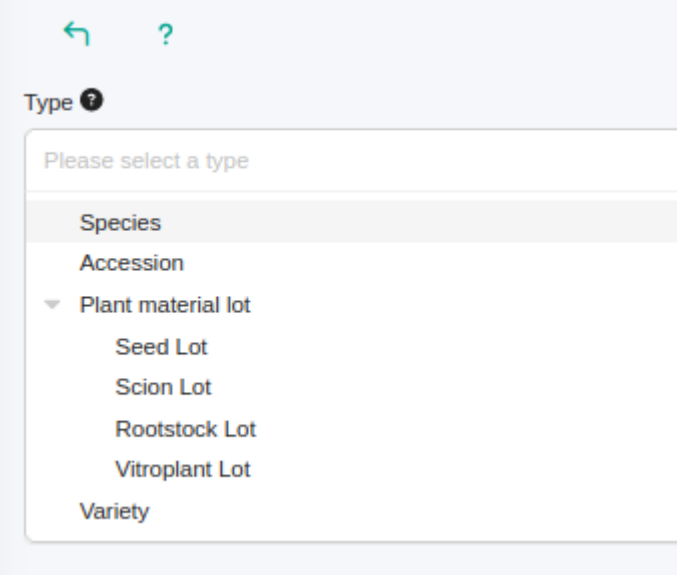
To declare a new genotype in OpenSILEX, you must go to the **Scientific Information** tab (A) and then to the **Germplasm** sub-tab (B). You must then press the button



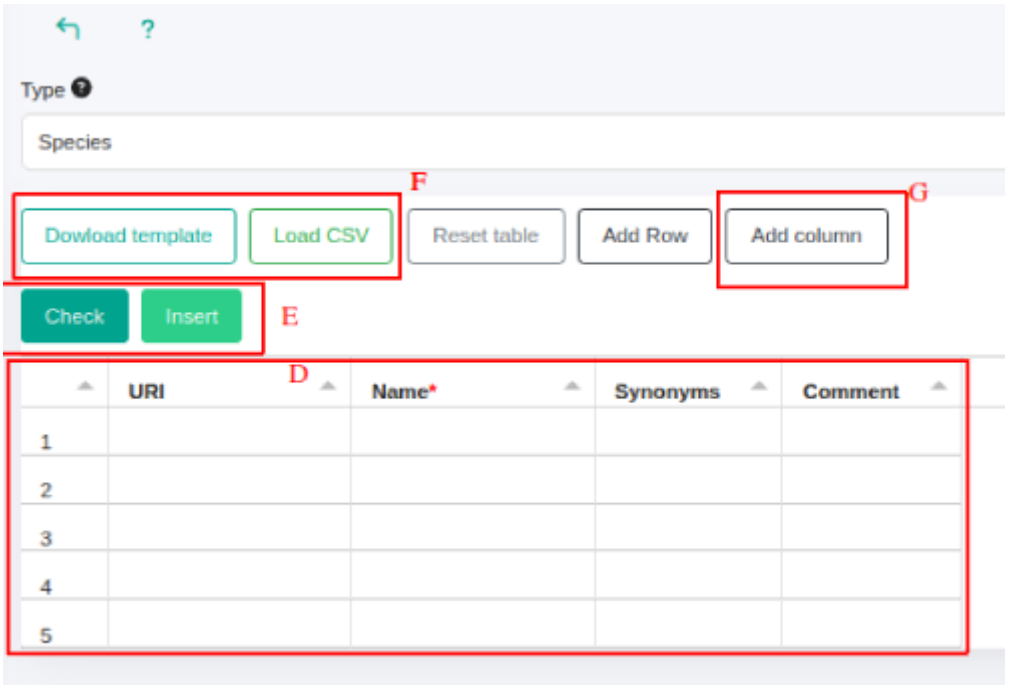
(C).



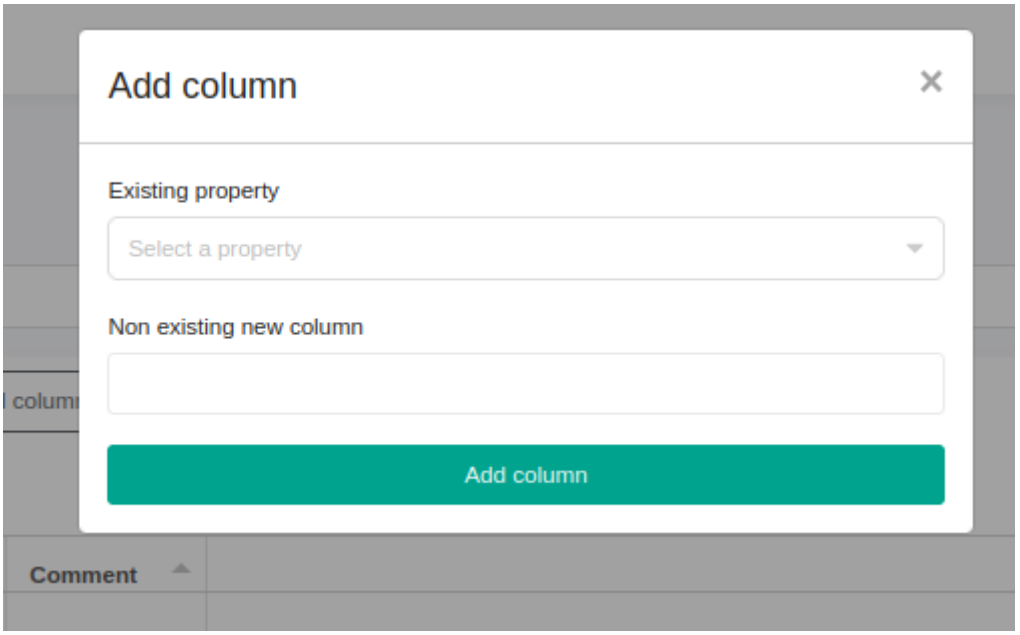
You are then redirected to a page where you can choose the germplasm type:



Once the germplasm type is chosen, the following interface is displayed:



You can then declare genotype-specific data by entering it directly into the provided table (D) and then clicking Check and Insert (E). You can add properties to your germplasms via Add column (G). You have the option to add existing properties or to create new ones:



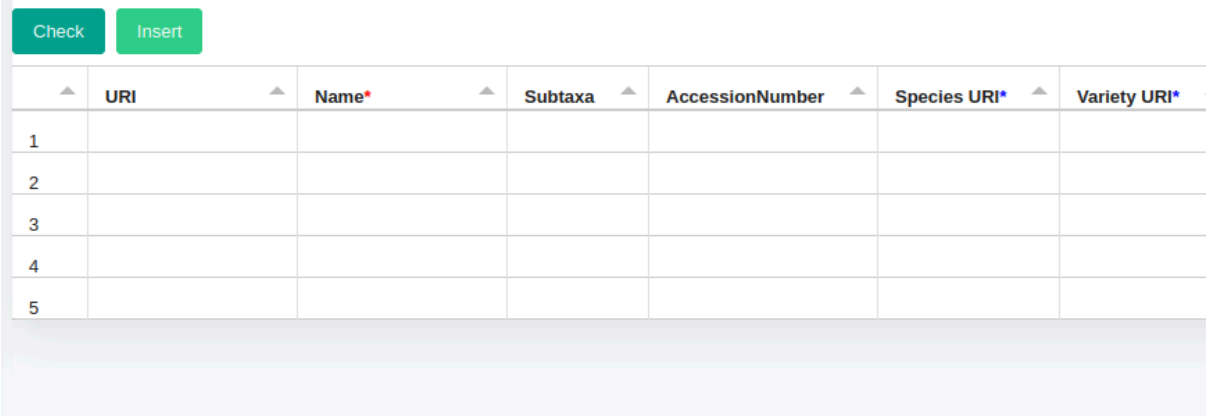
The declaration of so-called existing properties will provide you with enhanced capabilities for querying the system and accessing additional features related to germplasms. If you have a large number of genotypes to import into OpenSILEX, it is advisable to utilize the template provided. You can download it by clicking on Dowload template (F). Once opened, it appears like follows:

A	B	C	D	E	F	G	H	I
uri	name	subtaxa	code	species	institute	website	comment	

You have either the possibility to add properties via the button Add column (G) into the table or you can directly add your properties to this table. **Pay attention to respecting the correct spelling for existing properties.** Depending on the declared germplasm type, additional mandatory information may be required. The following summary table lists the necessary elements based on the germplasm type:

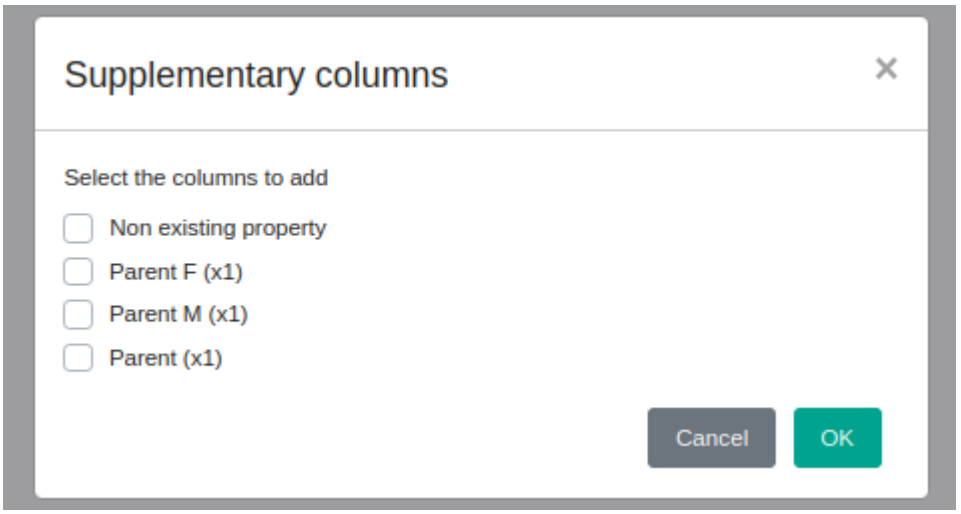
Germplasm type	**Mandatory data**
Accession	Accession name and URI of the species or the variety
Variety	Variety name and species URI
Species	Species name
Plant material lot	Lot name and URI of the species, variety or accession

In the header of the provided table, some columns are marked with an *. This symbol indicates that at least one of the data entries must be completed.



In the example above, for instance, you must fill either the "*Species URI*" column or the "*Variety URI*" column.

Once you have described your genotypes, you can use the button Load CSV (F) to import the data from the filled template. If you have added columns to your CSV file, a message indicating the created columns will be displayed:

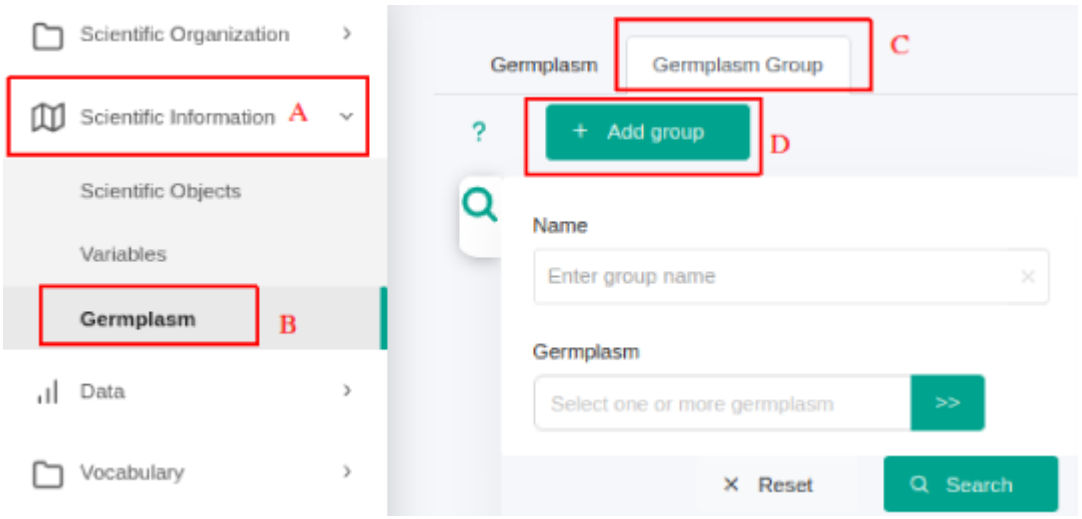


Once you've confirmed the genotype properties, you must validate the genotype addition in the system.

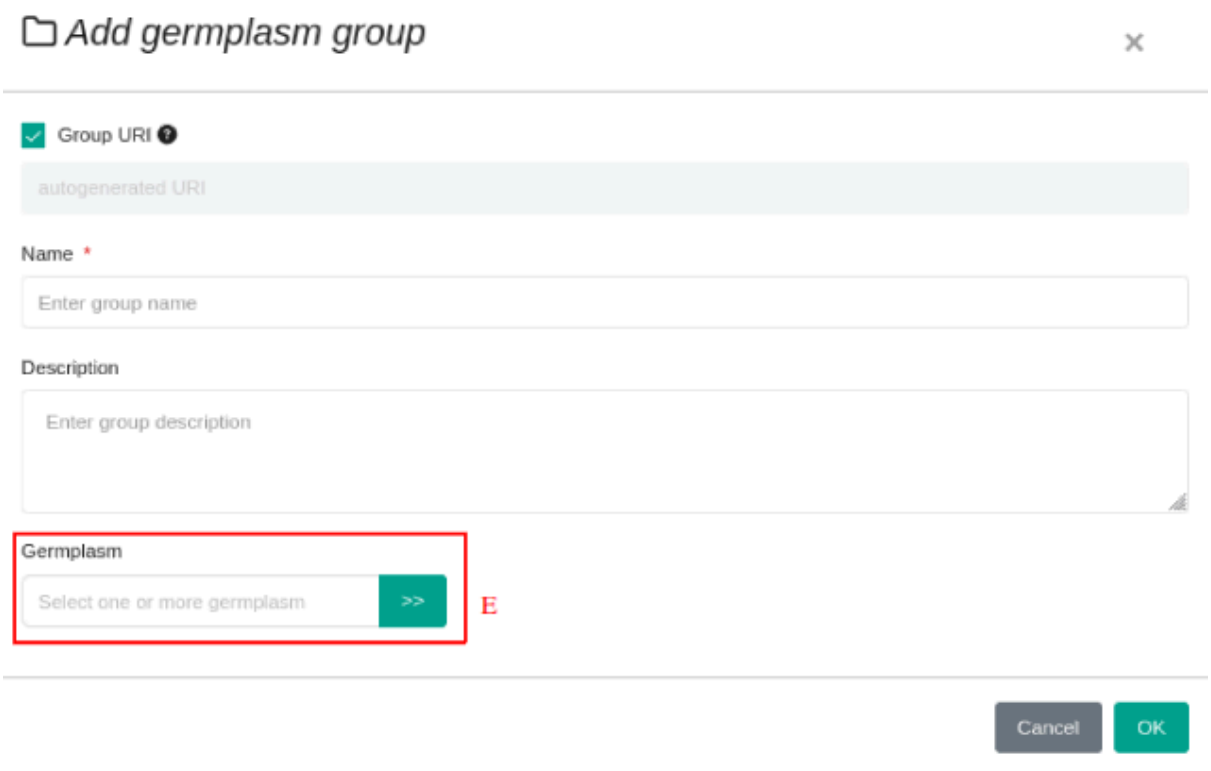
II.3 - I would like to create a germplasm group

When dealing with a large number of genotypes, sorting through available data can be challenging. For instance, isolating data specific to a set of genotypes with a common parent clone might be difficult. The following feature simplifies data exploration by allowing the creation of groups of genotypes for analysis. To create a genetic resource group, navigate to

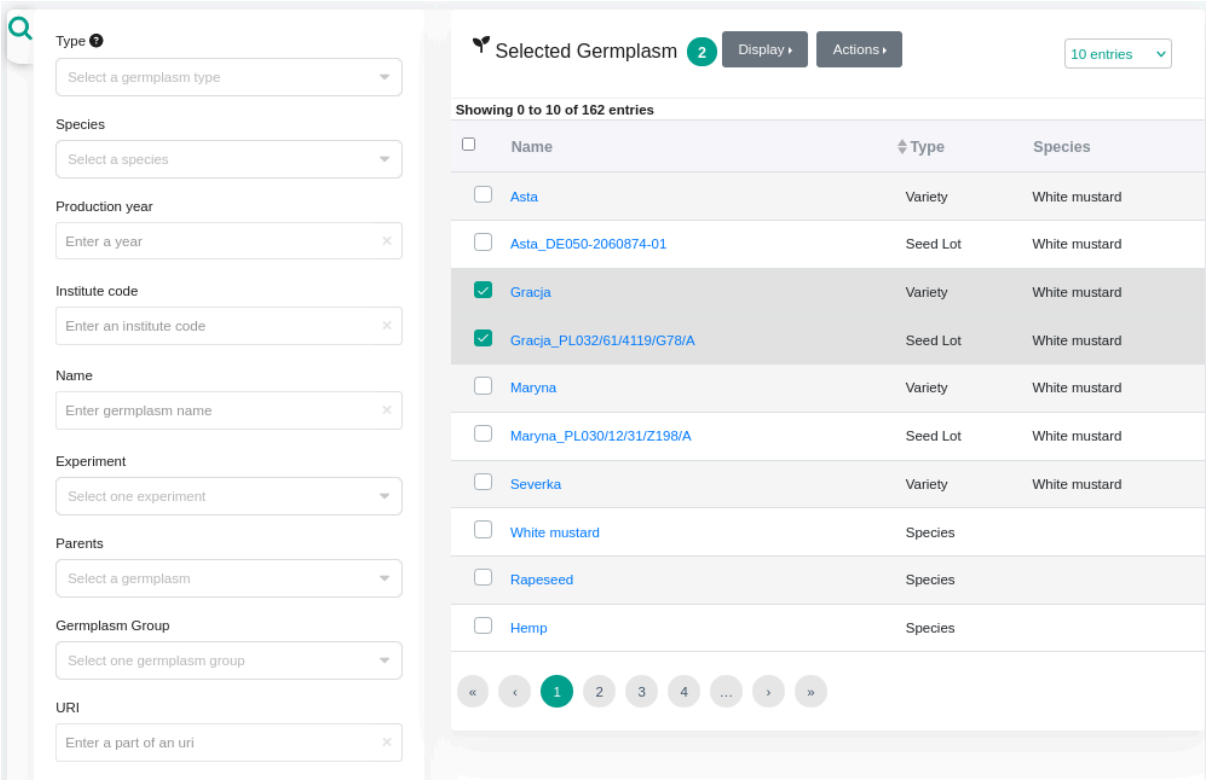
the **Scientific Information** tab (A) and then to the **Germplasm** sub-tab (B). On the loaded page, click on Germplasm Group (C) and then on + Add group (D).



The following window will pop up:



You can then name your germplasm group and provide a description. Once done, you can assign specific genotypes to the group using the button >> (E). You will be redirected to a new window:

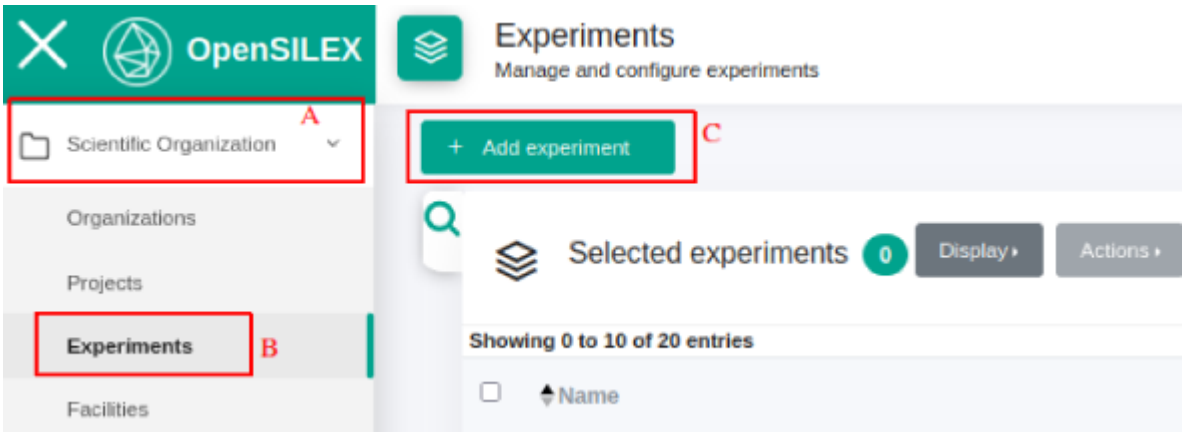


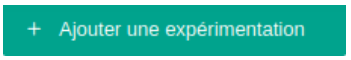
In this interface there are two sections. On the left, you can use dropdown lists to filter germplasms, and on the right, the filtered genotypes are listed. After selecting your genotypes, you have to confirm the group creation by clicking Validate the selection on the bottom of the window.

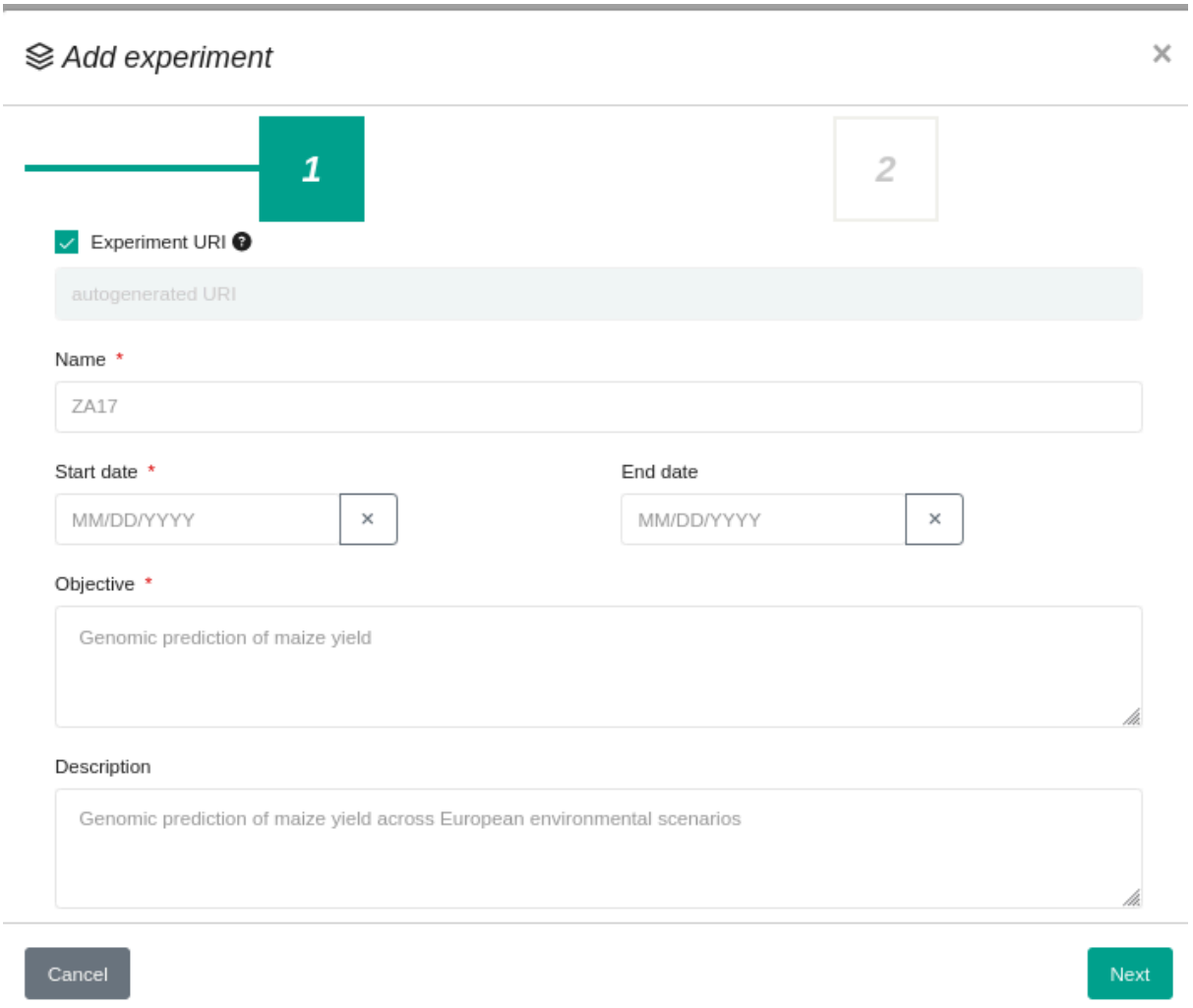
III - I would like to create my experiment and import my data:

III.1 - I would like to create a new experiment.

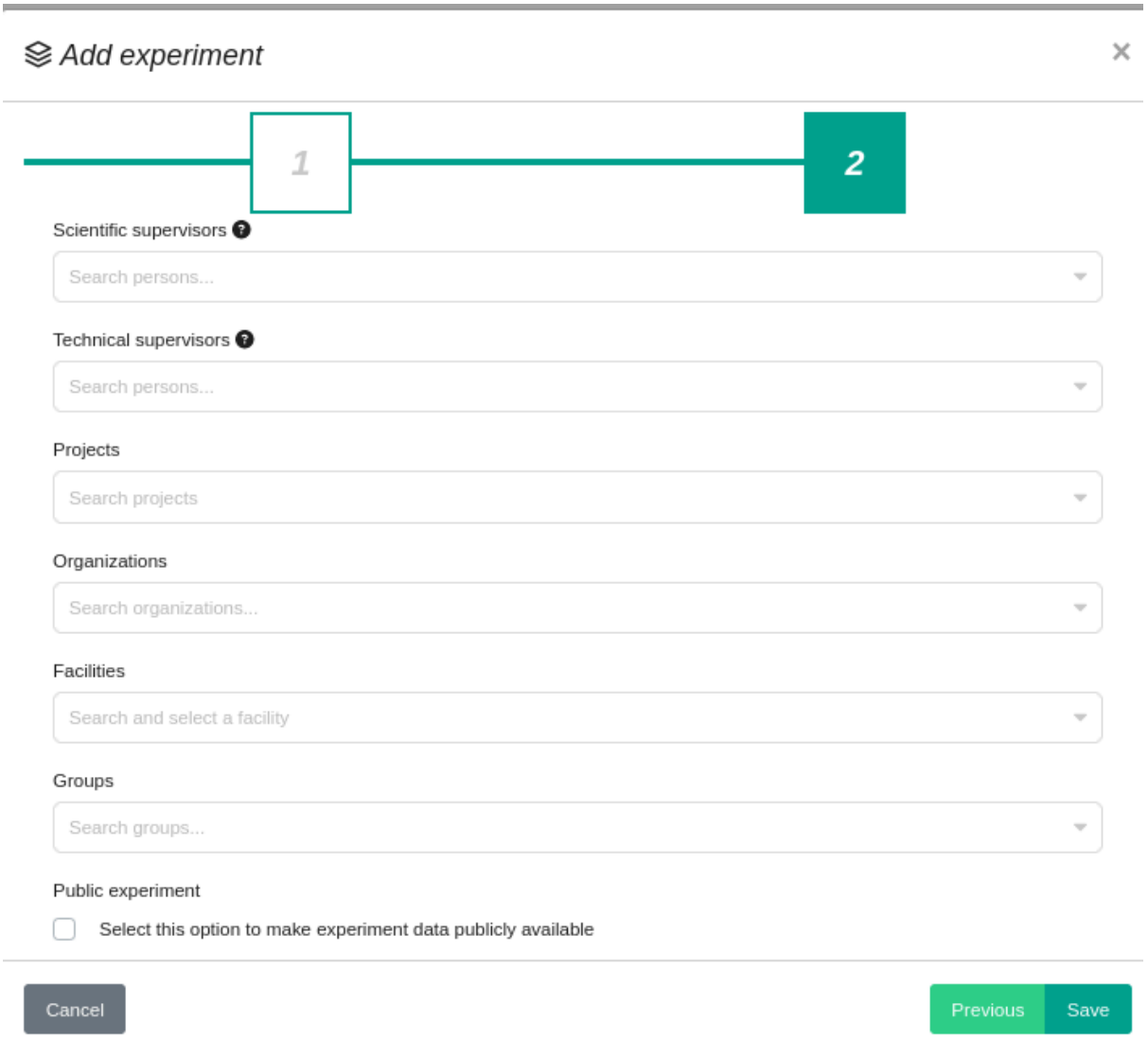
Before entering your data, you must describe the experimental framework. You must therefore declare your experiment in the system. To do so, go to the **Scientific Organization** tab (A) and then to the **Experiments** tab (B).



You can create your experiment by pressing the button  (C). This will open the following window:



You must then name the experiment, enter its start date and indicate its objective. You may also add a description to the experiment in the corresponding field and press Suivant to continue.

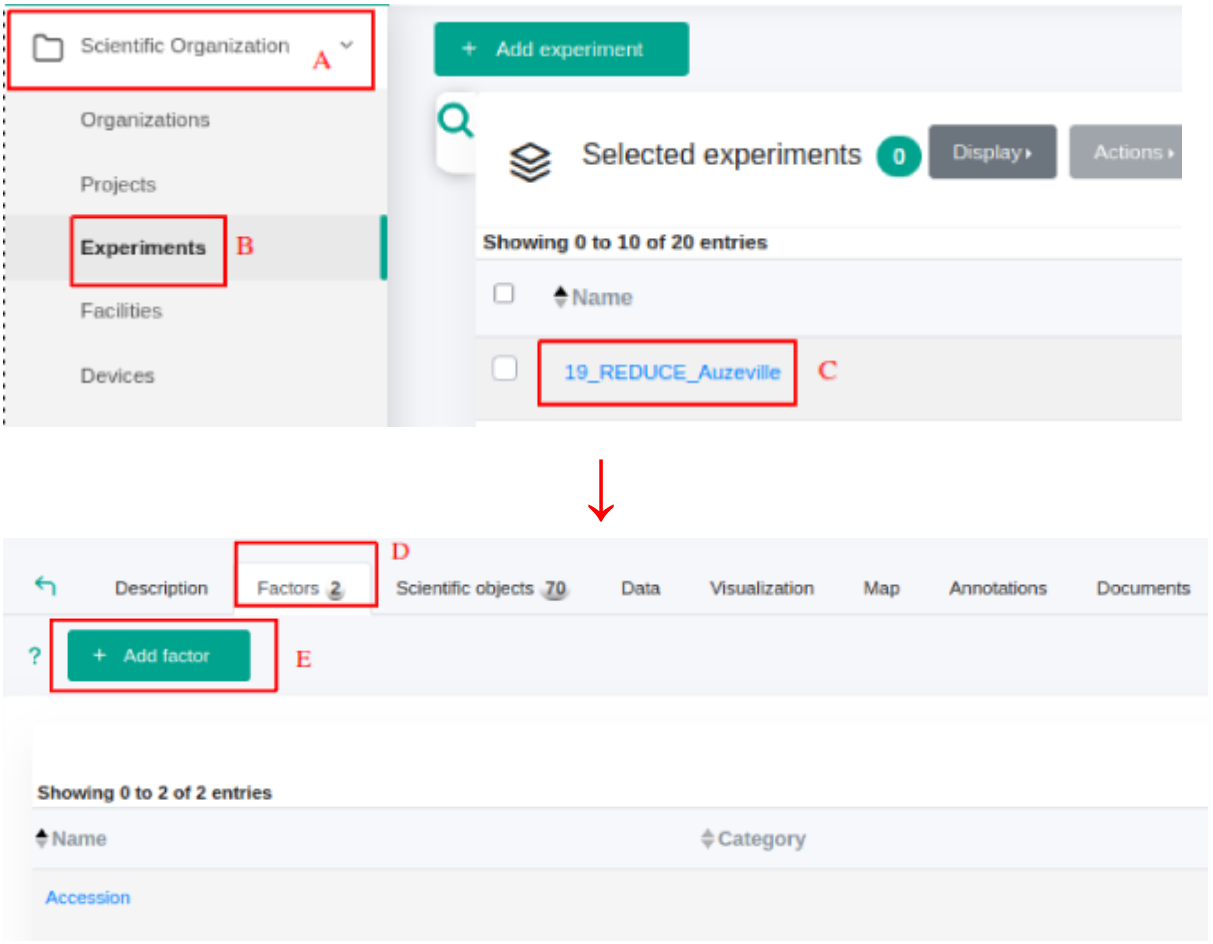


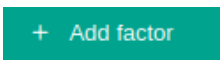
At this level of experiment creation, you can enter the scientific supervisor(s) of the experiment and the technical supervisor(s). You can enter the project(s) and organization(s) to which your experiment is associated. **You are encouraged to describe your experiment as clearly as possible so that your data can be used and understood by all users.**
To restrict access rights to your experiment, you need to associate one or more **user groups** with your experiment. How to create and manage a user group is described here.

III.2 - I would like to declare a factor with one or more modalities.

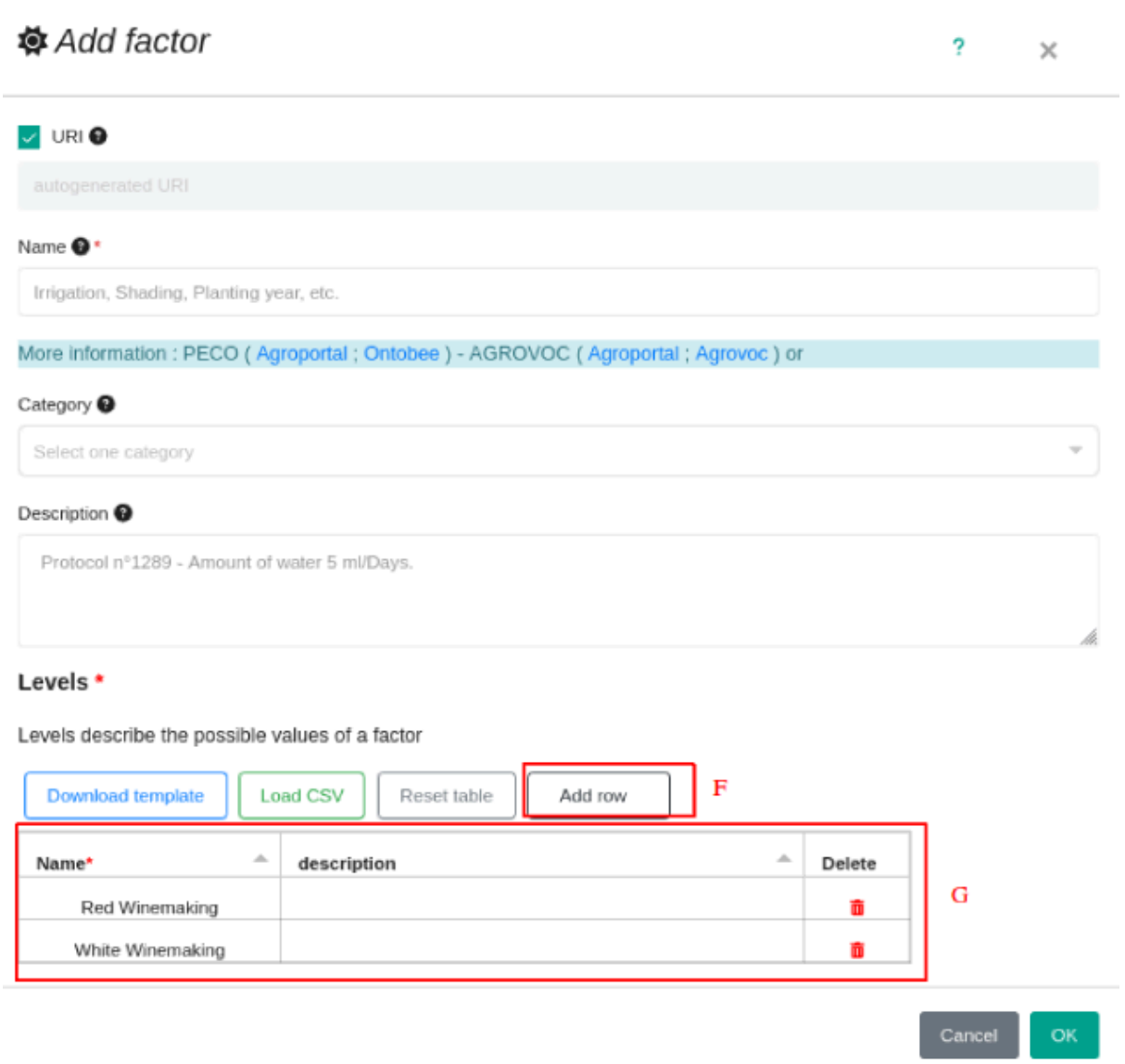
In order to describe your experiments in the best possible way, you need to describe the factors and the factor modalities that are applied to your objects of study. In OpenSILEX you

can declare your factors by selecting your **Experiment** (C) and then going to the **Factors** tab (D).



Press on 

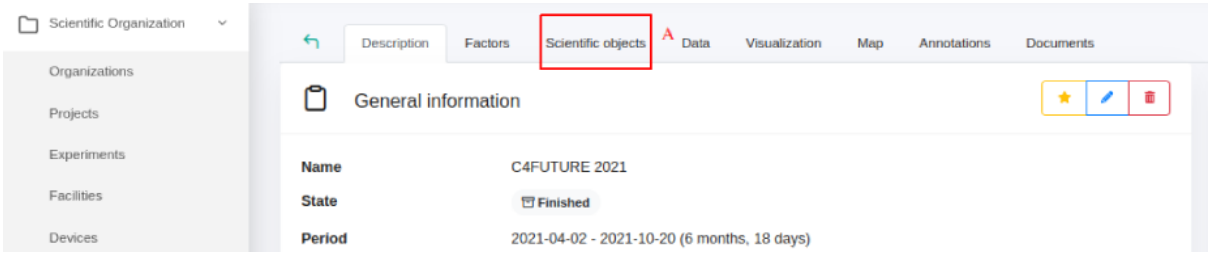
(E) to open the following window.



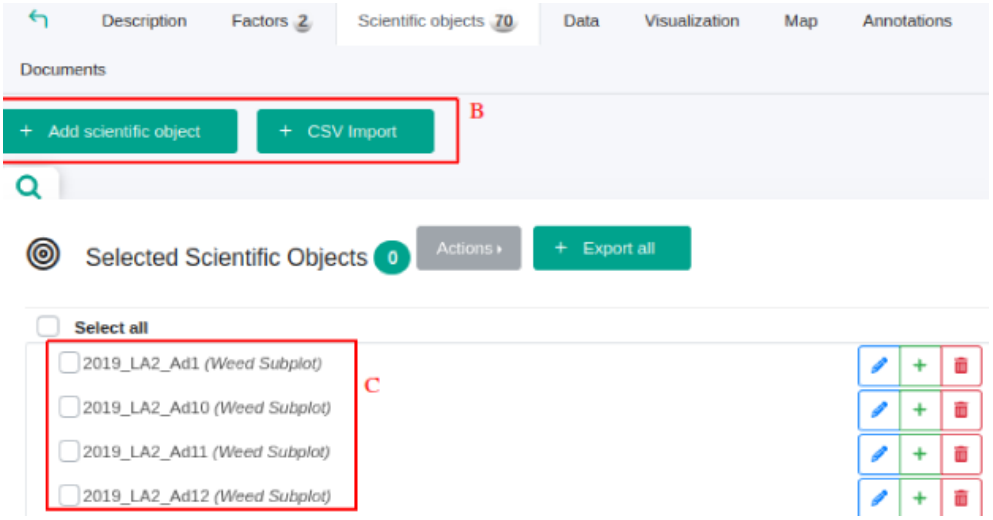
You can then name your factor, assign it to a category that is already described in the system, and add the factors' levels to table G. If you have a large number of factors, you can use a CSV file with two columns instead: Name and Description.

III.3 - I would like to create a new scientific object.

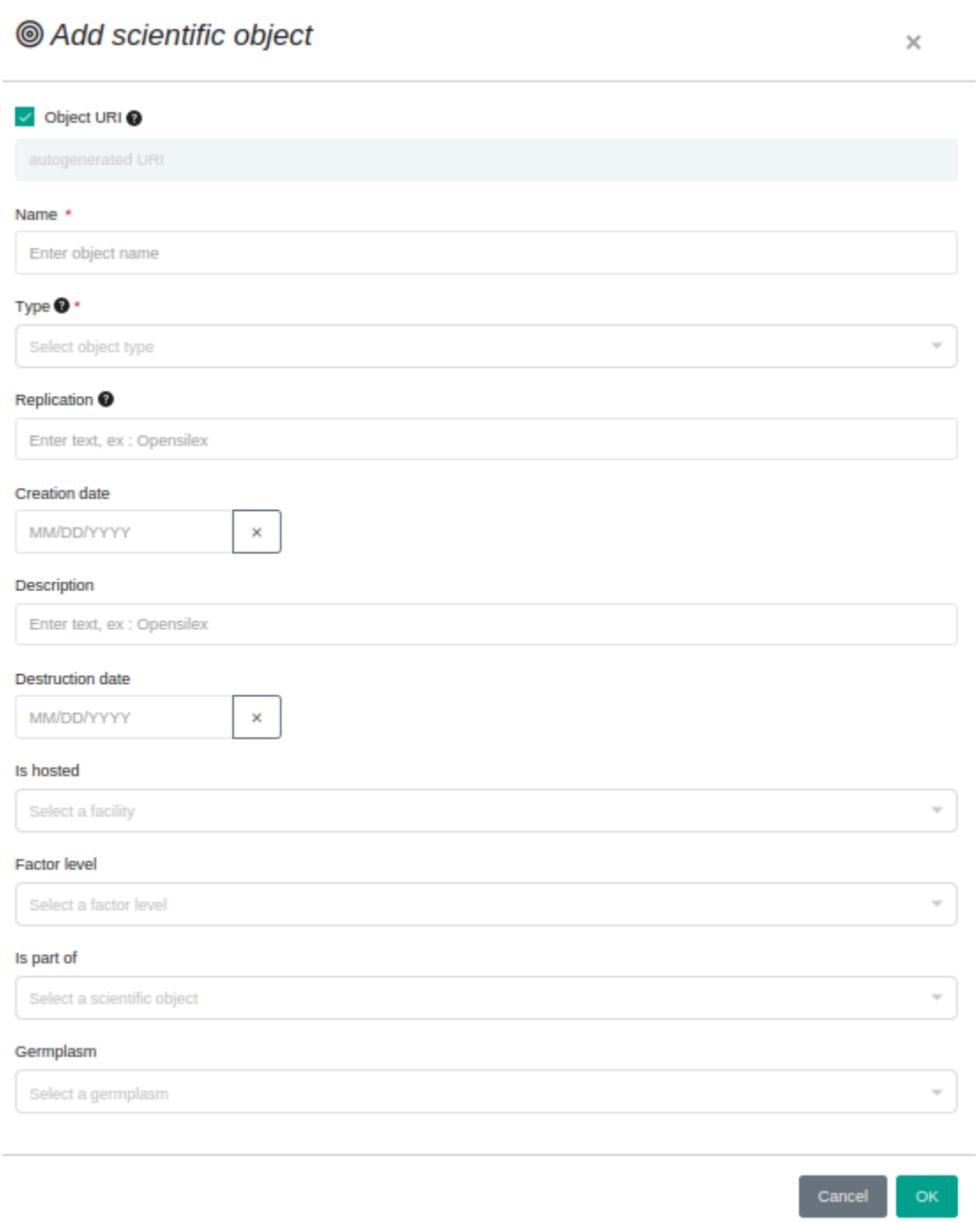
To declare new scientific objects, select the scientific objects tab (A) in the corresponding experiment.



On the scientific objects page, a list of all objects already declared in your system will be shown (C). You can import your objects one at a time into the system by clicking on + Add scientific object or import more than one object by clicking on + CSV Import (B).

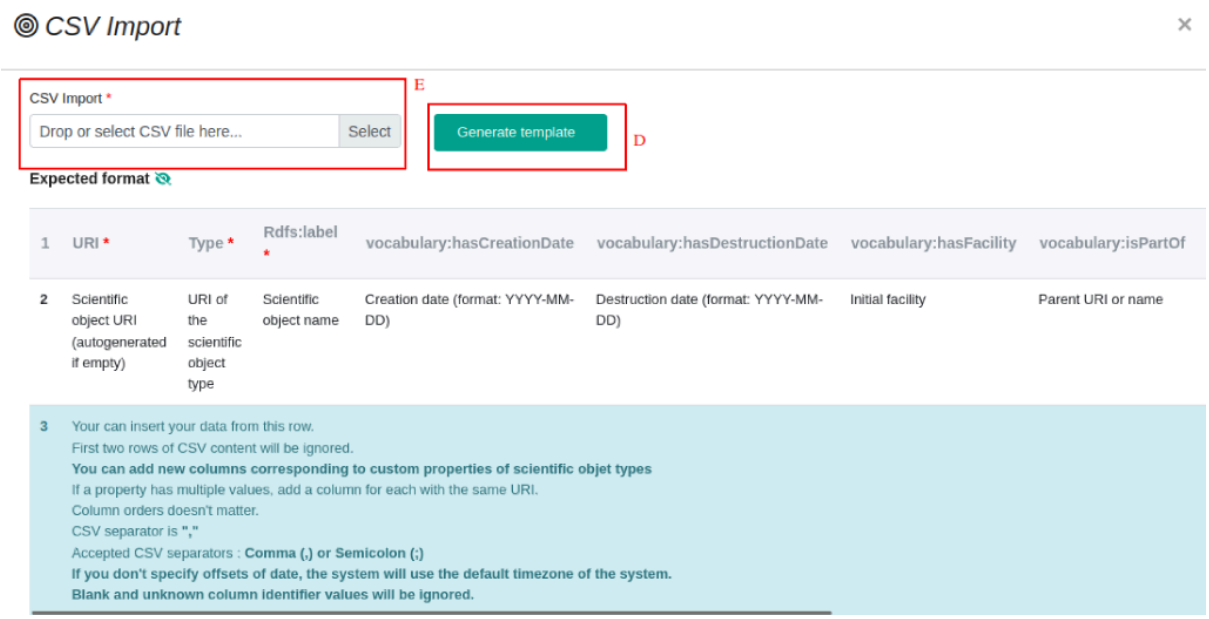


Adding the scientific object by clicking on this button + Add scientific object will open the following window:

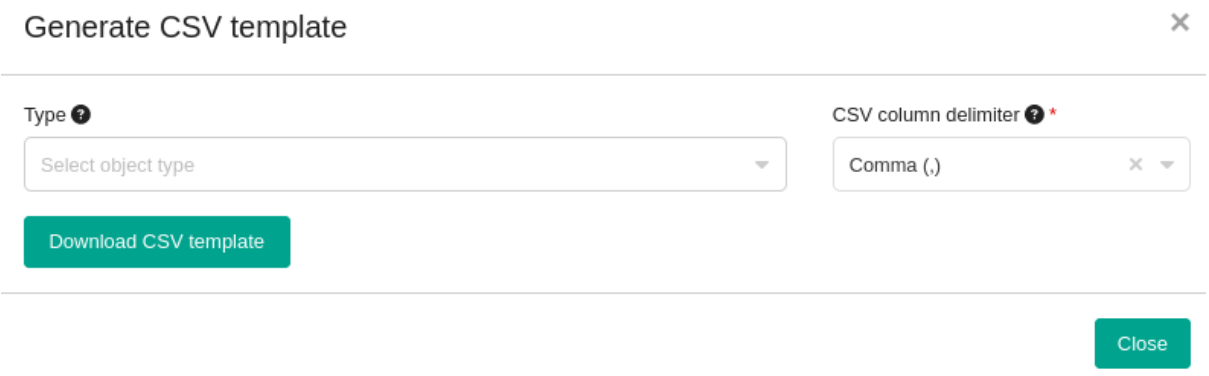


You can then go on to fill in the various properties of the scientific object concerned. **It is important to bear in mind that the properties that need to be filled in depend on the type of object that is being declared.** For example, if we declare a bunch of grapes,we can fill in the Bunch or Berry property; if we declare a plot of land, you can fill in the Row number property.

If you are importing the scientific object via + CSV Import, you must use this interface:



If you already have a completed system template, you can upload it via (E). If not, you will need to generate this template from scratch. If you want to generate a system template from OpenSILEX, this can be done via Generate template (D). You will then need to select the type of scientific object you want to retrieve in order to be able to download the appropriate template. In the example below we will generate a template for the declaration of scientific objects.



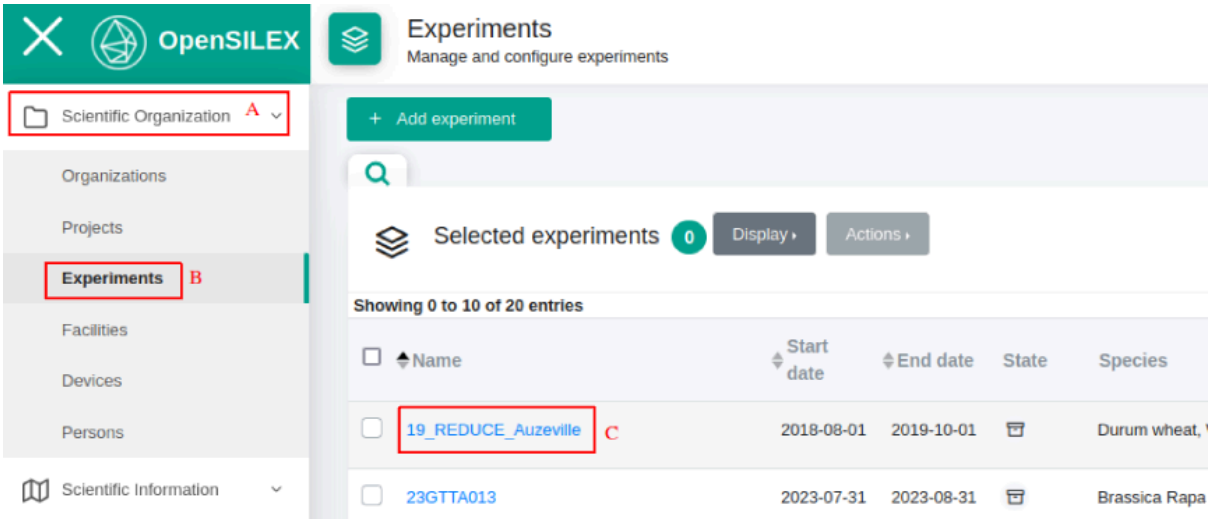
You will then need to fill in a template in a similar way to the example below:

A	B	C	D
uri	type	rdfs:label	vocabulary:hasGermplasm
Scientific object URI (autogenerated if empty) Required : no. Example : http://opensilex.org/id/scientific-object/so-name1	URI of the object type Required : no. Example : vocabulary:Plant	Property name : Nam Data type : Short strir Property description : Required : yes Example : Opensilex	Property name : Germplasm Data type : Germplasm descriptor informat Property description : Required : no This column can be present multiple time t
	vocabulary:Leaf	Leaf1	http://aims.fao.org/aos/agrovoc/c_8283
	vocabulary:Leaf	Leaf2	http://aims.fao.org/aos/agrovoc/c_8283
	vocabulary:Leaf	Leaf3	http://aims.fao.org/aos/agrovoc/c_8283
	vocabulary:Leaf	Leaf4	http://aims.fao.org/aos/agrovoc/c_8283
	vocabulary:Leaf	Leaf5	http://aims.fao.org/aos/agrovoc/c_8283
	vocabulary:Leaf	Leaf6	http://aims.fao.org/aos/agrovoc/c_8283
	vocabulary:Leaf	Leaf7	http://aims.fao.org/aos/agrovoc/c_8283

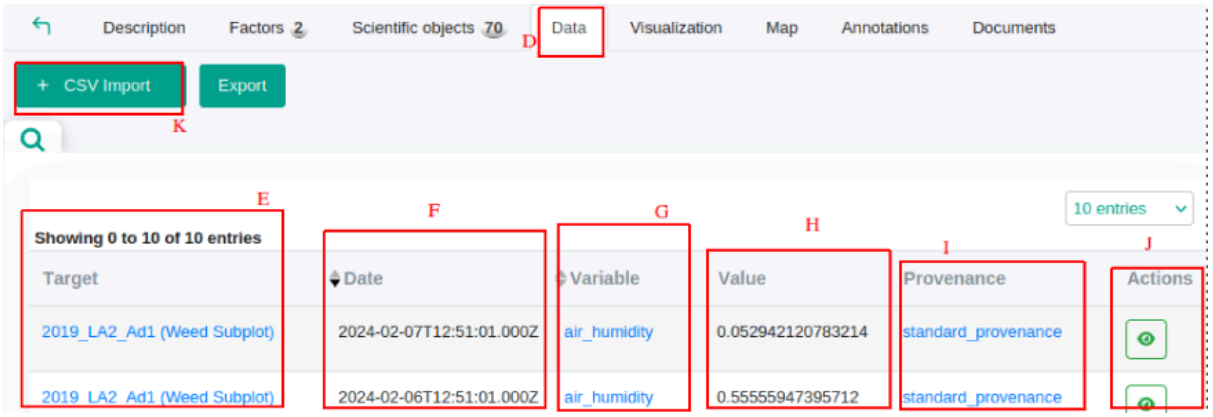
It is important to remember that once the scientific objects have been imported, they can only be updated manually, one at a time. Make sure you have entered the correct information to each of your scientific objects.

III.4 - I would like to import/export my data.

To add data to an experiment, open the experiment description page. To do this, go to the **Scientific Organization** tab (A) and then to the **Experiments** sub-tab (B). Then select the experiment in question, in this case experiment *19_Reduce_Auzeville* (C).



On the experiment page, go to the **Data** tab (D). This takes you to the experiment data page. This consists of a table with 6 columns.

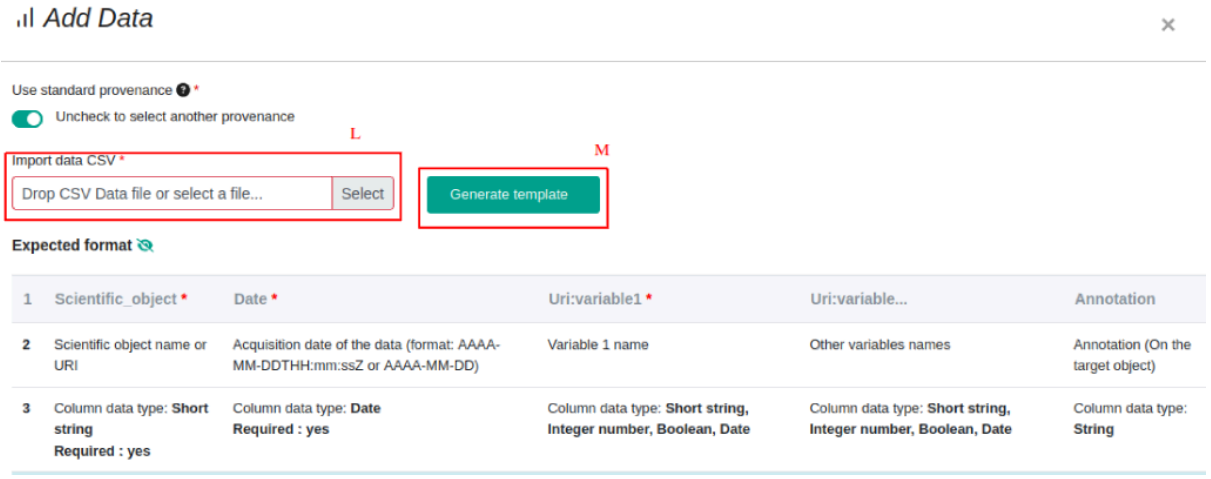


The **Target** column (E) : This is an indication of the element to which the data relates.
The **Date** column (F): Contains the date on which the data was measured at the scientific object level.
The **Variable** column (G): Contains the name of the variable that was measured.
The **Value** column (H): Contains the value of the measurement.
The **Provenance** column (I): Holds the name of the provenance giving information about the origin of the measurement.

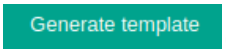
The **Actions** column (J): contains a button  for displaying all the measurement information in JSON format. An example is provided in Appendix 2 of this document.

Data can only be imported into the system via a CSV import, using button 

(K). Click on this button to get the window below:



In this window you can do the import of your data into the system via 

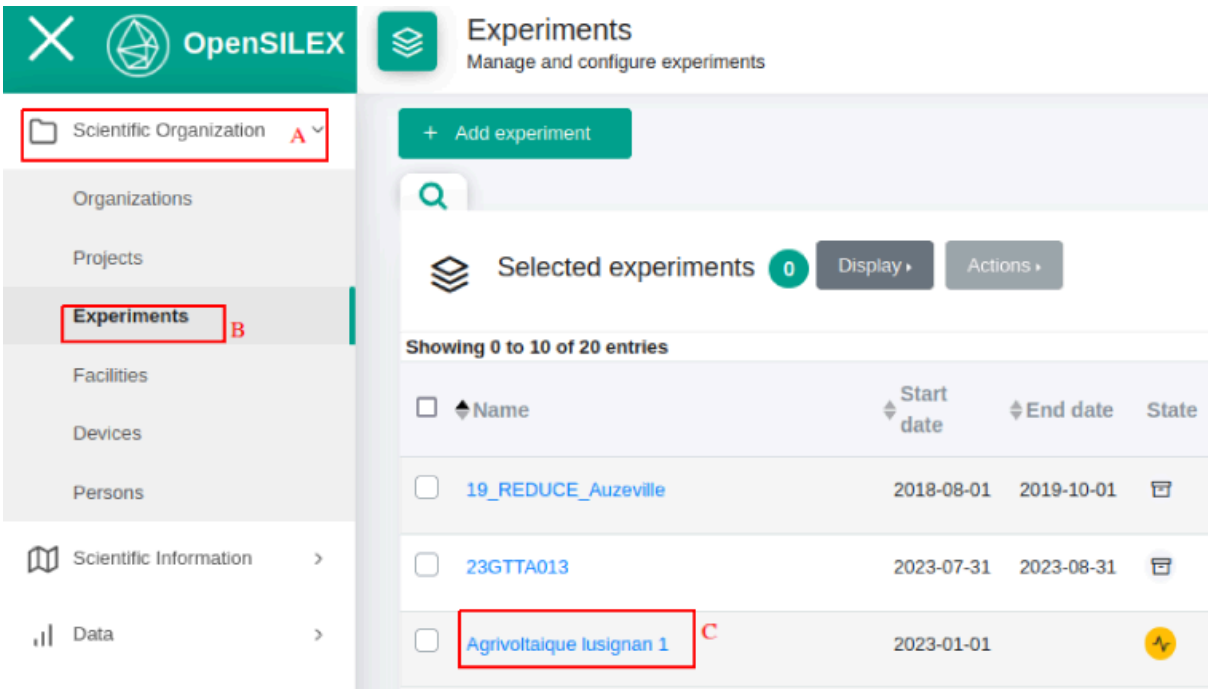
(L). If you do not have a ready to use template for your system, you can create one by clicking on the button 

(M).

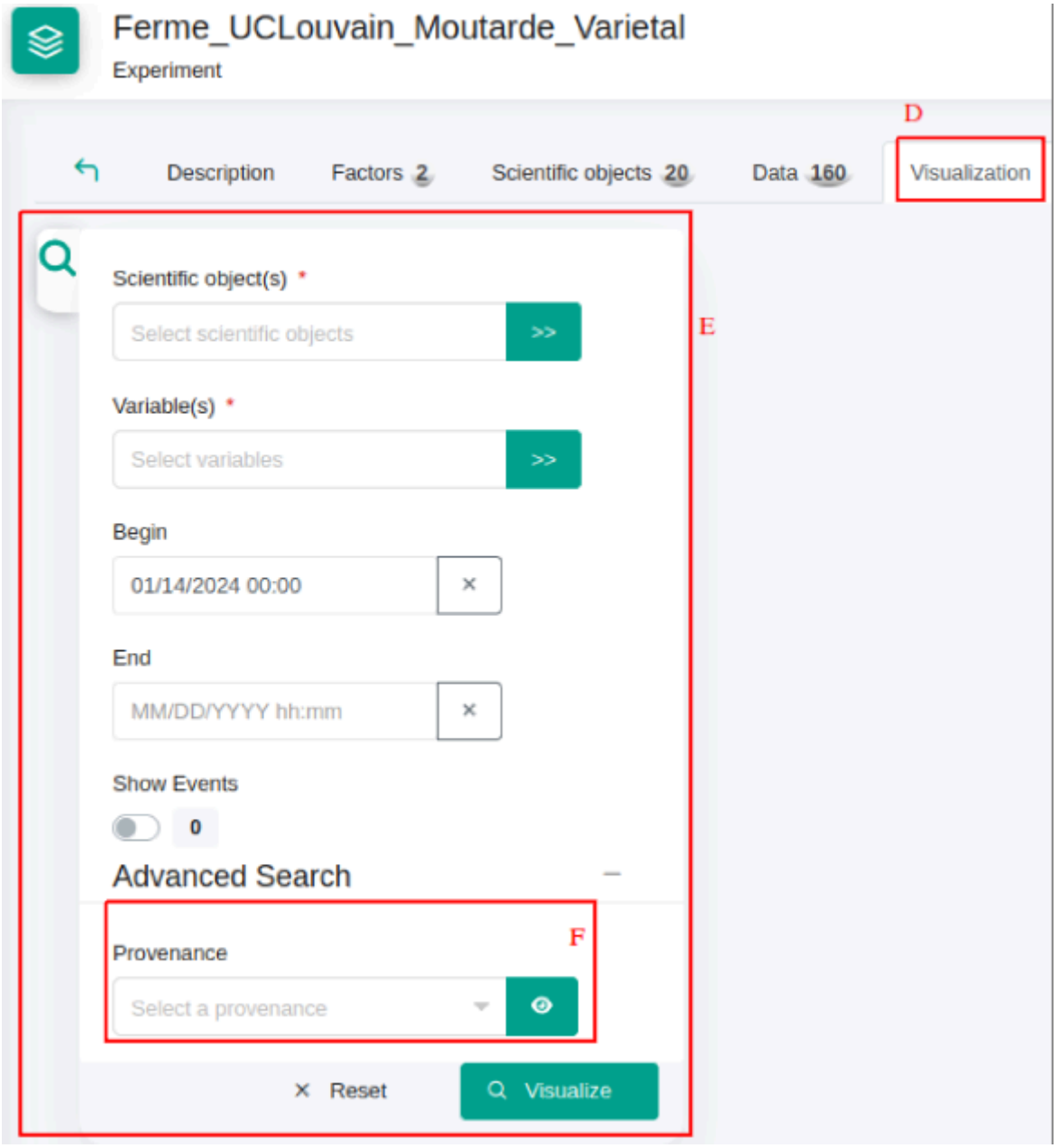
IV - I would like to view the data from an experiment :

IV.1 - I would like to visualize my experimental data for one or more scientific purposes.

To view the data for an experiment, go to the experiment description page. This can be done by going to the **Scientific Organization** tab (A) and then to the **Experiments sub-tab** (B). Then select the desired experiment, in this case *Agrivoltaique lusignan 1* (C).



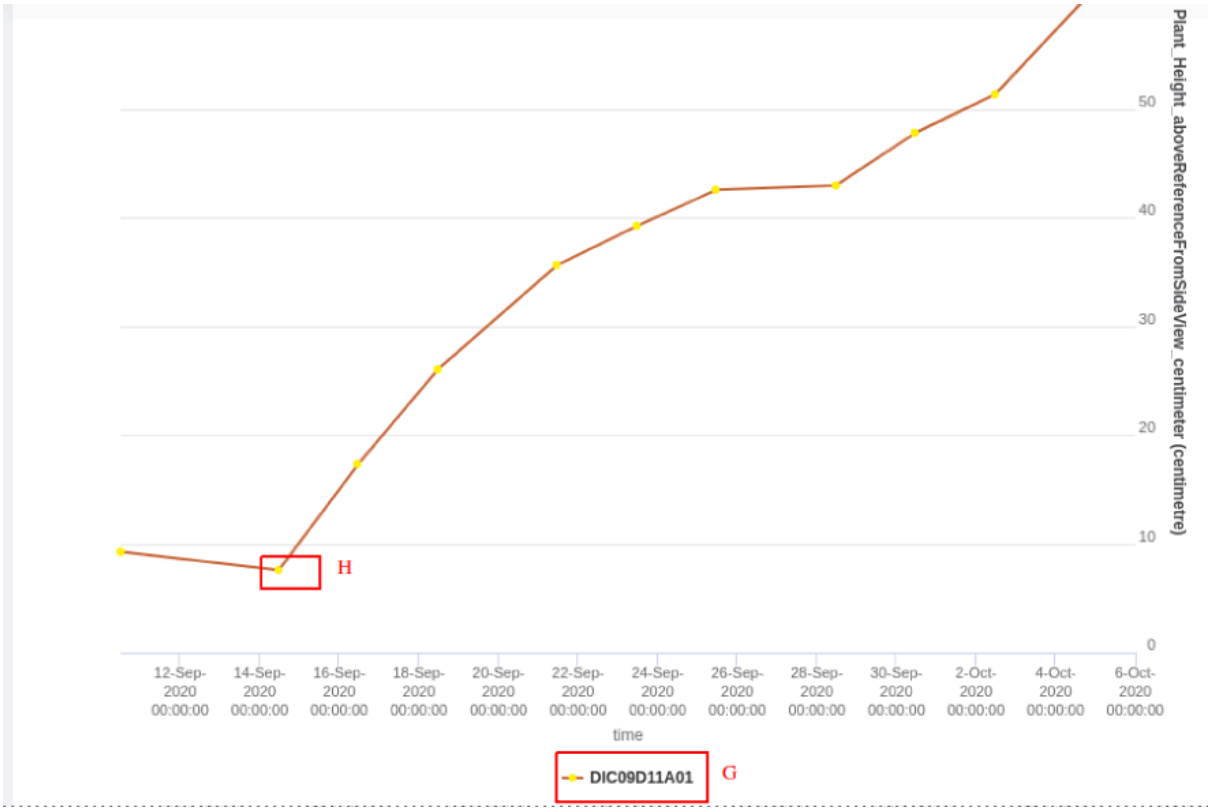
On the experiment page, go to the Visualization tab (D).



You will then be able to access a list of fields (E) in which you can select the scientific objects - up to 15 objects - whose data you would like to consult. It is also necessary to select the variables that describe the measurements to be observed, up to a maximum of 2 variables. You may display the events associated with the measurements and declared in the system. Lastly, you can filter your data in order to keep only the data with a specific origin (F). **Don't forget to check the start and end dates of the observations you want to have a look at.**

Once you have finished filling in, click on 

to continue. A graph such as the following will be displayed:

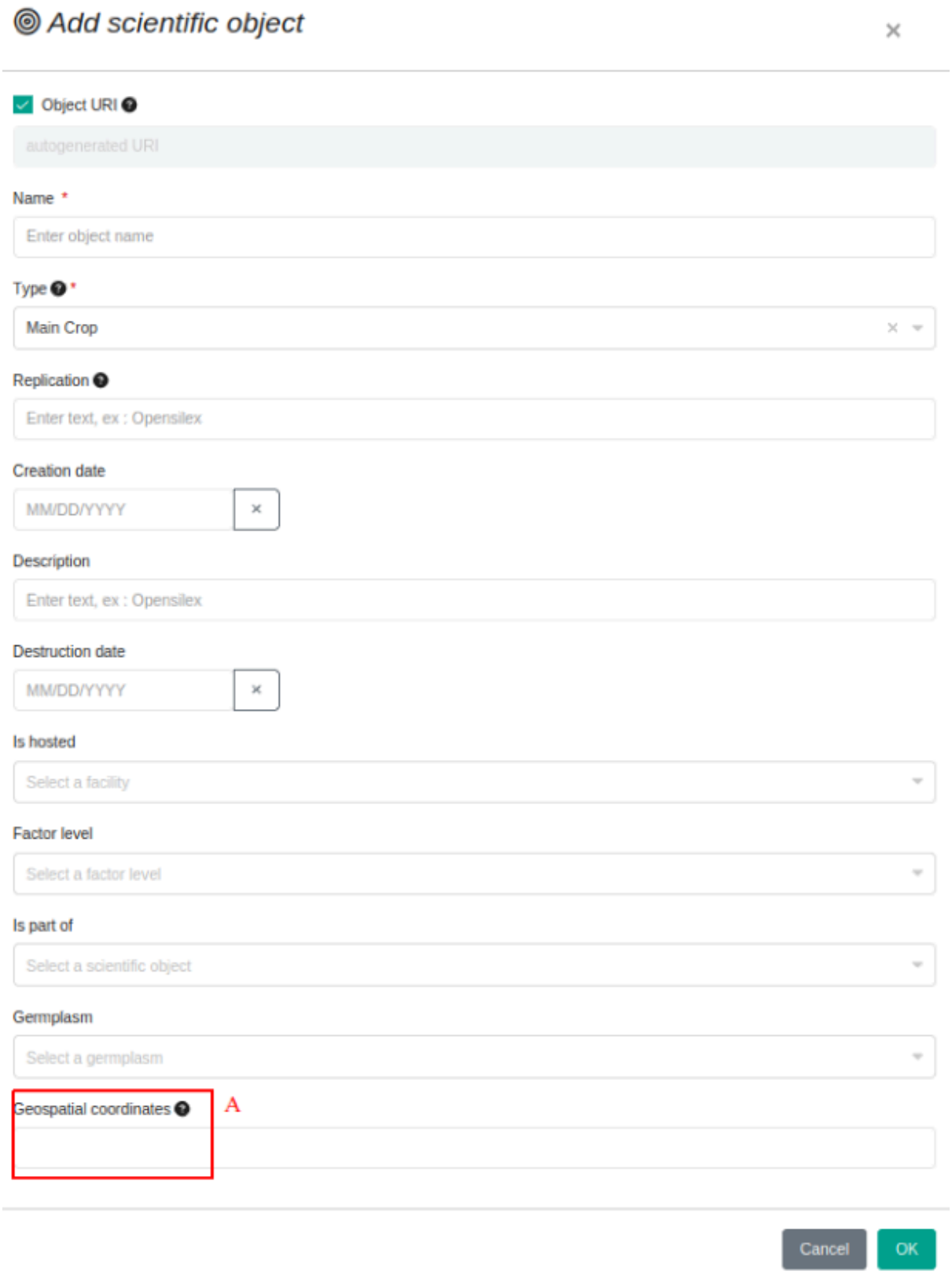


On this graph example you can see the dates of the measurements on the abscissa and the values of the variables previously selected on the right and left ordinates. In the legend of the x-axis you will see the value of the measured variable and the label of the selected scientific object(G). By clicking on (G), you can show or hide the corresponding data representation on the graph, making it easier to read the graph. You can get more information about the data and its source by left-clicking on one of the points in your graph (H). The information will be displayed in the JSON format. You can add an event or annotation to the object or data by right-clicking on one of the points in your graph (H). You can also download your graph using the ≡ at the top right.

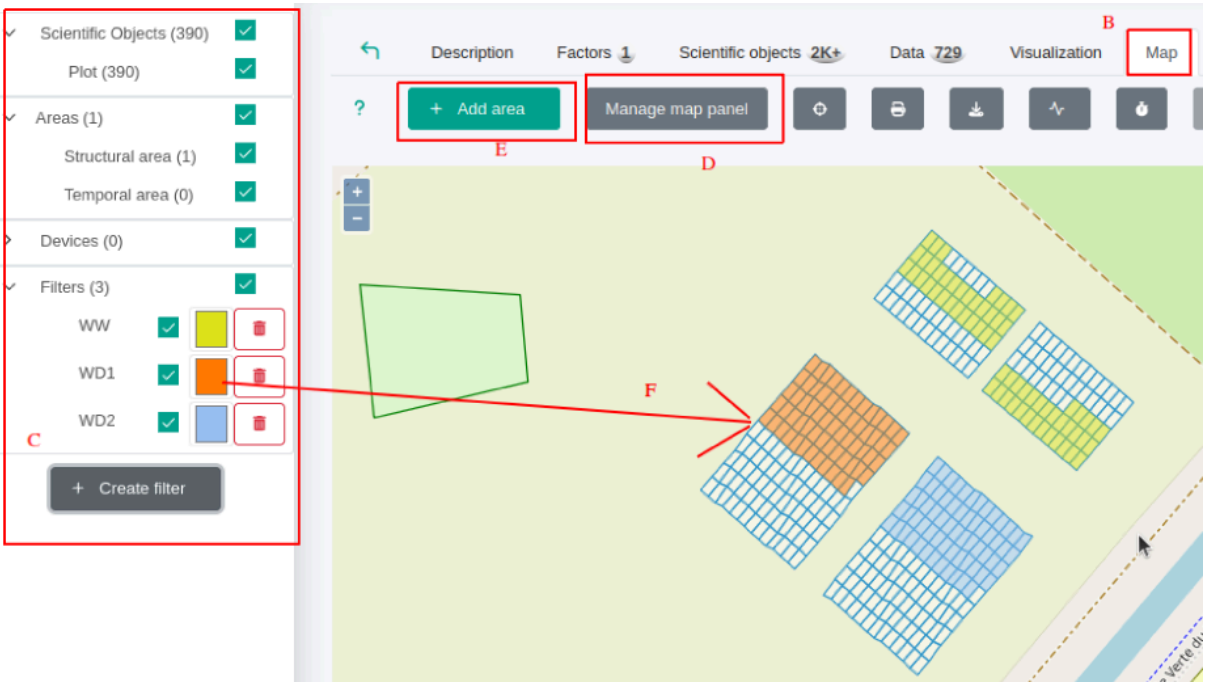
IV.2 - I would like to visualize my scientific objects and equipment for experimentation.

If **the coordinates of scientific objects and devices have been defined**, OpenSILEX allows you to view them on a map. This can facilitate understanding the organization of an experiment.

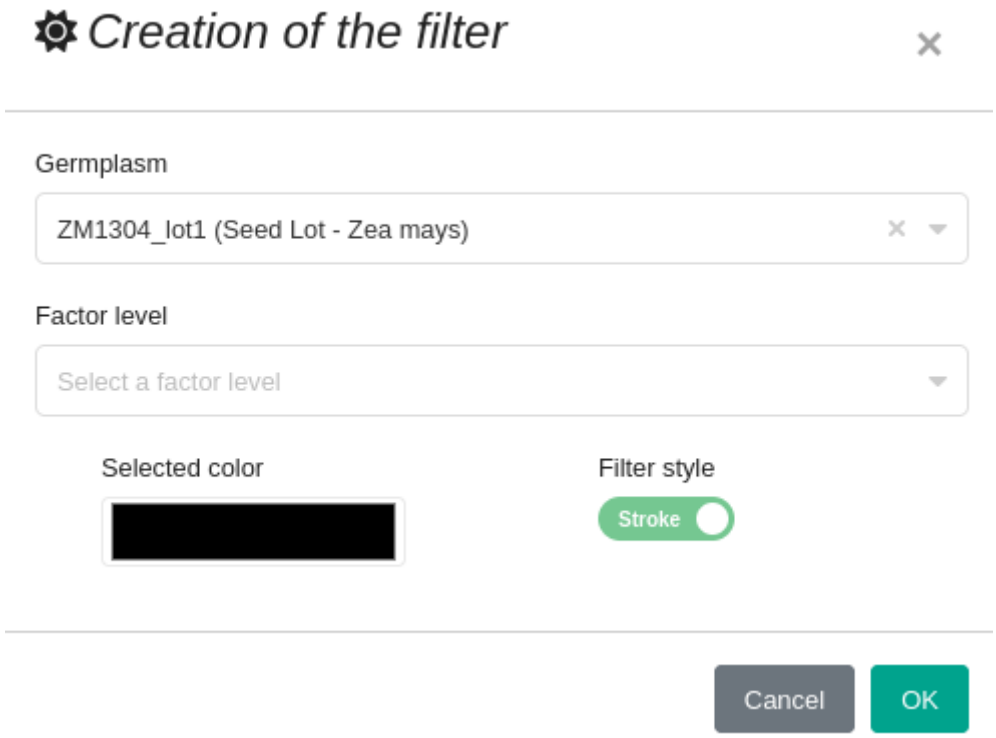
To do this, make sure that you have filled in the **coordinates** field (A) for a scientific object or device.



Geospatial coordinates must be entered in WKT format. Coordinates are entered for scientific objects when they are created, modified or through a “move” event. For devices, coordinates are entered via “move” events. Once you have entered the coordinates of your scientific objects and devices, you can switch from an experiment to the “Map” tab (B).



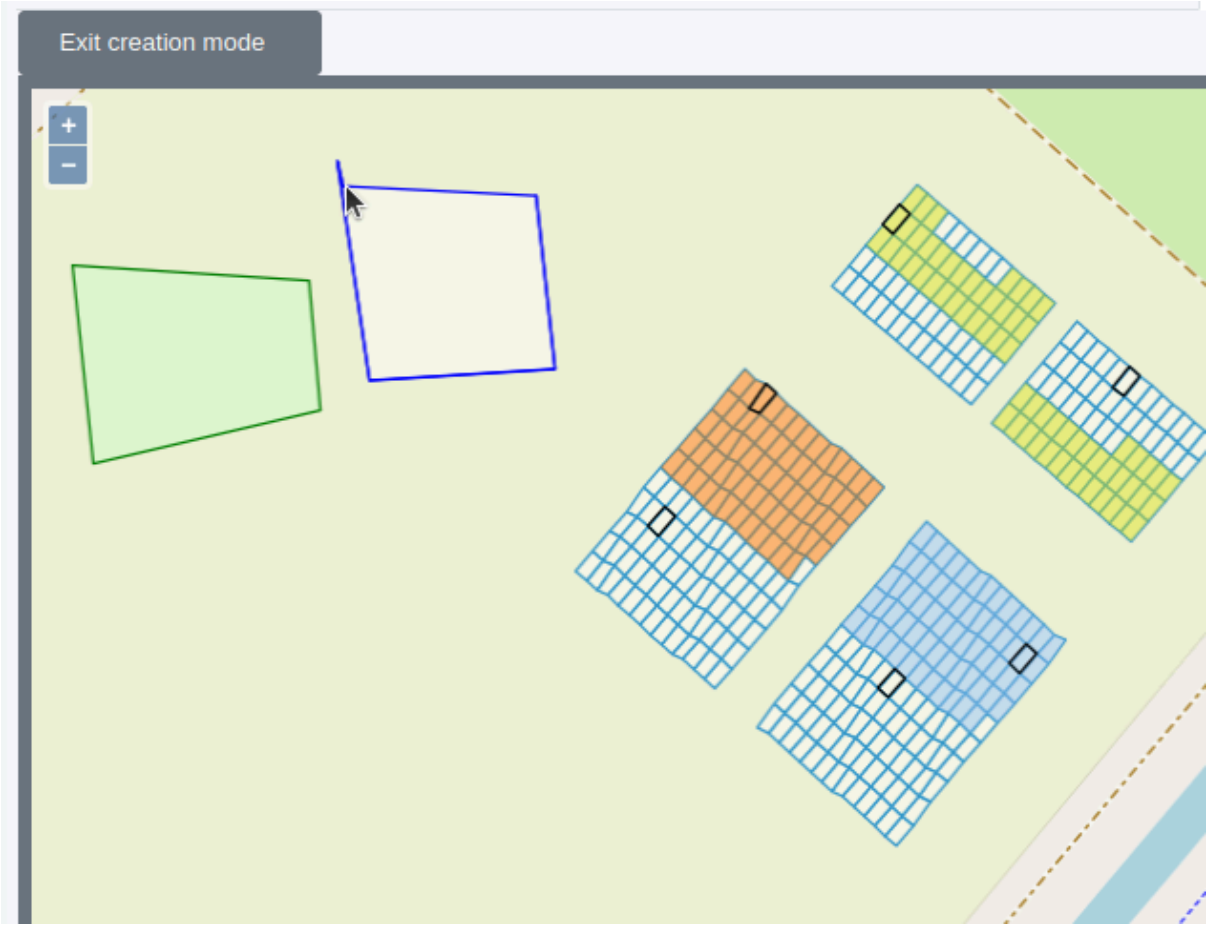
When you open this tab, you can see on the left of your window a summary of the elements visible on your map (C). In this example we have 1 zone and 390 scientific objects, mostly plots. You can show or hide this window by pressing Manage map panel (D). Through the selectors in the (C) menu, you can hide or show the elements represented on your map. You can also create various filters to highlight certain scientific objects using the + Create filter (C). The filter criteria created can relate to the genetic resources of the scientific objects or their factors. The filters do not hide your scientific objects, but rather modify the way they display the scientific objects that meet the filtering criteria (F). In the example above, we have created three filters in order to distinguish between the different types of irrigation that are carried out on our plots of land. To see which plots have a particular genotype, we will now add a filter. By pressing the + Create filter the following window appears:



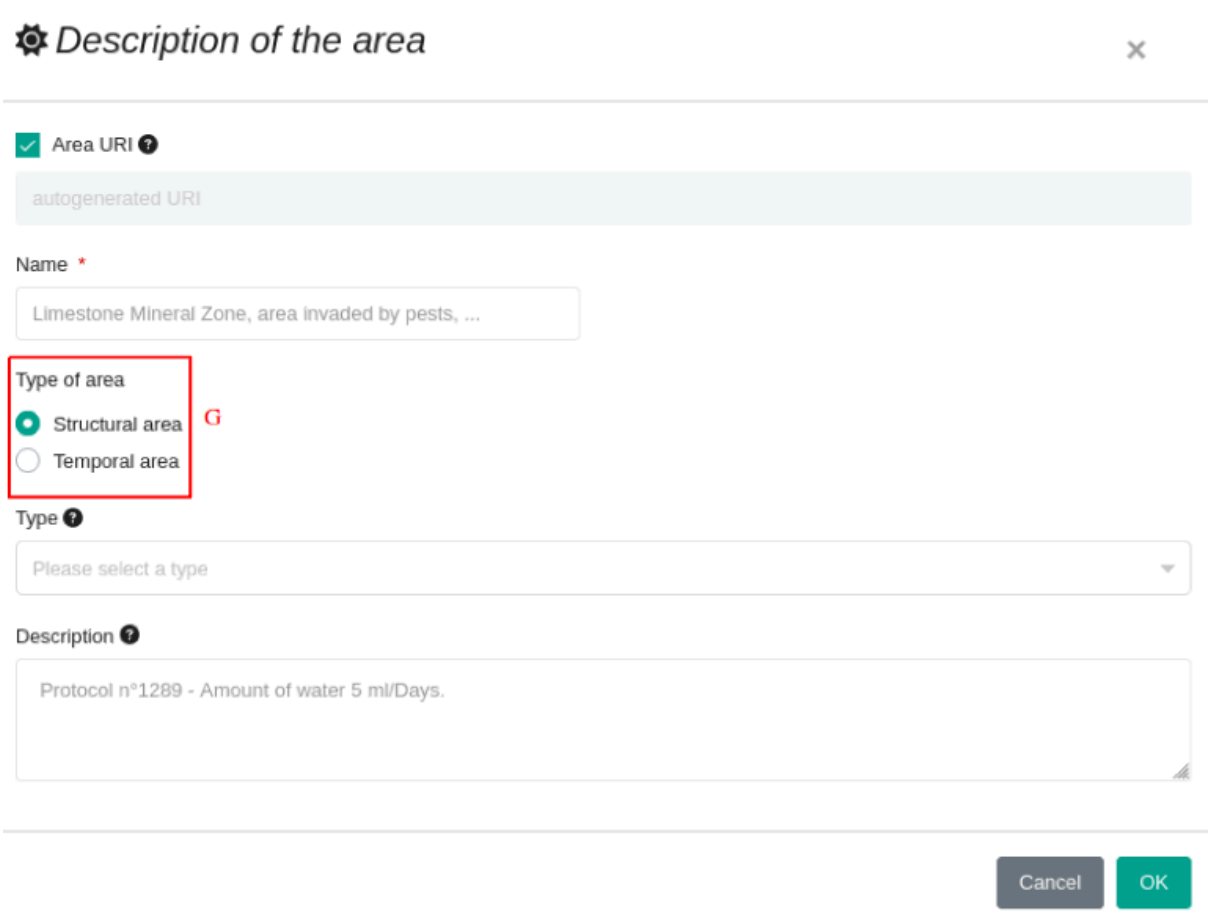
We select a specific germplasm i.e. “ZM1304_lot1”.Applying this filter produces the following map:

IV.3 -I would like to create temporary or permanent zones on a map

If you want to record an event such as a flood or want to show your structures, you can create a temporal or structural zone directly from the Map tab. To do this, press + Add area (E). You can then draw your zone on the map.



If you wish, you can cancel zone creation by pressing Exit creation mode (F). Once you have created your zone, double-click to confirm the geometry. A window opens:



You can then enter information specific to the area being represented. Here the type of zone (G) can be either structural, to represent a tarmac surface for example, or temporary, to be used to represent an event over a large area, such as a flood.

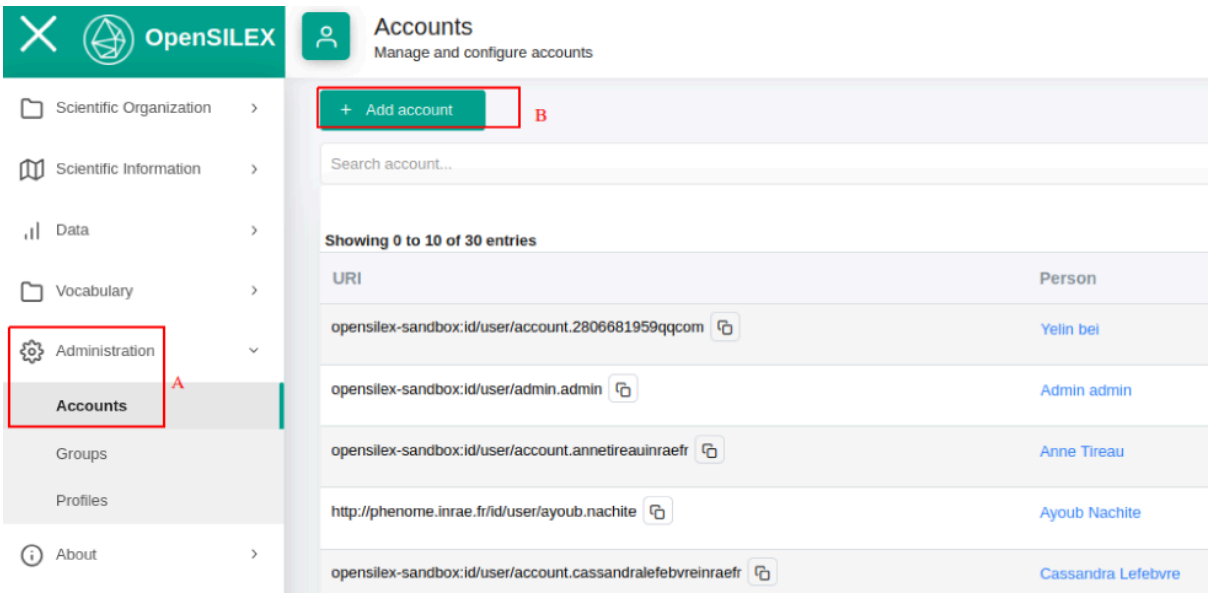
V -Profiles and user rights :

V.1 - I would like to understand how rights are managed.

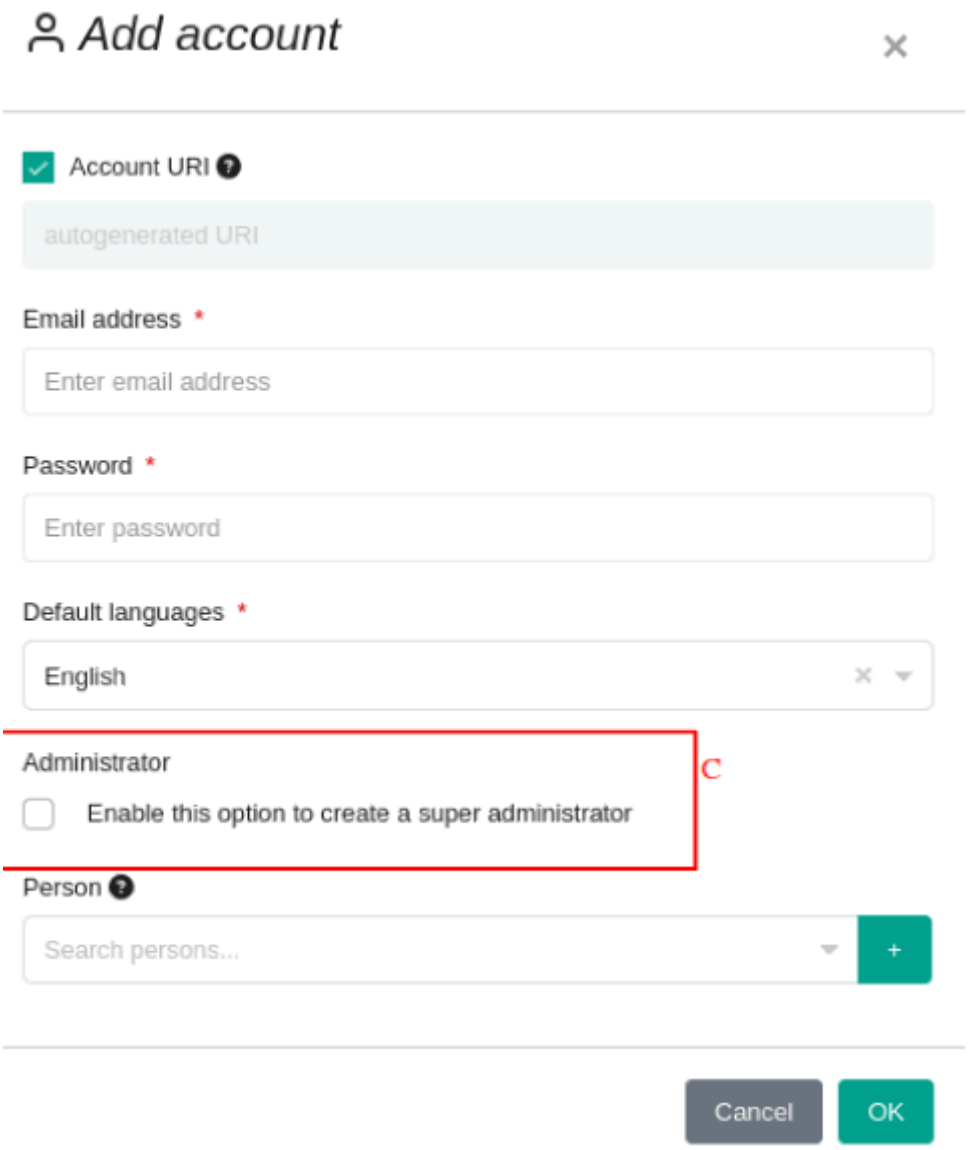
In OpenSILEX, user rights are **not managed at the account level** but at the **profile level** (access to system functions). By associating a user group with a specific profile we are able to define who has access to the data of an experiment.

V.1.1 - How is a user account created?

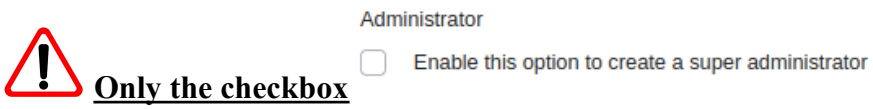
You will only be able to create a **new user account if you have the rights to do so**. If you do not have a profile that allows you to manage users (add or modify users), you will need to contact a person who can do this in your place (e. g. an administrator).



Go to the **Administration** tab and the **Users** sub-tab (A). If the **Administration** tab or the **Users** sub-tab is not displayed, this means that you do not have the rights to create a user. If you do have the rights, you can create a user by clicking on + Add account (B)
The following window will appear in your browser:



In this window, all fields except the Administrator field must be filled in.

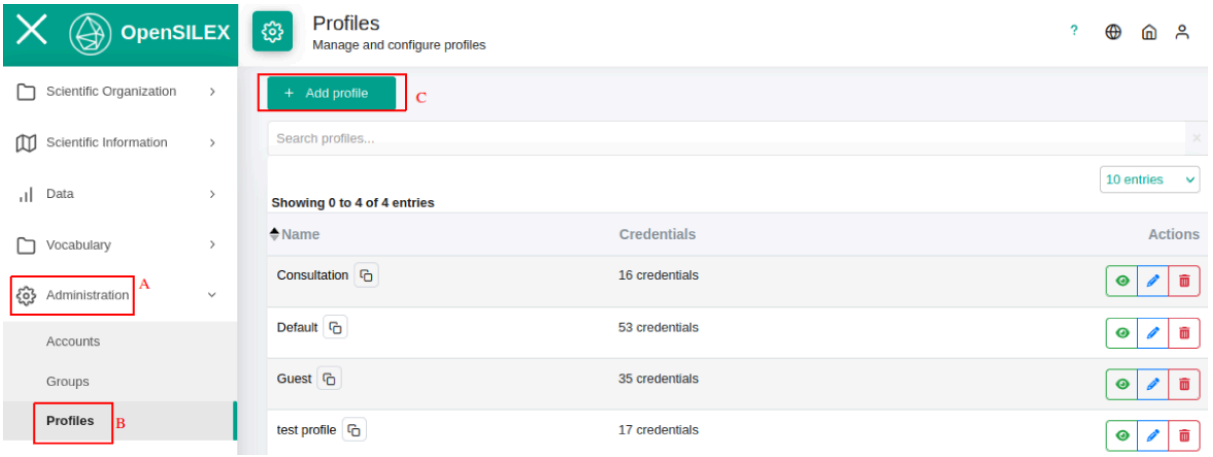


<u>Only the checkbox (C) should be ticked to give all rights to a person whose role is to manage the information system.</u> This person will then have the role of a Super-Administrator. **This option will also give them access to all the experiments and data.** This role should only be assigned to a **<u>trusted person who is in charge of the information system.</u>**

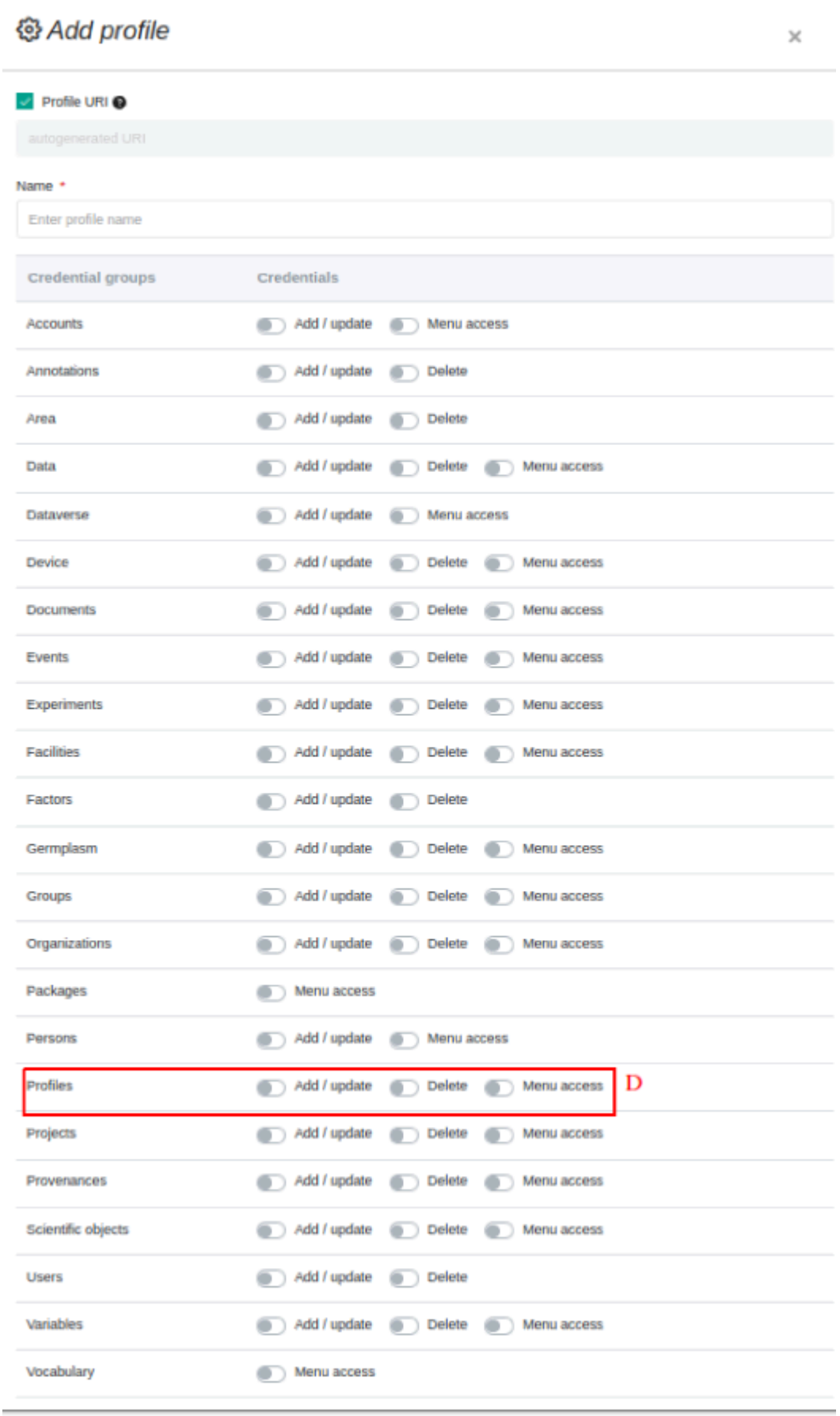
Once the account has been created, you will need to contact the user through the provided e-mail address. **Don't forget to assign a password to the user account.** Remember to contact the newly created user, as the current system does not have an automatic email system.

V.1.2 - What is a user profile?

The **profile** system is used for the allocation of user roles within a **group**. User profiles must be in place before a group is created. It should be noted that a user combines the roles that have been assigned to him/her in more than one group.



To create a user profile, go to the **Administration** tab (A) and then to the **Profiles** sub-tab (B). A page will appear listing the different profiles available. The number of rights assigned to each profile will also be shown. To create a profile, press + Add profile (C). A new window will open:

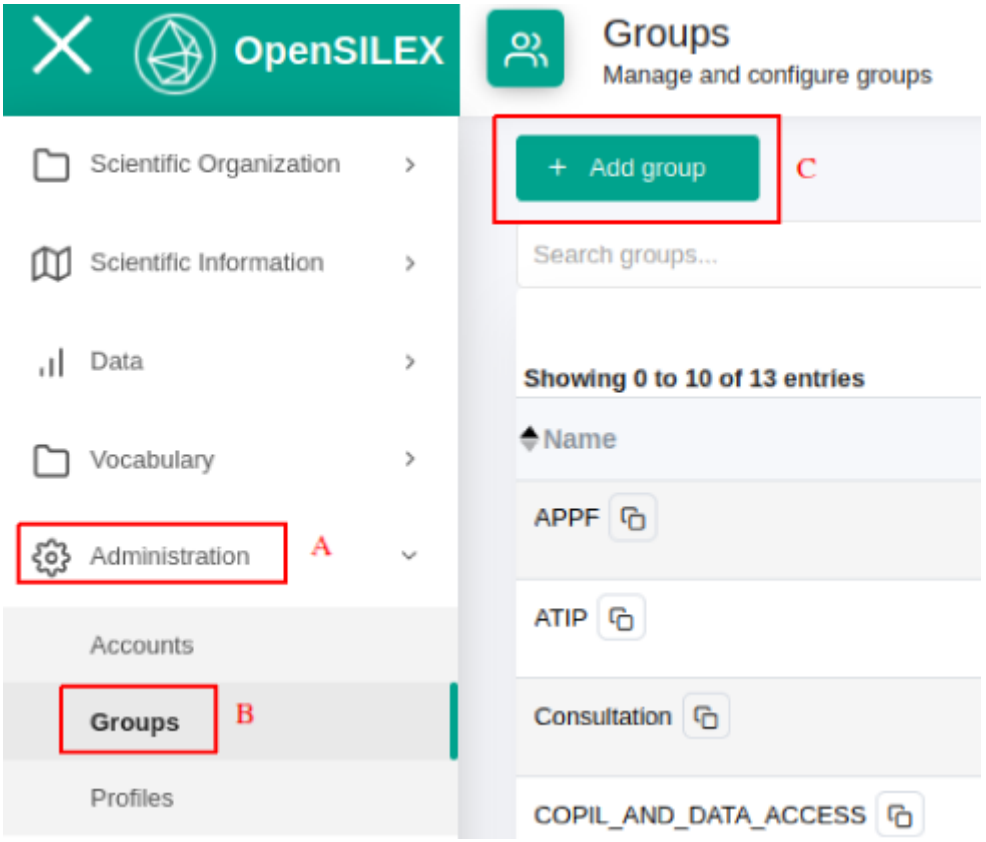

Add profile
Profile URI
autogenerated URI
Name *
Enter profile name
Credential groups
Credentials
Accounts Add / update Menu access
Annotations Add / update Delete
Area Add / update Delete
Data Add / update Delete Menu access
Dataverse Add / update Menu access
Device Add / update Delete Menu access
Documents Add / update Delete Menu access
Events Add / update Delete Menu access
Experiments Add / update Delete Menu access
Facilities Add / update Delete Menu access
Factors Add / update Delete
Germplasm Add / update Delete Menu access
Groups Add / update Delete Menu access
Organizations Add / update Delete Menu access
Packages Menu access
Persons Add / update Menu access
Profiles Add / update Delete Menu access
D
Projects Add / update Delete Menu access
Provenances Add / update Delete Menu access
Scientific objects Add / update Delete Menu access
Users Add / update Delete
Variables Add / update Delete Menu access
Vocabulary Menu access

In this window, you can enter the name of the profile and select the different rights that users with this profile will have access to. There are three types of rights: **“Add/Modify”**, **“Delete”** and **“Menu Access”**. The **“Menu access”** permission gives access to the tab or sub-tab associated with the function, in this case (D) the **Profiles** sub-tab. The **“Add/Modify”** right corresponds to the addition of an item of the chosen type. In this case, the user can add or modify a profile. The user can delete an item linked to the feature with the **“Delete”** permission.

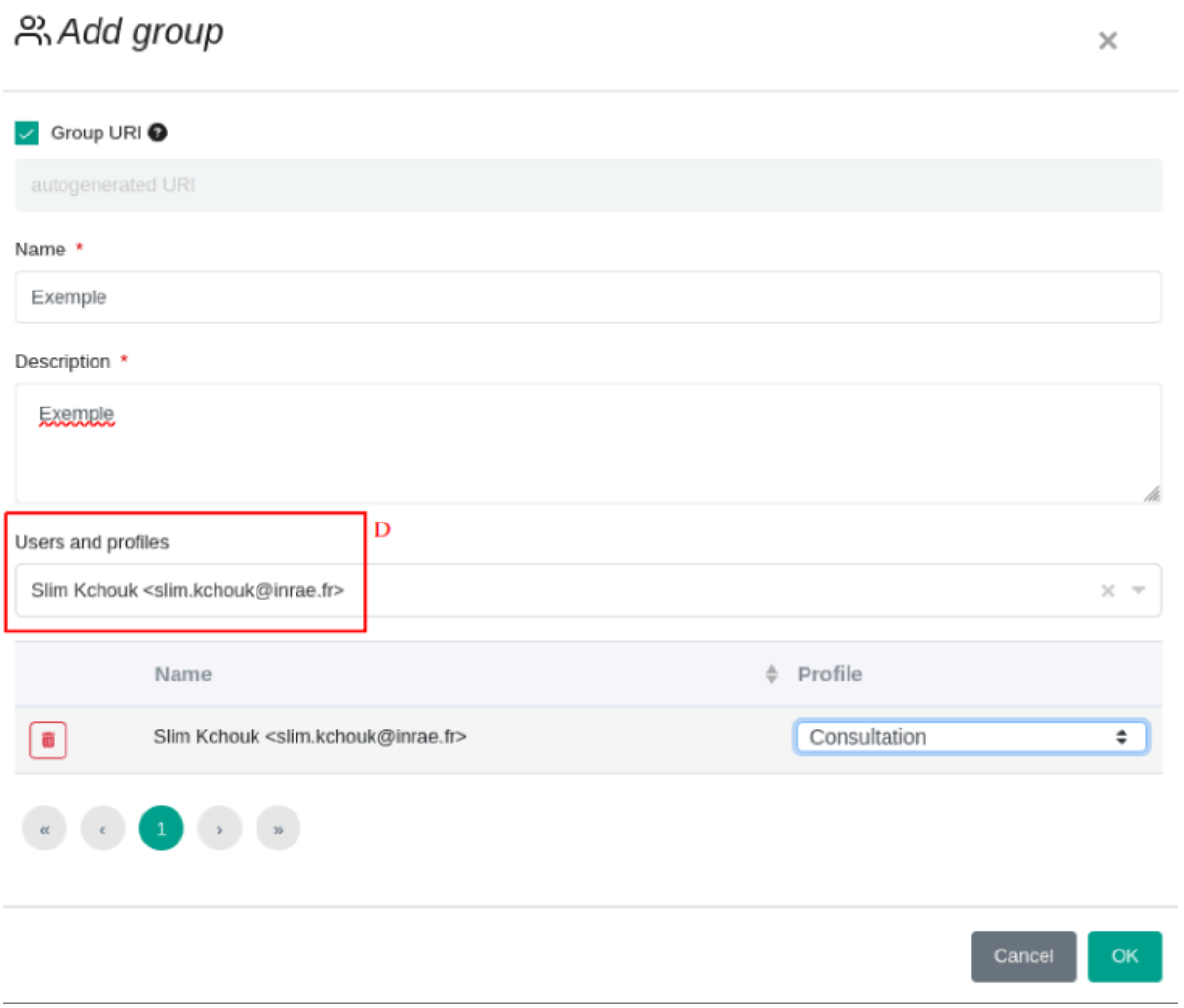
V.2 -I would like to add a user to a user group.

To use this feature, you must first declare all the users and user profiles you wish to add to the group. These functions are explained here.

Once a user group has been created, it is possible to associate one or more users with it. This makes it possible to manage the access and the roles of each user in experiments.



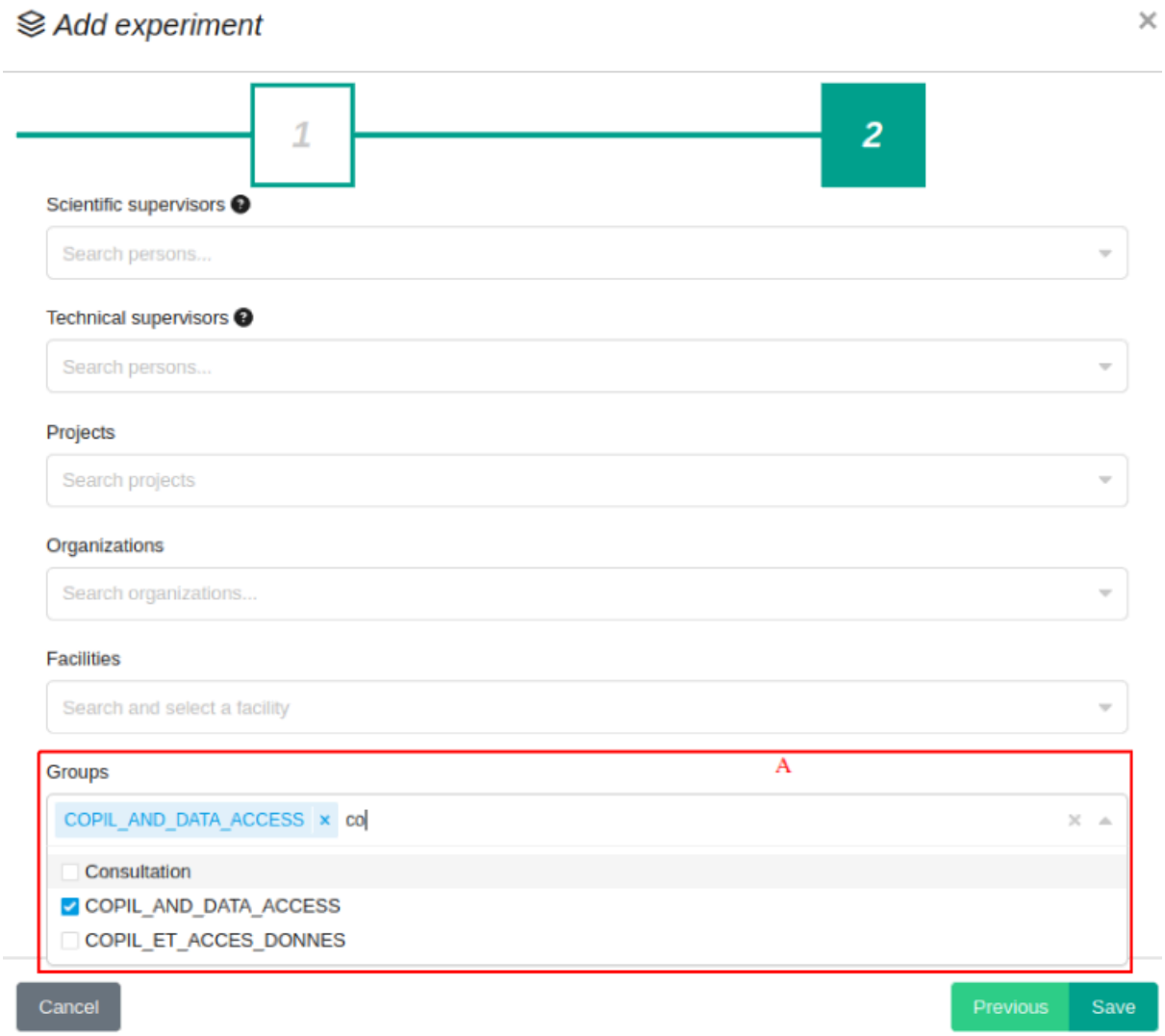
To create a group, go to the **Administration** tab (A) and then to the **Groups** sub-tab (B). Once you have done this, you will have access to the different groups that have already been created. To create a group press + Add group (C). You will see the following window:



In this window, you can enter the name of the group and its description. To add users to the group, you can search for them in the *Users and profiles* list (D). You can then manage the rights of each user by assigning them a specific profile.

V.3 - I would like to choose who has access to my data.

When an experiment is created, access to the experiment data is assigned to one or more user groups.



For example, here is the window that opens when you create an experiment. In the list of **Groups** (A) we can select one or more groups of users who will be allowed to access the data. **Access rights will therefore vary according to the group selected and the user profiles within the group.**

Access rights to an experiment can then be modified at the experiment level by deleting or adding a group. Alternatively, rights can be modified by modifying the user group itself, i.e. by adding and deleting users or modifying their profiles.

VI - Contacts :

If you encounter a problem when using an OpenSILEX instance, you can either contact us via this email address :opensilex-help@groupes.renater.fr or by logging on to ***mantis*** via this link

http://OpenSILEX.org/mantisbt/login_page.php. If you don't know how to use ***mantis***, you can find a short user guide at this address:https://nextcloud.inrae.fr/s/EZ87XNK3wqQ7mcN

VII - Appendixes :

VII.1- Example: device import template.

A	B	C
uri	type	rdfs:label
URI de l'équipement (auto-générée si vide) Obligatoire : non. Exemple : http://opensilex.org/id/device/rasperry_pi_4	URI du type d'équipement Obligatoire : non. Exemple : vocabulary:SensingDevice	Nom de la propriété : Type de donnée : Te Description de la pro Obligatoire : oui Exemple : Opensilex
	vocabulary:Tensiometer	Tensio_01
	vocabulary:Tensiometer	Tensio_02
	vocabulary:Tensiometer	Tensio_03

D	E	F	G	H
vocabulary:hasMode	vocabulary:removal	vocabulary:hasSeria	vocabulary:startUp	vocabulary:hasBrand
Nom de la propriété : Type de donnée : Te Description de la pro Obligatoire : non Exemple : Opensilex	Nom de la propriété : Date Type de donnée : Date Description de la propriété Obligatoire : non Exemple : 2022-01-01	Nom de la propriété : Type de donnée : Te Description de la pro Obligatoire : non Exemple : Opensilex	Nom de la propriété Type de donnée : D Description de la pr Obligatoire : non Exemple : 2022-01-	Nom de la propriété : Type de donnée : Tex Description de la prop Obligatoire : non Exemple : Opensilex
Withings_heartbeate	2023-12-31	LPmFeACQ	2023-01-01	Phillips
Withings_heartbeate	2023-12-31	2gGdvs3a	2023-01-01	Phillips
Withings_heartbeate	2023-12-31	dt7pSWuB	2023-01-01	Phillips

I	J
rdfs:comment	vocabulary:measures
Nom de la propriété : Description Type de donnée : Texte court Description de la propriété : Obligatoire : non Exemple : Opensilex	Nom de la propriété : mesure Type de donnée : Variable (URI) Description de la propriété : Variable mesurée par l'appareil Obligatoire : non Cette colonne peut être présente plusieurs fois pour définir plusieurs val
Damaged and repaired the 2022-03-23	http://phenome.inrae.fr/id/variable/air_humidity
	http://phenome.inrae.fr/id/variable/air_humidity
	http://phenome.inrae.fr/id/variable/air_humidity

K	L
vocabulary:personInCharge Nom de la propriété : responsable Type de donnée : Description de la propriété : Personne responsable de l'appareil Obligatoire : non	
opensilex-sandbox:id/user/guest.opensilex/Person	

VII.2 -Example: Information about data in JSON format.

Unset

Data


```
{
 "uri": "opensilex-sandbox:id/data/fe4e263b-afb1-4674-9897-16459af93562",
 "date": "2023-05-02T11:00:00.000Z",
 "target": "opensilex-sandbox:id/scientific-object/so-plot_f2",
 "variable":
"opensilex-sandbox:id/variable/air_humidity_instant15minmeasurement_percenta
ge",
 "value": 62,
 "confidence": null,
 "provenance": {
  "uri": "test:provenance/standard_provenance",
  "prov_used": null,
  "prov_was_associated_with": [
   {
    "uri": "opensilex-sandbox:id/device/station_z124",
    "rdf_type": "vocabulary:SensingDevice"
   }
  ],
  "settings": null,
  "experiments": [
   "opensilex-sandbox:id/experiment/agivoltaique_lusignan_1"
  ]
 },
 "metadata": null,
 "raw_data": null
}
```


Provenance


```
{
 "uri": "test:provenance/standard_provenance",
 "name": "standard_provenance",
 "description": "This provenance is used when there is no need to describe a
specific provenance",
 "prov_activity": [
  {
   "rdf_type": "vocabulary:MeasuresAcquisition",
   "uri": null,
   "start_date": null,
   "end_date": null,
   "settings": null
```

```
  }
 ],
 "prov_agent": []
}
```