User Manual GET-IT

A short guide to instal & use GET-IT.

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What is the Geoinformation Enabling ToolkIT starterkit® ?

- GET-IT is a open-source software suite that allows you to easily share **maps**, **measurements**, and **sensors** with simple actions .
- The suite is the first open-source collaborative effort toward the integration of traditional geographic information with observational data.
  This is achieved by coupling GeoNode with the SOS implementation by 52ºNorth and with components developed from scratch in the context of RITMARE, primarily for addressing data visualisation and metadata editing (EDI).

How to install GET-IT

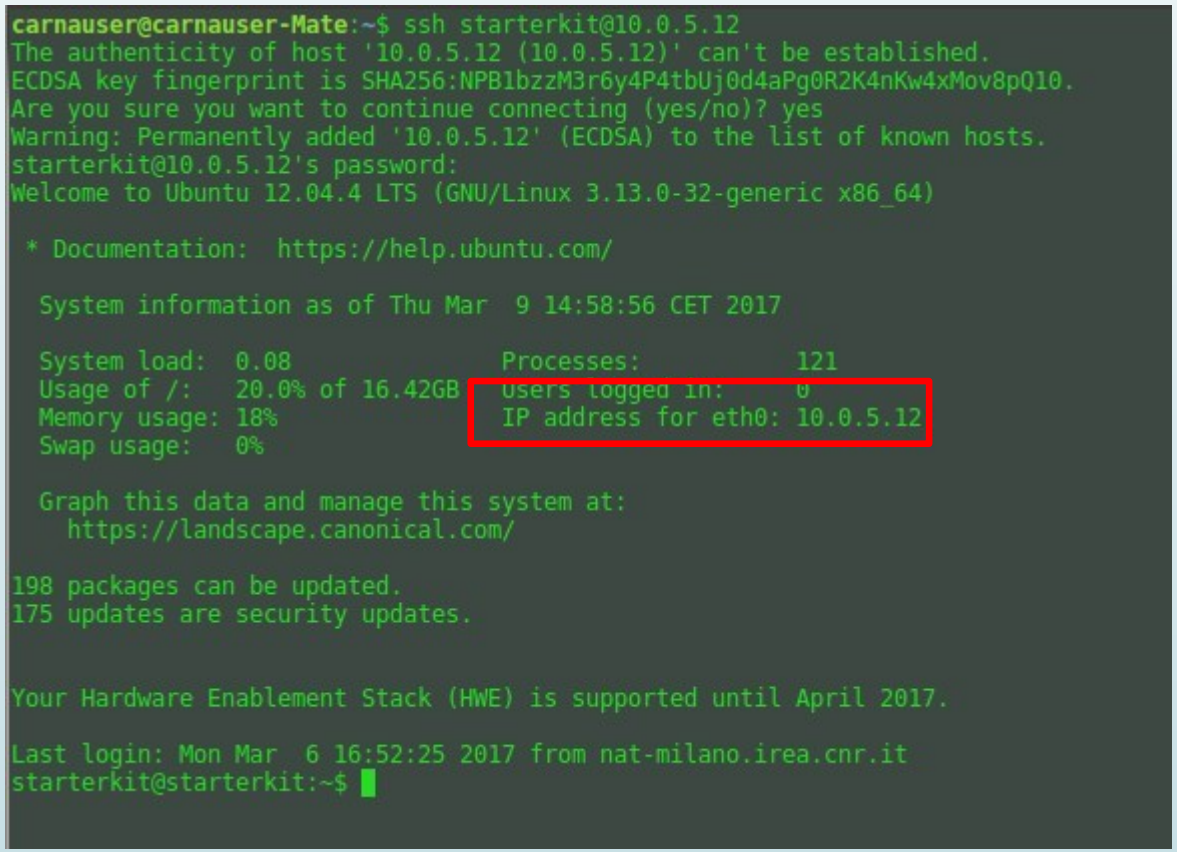
- GET-IT is a complex software suite.
  It is not easy to install from scratch, that’s the reason why we have prepared a Virtual machine.
- You can dowload it from this link :
  HERE
- The format of the virtual machine is a Virtual Machine Disk in the VMWare format.
  If you need a different format, or you have only a VMWare Player, we provide also the OVF file.
  - You can dowload it from this link :
    HERE

VM System requirements

- RAM: 6 GB minimum, better 8 GB
- CPU number: 1CPU 4 core
- HDisk capacity: virtual machine occupy 30 GB
- hardware 64-bit is recommended

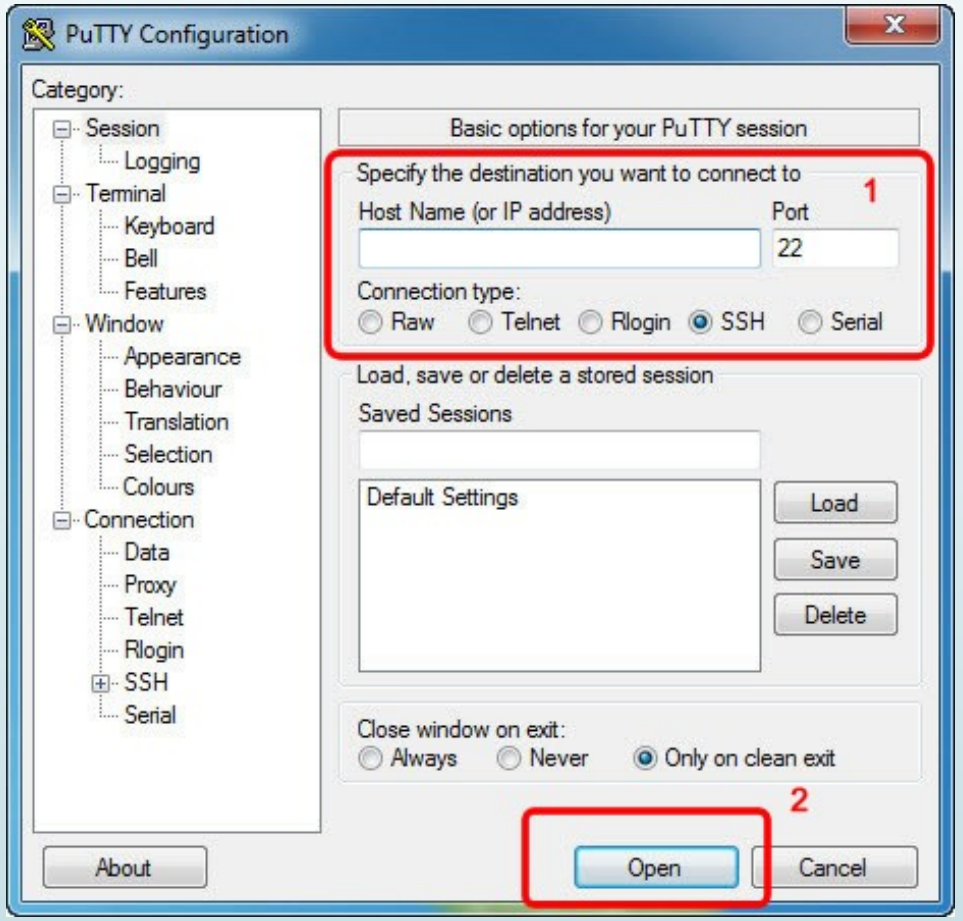
GET-IT VM credential s

- In order to access to GET-IT for the first time use this credentials :
- USER NAME : *starterkit*
- PASSWORD : *:;sos14-*
- NOTE : By default the SSH connection is enabled.



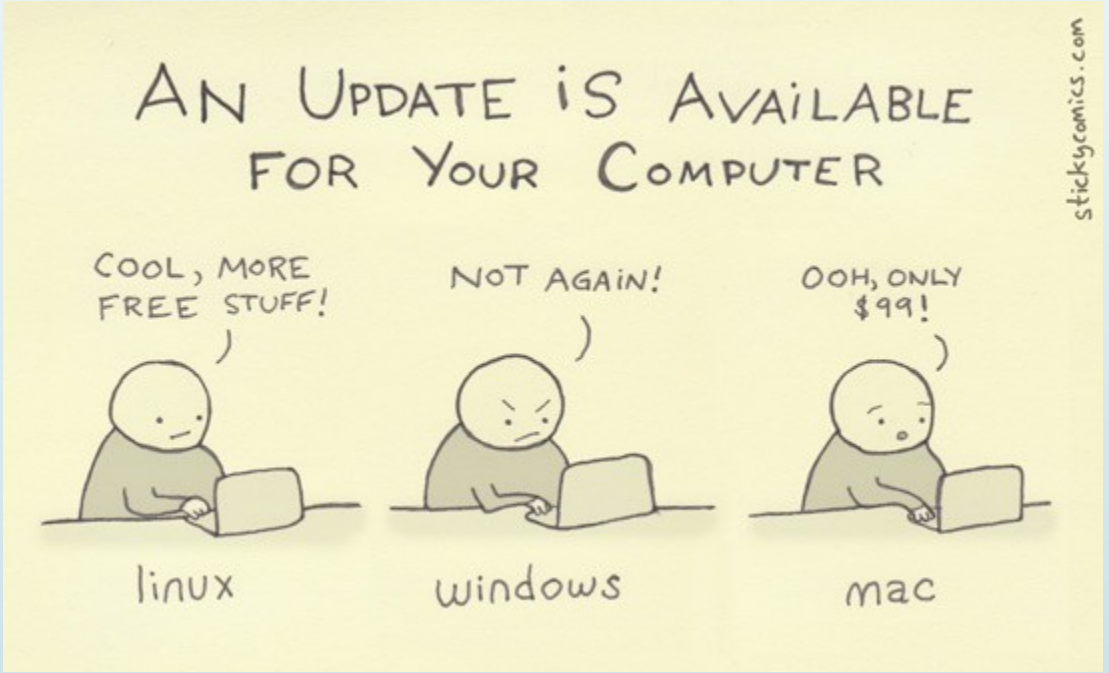
How to connect

- Windows
  - Download Putty from HERE
    Just run the exe file.
    No installation is needed.
    1. Insert your ip in the Hosts field and select SSH.
    2. Press Open
- Linux & Unix
  - Just type in a terminal :
    ssh starterkit@[yourip]
    i.e.
    ssh starterkit@10.0.5.2



FIRST THING TO DO : UPDATE

- Yes it is boring and It’ll take a lot of time but you need to do it.
- For security reason
- To make Get-IT Work!



UPDATE step 1

- Connect to the VM using SSH protocol.
  In windows you can use putty.

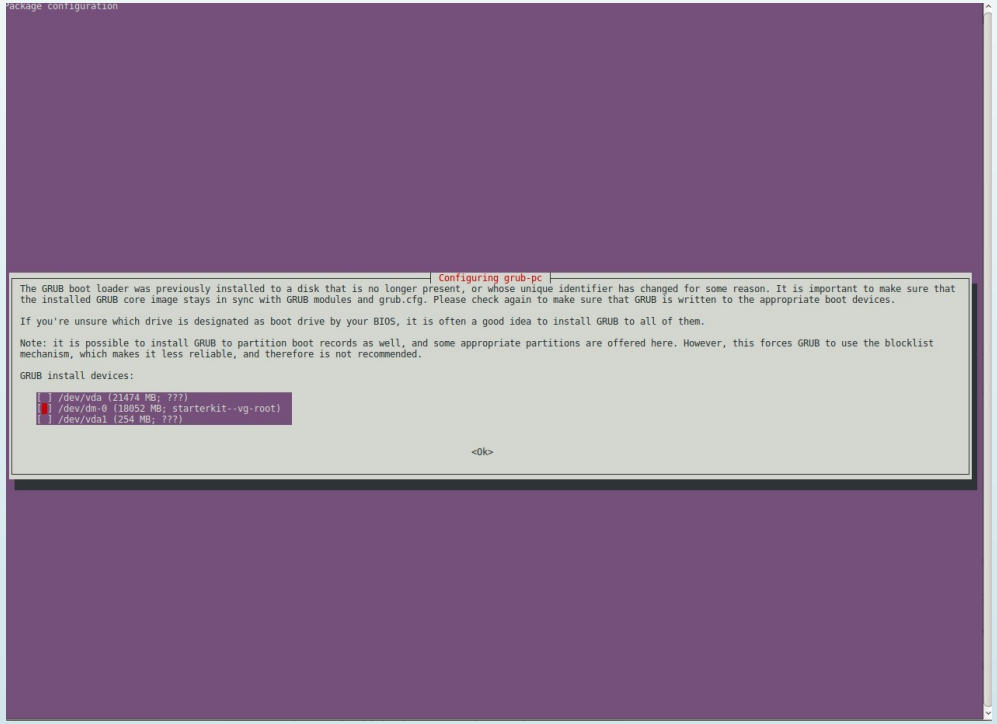
- *sudo aptitude update*
- *sudo aptitude full-upgrade*

This will take a looooooooong time, also with a fast internet connection.

During the update you'll face a screen like this.
It refers to the boot loader GRUB.

Pl

[ ] /dev/dm-0 (18052 MB; starterkit--vg-root)



UPDATE step 2

- UPDATE GET-IT : simply copy & paste those commands.
- *sudo pip install --upgrade --no-deps starterkit*
- *sudo pip install django-analytical==1.0.0 owslib==0.10.3*
- *sudo sk collectstatic --noinput -i externals -i node_modules -i SOSClient*
- *sudo sk migrate mdtools*
- *sudo /etc/init.d/apache2 reload*

UPDATE step 3

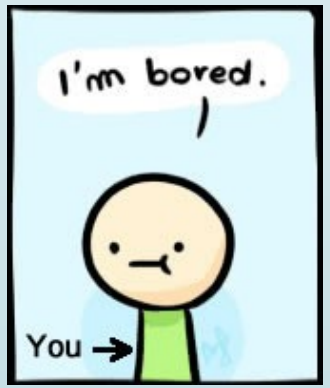
GeoServer

- Geoserver is a software written in JAVA so we need to update it. Copy & paste those commands.

- *sudo apt-get install python-software-properties*
- *sudo add-apt-repository ppa:webupd8team/java*
- *sudo apt-get update*
- *sudo apt-get install oracle-java6-installer*

UPDATE step 4 the last one.

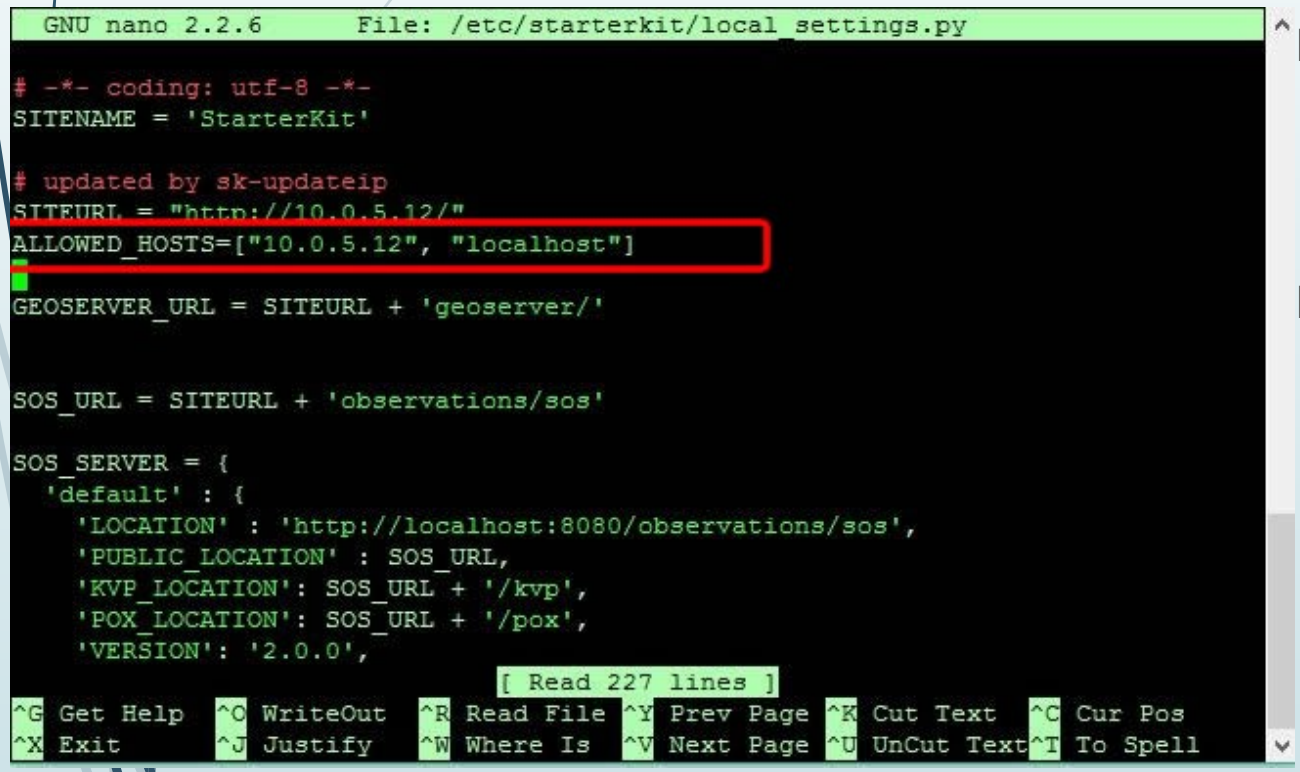
- JAI extensions.
  To improve perfomance we have to install Java Advanced Imaging.
  Copy & paste those commands.
- *sudo apt-get install libjai-core-java libjai-imageio-core-java*
- *sudo cp /usr/lib/jni/{libclib_jiio.so,libmlib_jai.so} /usr/lib/jvm/java-6-oracle/jre/lib/amd64/*
- *sudo cp /usr/share/java/{jai_core-1.1.4.jar,jai_codec-1.1.4.jar,jai_imageio-1.2.jar,mlibwrapper_jai-1.1.4.jar,clibwrapper_jiio-1.2.jar} /usr/share/geoserver/WEB-INF/lib/*
- *sudo /etc/init.d/tomcat7 restart*



THE DOMAIN NAME.
The right way...

- This is a mandatory step.
- Get-it needs a domain name to work in order to enable all its features.
- There are 2 ways
- The easy way, and the recommended one :
  Just type :
  sudo sk-updateip [domain name]
  in a shell, and insert your domain name (without [])
- Just for test you can insert the IP of the VM instead of the domain name.

THE DOMAIN NAME.
An alternative way.



- The wrong, but usefull way
  Edit the file /etc/starterkit/local_settings.py
  (i.e. sudo nano /etc/starterkit/local_settings.py)
- i.e. Add your domain in the array :

```
["10.0.5.12","mydomain.it","localhost"]
```

Fix background map problems. Step 1.

- After the upgrade something is changed.
  We need to fix some problem related to the tile maps.
- There are a lot of avaible maps but we have do disable some of them.
  With the same procedure we could also add other tiles.
- Edit the file :
  /etc/starterkit/local_settings.py
  (i.e. sudo nano /etc/starterkit/local_settings.py)
- Comment the lines as the example using #.

```
  "name":"naip",
  "group":"background",
  "visibility": False
# }, {
#   "source": {"ptype": "gxp_bingsource"},
#   "name": "AerialWithLabels",
#   "fixed": True,
#   "visibility": False,
#   "group":"background"
},{
  "source": {"ptype": "gxp_mapboxsource"},
},
```

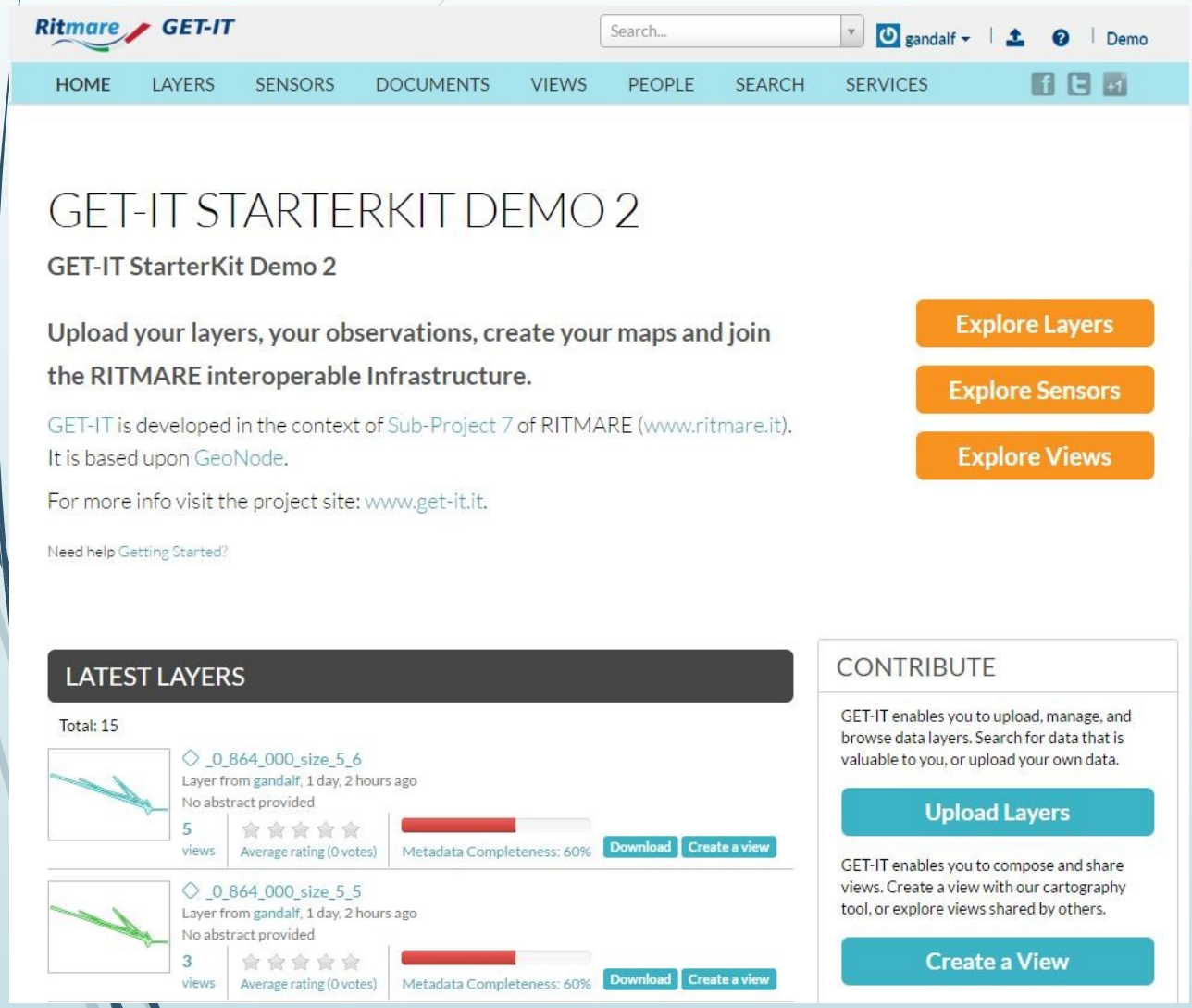
Fix background map problems. Step 2.

- Now launch the python console using this command : *sk shell_plus* and copy & the commands:

  from geonode.maps.models import MapLayer
  MapLayer.objects.filter(name=u'AerialWithLabels').delete()

- Reboot : *sudo reboot*
- That's it.

AT LAST GET-IT



- We have defined a domain name before, so type it in your browser. This is the get-it home page.
- We'll take a short overview on the
  - Layers
  - Sensor
  - Services

  pages.
- But first….

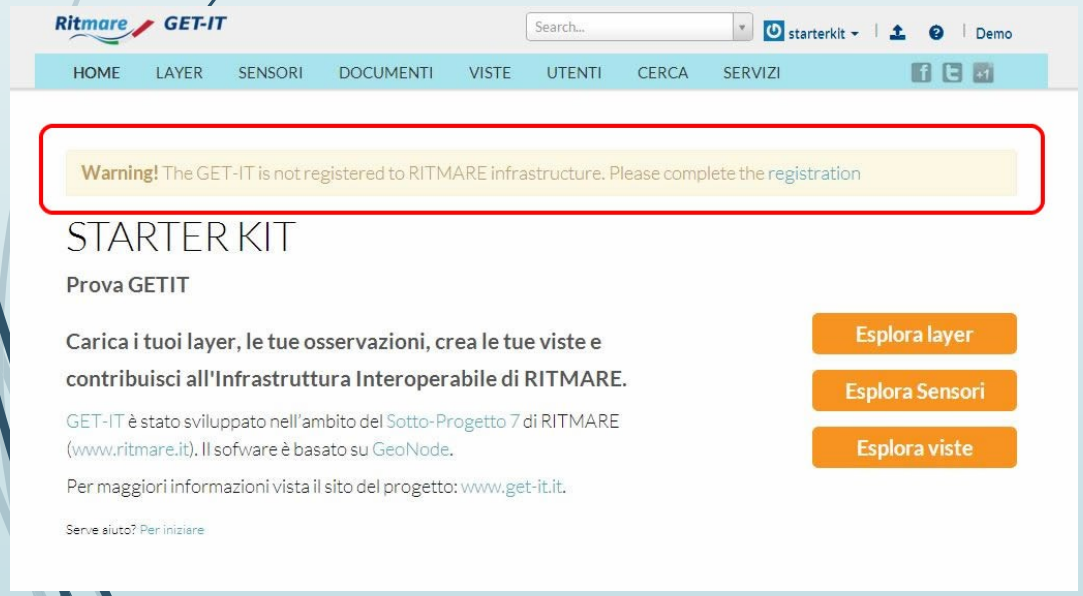
It is better to log in.

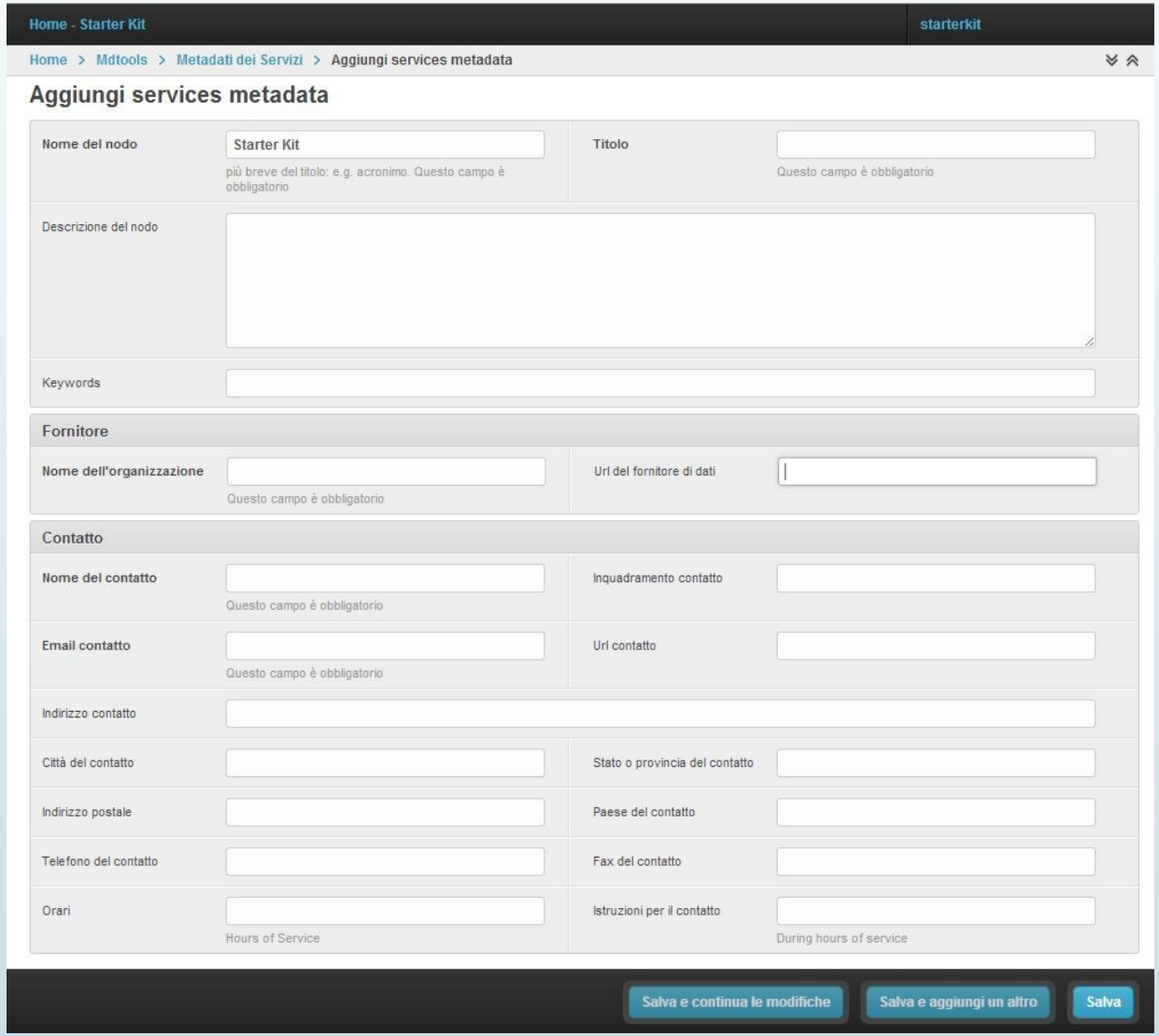
- To log in as the default user use this credentials :
- USER NAME : *starterkit*
- PASSWORD : *sk2014*

- *And...*

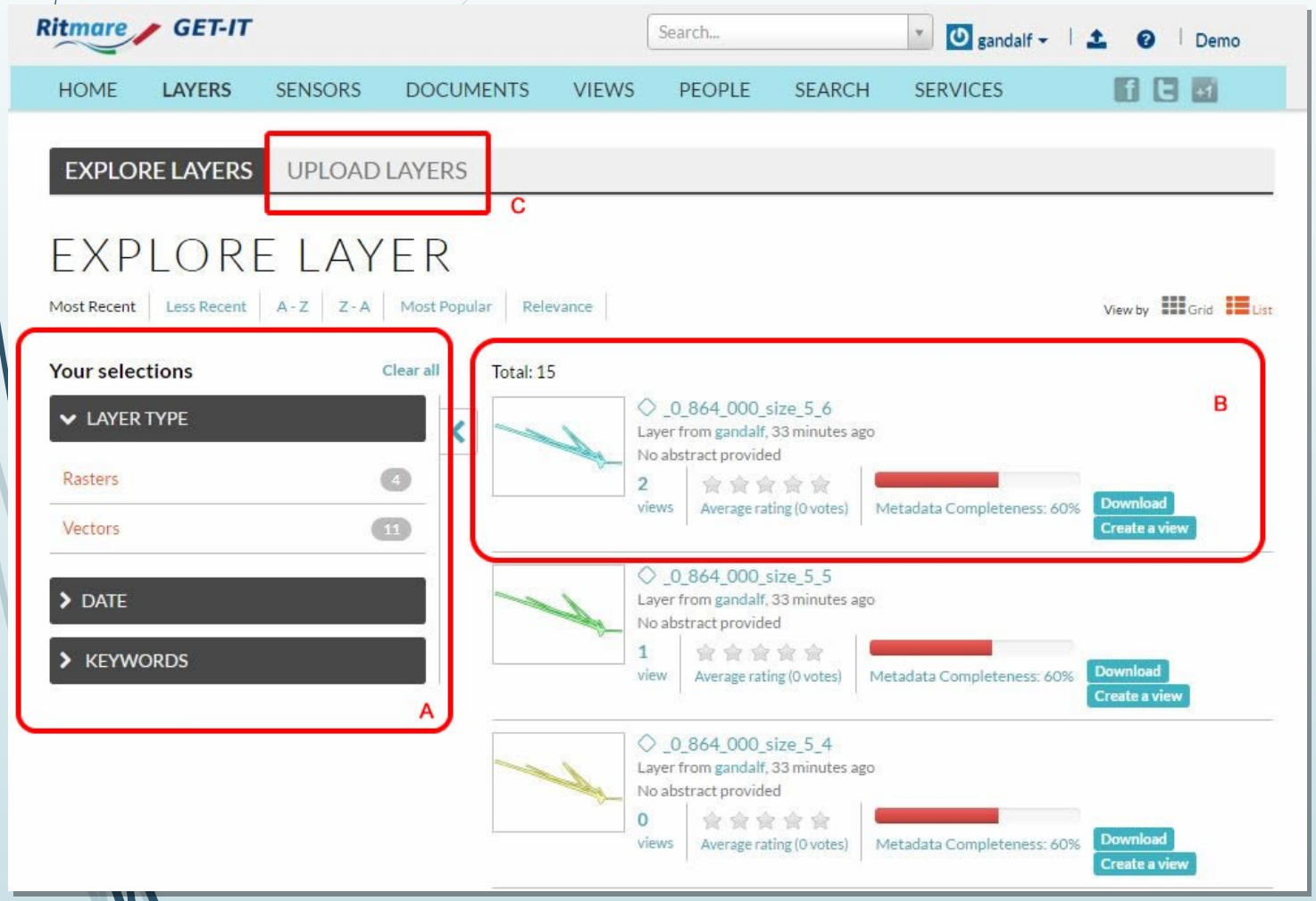
Register GET-IT

Once you have been logged in for the first time, it'll appear a Warning message.
Like in the image below.
Follow the link and fill the form.
Like in the image on the right.
Press the button «Save»
Reboot the VM.
Just type : sudo reboot





A short Overview : Layer page

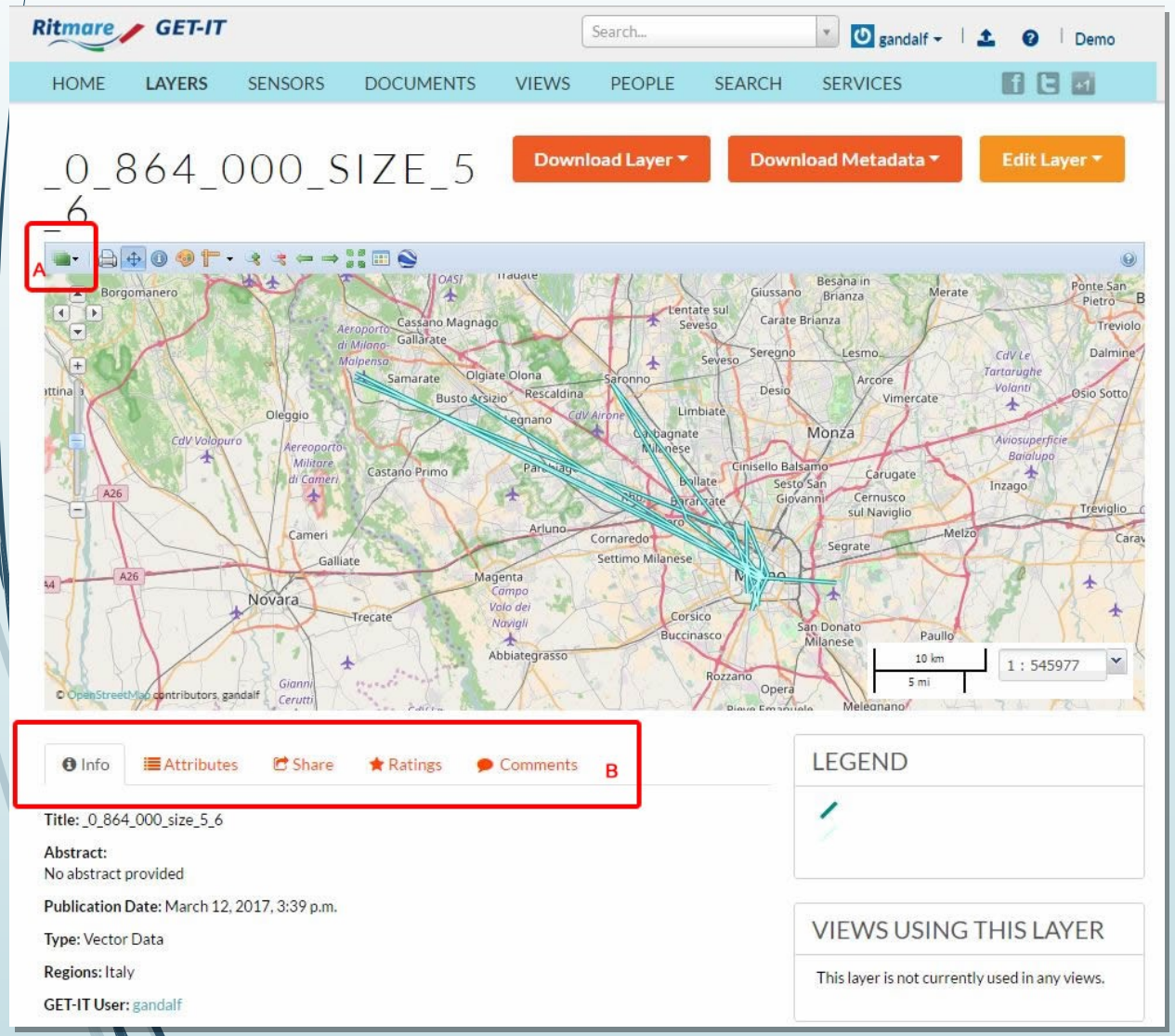


A. This section help you to search the layer yuo need.

B. This is the list view of the layers It is possible to select a grid view using the buttons on the top right.

C. This is the button to upload a new layer (vector or raster)

A short Overview : Layer view

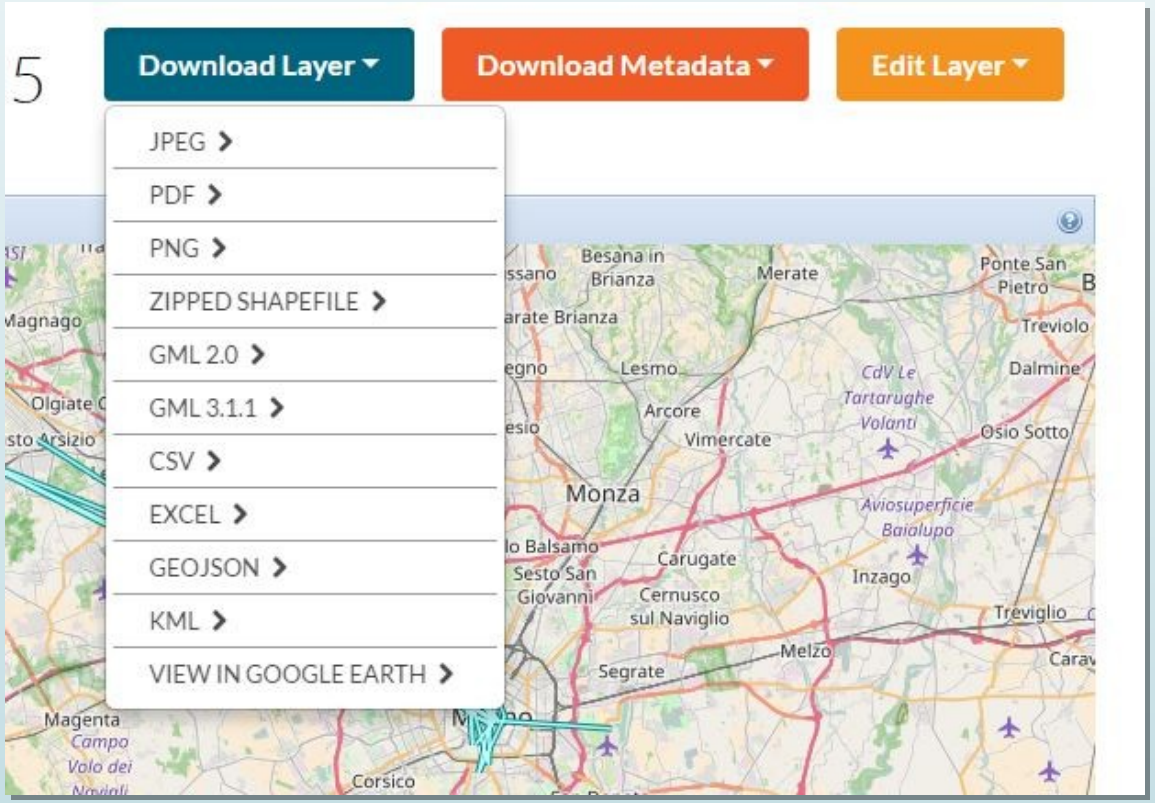


A. Here you can select the tile layer for the map

B. This is a menu to navigate in a short summary of the layer's metadata.

A short Overview : Layer view Download Layer.

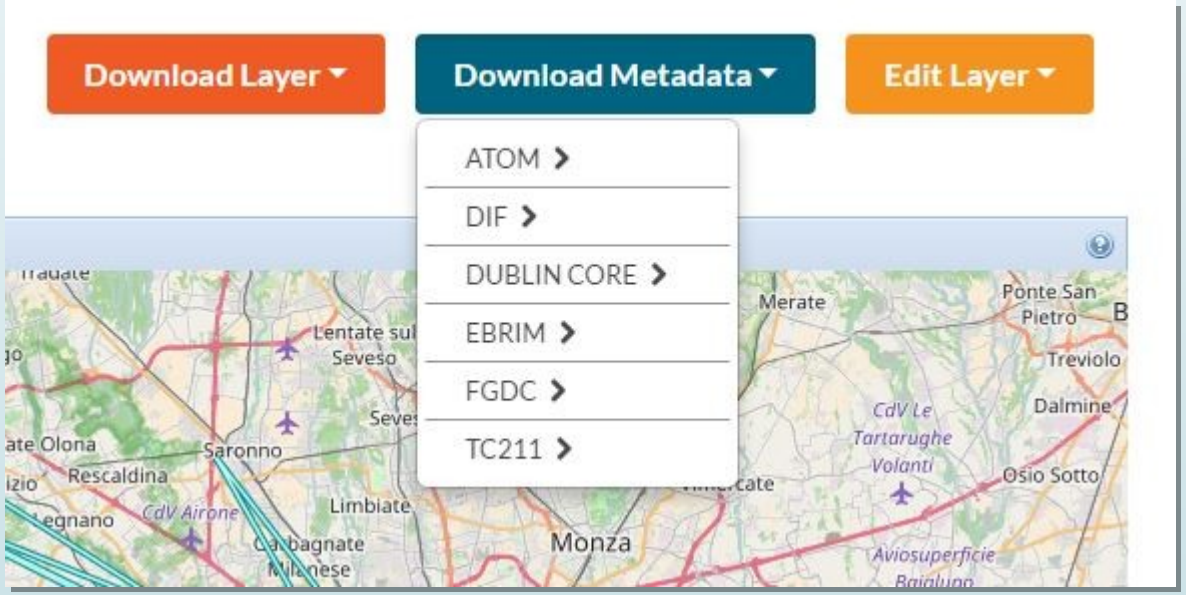
- In the upper right there is a voice for the layer dowload where you can select the output format.



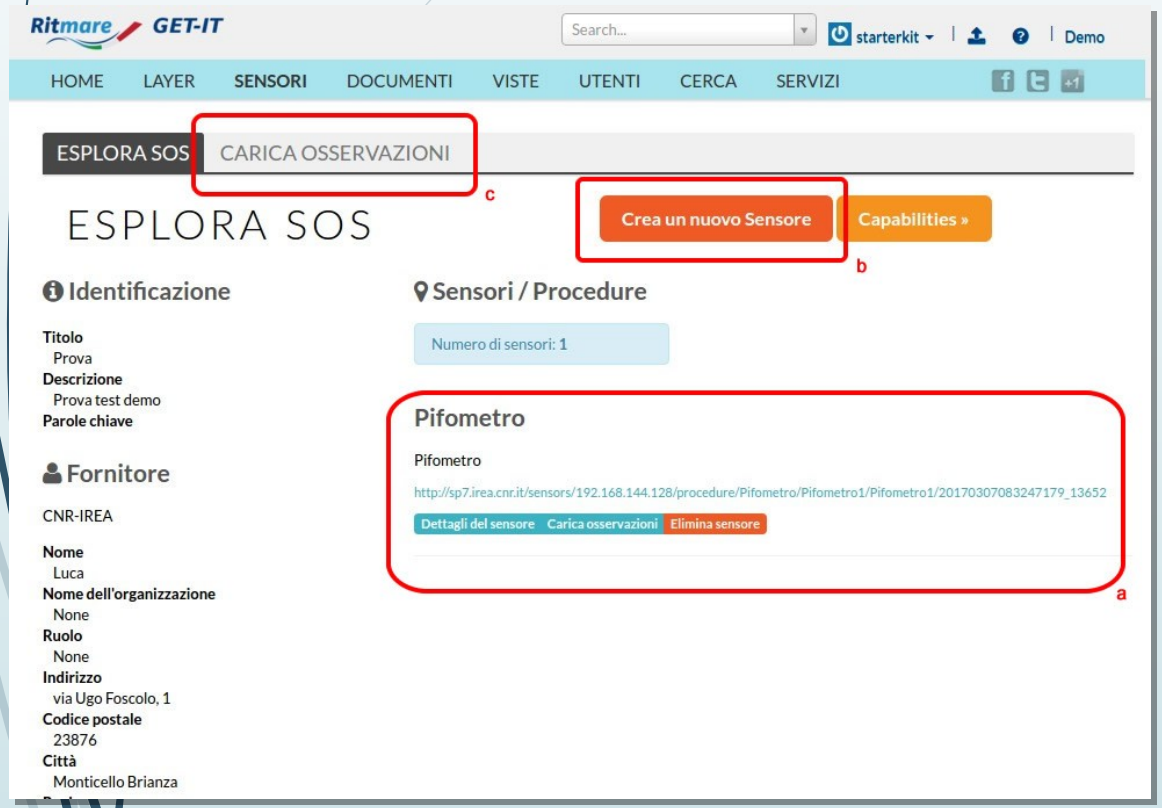
A short Overview : Layer view Download Layer.

- In the upper right there is a voice for the metadata dowload where you can select the output format.

- ATOM
- DIF
- DUBLIN CORE
- EBRIM
- FGDC
- TC211



A short Overview : Sensor page

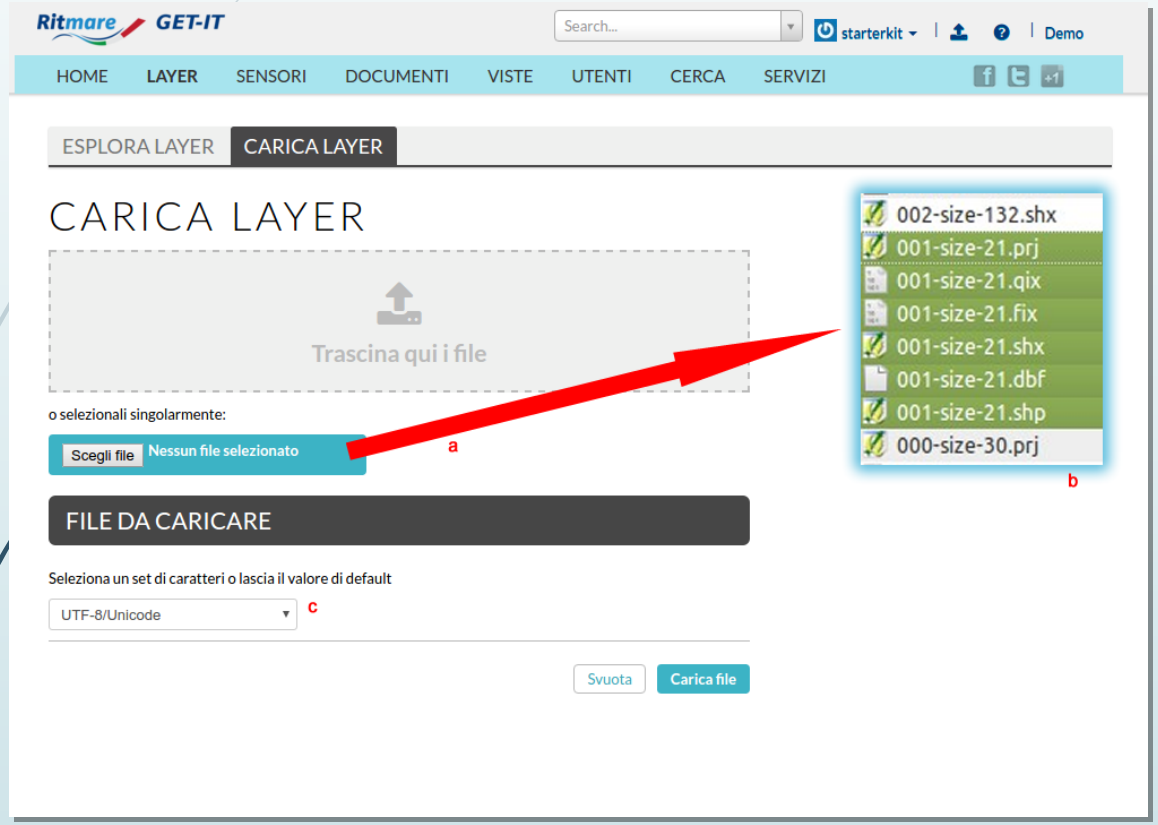


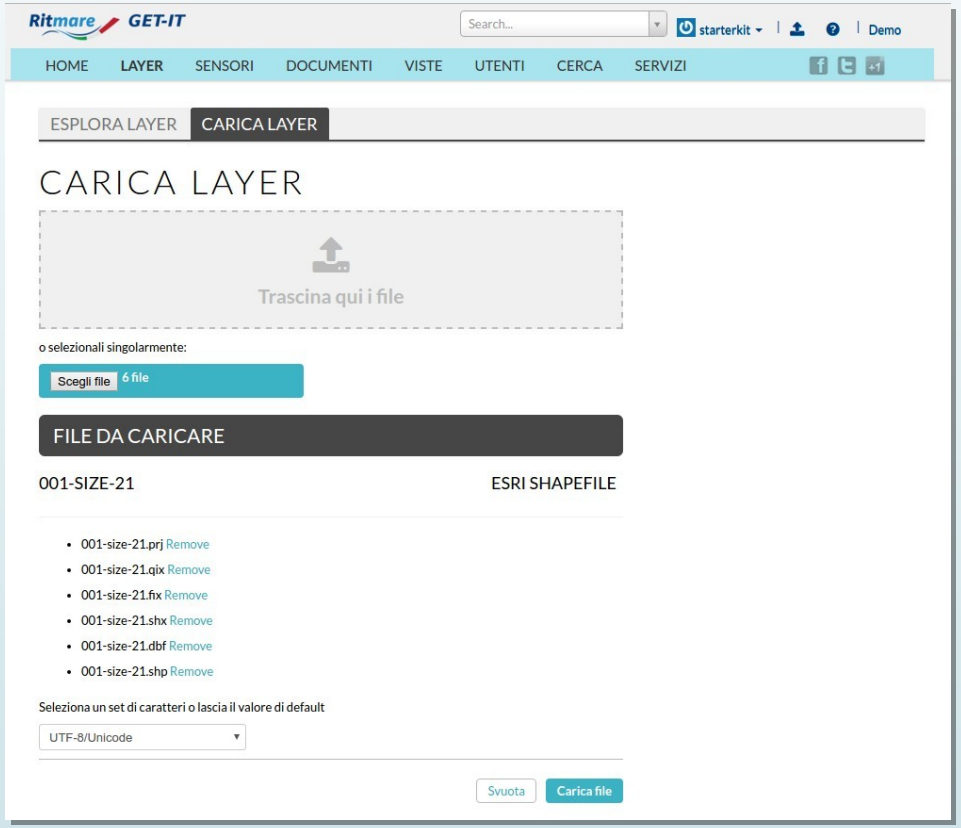
A. A list of the sensor have been already created.
   To upload an observation, first you have to create a Sensor's metadata.

B. The button to create the sensor's Metadata.

C. The button to upload an observation value of a sensor.

Example 1 : Upload a new Layer...

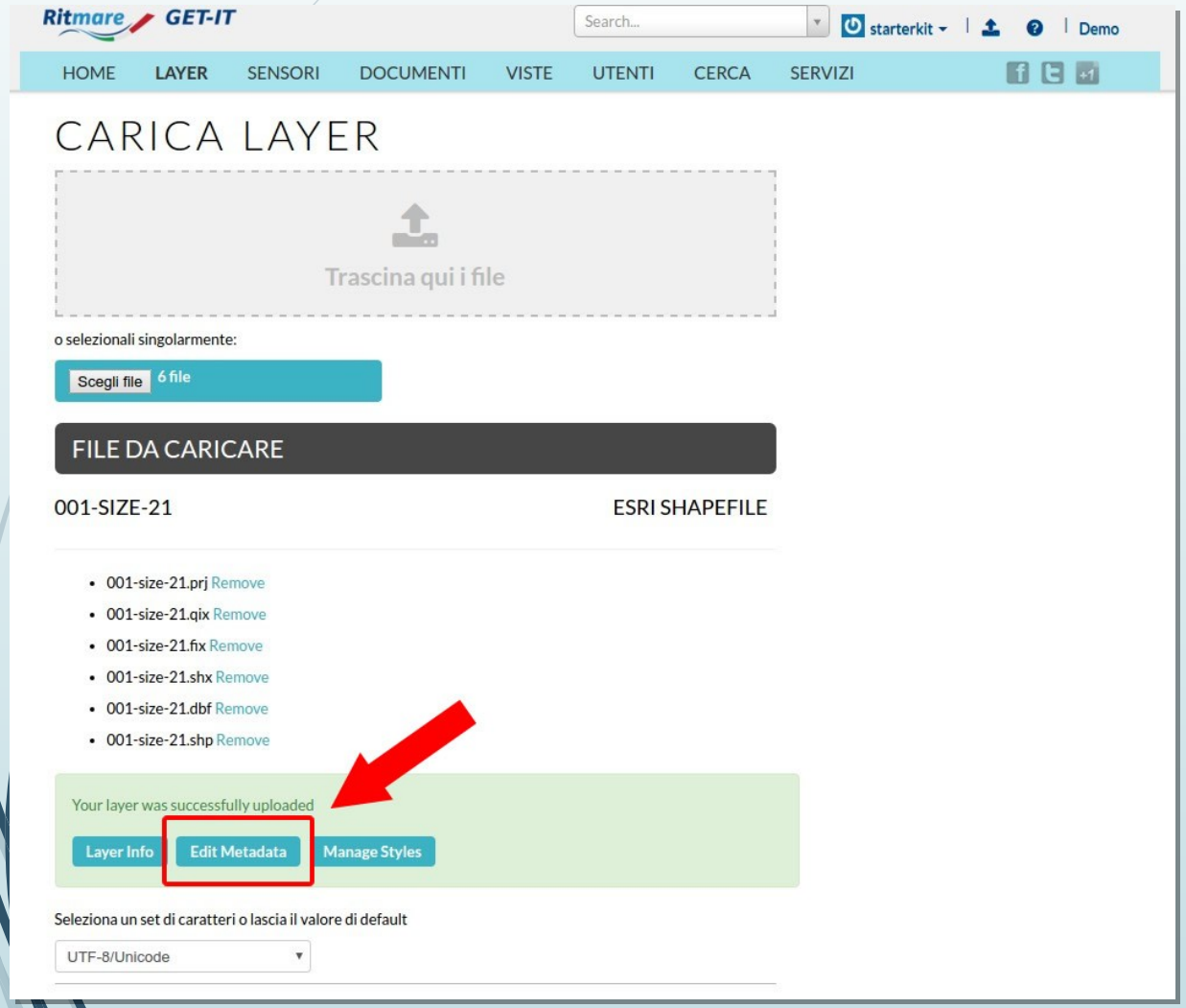




A. Select the shape files.
B. yes all the files!
C. Select the charset

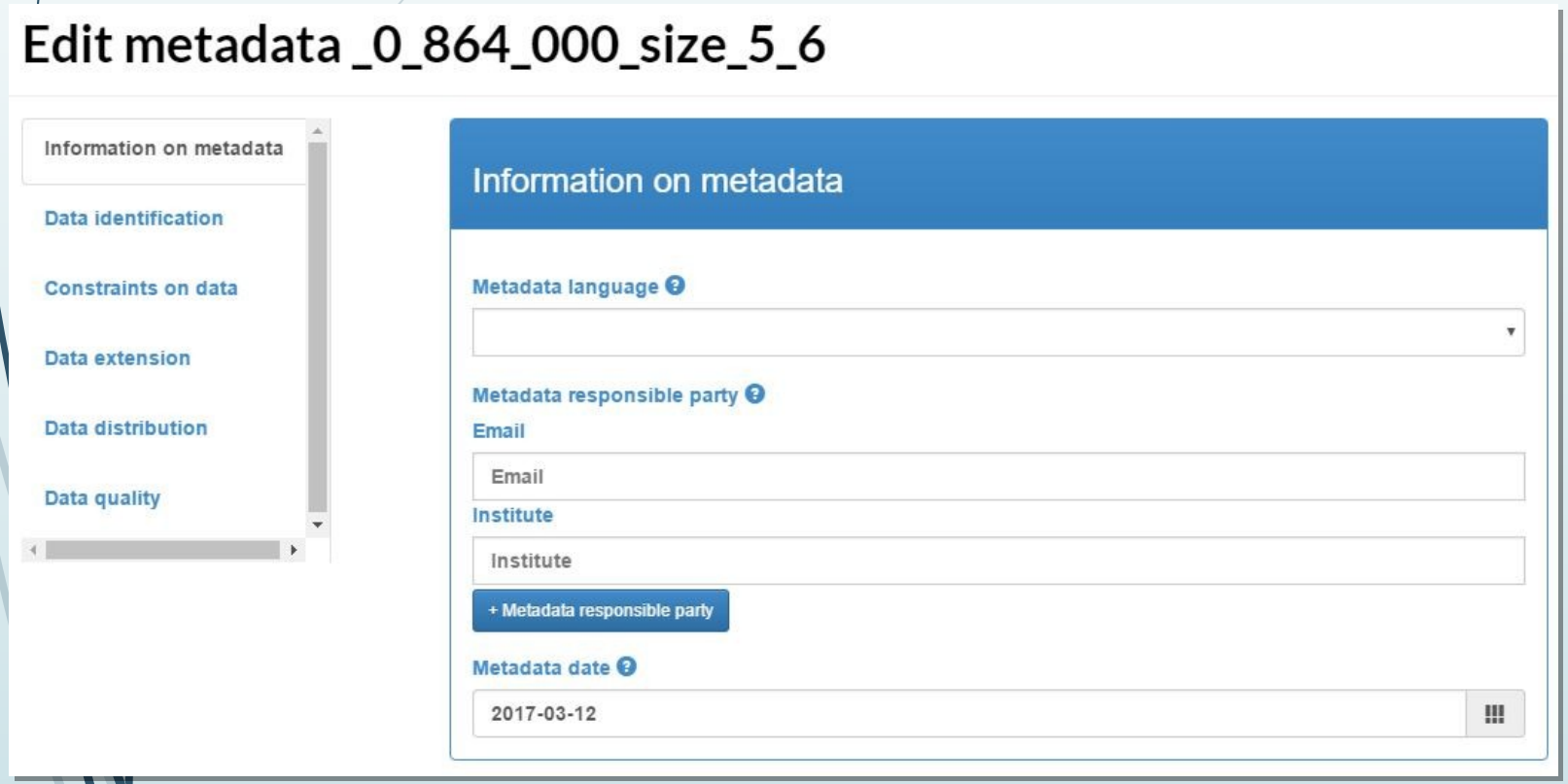
If there are no error messages
Press «Carica File» button.

Example 1 : Upload Ok!



If everything is ok... proceed by clicking Edit Metadata!

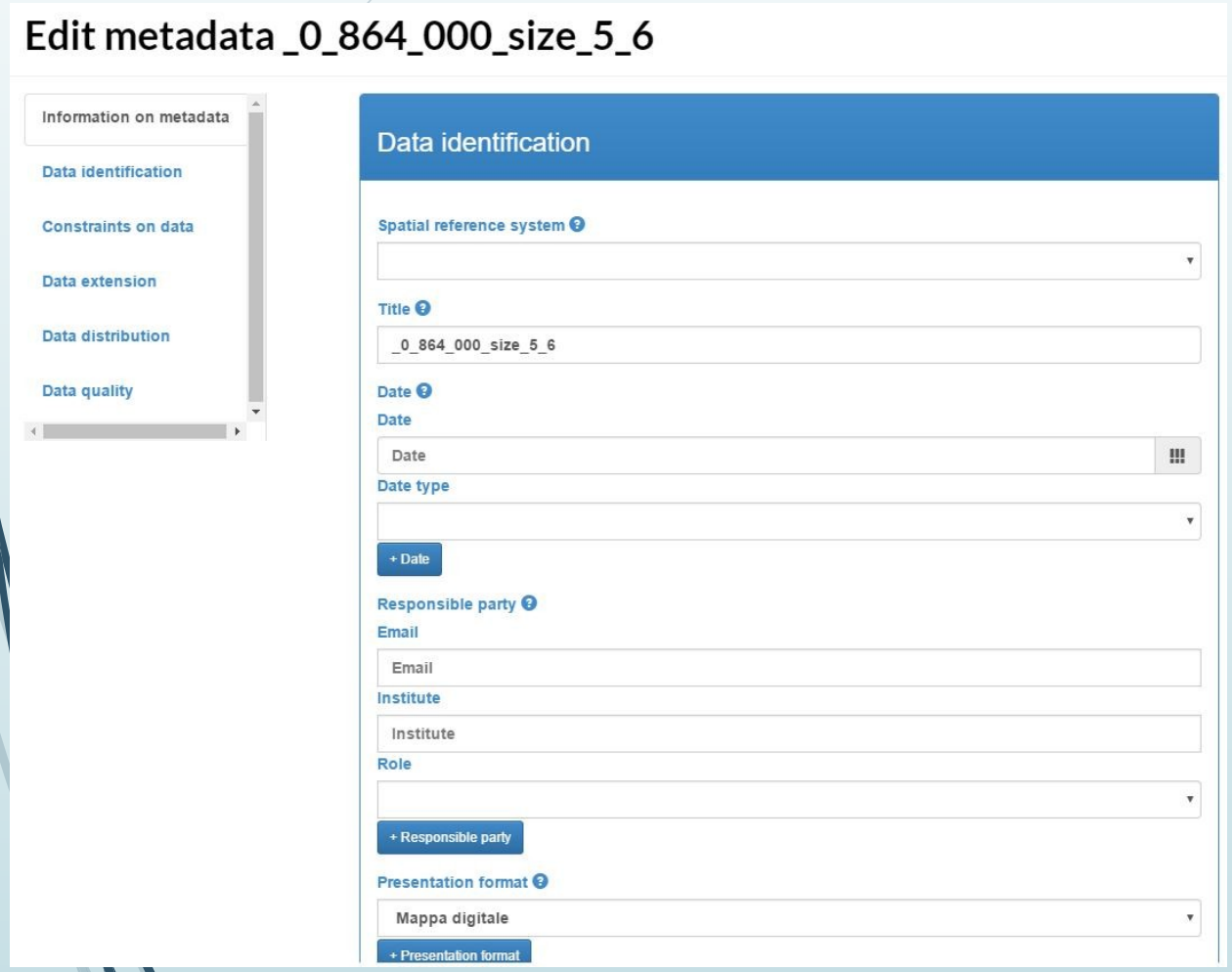
Example 1 : Edit Metadata! Information on Metadata



Person in charge for Metadata is a controlled field.
It checks the email in order to uniquely identify the person.
It fills also the «institution» field automatically because each person belongs to an «istitution».

In the next days I'll give you the link to the form to insert new persons and institutions to complete those kind of fields.

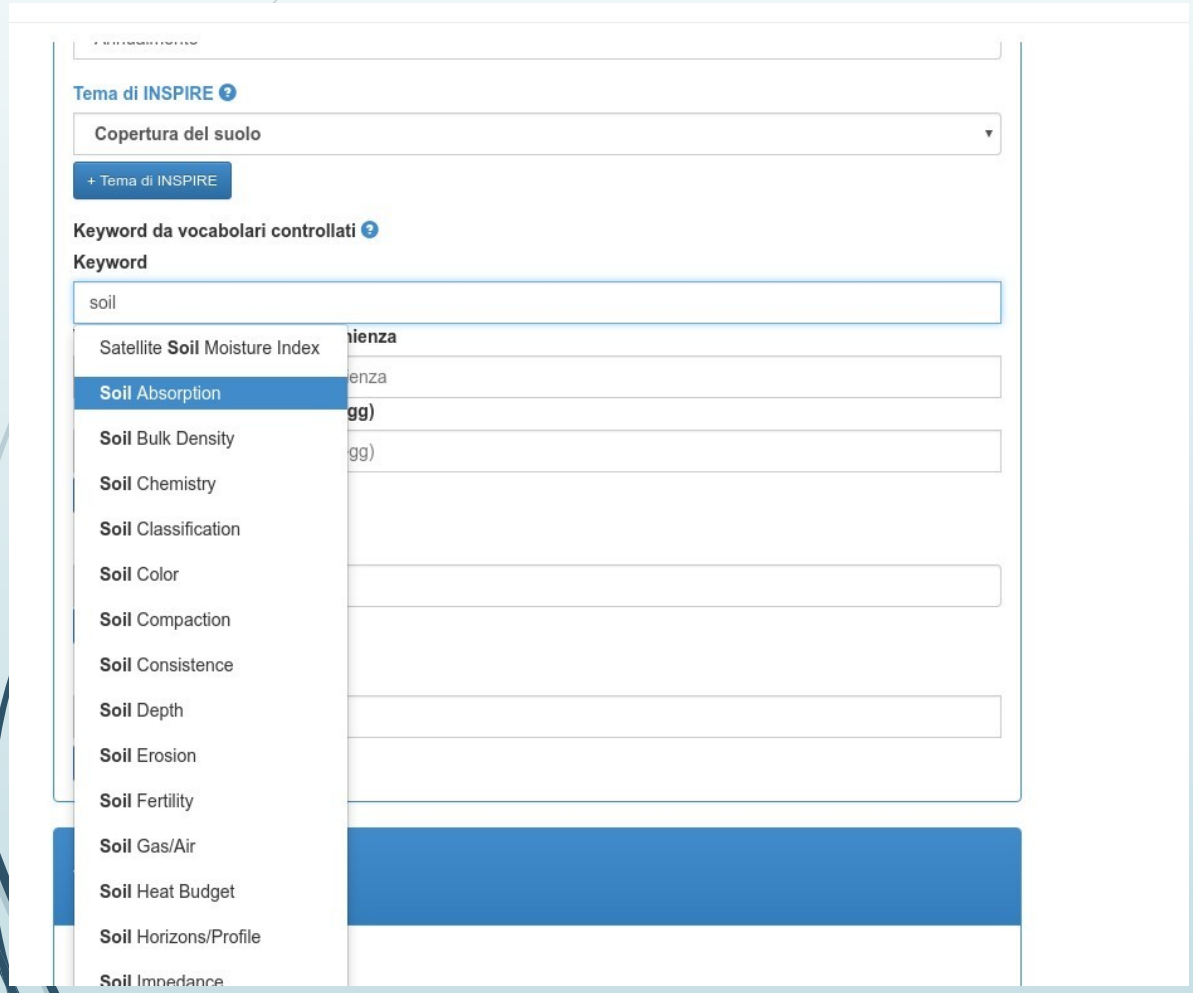
Example 1 : Edit Metadata!
Data Identification



Here you should selct the Spatial Reference System (SRS).

- WGS84 World Geodetic System 1984
- NAVD88 N. American Vertical Datum 1988
- ETRS89 European Terrestrial Reference
- And a lot more…

Example 1 : Edit Metadata
Controlled vocabulary

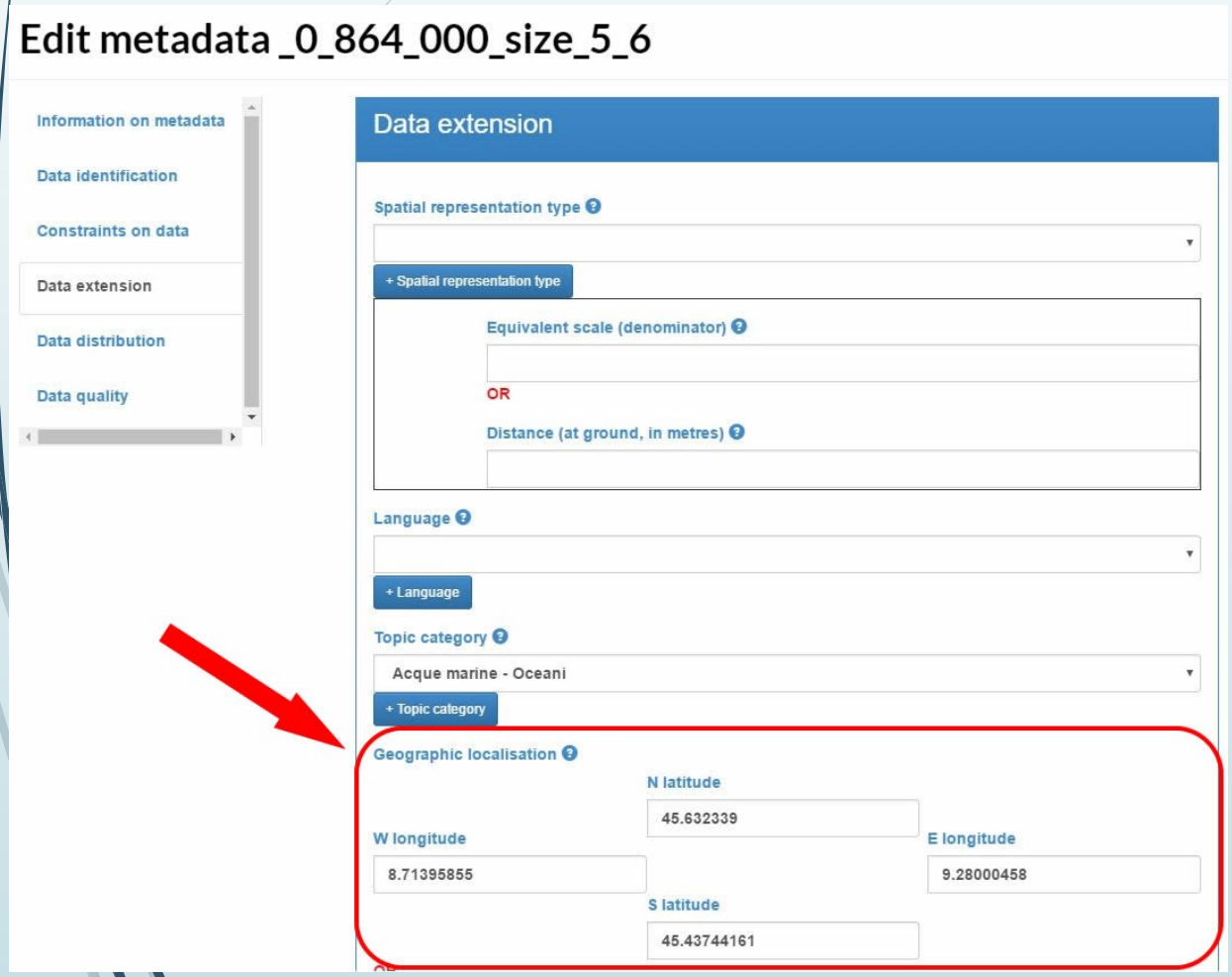


Here one of the form's autocompletion based on a Controlled vocabulary.
(i.e. for soil consumption shall we use FAO's AGROVOC Tesaurus ?)

Example 1 : Edit Metadata Constraints on Data

Here you shall set rules to use yuor data.
The licence type and the security level.

Example 1 : Edit Metadata Data Extension



As you can see from this picture, some of the Metadata fields have been already filled using the information retrived by the shape files.

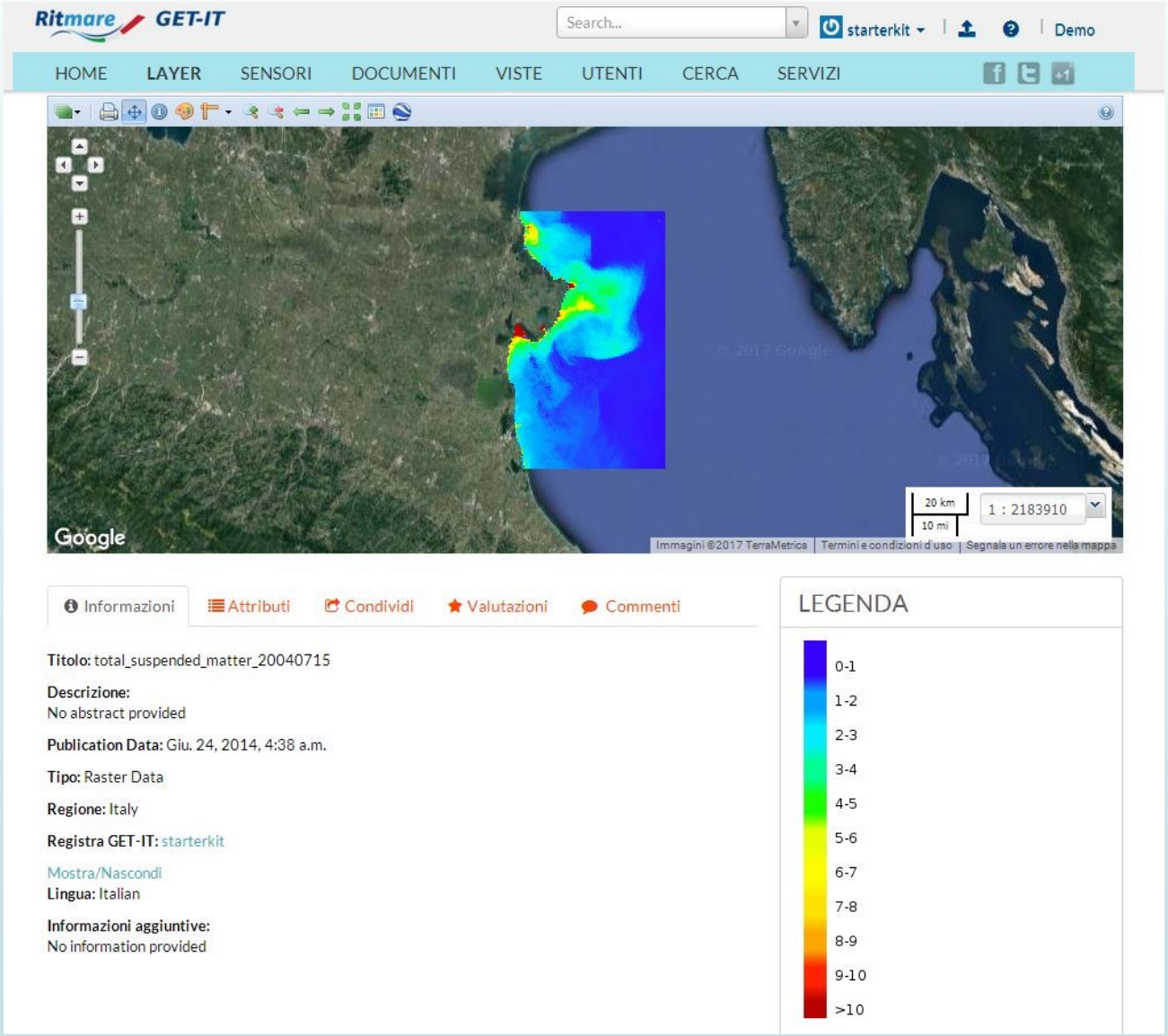
Example 1 : Edit Metadata
Data Distribution & Quality

We'll extend this RNDT Metadata with quality fields i.e. :

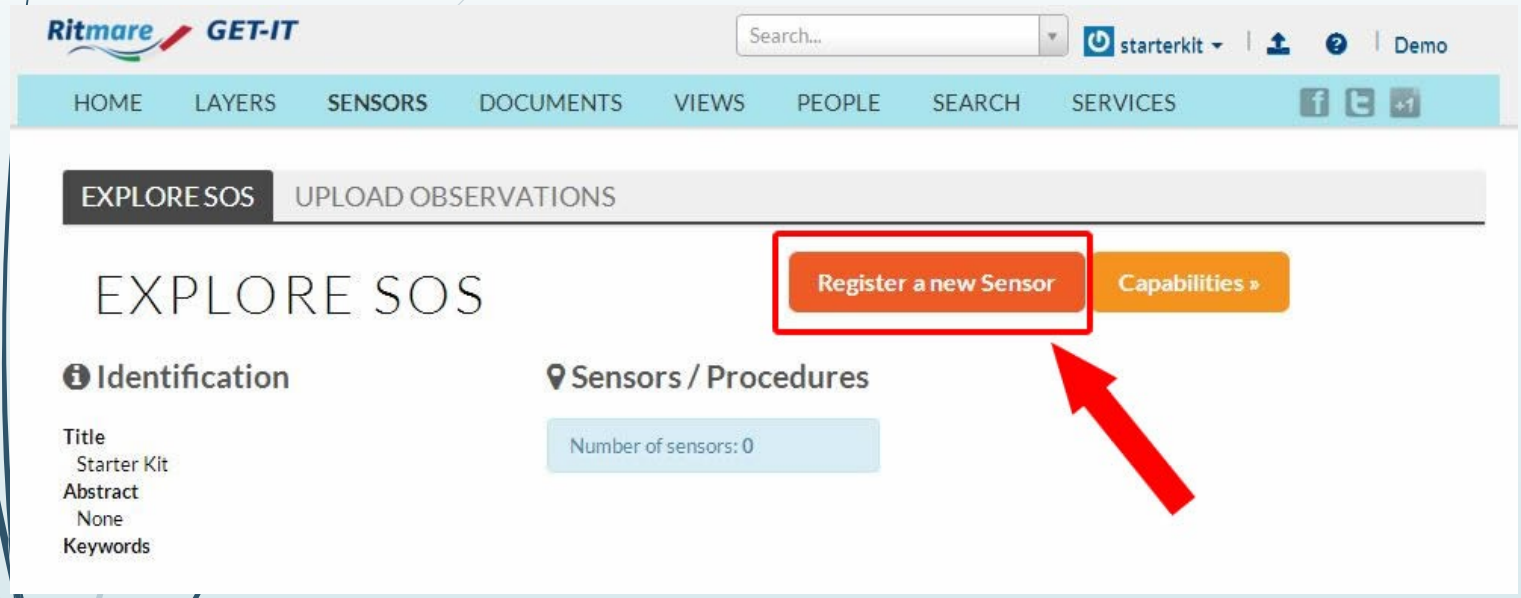
- Reliability of the source
- Time resolution (if it is a series)
- …

Please suggest us if you have other specific quality indicator to use for you aims.

Example 1 : A new Layer...FINISH!

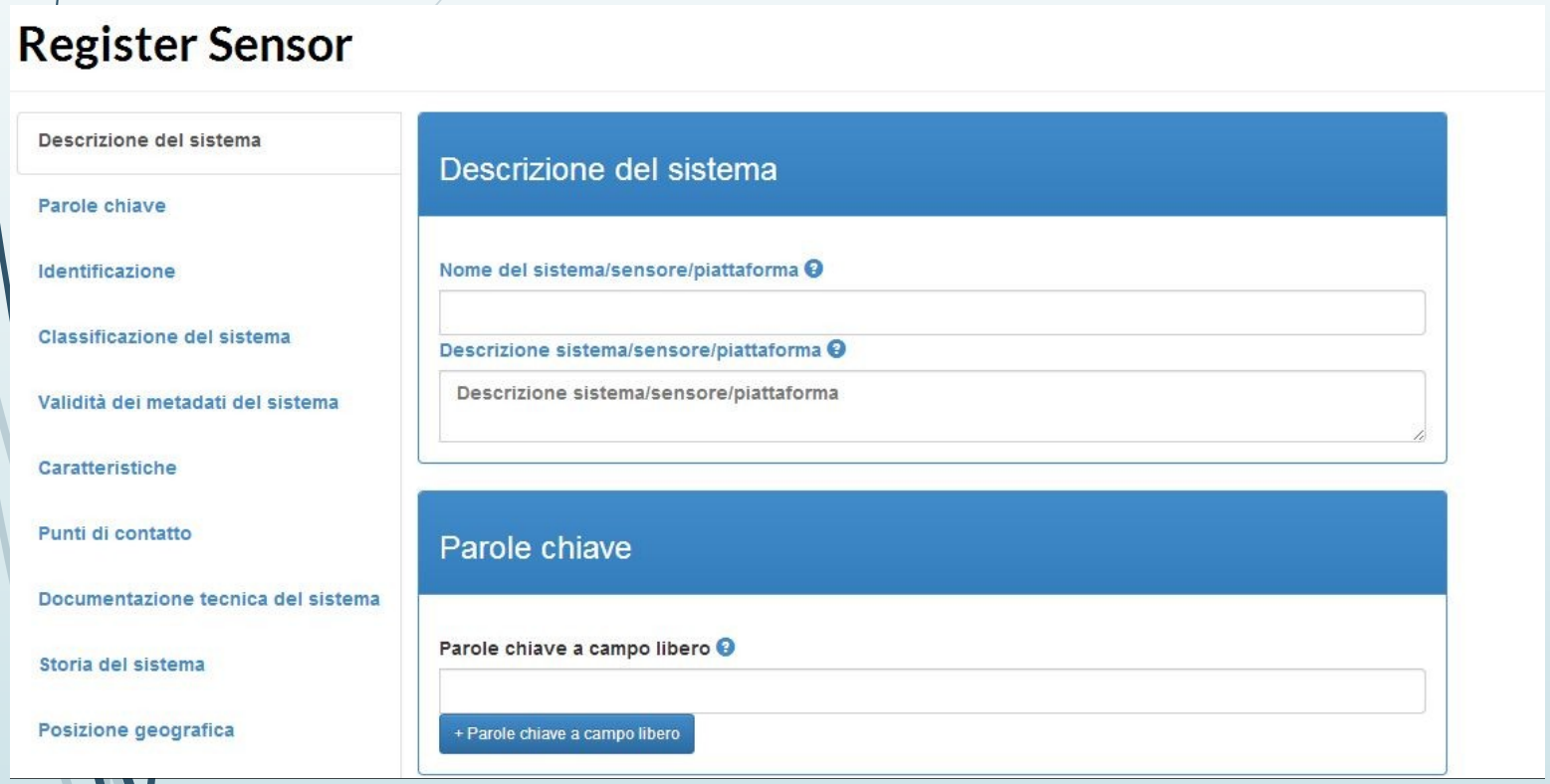


Example 2 : Register a new Sensor...



- In order to upload any observation you must create a sensor.
- In the Sensor Page click on

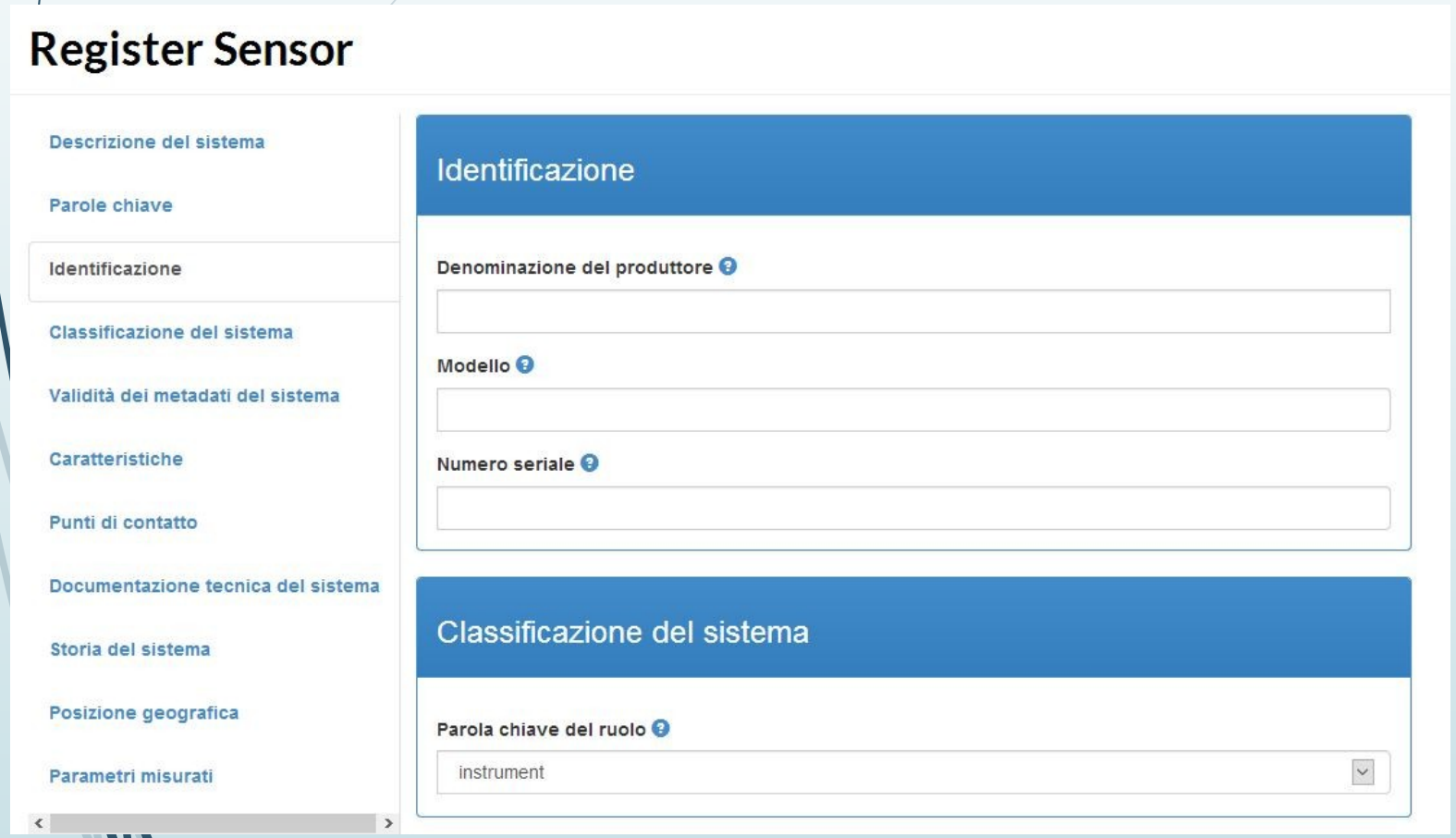
Example 2 : Register a new Sensor... Description of the system & Keywords



- Description of the system
  Here you define the sensor name and a short description.

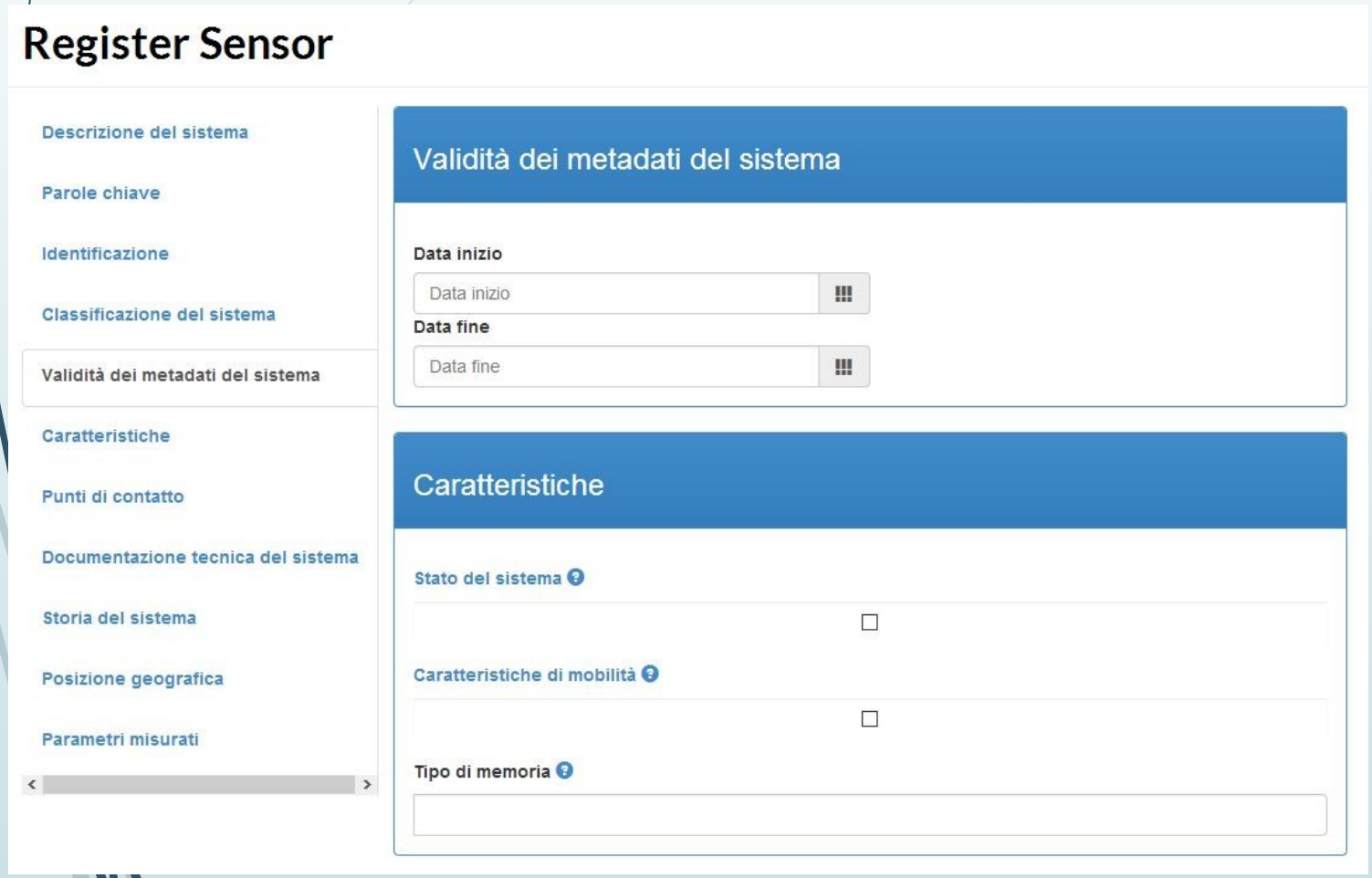
- Keywords
  The keywords are usefull in order to help the search engine.

Example 2 : Register a new Sensor...



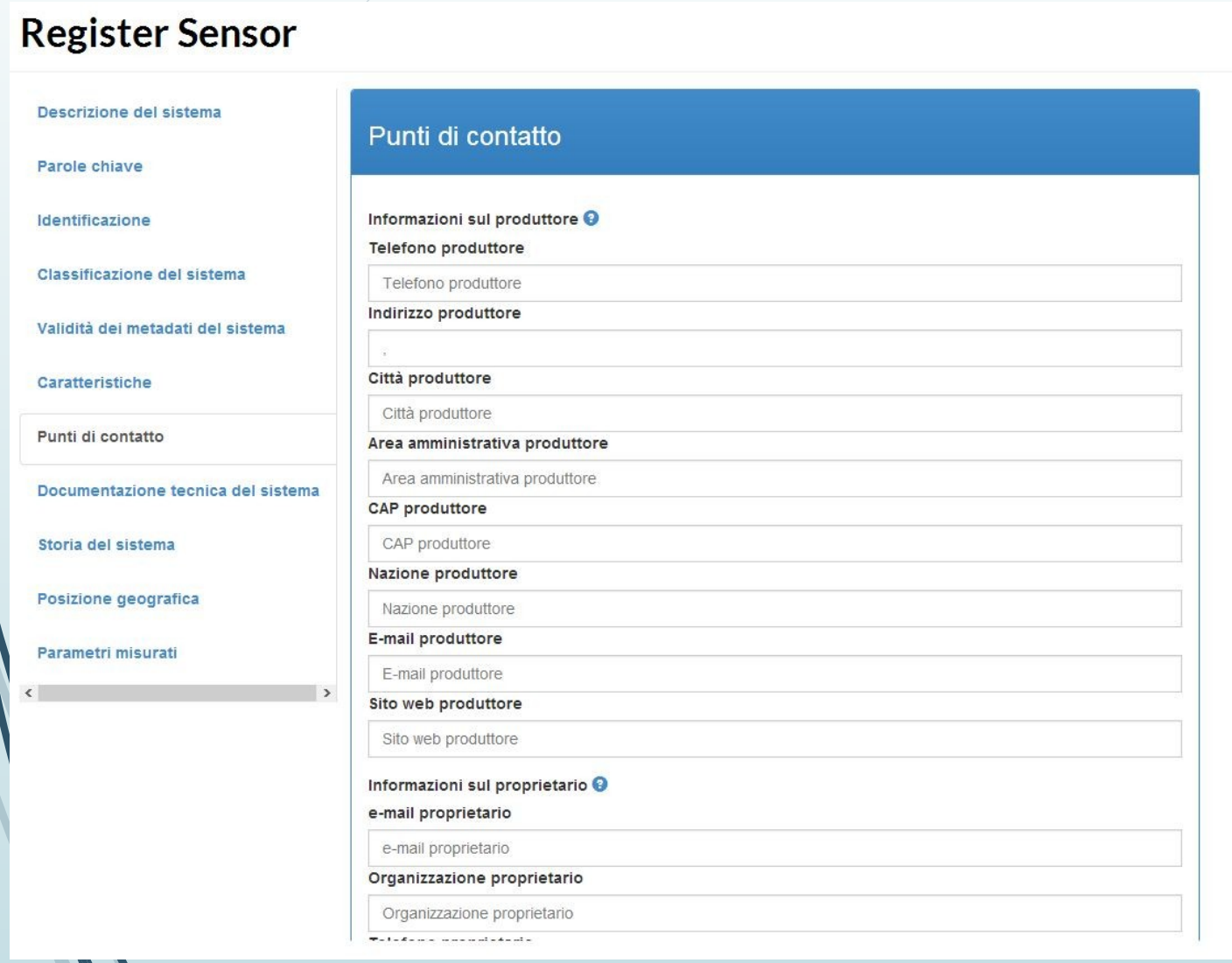
- Identification of the system
- System Classifiers

Example 2 : Register a new Sensor...



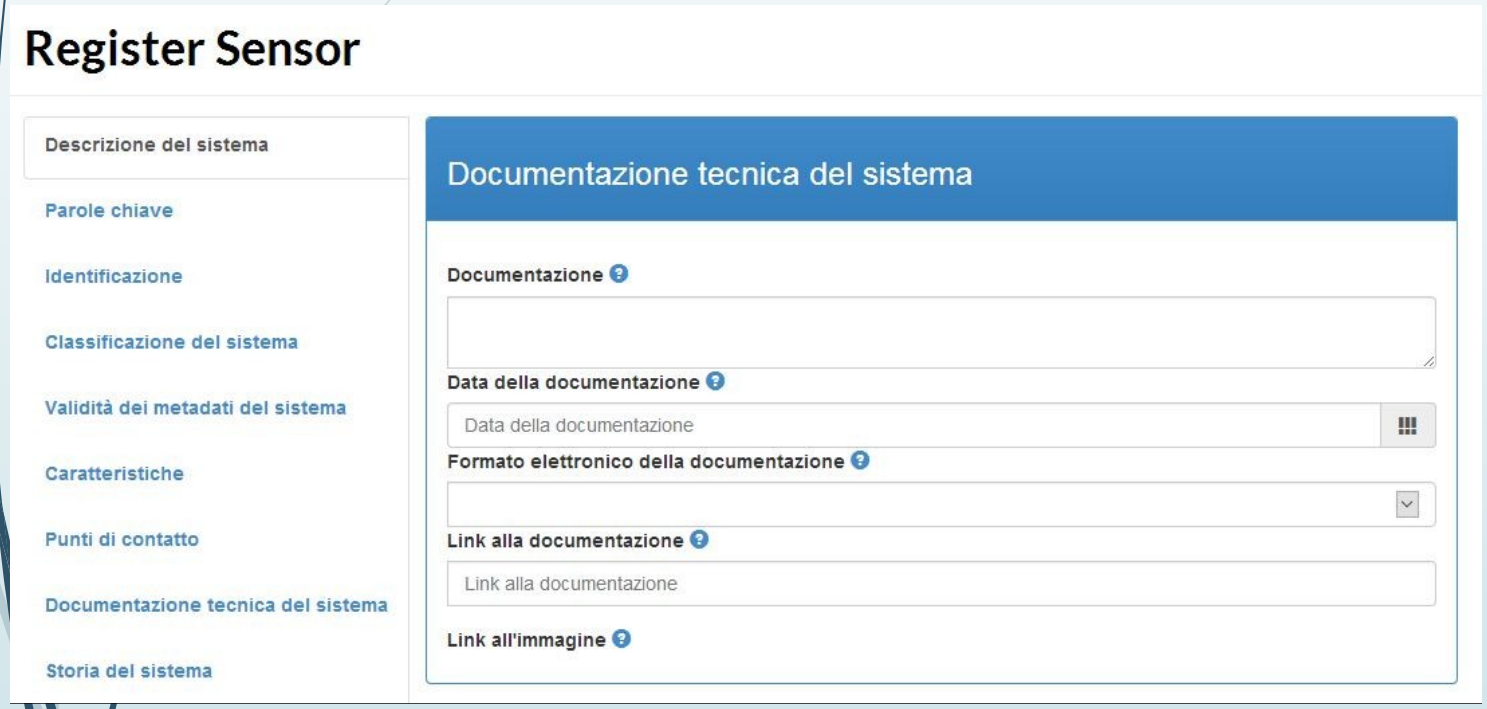
- Temporal validity of metadata description
- Capabilities

Example 2 : Register a new Sensor...



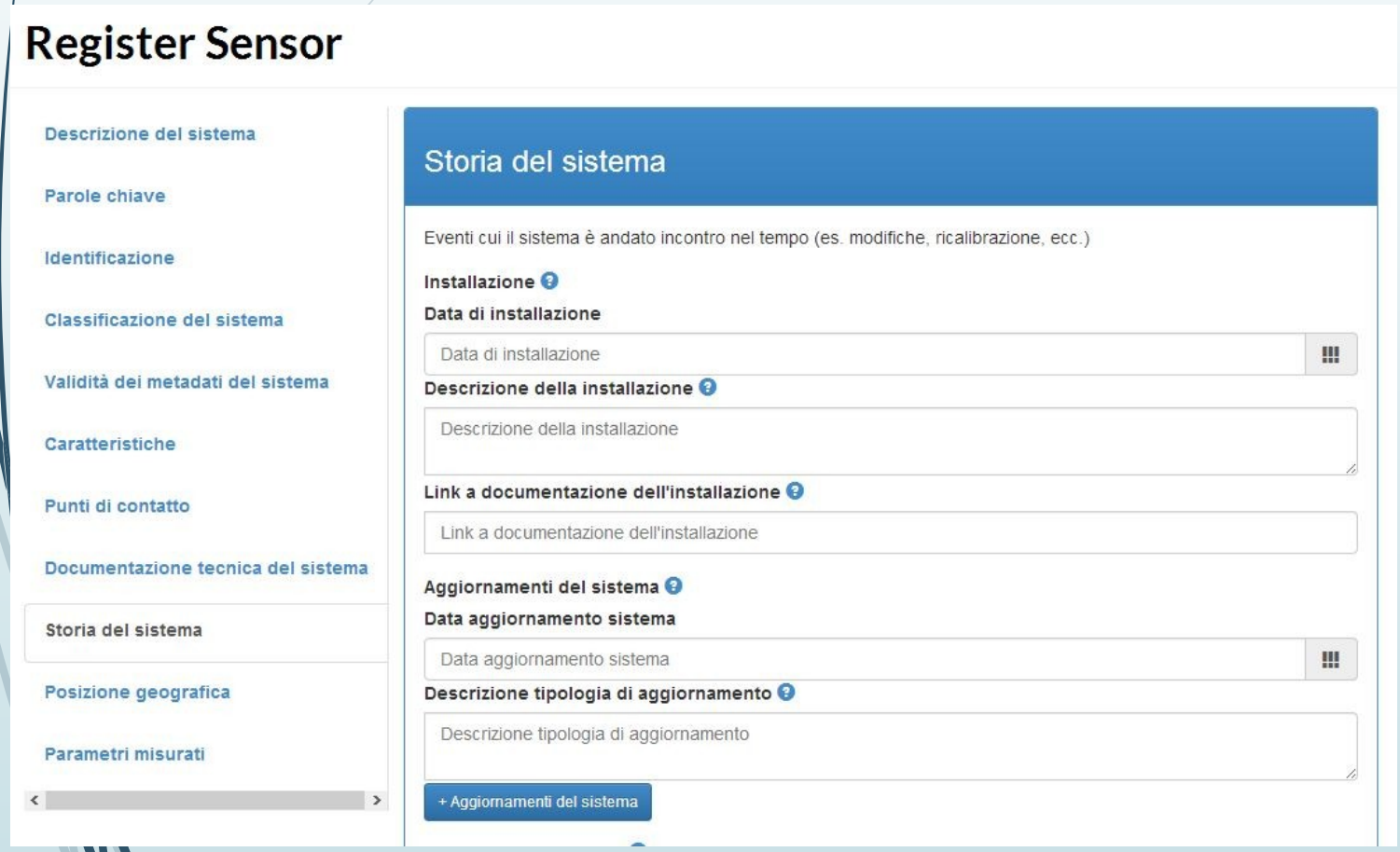
- Relevant Contacts
  Those fields are automatically filled if the values in the identification of the system fields have been recognized.

Example 2 : Register a new Sensor...



- System documentation
  Information regarding the documentation of the sensor and where to find it.

Example 2 : Register a new Sensor...

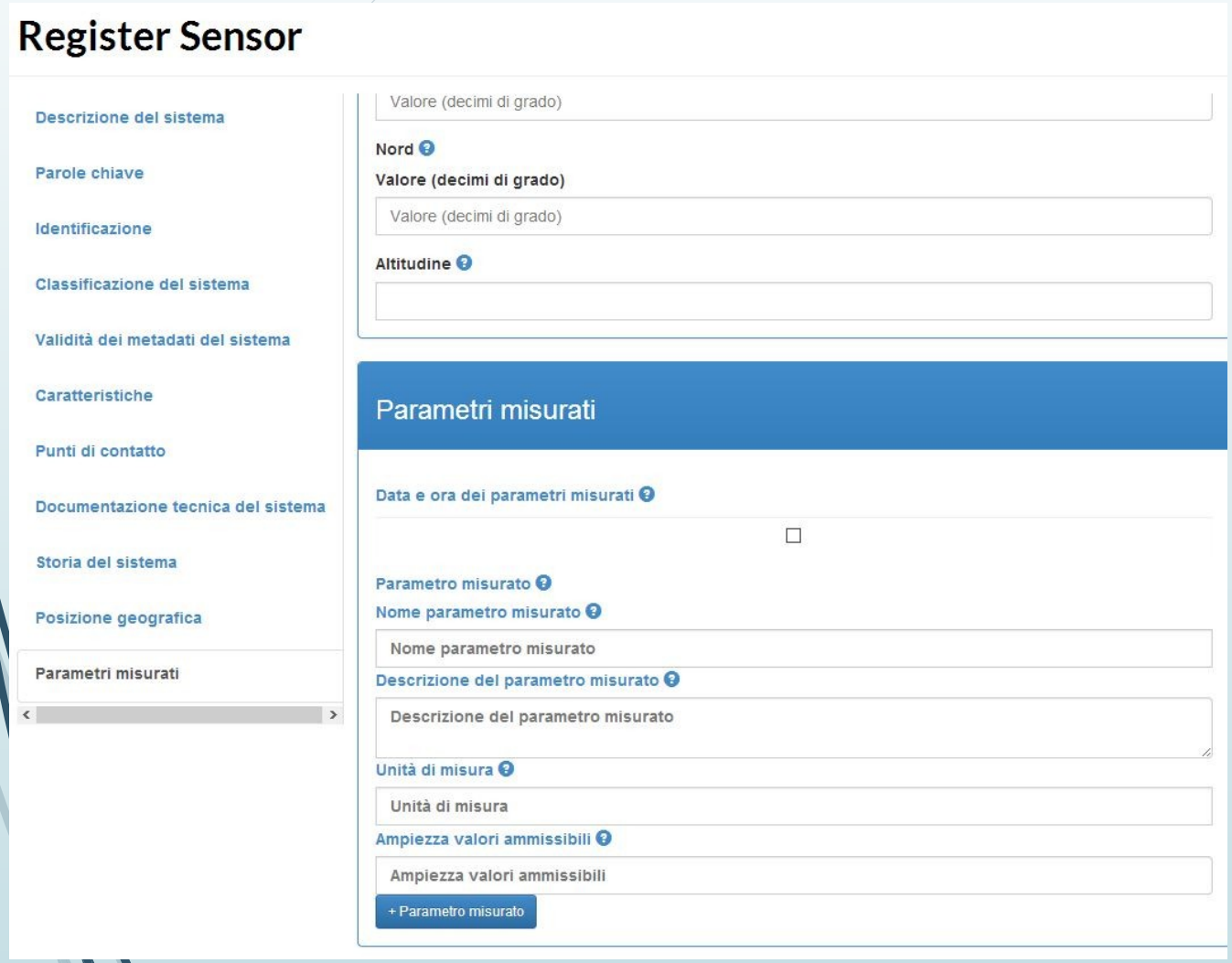


- History
  When and Where the sensor is installed and informatione regarding the documentation of that process.

Example 2 : Register a new Sensor...

- Position Properties
  It asks you the reference system and the position.

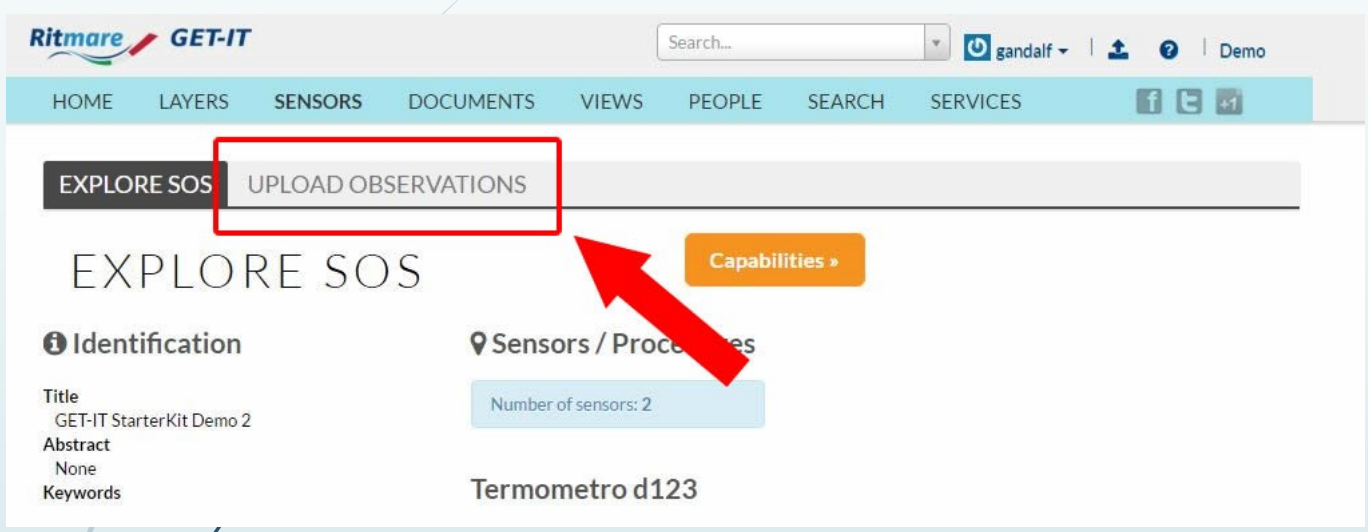
Example 2 : Register a new Sensor...

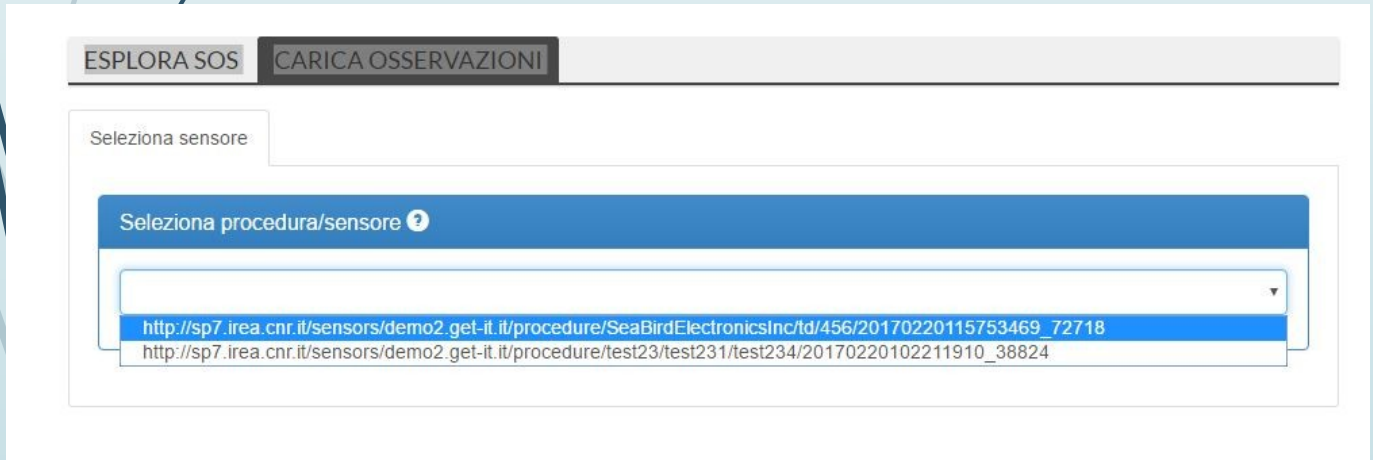


- Output Signal
  Information regardind the signal or the signals misured by the sensor.

Now click on Register button at the bottom right.

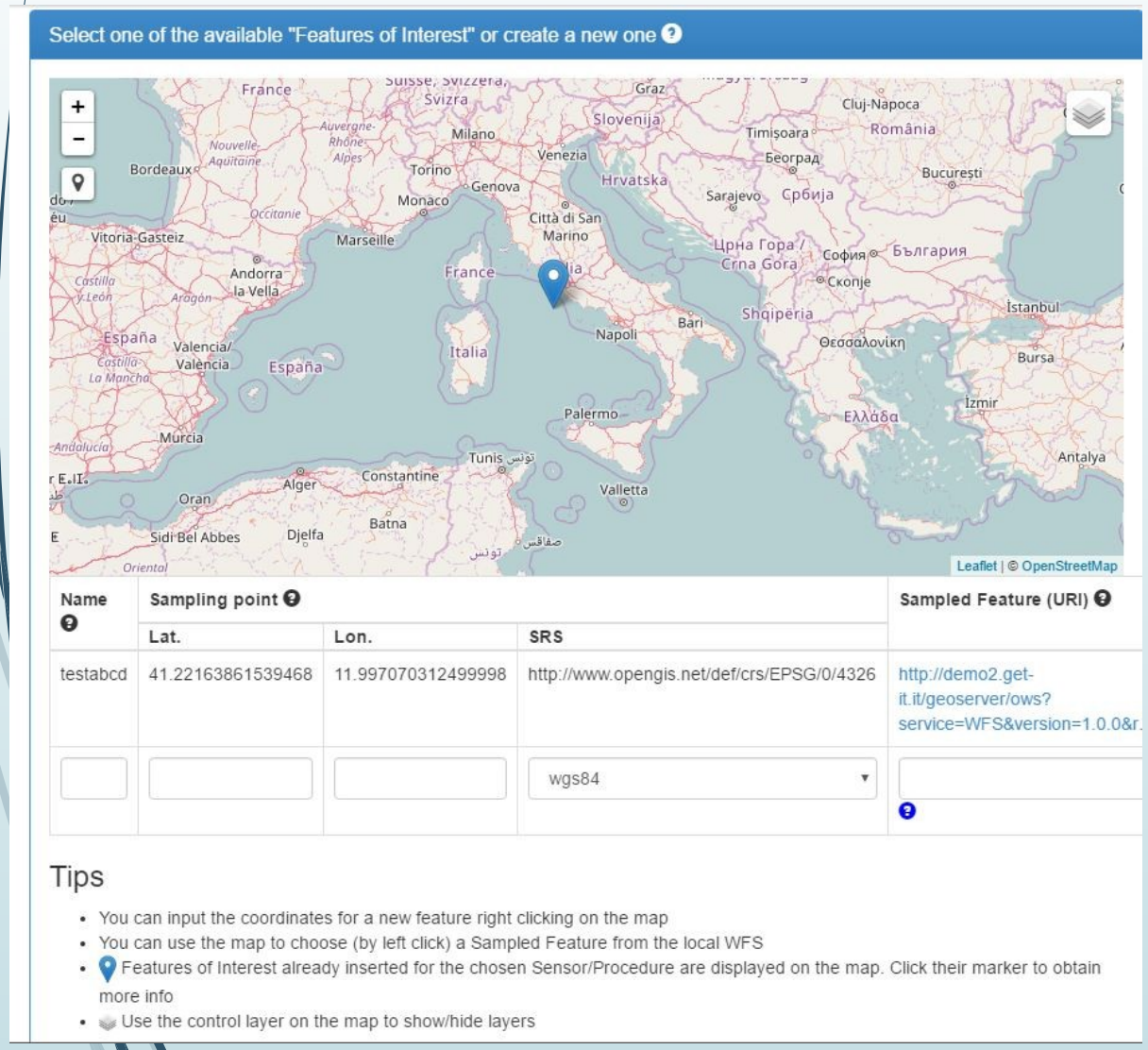
Insert an observation Step 1





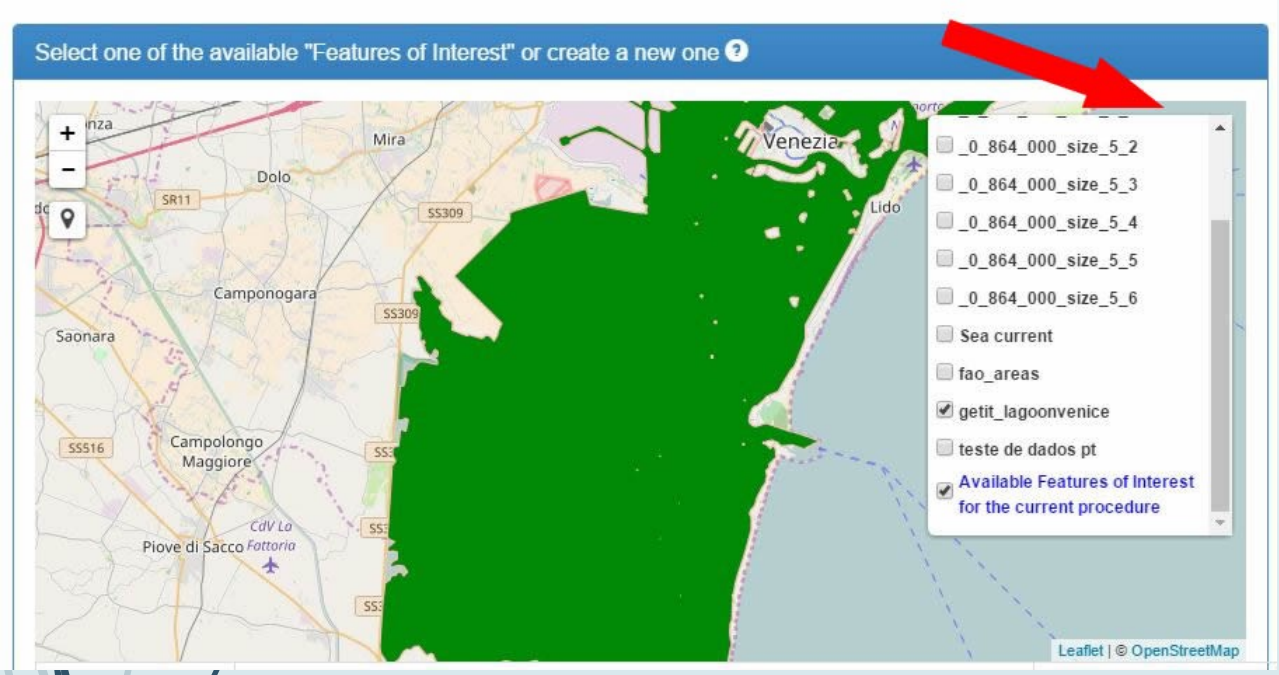
- Go to the Sensor Page
- Click on : Upload Observations
- Select the Sensor

Insert an observation Step 2

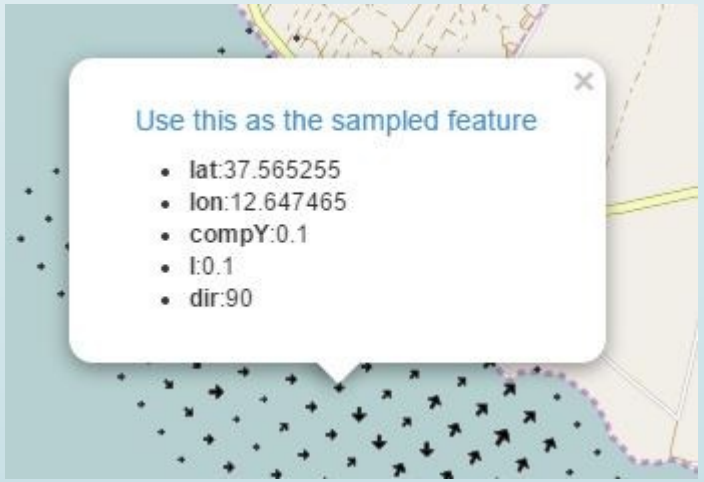


- This is where you select the coordinates. By default you can use the coordinates provided by the description of the sensor. Simple click on the marker and on the button «USE» on the pop up window.
- Otherwise, if you desire to use other coordinates, simple click with the right button on the map on the desired location.
- A notification like this'll appear.
  If the position is right, click on «Set this as the sampling position for the new feature»

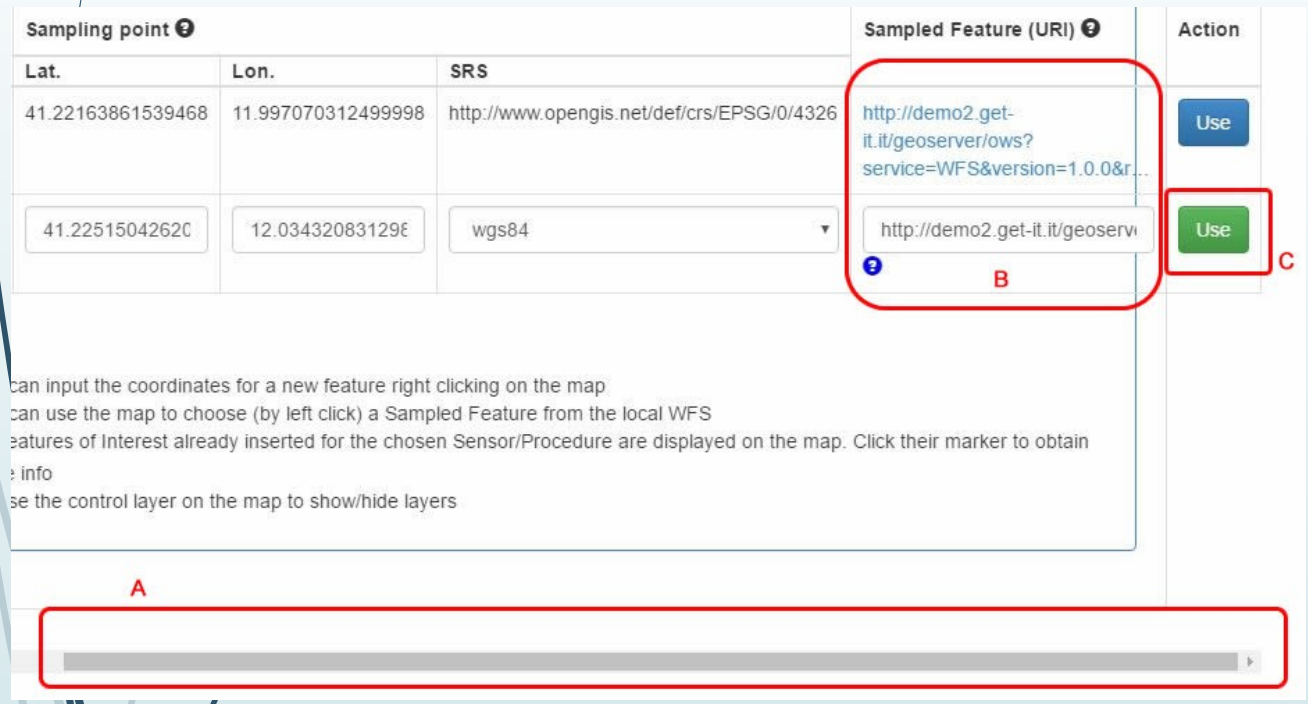
Insert an observation Step 3



- If you decide to use a new position for the sensor, you need to fill also the «Sample Feature (URI)» field.
- Go to the upper corner and select the layer you need.
- Click the left button on the layer selected and click on «Use this as the sampled feature»

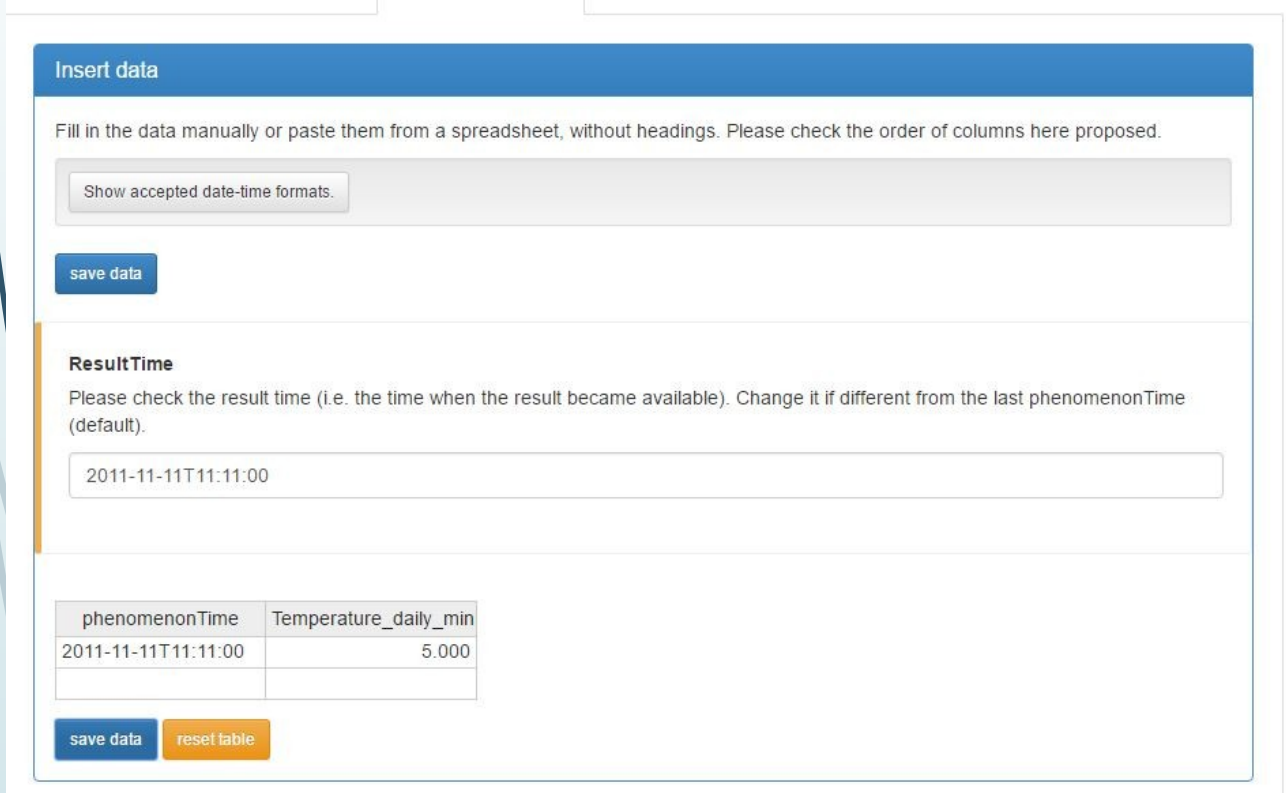


Insert an observation Step 4



A. Once you have inerted the coordinates move the bottom bar (A) to show the buttons
B. Check if Sample Feature (URI) is right
C. Press button «Use»

Insert an observation Step 5



- Now you can insert the values of the observations
- Manullay insert the date on the desired format (to check the format press «Show accepted date-time formats»)
- Insert values
- Press Save data button
- Observation inserted

Last thing.. .where you can find the link to alla services ?

Navigate in the top menu bar and select «Services»

Here it is the page with all the desired link.

GeoServer Instance

- In order to access to the native GeoServer instance simply add «/geoserver/web/» to your domain or ip.
  (i.e. http://demo2.get-it.it/geoserver/web/)
- The credentials are :
- USER NAME : *starterkit*
- PASSWORD : *sk2014*

Finish!
Thanks!