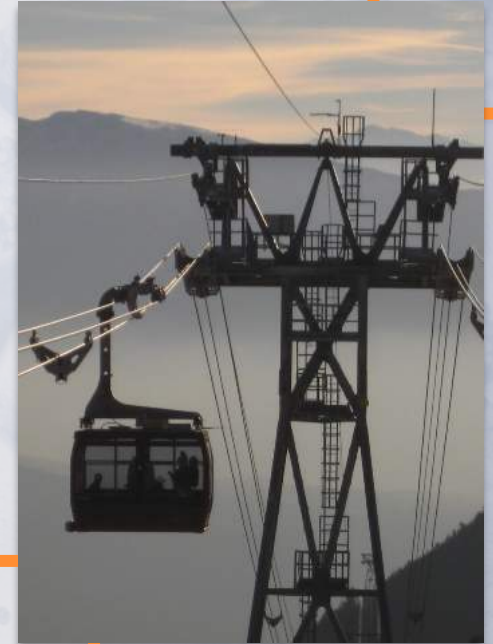**TRAINING SESSION**

OPHELIA SENSORS

SESSION AGENDA

----

1. **Geocube System main features**

2. **Presentation of equipment**

3. **General operating principles**

4. **Installing a new project**

5. **User interface**
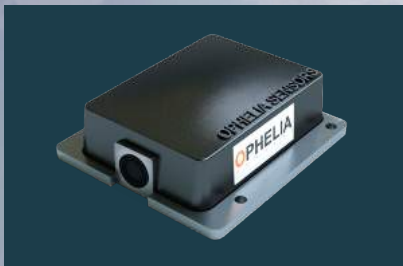
6. **Operating a Geocube system**

A REAL-TIME & PRECISE MONITORING SOLUTION

- Monitor slow, low-amplitude displacements

- Set up a continuous survey of millimetric deformations of infrastructure and ground movements

- Operate large networks of monitored points

- Remotely access and download data in real-time

OPHELIA SENSORS

## WHAT IS THE EQUIPMENT YOU RECEIVED?

Geocube

- GNSS receptor with radio communication

- Installed in positions to be monitored and fixed reference

- 5V – 14.6V DC powering

- Requires radio antenna

Geoport

- Communication gateway to collect Geocube information through radio and transmit it through 3G/LTE

- Installed in location that allows radio connection with Geocubes

- 5V – 18V DC powering

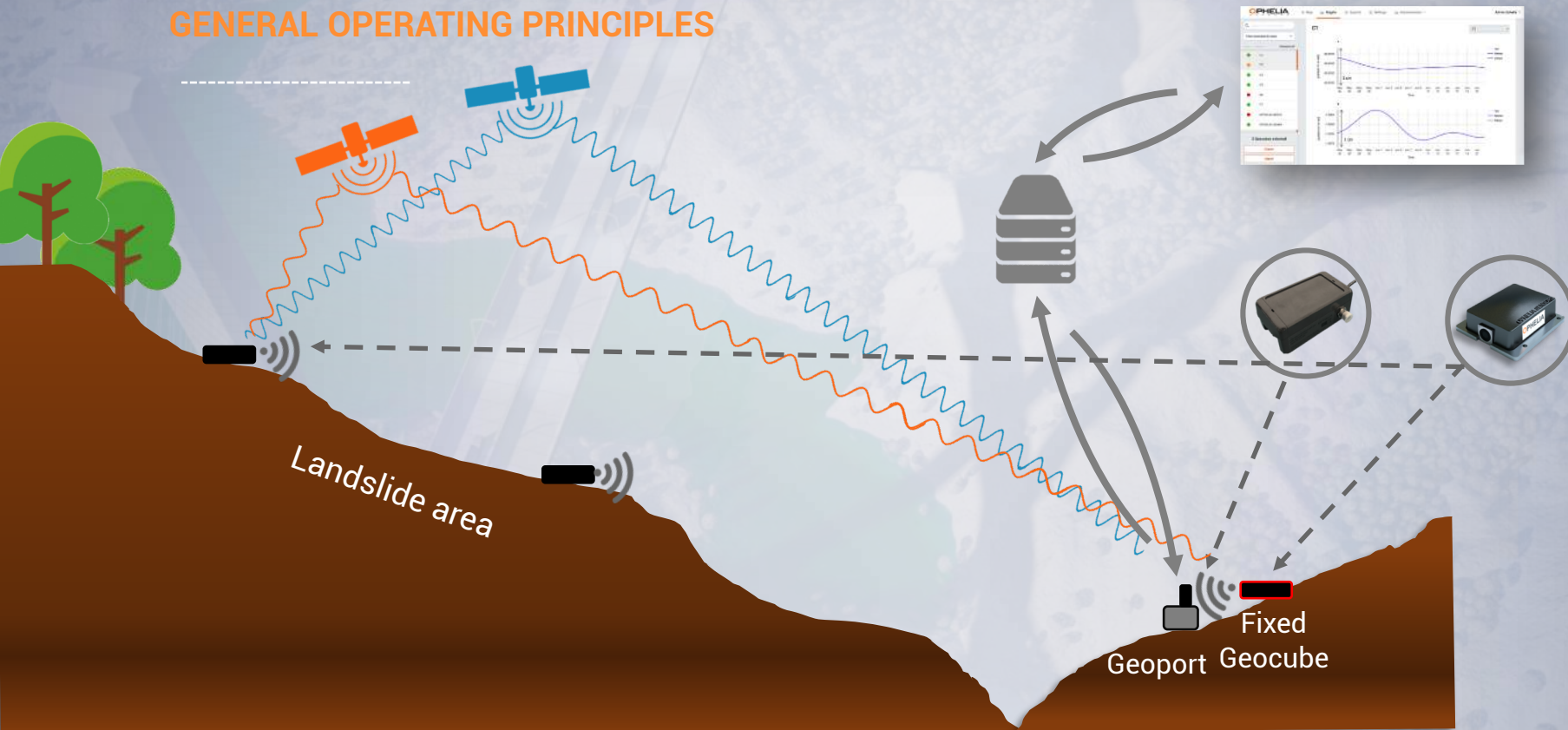- Requires SIM card (3G/LTE) and radio antenna
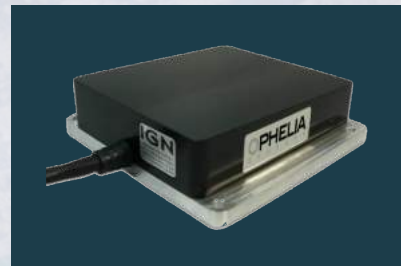
Geoscope

- Communication device to set Geocube and Geoport parameters locally and test the radio network

- Mobile device used during the installation phase

- USB powering

- Requires radio antenna

Miscellaneous

- Radio antennas

- Power packs

- Masts

- Other

GENERAL OPERATING PRINCIPLES

Landslide area

Fixed
Geocube

Geoport

INSTALLING A NEW PROJECT (I)
First steps

- Download Geosight Manual (https://ophelia-sensors.com/products)

- Download and install Geosight program (https://ophelia-sensors.com/products)

- Locate Buccaneer to USB extensions

- Remove PIN protection from SIM card

- Know the APN of your SIM card provider

- Insert SIM card in Geoport

- Connect antennas to Geocubes, Geoports and Geoscope

- Locate the PA Manual and Installation Manual, received by mail

- Connect to your User Interface

Product & system information

| Operating principle & network architecture |
| Datasheet |
| Geo3 user manual |
| Geosight user manual |
| Download Geosight software (Windows) |
| Download Geosight software (Mac) |
| Configure a radio network |

Geocube installation manual

Project Administrator Manual

Geosight User Manual

INSTALLING A NEW PROJECT (II)
Configuring a Geoport

- Connect Geoport to computer using USB extension

- Launch Geosight

- Set APN corresponding to your service provider

- Check LED flashes slowly

- Check that Geoport appears on your user interface after a few minutes
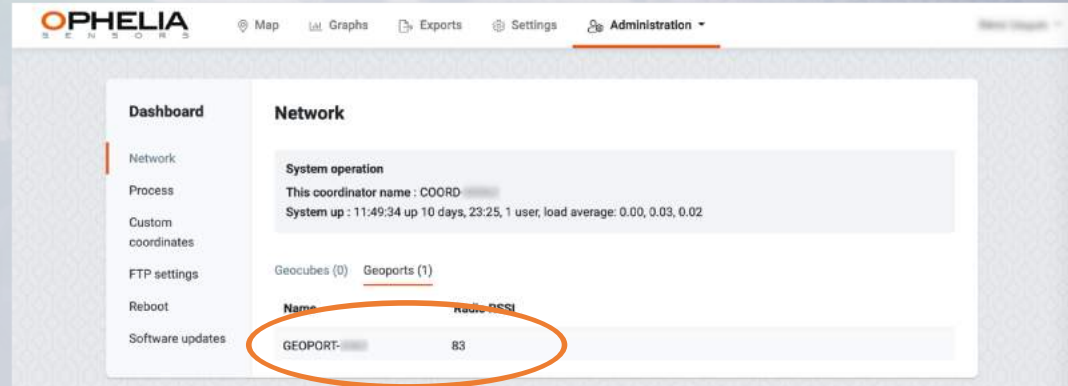
INSTALLING A NEW PROJECT (III)
Detecting Geocubes

- Power Geocubes

- Press "Detect" on the Process page

- Check new Geocubes are added to your project on the Network page

OPHELIA
S E N S O R S

INSTALLING A NEW PROJECT (IV)
Setting a process

• Click on "Define" on the Process page

• Select Geocubes to be used as fixed/reference for your project

• Select Mobile property for measurement points and associate it with one of the Fexed Geocubes previously defined

• Enter custom Geocube names if necessary

• Set calculation frequency (30s unless otherwise necessary)

• Press "Define"

INSTALLING A NEW PROJECT (V)
Checking radio network

- Connect the Geoscope to your computer and launch Geosight

- Geoscope first detects all powered devices in its immediate surroundings

- Once completed, click on "Select all" and press "Test link RSSI" to check radio signal strength between each device

- When performing a definitive installation, you can run the Test and save the results in a csv file

RSSI>-70 dBm	good
-70 dBm>RSSI>-85 dBm	weak
-85 dBm>RSSI	very weak

INSTALLING A NEW PROJECT (V)
Changing radio subnetworks

• When using several Geoports on a single project to link each Geocube to a unique Geoport

• Select device and press "Configuration"

• Enter a new name for network ID and press write

⚠️

• Devices can only communicate with the devices using the same Network ID (Geocubes, Geoports <u>and</u> Geoscope)

• Keep track of the Network ID used and create a simple system (e.g. "212" for all devices linked to Geoport-0212)

INSTALLING A NEW PROJECT (VI)
Recommendations

- If possible, place Geocubes where there is a maximum sky view. A poor sky view will lead to discontinuous and imprecise data

- Check radio connections are robust enough for the whole network using the Geoscope

- Placing Geocubes a meter above ground-level enhances radio connections and improves satellite reception

- Fixed Geocube is key for all calculations. Pay special attention to sky view, powering and connection to Geoport

- Avoid nearby metal/glass structures since they reflect satellite signals (multipaths)

BAD   BETTER   BEST
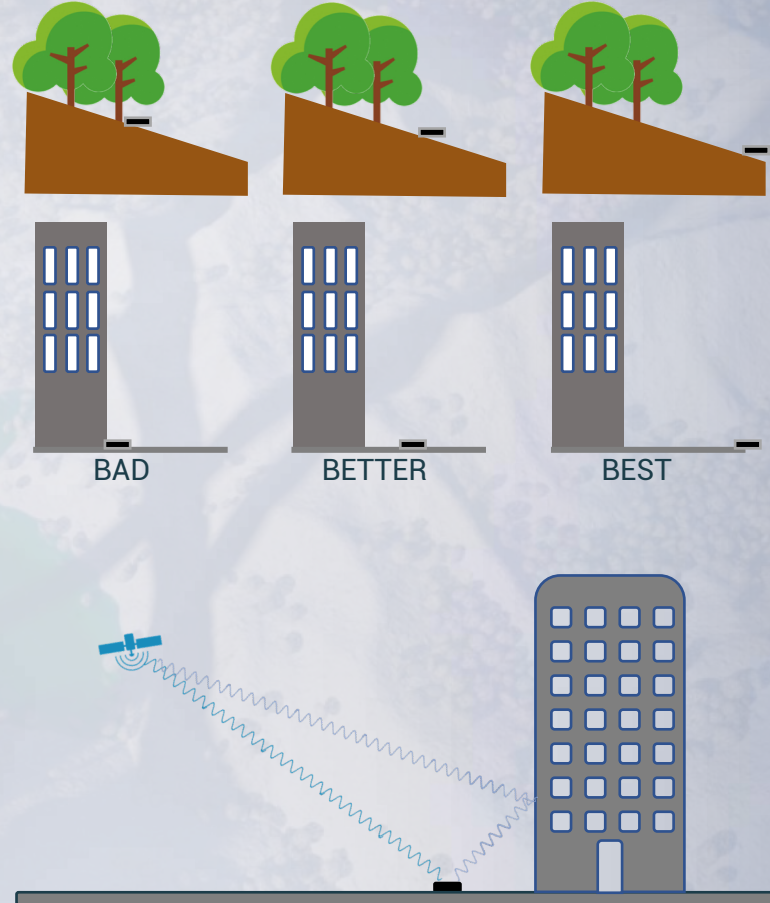
USER INTERFACE (I)
Managing users

- To create a new user, press "User Administration" and then "Create new user"

- Fill in data for the new account :

    user : will not have access to Administration tab
    Admin : will have full access and be able to change parameters of the project

- Press "Add", an e-mail will be generated inviting the new user to lo on the site
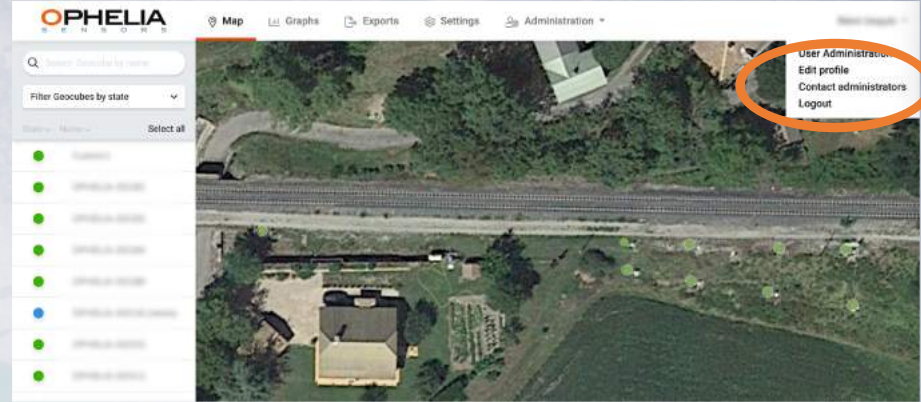
OPHELIA
S E N S O R S

USER INTERFACE (II)
Setting an FTP link

- Go to "Administration" and "FTP settings"

- Click on the checkbox and fill up the information regarding your FTP server

- Once completed, press "Save"

- Position and sensor files will be transferred to your server at the set rate

- You can also download the data manually on the "Exports" tab which will generate a csv file

FTP settings

✓ **Enable FTP client**
Use this service for pushing data on external FTP server.

Rate

| 10 | ⇕ | minutes |

Login
kylia

Password
•••••••••

Server address
149.202.53.58

Port
21

Path
/

Projection type
Geocentric Cartesian (x,y,z)

Save

OPERATING A GEOCUBE SYSTEM (I)
Keeping contact with Ophelia

• On the User Interface, you can generate a mail by clicking "Contact administrators"

   Mail sent to the administraor if you are a user
   Mail sent to Ophelia if you are an administrator

• In addition, the project administrator has received a mail to log on to the administrative platform located at :
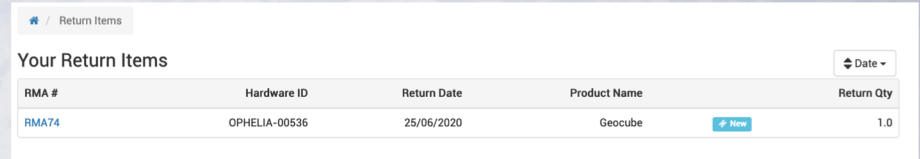   ophelia-sensors.com
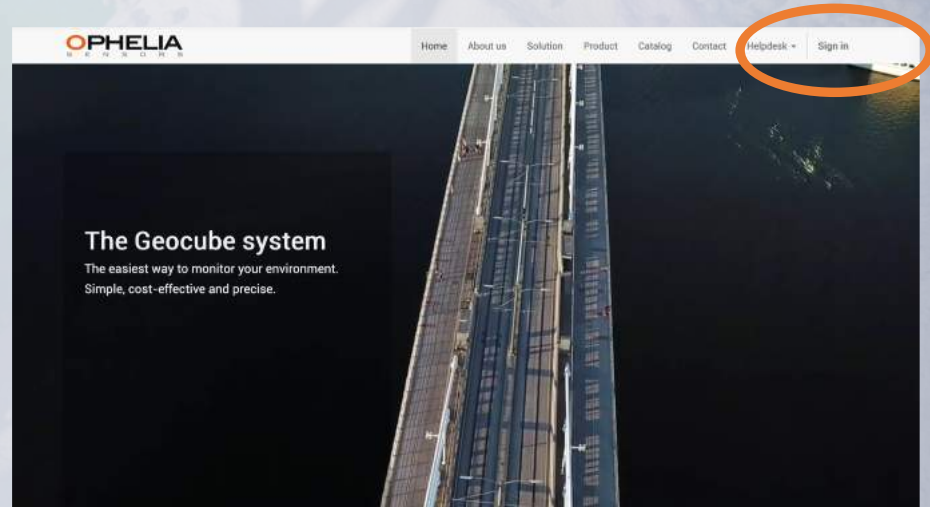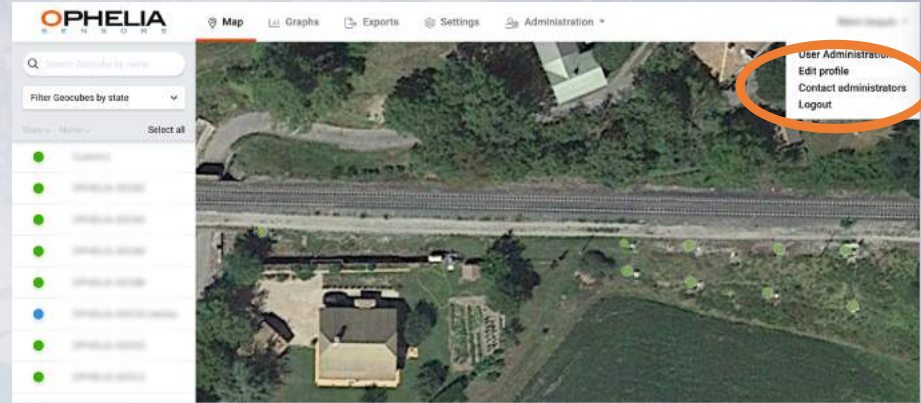
OPERATING A GEOCUBE SYSTEM (II) Helpdesk

- Once logged onto the administrative platform you can generate a Helpdesk ticket for any issue (technical, inquiry,…)

- Click on "Helpdesk" to manage or add an issue

- To add a ticket, just fill up the requested information and press "Submit"

- You can follow up on the advance of your inquiry through the same canal
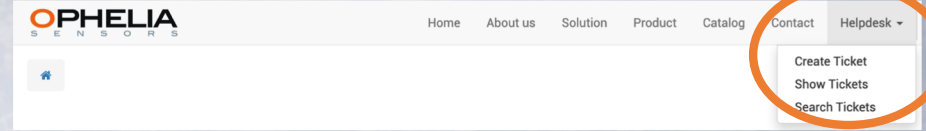
OPERATING A GEOCUBE SYSTEM (II)
RMA

- After raising an issue through the Helpdesk, If one of your devices is damaged or dysfunctional, Ophelia will issue a RMA

- You can follow up on the different stages of your RMAs through the same portal by pressing RMA on the landing page.

CONTACT US

EMAIL ADRESS
admin@ophelia-sensors.com

WEBSITE
ophelia-sensors.com

PHONE
+33 1 42 74 59 21