

Project Administrator Manual



Version : Date : 1.02 May 2020



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I. INTRODUCTION

This document describes the different stages in setting up, installing, managing and modifying successfully a Geocube network.

This manual comes as a complement to the Geo³ User Manual, which explains how to navigate in the Map, Graphs, Export and setting pages of your Geo3 interface.

To be able to undertake all the actions described in this document, you will need to be registered as the Administrator of a project.

To navigate in this document, you can directly access a given chapter by clicking the corresponding entry in the summary page 2.

To go back to the summary, you can click on the following icon, \equiv , on the top left hand side of every page.







II. GETTING STARTED

II.A. SETTING UP A SERVER

Once you have received the hardware (Geocubes, Geoports, powering, antennas, etc.) and before you go on site to install the equipment, you will need to open a calculation and interface server specific to your project.

To do so, send a mail to your Ophelia Sensors contact specifying your request. You will receive the following mail :

	Ophelia Sensors
You are now register set your pasword:	red to GEO3 web application, please login and
	Access and generate password
Thank You for using	our app !
Regards, Ophelia Sensors	
If you're having trouble cl paste the URL below into	icking the "Access and generate password" button, copy and your web browser:

To complete your registration, simply follow instructions.

Once you access for the first time the Geo³, make sure you bookmark the website in order to access it easily in the future.

II.B.

INSTALLING THE GEOSIGHT SOFTWARE

A number of operations (configuring a Geoport, checking a radio network) are made easier by using a small software named Geosight which runs under any Windows environment.

a) Installing the software

Go to the Ophelia Sensors homepage and click on the "Product" tab. Download the Geosight software by clicking on the "Download Geosight software" link. Install the software on your computer.

b) Installing the drivers (optional)

If all buttons on the welcome page of the Geosight software appear grey although a Geoport or a Geocube is correctly plugged to your computer, you should install the correct drivers on your computer to detect both type of devices.

To do so, click on "Download Geosight drivers", in the "Product" page.

Unzip the drivers and install them on your computer





III. CONFIGURING A GEOPORT

At this stage, the server is ready to run, but no object is connected to it.

In order to ensure a smooth installation once on site, best is to parameter the Geoport in office beforehand.

Your Geoport is identified by a unique serial number (S/N), with the format Geoport-XXXXX, which is indicated on the side of the hardware.

The first step is to establish a connexion between a Geoport, which will be installed on site, and the calculation server, so information can flow from one to the other. To do so, follow steps listed here below :

III.A.

INSERTING A SIM CARD

To function, a Geoport requires a 3G SIM card. Geoports are compatible with any 3G subscription worldwide. For project requirements, 3G subscription should have a data plan of a minimum of 1Go/month.

Make sure that the SIM card you will insert in the Geoport does not require a PIN code authentication. If you are not sure whether your SIM card is PIN locked or not, insert it in a phone and disable PIN security in the menu.

a) Open lid

Check beforehand that no power is connected.



b) Open SIM card slot







c) Preparing SIM card

The device is designed for mini SIM cards. If you have a nano or a micro SIM card, you will need an adaptor.



Make sure you keep the number of your SIM card, since it may be necessary to communicate with the Geoport through SMS for troubleshooting issues.

III.B. SETTING GEOPORT PARAMETERS

If you have purchased a deployment pack, there are a number of USB cables included your shipment. It allows you not only to power the Geoport, but also to communicate with it through USB.

To enable a Geoport to communicate with your server, you will need to parameter how to send that information (APN of the SIM card provider). To do so, we will communicate with the Geosight software through a USB cable.

a) Power up the Geoport

Using the specific USB cable, connect the Geoport to a computer where the Geosight software is installed.

b) Connecting to the Geosight software

Launch the Geosight program on your computer.





The following screen should appear (additional ports may be listed if you are using a mac):

Select a serial port in the list FT231X USB UART (tty.usbse	and click on "Open Device" rial-DM01I8PD)
Open Device	Refresh ports

Select the indicated port and click on Open device.

The following screen will pop-up:

Geosight - Geoport configuration		
Connected to GEOPORT-1111		
Access Point Name (APN)	Read	Write
Destination Address	Read	Write

To modify the APN corresponding to your service provider or the destination address which corresponds to your project (this information is contained in a a mail inviting you to create your profile), simply enter the correct information and press "Write".

c) Changing settings

If you need to change either the server IP to which the Geoport points, simply type in the new IP address.

If you need to change the APN (because you are using a new SIM card from a different provider for example), just type in the correct APN to allow the SIM card to connect through the 3G/LTE network. Reminder, if you are inserting a new SIM card, you need to remove the PIN code first.

To find your APN, please refer to your service provider.

Once all the changes have been made, exit the Geosight program and unplug your Geoport. It is now fully configured.

III.C. CHECKING GEOPORT IS CONNECTED

a) Connection to the 3G network

Connect your Geoport to any powering device. When first powered, the green led should be lit for a minute, while the system runs initial setup. After a minute, the led will start flashing fast. It is now trying to connect to the 3G network.

Once the APN (access point name) has been configured in the device, after approximately one minute, the green led should start flashing slower (1s on – 1s off). It is now connected to the 3G network.

If the led does not switch to slow flashing mode, it will be one of the three following issues :



- No 3G/LTE coverage in your area
- SIM has a PIN code
- APN is erroneous

Once 3G/LTE connection is confirmed, cautiously screw the lid back on top of the Geoport, making sure that the washer is properly positioned to ensure complete watertightness.

b) Connection to the calculation server

Once the 3G/LTE connection is established, and if the server address is correctly set, the Geoport should be connected to the server. To check this, log on to the server interface and click on the "Administration" page and choose "Network" in the drop-down menu.

	Мар	🔟 Graphs	🕒 Exports	Settings	\mathcal{L}_{\otimes} Administration \star	Marc 104474 -
Castach Geocubes by state				Differences Differences	Network Process Custom coordinates FTP settings Reboot Software updates	
0 Geocube selected Graphs Export	Google					+ 1

You will land on the Network page. Click on the "Geoport" tab :

	Calculation Server ID and a	data
	© Map i⊒ Graphs ⊡, Exports © Settings <u>2</u> Administration -	
Dashboard	Network	
Network Process Custom	System operation This coordinator name : COORD System up : 11:49:34 up 10 days, 23:25, 1 user, load average: 0.00, 0.03, 0.02	
coordinates FTP settings Reboot	Geocubes (0) Geoports (1) Name Radio BSSI	
Software update	s GEOPORT- 83	

Geoport serial number

3G signal strength

If you have several Geoports, all online Geoports will appear.





IV. ADDING GEOCUBES

IV.A. DETECTING GEOCUBES

Once the Geoport is connected, you can detect neighboring Geocubes. Obviously, Geocubes need to be powered to be detected, so if you are testing a setup in office, you should power Geocubes with the USB cables provided with the Deployment pack.

To do so, go to the Administration – Process page



You will land on the following page

Dashboard	Process
Network Process	Geocube radio detection Discover Geocube within radio range of Geoports Detect
Custom coordinates	
FTP settings	
Reboot	
Software updates	

Press the "Detect" button and press "OK" on the pop-up window.

Geoport will scan its surroundings to detect the presence of Geocubes. During this process a message will appear on top of your screen :



Once the process is completed, detected Geocubes will appear in the "Map" page. They will appear in black given, at this stage, they are not included in a calculation process.

IV.B. CHECKING GEOCUBE PROPERTIES

Geocubes will also appear on the Administration – Network page.

To ask for a Geocube to send its current status and information, you can click on the "Show" button on the line corresponding to that Geocube.



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Ç		ap ⊡ Graphs ⊡ Exports ⊗ Settings 2⊛ Administration ▼	Non-Inspire -
	Dashboard	Network	
	Network Process Custom	System operation This coordinator name : COORD System up : 11:44:51 up 11 days, 23:20, 1 user, load average: 0.17, 0.92, 0.88	
	coordinates FTP settings	Geocubes (9) Geoports (1) Q Search by name Filter Geocubes 🗸	
	Reboot Software updates	Moving State ∨ Name ∨ Serial name ∨ ∨ Status ∨ Geoport ∨ Properties	
		OPHELIA-00184 OPHELIA-00184 UNUSED Geocube is not part of the process GEOPORT-0083 Show	
		OPHELIA-00159 OPHELIA-00159 UNUSED Geocube is not part of the process GEOPORT-0083 Show	
		OPHELIA-00189 OPHELIA-00189 UNUSED Geocube is not part of the process GEOPORT-000 Show	
		OPHELIA-00183 OPHELIA-00183 UNUSED Geocube is not part of the process GEOPORT-0083 Show	
A pop-up page wil Strength	ll appear : of radio connectio	n Number of locked satellites	
C	OPHELIA-00189	OPHELIA-00189	×
	RF	RSSI: -76 dBm	
	Locked Satellites	7	
	Battery	Voltage: 13.860 V	
	Temperature	Temperature: 23.6 C	
	GEO3 firmware	Software : G30S v2.0n +0K	
Internal Geocu	he temperature	Eirmware version Powering voltage	
	se temperature		

RF

- Strength of the radio signal with which the Geocube sends and receive information either directly to a Geoport or by meshing with another Geocube.
 - 30 dBm to -60 dBm : strong signal
 - 60 dBm to -75 dBm : medium
 - 75 dBm to -85 dBm : poor
 - Below -85 dBm : very poor, should be improved for long term operations

Locked satellites

Number of GNSS satellites currently tracked by the GNSS chip. Varies throughout the day, depending on the
position of the Geocube and its sky view. In order to complete a calculation, Geocube must lock a minimum
of 4 satellites. 8 satellites and above is considered adequate for operational purposes.

Battery

• If working on standard batteries (e.g. lead batteries), this measurement is important since it indicates whether the powering of the Geocube is at risk of being interrupted due to low battery voltage (set through the position of the jumper on the charge controller, see chapter XXXX).

Temperature





• Although correlated to the outside temperature, this figure is the temperature measured inside the Geocube, which can be significantly higher.

Firmware version

• Version of the Geocube firmware.

IV.C. ADDING A GEOCUBE

At any stage, even if a process is up and running, you can add an additional Geocube. To do so, simply repeat the "Geocube radio detection" process explained in chapter IV.A. Your newly installed Geocube will appear in the list of previously detected Geocubes. You can then include it in a process.

This action does not affect other Geocubes or an ongoing process.

IV.D.

Removing a Geocube

If, for any reason, you need to remove a Geocube from your project, simply access the "Administration – Process" page. Opposite "Remove unwanted Geocubes in process", choose which Geocube you would want to erase and simply click on the "Remove" button.

This action does not affect other Geocubes or an ongoing process, provided you have not erased one of the fixed Geocubes.





V. SETTING A CALCULATION PROCESS

V.A. GENERAL CONSIDERATIONS

In order for the algorithm to process data, you need to define a fixed/reference Geocube, which will be used as pivot in the calculation.



The fixed Geocube is exactly the same hardware as those used as mobile Geocubes. His installation and location needs nevertheless to comply with a number of attributes :

- Positioned outside the monitored area (bridge, building, landslide, etc.)
- Positioned on a stable location with very little or no movement (foundation, boulder, etc.)
- Have a clear sky view (true of all Geocubes but even more sensitive for the fixed Geocube)
- Have a strong radio connection with the Geoport, which will convey information of all Geocubes to the server

V.B.

SETTING UP A PROJECT : WHAT SHOULD BE DEFINED?

Now that all Geocubes are detected, you can launch a calculation. To do so, a number of parameters need to be set :

- Which is/are the fixed Geocube(s)?
- If there are more than one fixed Geocube, which is the one that should be used for each given mobile Geocube?
- How often do you need a calculation done?

All these parameters will be set in a single page. To access it, go to the "Administration-Process" page and click on the "Define" button, opposite "Define or redefine Process".



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	_
•	

Puompouru	100633	
Network		
Process	Geocube radio detection Discover Geocubes within radio range of Geoports.	Detect
Custom coordinates FTP settings Reboot	Remove unwanted Geocubes in process OPHELIA-0010	84 • Remove
	Define or redefine Process	Define
Software updates	Set fixed Geocube position ① Used to pin fixed points. If not specified, the navigated GNSS values will be applied.	



DECLARING FIXED GEOCUBES

First action is to define which are the fixed/origin Geocubes in your process. There are no limits as to the number of fixed Geocubes in any given process.

Identify the Geocube you will use as reference in your calculations and click on "Origin" in the drop down menu in the "Moving property" column.

OPHELIA-00159 UNUSED OPHELIA-00182 OPHELIA-00182 OPHELIA-00159 OPHELIA-00182 UNUSED OPHELIA-00182 OPHELIA-00159 OPHELIA-00183 UNUSED OPHELIA-00183 OPHELIA-00159 OPHELIA-00184 UNUSED OPHELIA-00184 OPHELIA-00159 OPHELIA-00189 UNUSED OPHELIA-00189 OPHELIA-00159 OPHELIA-00189 UNUSED OPHELIA-00189 OPHELIA-00159 OPHELIA-00216 UNUSED OPHELIA-00216 OPHELIA-00159 Calculation frequency O OPHELIA-00216 OPHELIA-00159	Serial name	Moving property	Custom name	Fixed Geocube
OPHELIA-00182 UNUSED • OPHELIA-00182 OPHELIA-00159 OPHELIA-00183 UNUSED • OPHELIA-00183 OPHELIA-00159 OPHELIA-00184 UNUSED • OPHELIA-00184 OPHELIA-00159 OPHELIA-00189 UNUSED • OPHELIA-00189 OPHELIA-00159 OPHELIA-00189 UNUSED • OPHELIA-00189 OPHELIA-00159 OPHELIA-00216 UNUSED • OPHELIA-00216 OPHELIA-00159 Scalculation frequency • OPHELIA-00552 OPHELIA-00552 OPHELIA-00552	OPHELIA-00159	UNUSED ✓ ORIGIN MOBILE	Custom1	OPHELIA-00159
OPHELIA-00183 UNUSED OPHELIA-00183 OPHELIA-00159 OPHELIA-00184 UNUSED OPHELIA-00184 OPHELIA-00159 OPHELIA-00189 UNUSED OPHELIA-00189 OPHELIA-00159 OPHELIA-00180 UNUSED OPHELIA-00189 OPHELIA-00159 OPHELIA-00216 UNUSED OPHELIA-00216 OPHELIA-00159 Salculation frequency O OPHELIA-00552 OPHELIA-00552	OPHELIA-00182	UNUSED	OPHELIA-00182	OPHELIA-00159
OPHELIA-00184 UNUSED • OPHELIA-00184 OPHELIA-00159 OPHELIA-00189 UNUSED • OPHELIA-00189 OPHELIA-00159 OPHELIA-00216 UNUSED • OPHELIA-00216 OPHELIA-00159 Selucitation frequency • OPHELIA-00216 OPHELIA-00159 30 • • OPHELIA-00216 OPHELIA-00159	OPHELIA-00183	UNUSED	OPHELIA-00183	OPHELIA-00159
OPHELIA-00189 UNUSED • OPHELIA-00189 OPHELIA-00159 OPHELIA-00216 UNUSED • OPHELIA-00216 OPHELIA-00159 Seluciation frequency • • OPHELIA-00216 OPHELIA-00159	OPHELIA-00184	UNUSED	OPHELIA-00184	OPHELIA-00159
OPHELIA-00216 UNUSED OPHELIA-00216 OPHELIA-00159	OPHELIA-00189	UNUSED	OPHELIA-00189	OPHELIA-00159
Columnia and a sec	OPHELIA-00216	UNUSED	OPHELIA-00216	OPHELIA-00159
	alculation frequency	© sec.	AD115111 20050	

You can repeat the operation if your project includes more than one fixed Geocube. There could be different reasons for which your project would require several fixed Geocubes :

- Widespread monitoring area (over 2 km)
- Significant altitude differences (ski resorts, tall buildings, etc.)
- Cross-checking position calculation
- Duplicate fixed Geocube for security/continuity issues

Once a gross initial position for a fixed Geocube is determined by the system, the Geocube algorithm considers the position this position as invariable. If you are using several fixed points, it is better to have their relative position as precisely as possible.

Given the Geocube system is very good at calculating relative positions, the easiest way to do so is to follow the following steps :





- set one of the future fixed Geocube (A) as "Fixed" and the other (B) as "Mobile"
- let the system converge so as to determine a precise relative position for Geocube B.
- once system has converged for position of Geocube B, change its moving properties to "Fixed" •
- define which mobile Geocubes should be using Geocube B as fixed/reference Geocube.

V.D. SETTING PARAMETERS FOR MOBILE GEOCUBES

For setting parameters of a monitored Geocube, choose the line containing its name, click on "Mobile" in the drop down menu in the "Moving property" column.

In addition, you will need to define which is the fixed Geocube associated with that particular Geocube. To do so, select the name of the related fixed Geocube in the drop down menu in the "Fixed Geocube" column. By default, the first fixed Geocube on the list will be chosen, which means if you have only one fixed Geocube in your project, you can skip this stage.

Serial name	Moving property		Custom name	Fixed Geocube	
OPHELIA-00159	ORIGIN	•	Custom1	OPHELIA-00159	
OPHELIA-00182	MOBILE	•	OPHELIA-00182	OPHELIA-00159	
OPHELIA-00183	UNUSED	•	OPHELIA-00183	OPHELIA-00159	
OPHELIA-00184	UNUSED	•	OPHELIA-00184	OPHELIA-00159	
OPHELIA-00189	UNUSED	•	OPHELIA-00189	OPHELIA-00159	
OPHELIA-00216	UNUSED	•	OPHELIA-00216	OPHELIA-00159	
Calculation frequency 30 © s	© sec.				
				Cancel Define	

SET THE INTERVAL BETWEEN TWO CALCULATIONS

This parameter sets the number of seconds between two calculations of the algorithm. It needs to be comprised between 10 seconds and 60 seconds. A lower figure will increase the number of calculations while increasing the size of downloaded data files.



Define proces	S				×
Serial name	Moving property		Custom name	Fixed Geocube	
OPHELIA-00159	ORIGIN	•	Custom1	OPHELIA-00159	•
OPHELIA-00182	MOBILE	•	OPHELIA-00182	OPHELIA-00159	•
OPHELIA-00183	MOBILE	•	OPHELIA-00183	OPHELIA-00159	•
OPHELIA-00184	MOBILE	•	OPHELIA-00184	OPHELIA-00159	•
OPHELIA-00189	MOBILE	•	OPHELIA-00189	OPHELIA-00159	•
OPHELIA-00216	MOBILE	•	OPHELIA-00216	OPHELIA-00159	•
Calculation frequency	I sec.				
				Cancel Defin	ie

Once you have defined properties of all Geocubes to be used in your project and the calculation frequency, you can press "Define".

V.F. **DE**FINING CUSTOM NAMES

In order to set custom names, simply type in the chosen name for one or several Geocubes and click "Define".

Custom names can only contain letters, numbers, dashes and underscores.

The custom name is considered as a physical location. If you change the Geocube (thereby changing the serial name) but keep the same custom name, the computation will continue seamlessly and the graphs will display positions of the previous and current Geocube on the same page.

If you change the Custom name of a Geocube, the system will consider it is a new physical location and will therefore start plotting the graphs from the moment you defined that new name.

It is therefore important to define Custom names beforehand so as not to change them unnecessarily once the process is defined.



Define process	;		x
Serial name	Moving property	Custom name	Fixed Geocube
OPHELIA-00159	ORIGIN	Custom1	OPHELIA-00159
OPHELIA-00182	MOBILE	▼ OPHELIA-00182	OPHELIA-00159
OPHELIA-00183	MOBILE	OPHELIA-00183	OPHELIA-00159
OPHELIA-00184	MOBILE	▼ OPHELIA-00184	OPHELIA-00159
OPHELIA-00189	MOBILE	OPHELIA-00189	OPHELIA-00159
OPHELIA-00216	MOBILE	▼ OPHELIA-00216	OPHELIA-00159
Calculation frequency	Sliding average 7 1		
00 0 3	7.1		Cancel Define

V.G.

DEFINING FIXED GEOCUBE'S PRECISE POSITION

The Geocube system is very good at measuring displacement between fixed and mobile Geocubes. It is nevertheless not designed to provide a precise absolute position of the fixed Geocube. The Geocube system will naturally estimate the fixed Geocube's position at the beginning of a process and keep that position for the rest of the project.

If you wish to set the position of a fixed Geocube (because you have access to its precise absolute position for example), you can do so by accessing the Administration – Process – Set fixed Geocube position page.

Drop down menu of all declared fixed Geocubes on the project

	Change position			×
	Fixed Geocube to set		-	
	Latitude (i)	Longitude (j)	Height (j)	
	44.5604145599817	6.22146505719098	878.02434857748	
	Save			
	×	*	×	
Latitude in de	cimal degrees	Longitude in decimal degrees	Height (over ellipsoid) in	meters

V.H. LAUNCHING/MODIFYING A PROCESS

When all the above parameters have set or modified, press the "Define" button on the bottom right corner.

Modifying any of the parameters listed above will not impact past calculated values (raw or average), nor will it interrupt ongoing calculations.





If some Geocubes appearing in the list should not be included in the process (detected but part of another process, deemed to be removed or repositioned), simply leave them as "Unused", they will appear in black on the map and will not appear on the list presented on the Administration – Network page.

V.I. USING A CUSTOM PROJECTION

For operational reasons, you might want to visualize or download data with a projection that specifically meet your project requirements. To do so, access the Administration – Custom coordinates page.

Dashboard	Cus	tom coo	rdinates							
Network Process Custom coordinates	Allow Use o Modif Trans	s to translate nly if you nee fications will lation (i)	e and rotate C ed to define a appear in Cu:	coordir Custo stom L	nate system. om Lambert9: .ambert93.	3 projectio	n.			
FTP settings	Те	955770 🔅	meters	Tn	63898110	meters	Th	878	٢	meters
Reboot	Orien	tation (i)								
Software updates	Az	90		٢						
		Save								

To center the projection on a given point, enter it's coordinates in Te(East), Tn (North) and height, all being set in meters in Lamber 193 coordinates.

Orientation is the azimuth between the North and the x axis, expressed in decimal degrees. In a regular Lambert93, x points in the East direction, which has an azimuth of 90° with the North.

	Coordina origin in I	tes of new ambert93		Y.		
J	Tn = Th =	3259176.41 m 757 m	+ 4			
. 2020 Gau				- Tur		
					1	+ -

You can change point of origin and orientation independently. If you wish to modify only one of them, leave the other unchanged.

Once parameters are set, press "Save".





VI. SETTING AN AUTOMATIC DATA DOWNLOAD

In addition to the manual download presented in the User manual, Project Administrator has the opportunity to set up an automatic download of all data to an external database through an FTP link. This will generate a 6 distinct, comma separated, csv files corresponding to the following data :

- Position
- Voltage
- RSSI
- Locked satellite
- Temperature
- Calculation parameters

Whereas positions are calculated every 10seconds to 1 minute depending on process parameters, sensor values are logged every 15 minutes.

To do so, access the "Administration- FTP settings" page.

Use this ser	P client vice for pushin	ig data on ex	tternal FTP server.			
Rate						
10	٢	minutes				
Login			Password			
kylia			•••••			
Server address			Port		Path	
149.202.53.58			21	٢	1	
Projection type						
Geocentric Carte	sian (x,y,z)			•		

<u>Rate</u>

Interval of time between two data transfers. Transfers will include all points calculated since the previous transfer. Interval needs to be above 10 minutes.

Login/Password

Credentials to access the external FTP server

Server address/Port/Path

Address of destination point

Projection type

Selected output projection

Once parameters are set, click the tick box on the upper left-hand corner at click on "Save".

Geocube system will generate 6 csv files, which will be sent to the external FTP server at the set interval of time.



Generic name :

COORD-00XXX_data_1YYYYYYYY

Name of project coordinator

Type of data contained in the file (position if void)

GMT timestamp

To get more information on the date corresponding to the timestamp, you can visit timestampgenerator.com

Data included in csv file :

Custom name, date, real time calculated position, rms, filtered position

rms is an indicator of the quality of the calculation performed by the algorithm. The lower the rms indicator is, the better the quality. Measurements with rms over 0.05 are rejected by the algorithm and are neither exported nor plotted on the graphs.

Example of csv file :

name	time			x	у	z	rms	x_avg	y_avg	z_avg
S-5-15	03/0	<mark>2/2</mark> 020	08:04:00	1369.689724	-1700.777182	2.267340729	0.022609405	1369.687323	-1700.775708	2.269889515
S-5-15	03/0	<mark>2/20</mark> 20	08:04:30	1369.689807	-1700.77735	2.267499178	0.020516321	1369.687324	-1700.77571	2.269889242
:			:	:	:	:	:	:	:	:
S-5-17	03/0	2/2020	08:04:00	1394.542738	-1737.382388	1.068885346	0.013845252	1394.539573	-1737.379522	1.069003558
S-5-17	03/0	2/2020	08:04:30	1394.542757	-1737.382418	1.068835086	0.012103883	1394.539574	-1737.379524	1.069001744
:			:	:	:	:	:	:	:	:
S-5-20	03/0	2/2020	<mark>08:</mark> 04:00	1385.099847	-1744.468844	1.039450048	0.026069732	1385.097401	-1744.465487	1.039795356
S-5-20	03/0	2/2020	<mark>08:0</mark> 4:30	1385.099795	-1744.46891	1.03959281	0.019461342	1385.097402	-1744.465488	1.039795286
:			:	:	:	:	:	:	:	:

b) Sensors files (4 files)

Generic name :

COORD-00XXX_data_sensor_ZZZZ_1YYYYYYYY

The options for the generic name depending on the logged sensor (ZZZZ) are the following :

- voltage
- temperature
- rssi
- satellites

Data included in csv file :

Custom name, date, ZZZZ

Example of csv file (in this case data sensor voltage) :

name	time	result
SM2-N28E48	03/02/2020 20:04	13.187
SM2-N28E48	03/02/2020 20:19	13.187
:	:	:
SM2-N31E49	03/02/2020 20:00	13.012
SM2-N31E49	03/02/2020 20:15	13.012
:	:	:
SM-A3_8_	03/02/2020 20:07	12.987
SM-A3_8_	03/02/2020 20:22	12.987
:	:	:

c) Calculation parameters (1 file)

Generic name :

COORD-00XXX_data_parameters_1YYYYYYYY

Data included in csv file :

Custom name, date, rms, sig_x, sig_y, sig_z

rms is an indicator of the quality of the calculation performed by the algorithm. The lower the rms indicator is, the better the quality. Measurements with rms over 0.05 are rejected by the algorithm and are neither exported nor plotted on the graphs.

Sig stands for sigma and are an indicator of the movement calculated between two in all three directions (x, y, z). The lower the sig factor are, the .

Example of csv file :





name	time	rms	sig_x	sig_y	sig_z
S-5-17	03/02/2020 09:19	0.019963344	7.01E-05	0.000119034	8.32E-05
S-1-50	03/02/2020 09:19	0.015954324	5.76E-05	0.000105866	9.03E-05
S-1-58	03/02/2020 09:19	0.014912607	6.32E-05	0.000100933	8.43E-05
S-2-51	03/02/2020 09:19	0.015761827	6.80E-05	0.00010657	9.95E-05
S-1-41	03/02/2020 09:19	0.013864854	6.34E-05	0.000102399	8.53E-05





VII. MANAGING ACCESS RIGHTS

As an administrator, you can create, delete, edit profiles and change passwords for both users and administrators. To do so, click on "User administration" on the top left corner, in the drop-down menu under you user name.



A pop-up page will appear, listing the current registered users :

Users				S+ Create new user
Name	Email	Role	Actions	
Admin Ophelia	higs patropythile service, con	superadmin		
	per selective principariy creat it	admin	• 1	
100000	and angle particle second on	admin	• 1	
	and any effective	user	• ?	۱.
William Te	when adjusted among on	user	© 1	
Presidence Providence	Telleri, artunglighelis artuin, um	user	© ?	
	pair to Press and project search 1	user	• 1	Î

There are three profiles types:

Access to the Map, Graphs, Exports and Settings pages

Admin :

User :

Superadmin :

Access to Administration pages in addition to the pages listed for the User profile Reserved for Ophelia Sensors administrator for contact and troubleshooting purposes

VII.A. CREATING A NEW USER

Click on the top hand corner "Create new user" button. A pop-up page will appear :



Register new user

Name		
E-Mail Address		
Role		
admin user		
	Cancel	Add

Fill in the form and press "Add". An e-mail will be generated to the specified e-mail address inviting the new user/administrator to enter a password to access Geo3 (see "User Manual" II.A).

VII.B. MANAGING USERS

By clicking on th<mark>e different icons, y</mark>ou can

۲	:	Check information and last login details
D	:	Change user attributes and reset password
Ŵ	:	Delete user

You can also edit your own profile by clicking on "Edit profile" in the drop-down menu below your name, on the top right corner of your screen.

VII.C. CONTACTING OPHELIA SENSORS

The easiest way to contact Ophelia Sensors for information or troubleshooting is to generate a mail by clicking on "Contact administrators" on the top right corner :







VIII. QUESTIONS AND TROUBLESHOOTING

1. How can I configure a Geoport if I don't have the USB connection cable or if the Geoport is inaccessible?

You can change Geocube configuration through SMS messages, provided the Geoport is powered and connected to a 3G network.

• To change the APN, send the following SMS to the SIM card inserted in the Geoport :

"set apn xxxx" where xxxx is the APN of the carrier

Message is acknowledged and changes saved once you receive a message form the SIM card stating : "apn set : xxxx"

• To change the server address, send the following SMS to the SIM card inserted in the Geoport : "set ip xx.xx.xx.xx" where xx.xx.xx is the address of the server

Message is acknowledged and changes saved once you receive a message form the SIM card stating : "destination ip set : xx.xx.xx.xx"