



- BioLoc Rx -



General informations



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Intended use

The device is designed for immediate and outdoor use. It has to be used with the appropriate accessories as described in these operating instructions. Please, before use, follow the safety instructions listed below.

Environmental protection



The packing materials can be recycled. Please respect your local environmental regulations in terms of recycling. Electrical and electronic appliances contain valuable, recyclable materials and components such as lithium batteries which can pose a potential threat to human health and environment. However, these components are required for the correct operation of the device. Appliances are not allowed to be disposed together with the household rubbish but should be collected separately for recycling. It is much more environmentally friendly to recycle batteries properly and safely. Follow applicable country, state, and local regulations for disposal/recycling of electronic device with lithium battery supplied in.

Scope of delivery

The scope of delivery for the appliance is shown in the delivery order. Check the contents for completeness when unpacking. If any accessories are missing or in the event of any shipping damage, please notify your contact at Xerius.

Warranty

This product is sold with a limited guarantee of 1 year. Xerius's responsibility may be further limited in accordance with its sales contract. Xerius is not responsible for product damages caused by natural disasters, fire, static discharge, misuse, abuse, neglect, improper handling or installation, unauthorized repair, alteration or accident. In no event, Xerius shall be liable for loss of data stored on your equipment. Xerius cannot be liable for exceptional damage, even incidental or consequential if it was informed of this possibility in advance. The warranty does not support modified product.

We invite you to read the contract to know all warranty rights, solutions and limitation of liability. The end user undertakes to use this product in accordance with its original purpose, without making any technical changes that can bring expectations to the product itself and Xerius business.

All modifications of the electronic circuits or software must be expressly approved by Xerius, if not, that will cancel all the guarantee. In case of guarantee, please notify your contact at Xerius.

Safety notice

CAUTION

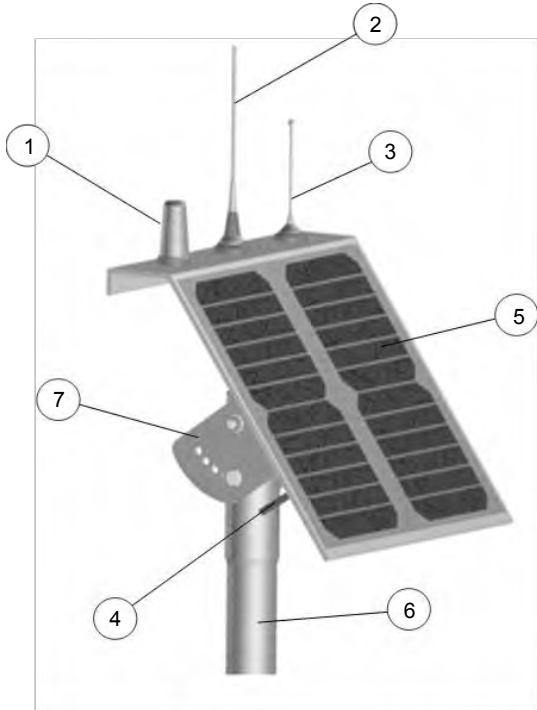
Please respect the following instructions². In case of non-compliance, the warranty will be canceled.

- Check battery level regularly (monthly recommendation);
- Do not put the product near and / or in contact with conductive materials (reinforced concrete, car roofs, ...);
- Space each receiver of 150m when they are ON;
- Do not expose the product to extreme temperatures $<-20^{\circ}\text{C}$ and $>+60^{\circ}\text{C}$;
- Do not hold the device near an open flame or a lit cigarette;
- Avoid shocks;
- Do not plunge the device inside liquids;
- Do not allow children to play with the product, as they may injure themselves or a third party, damaging the product, including the battery;
- In case of storage, the battery level must not exceed 1/2 or even 2/3 of the maximum voltage.

² Not hierarchically listed

Description of the device

Depending on the model used, there are differences in the scope of delivery (see on the delivery order).



- 1 GSM antenna
- 2 434MHz antenna
- 3 868MHz antenna
- 4 Bluetooth antenna
- 5 Solar panels
- 6 Mast fixation
- 7 Mast (in option)

Quick first start

1. Leave BioLoc Rx outside in the open and facing South following the instructions in the Safety Notice;
2. Place a transmitter in test outside at 100m from the station;
3. After two days charging at sun, check the battery level and data reception using the Bluetooth link and BioLoc Rx software previously installed on your laptop;
4. If the battery level is 100% and data reception is good, you can deploy the BioLoc Rx station.

Installation

BioLoc was developed for mast mounting. The height depends on your study area. Check and test the robustness of the installation after deployment.

Xerius reserves the right to cancel the guarantee in case of non-compliance with these instructions.

Functioning

BioLoc Rx downloads BioLoc Tx data into the study area. Data are saved and stored in the internal memory.

If you have more than one BioLoc Rx, all the data will be sent automatically to the main station BioLoc Rx (called the Master).

The data can be downloaded via Bluetooth from the Master or received directly by mail thanks to the GSM network. The other BioLoc Rx relaying to the Master are called Slave. If you have only one station, it will automatically be a Master.

To activate the GSM network, please send us a Micro SIM card including SMS and at least 50MB of internet in 2G.

Technical data

Weight	< 2kgs
Dimension	320mm * 310mm
Frequencies	ISM 434MHz ISM 868MHz
GSM link	Quad-bande 850/900/1800/1900MHz -Class 4 (2 W @ 850/900MHz) -Class 1 (1 W @ 1800/1900MHz)
Bluetooth link	ISM band 2400–2480 MHz IEEE 802.15.1. Bluetooth version BT3.0.
Internal sensors	Temperature Battery level Reception level
Memory	32 Millions bits
Autonomy	Illimited
Operating temperature	-20°C to +60°C
Compatibility	BioLoc Tx

Care and service

In case of defaults, please refer to your contact at Xerius.

Only Xerius collaborators are authorized to make the repairs on your device.

In the event of non-compliance, the warranty will be cancelled.

Return policy

All requests for after-sales service must be send by mail to your contact at Xerius for acceptance.

Every device should be returned at the following address :

XERIUS

4 Rue Jean Monnet

ZA Le Cassé II

31240 SAINT JEAN (France)

+33 (0 5 62 89 09 83

After receiving and testing in-house, Xerius reserves the right to charge the customer, after its consent, for any defaults not covered by the warranty.

Return delays may vary depending on the failure.

To go further...

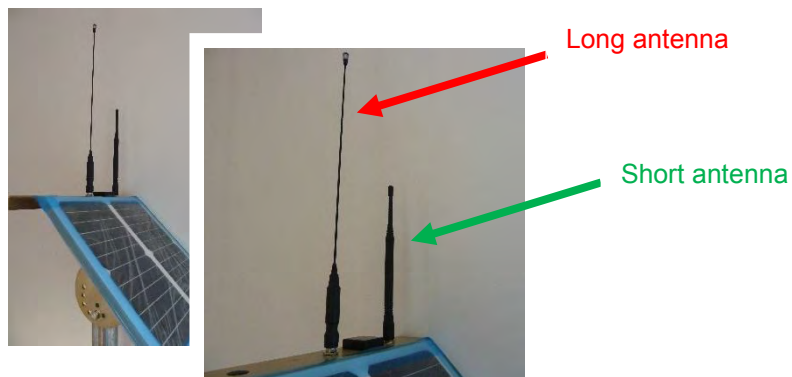
For more information on our product and their use, you can visit our website www.Xeriustracking.fr and our Youtube channel @XeriusTracking where you will find described video with some more informations.



Quick start

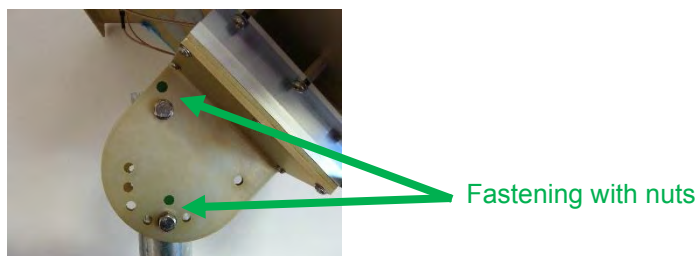


Before installation, please mount the antennas delivered with the station as shown in the following photos.



Solar panels in front of the station are fragile. Please be careful not to bump or scratch them.

The station can be mounted on a mast as shown in the following photo.



The station must be placed at a high point away from metallic objects and/or electrical elements.

In order to optimize its recharging, an orientation of the solar panels to the South is strongly recommended.

The station can be activated via Bluetooth, please check the date, time and battery voltage in the configuration before to start.

If the date and time are not up to date, put your station outside, in the open, for 48 hours.

Before each first use, we recommend a minimum battery threshold of 85%. If your battery level is lower, we advise you to put the station to charge outside, in the open, with the solar panels visible.

For any technical support, please contact your referent at Xerius.

BioLoc Rx software



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Software installation

Database installation, click on the following link :

<https://www.dropbox.com/s/qnst7uds5jfoqpo/AccessDatabaseEngine.exe?dl=0>

Software installation, click on the following link :

https://www.dropbox.com/s/ikk4ec0bze2565w/BioLoc_RX_setup%20v1.0.26.zip?dl=0

General Functioning

BioLoc Rx software allows you to :

- Decode data received by mail
- Configure tracking areas
- Connect to the Master station in Bluetooth
- Set data configuration
- Download data remotely via Bluetooth
- Change the configurations of the Master station
- Update the software of the Master station



Configure tracking area

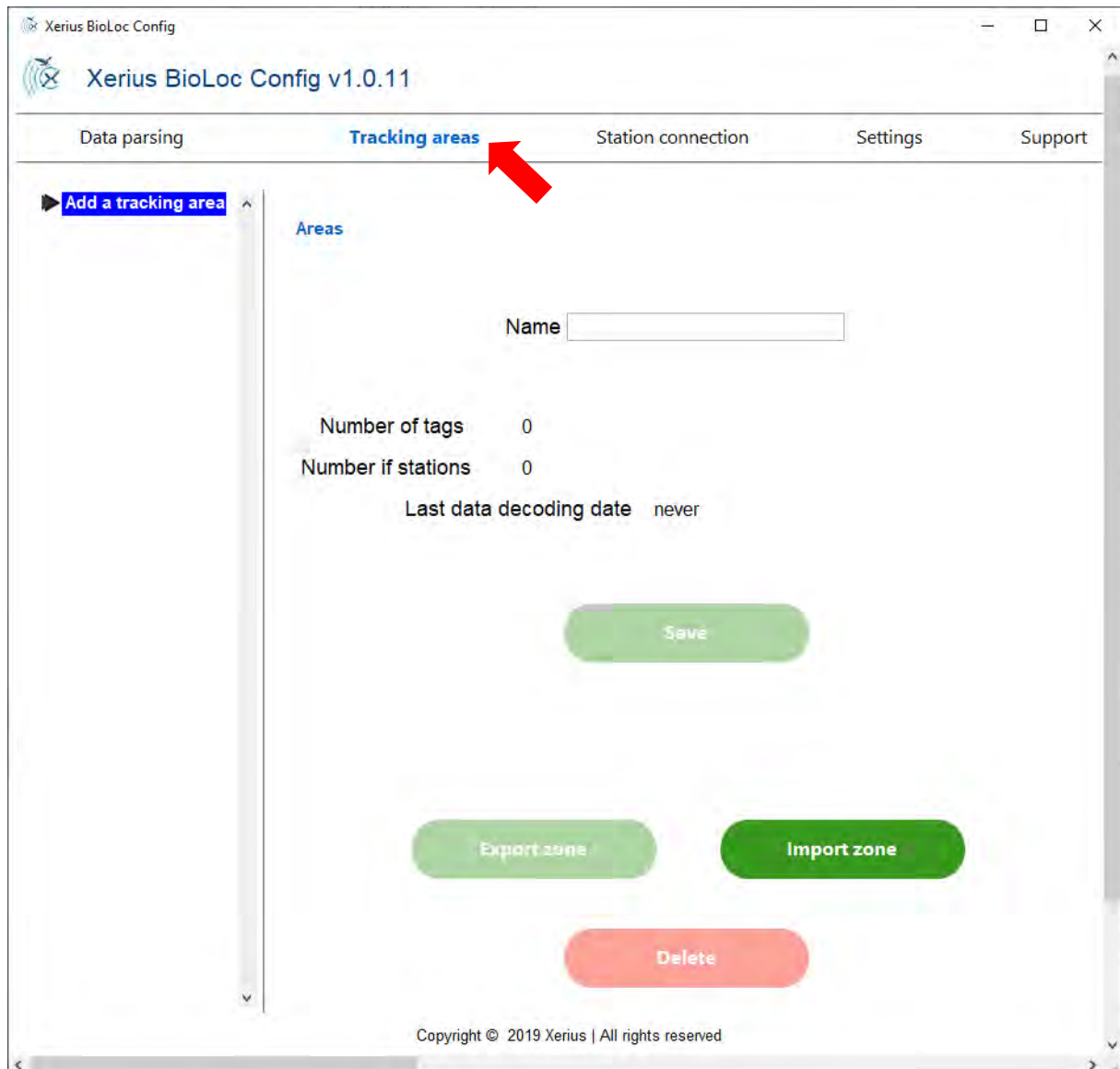
Setting tracking area allows you to link BioLoc Tx transmitters to your BioLoc Rx.

Tracking area must be filled before Bluetooth connection.

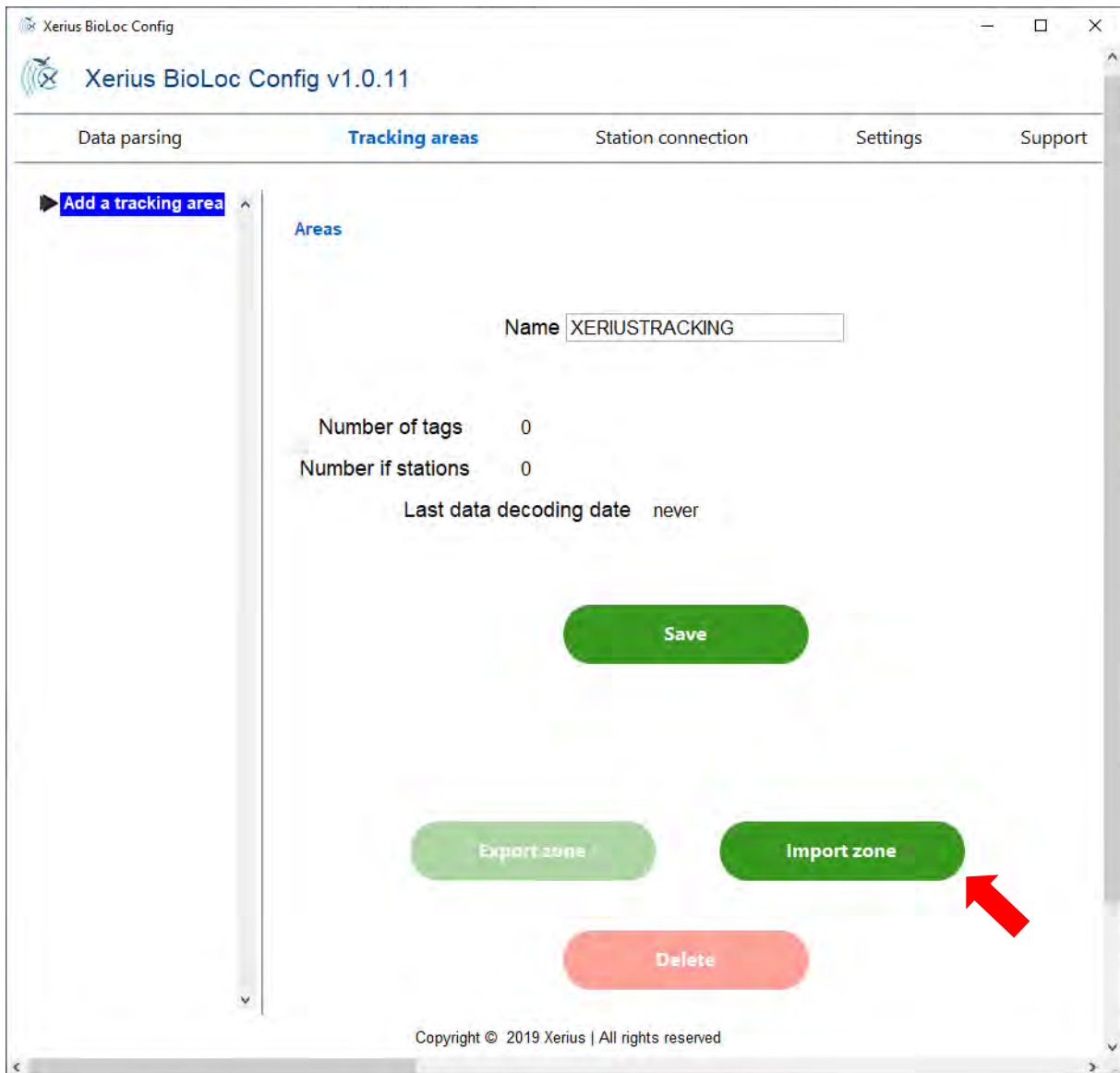
Automatic tracking area import

You have received a file named "Tracking area" by XERIUS. You can automatically import a tracking area.

1/ Go to the tab « Tracking area »



2/ Click on « Import zone »



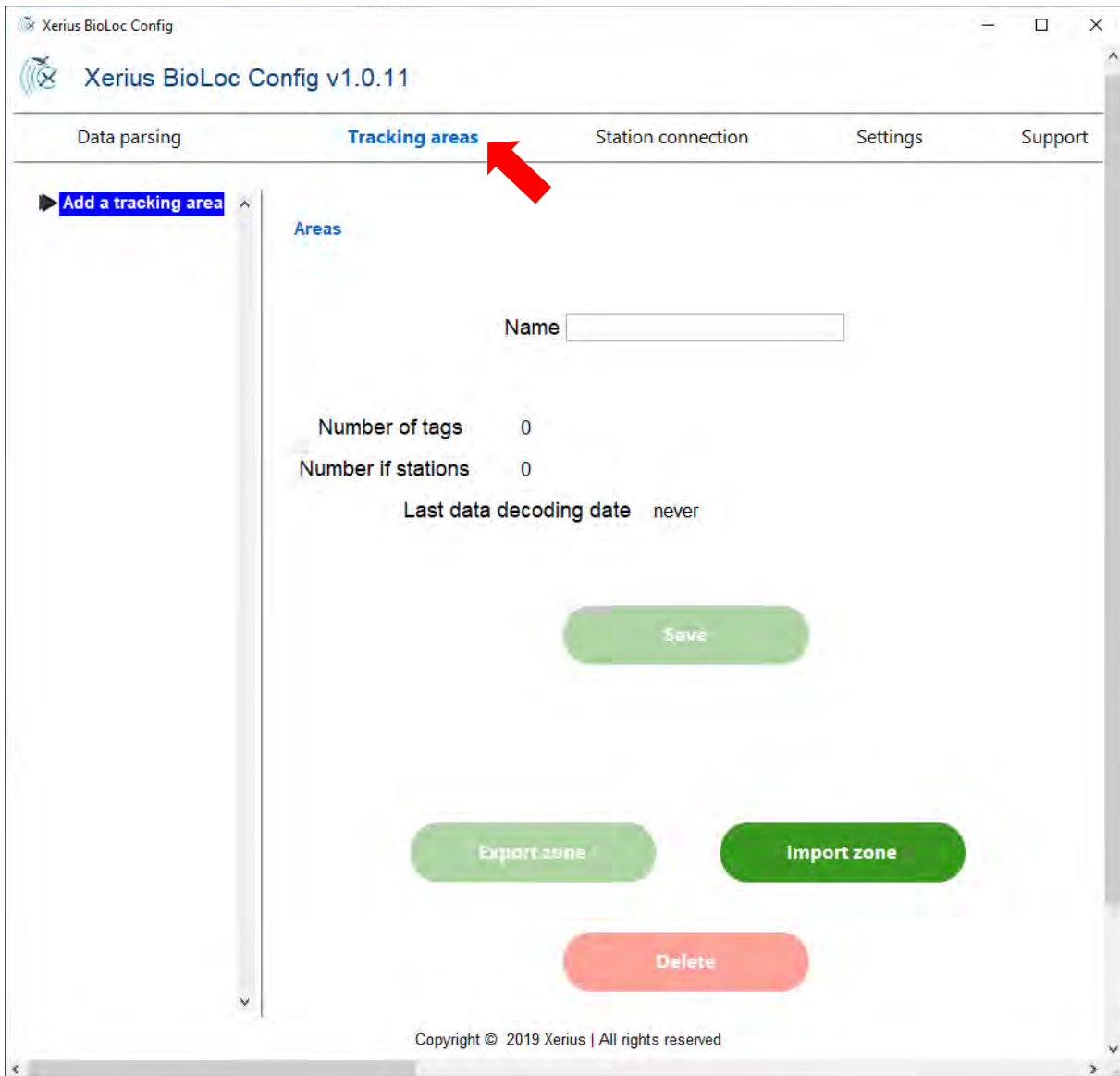
3/ Select the file « Tracking area » saved on your laptop

Tracking area will be automatically imported.

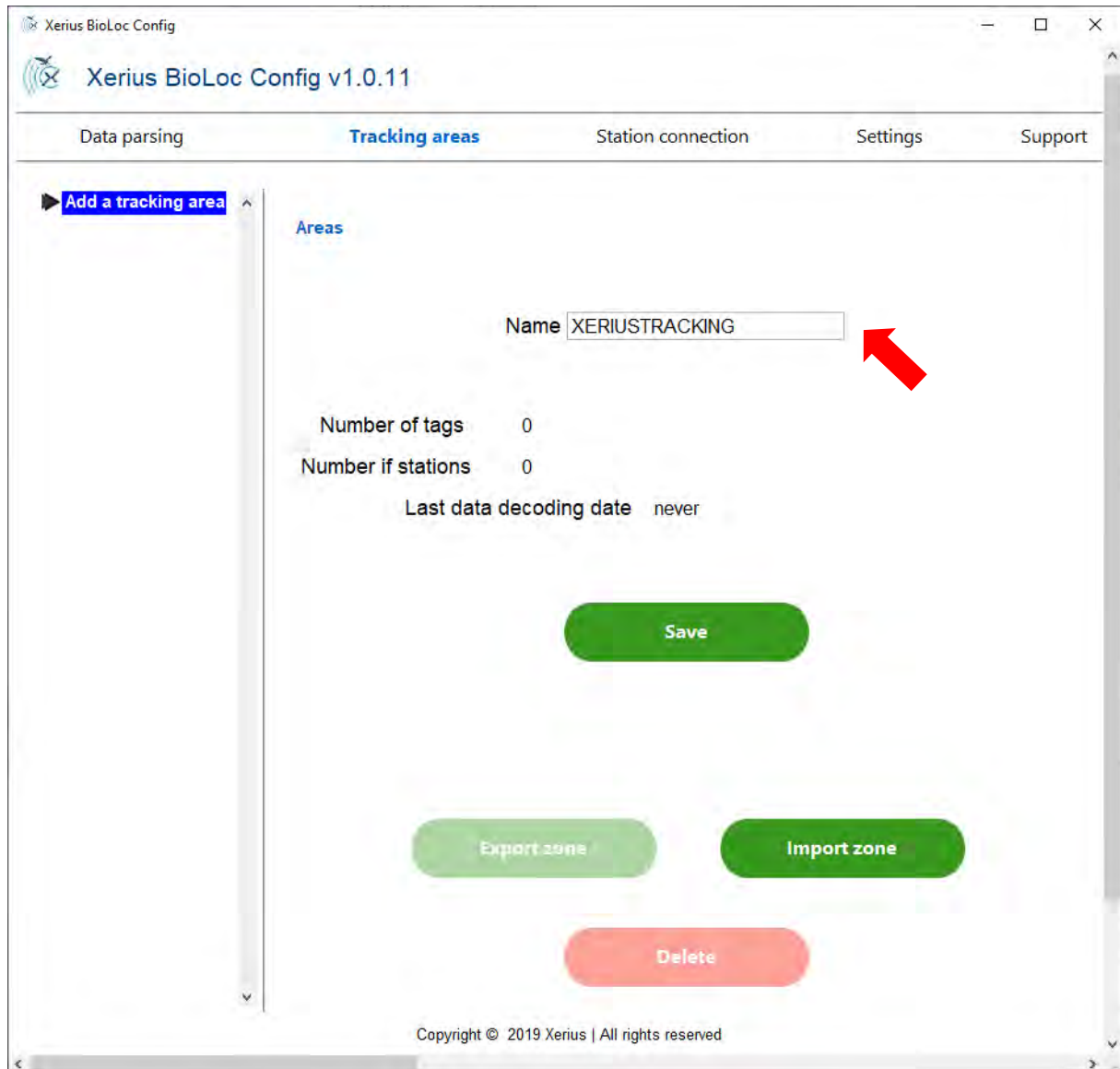
Manually tracking area import

You have not received a file named « Tracking area » by XERIUS. You must import your zone manually.

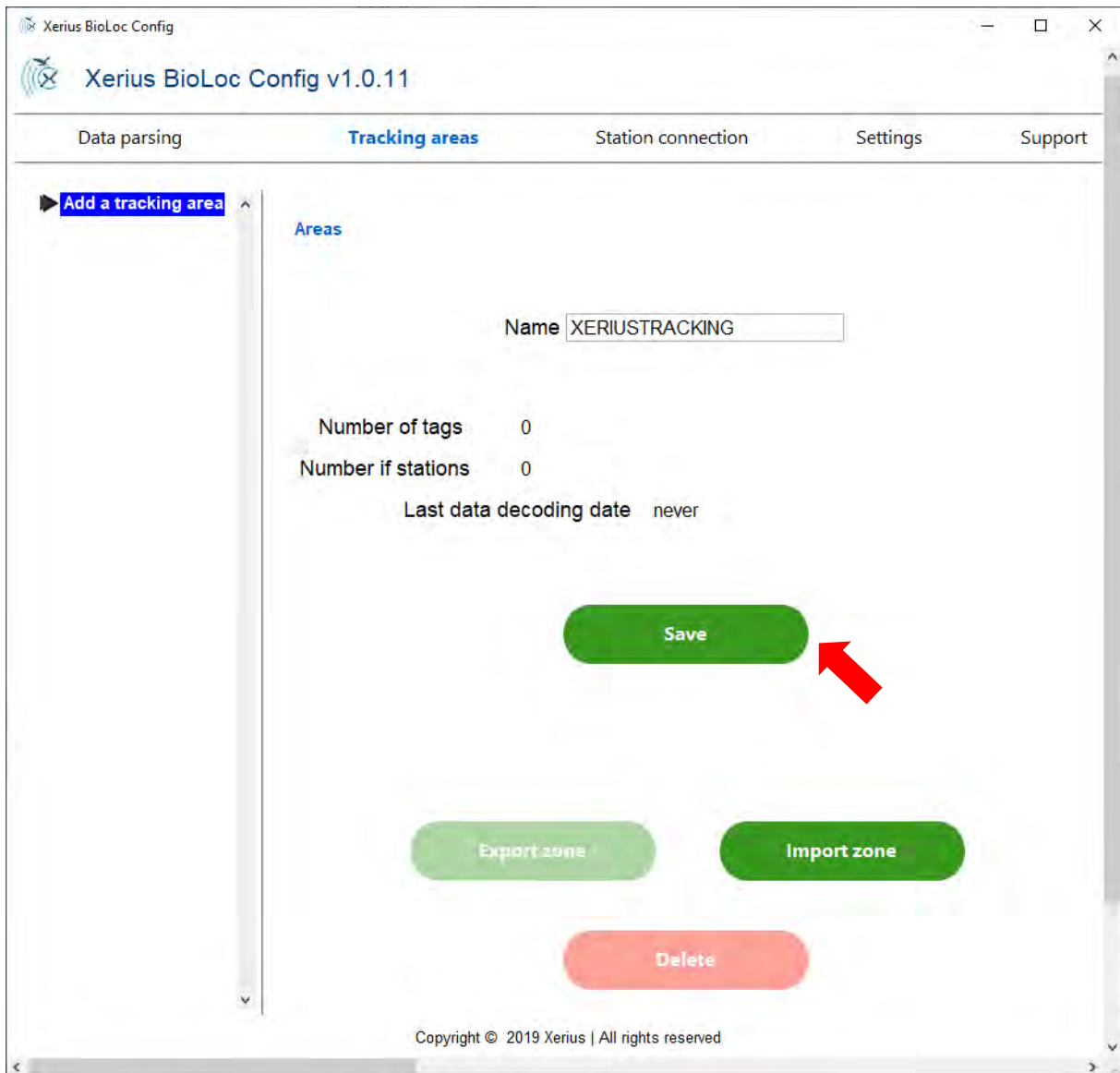
1/ Go to the tab « Tracking area »



2/ Name your tracking area in the « Name » space and then « Save »



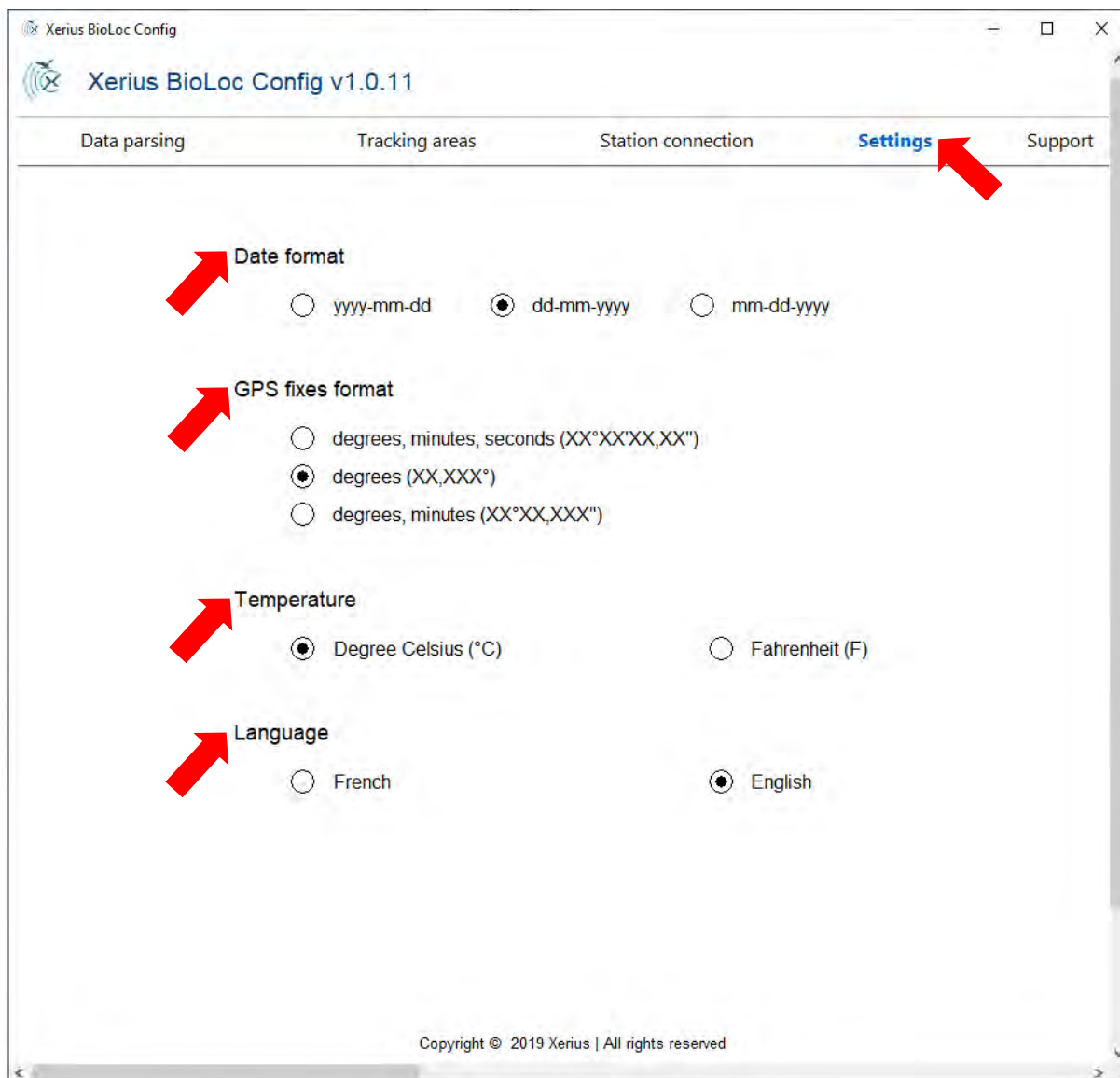
3/ Click on « Save »



Setting data configuration

Before downloading data received via mail or downloaded by Bluetooth, we recommend to fill data parameters in the « Settings ».

Go to the tab « Settings ». You can select and/or change date format, GPS format and the expression of the temperature as well as the language of BioLoc Rx software.



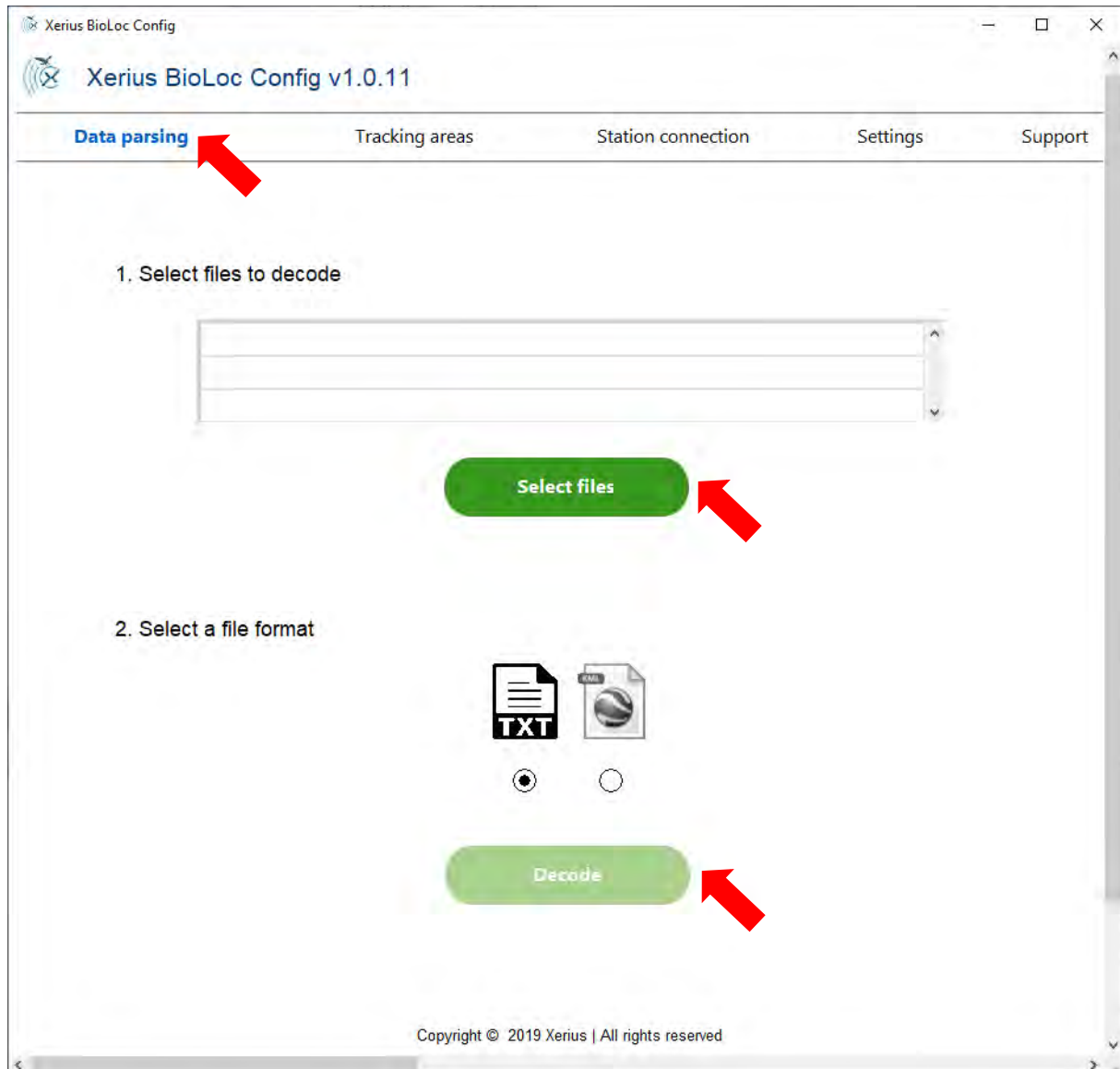
Parameters are automatically saved in the software.

Decode data received via mail

When you received data directly via mail, you only received a raw encoded file **XXX.txt**.

This files contains encoded data that BioLoc Rx decode using the tab « Decode my data ».

- 1/ Select the file to decode received via mail
- 2/ Choose the saving format (one or several)
- 3/ Enter the saving location of the decoded files on your laptop

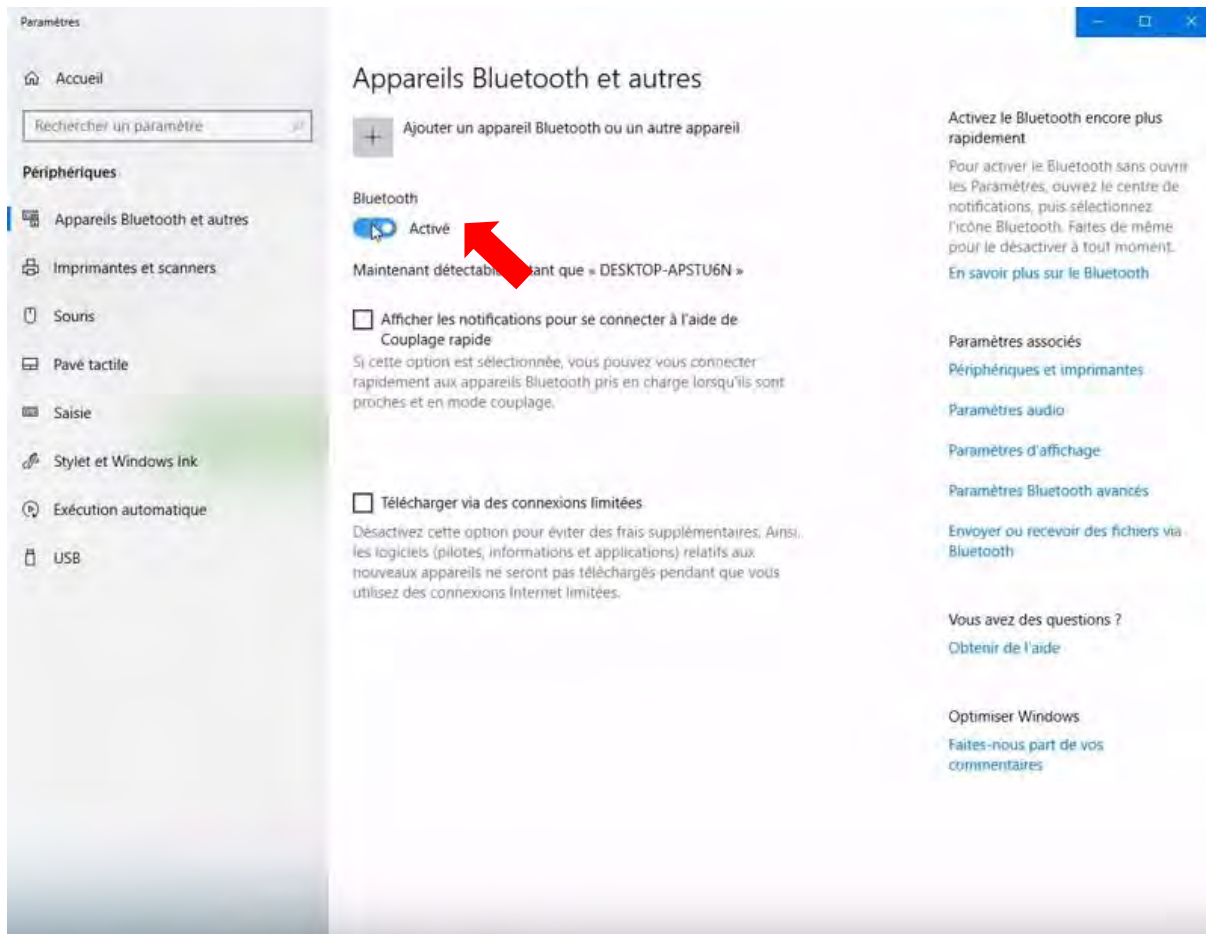


You will get this following files:

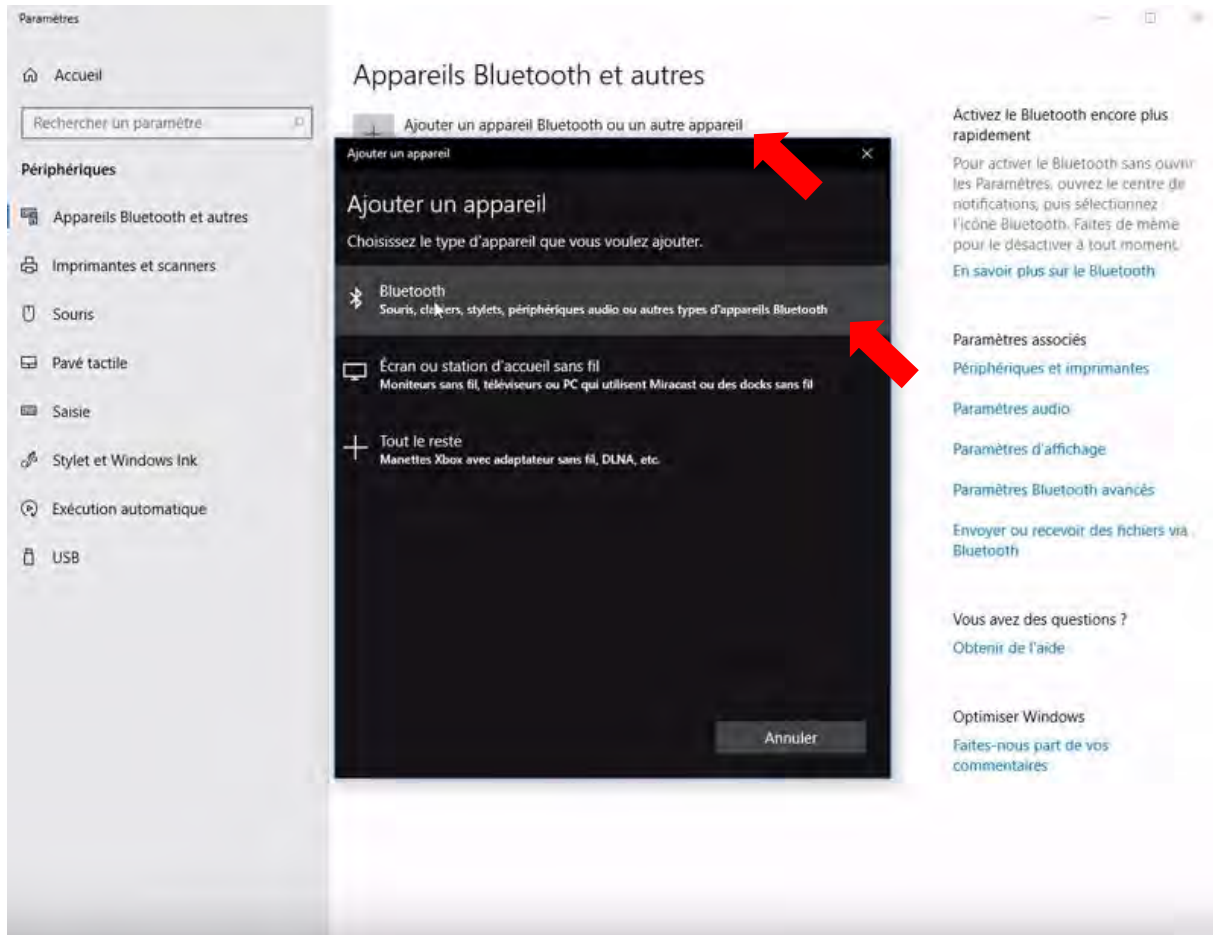
- **XXXX**_Data.txt
- **XXXX**_Info.txt
- **XXXX**_Data.kml

Connect to the station in Bluetooth

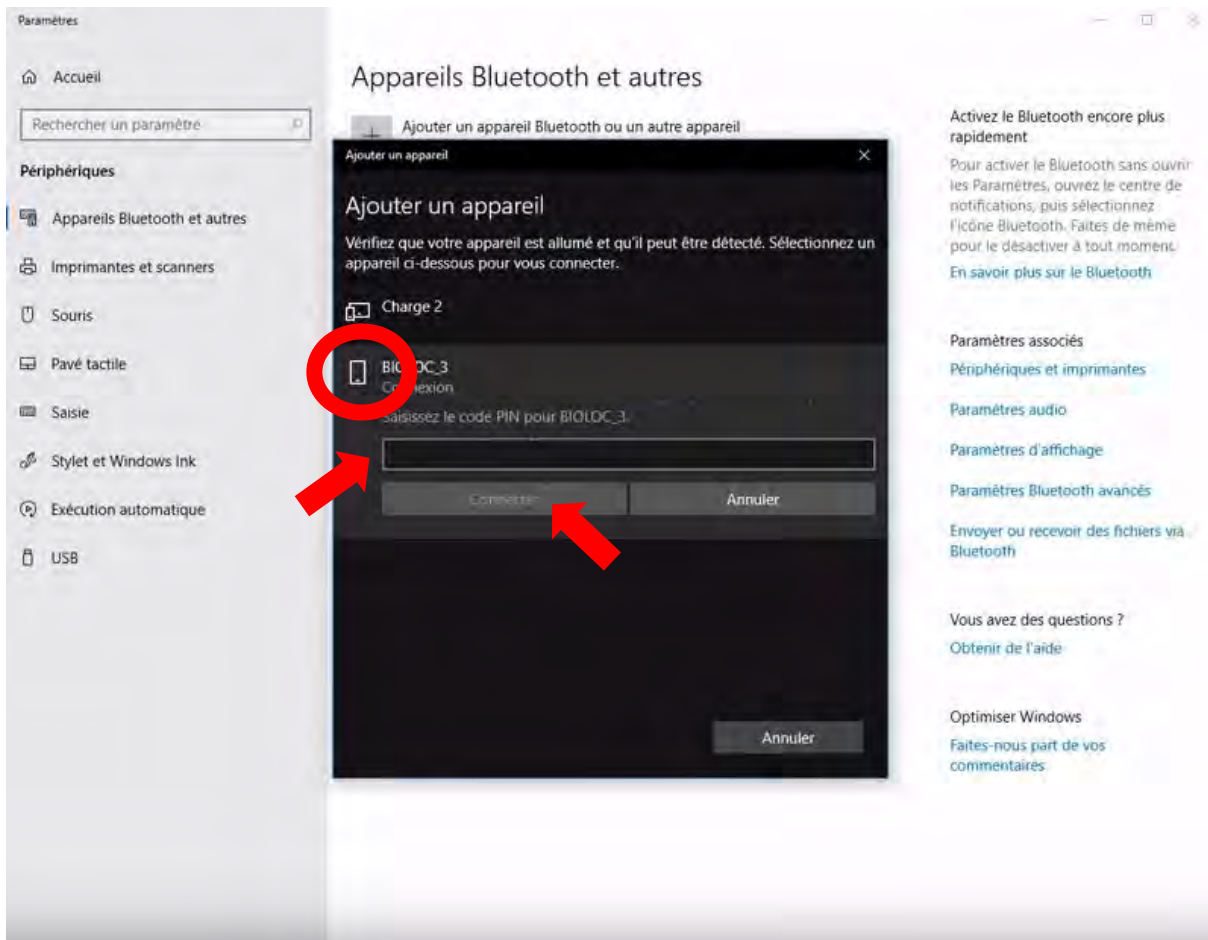
1/ Go to settings and activate the Bluetooth on your laptop



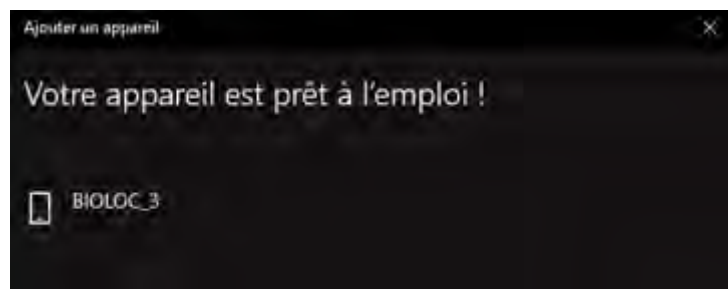
2/ Go to « Add Bluetooth device or other device » and select « Bluetooth »



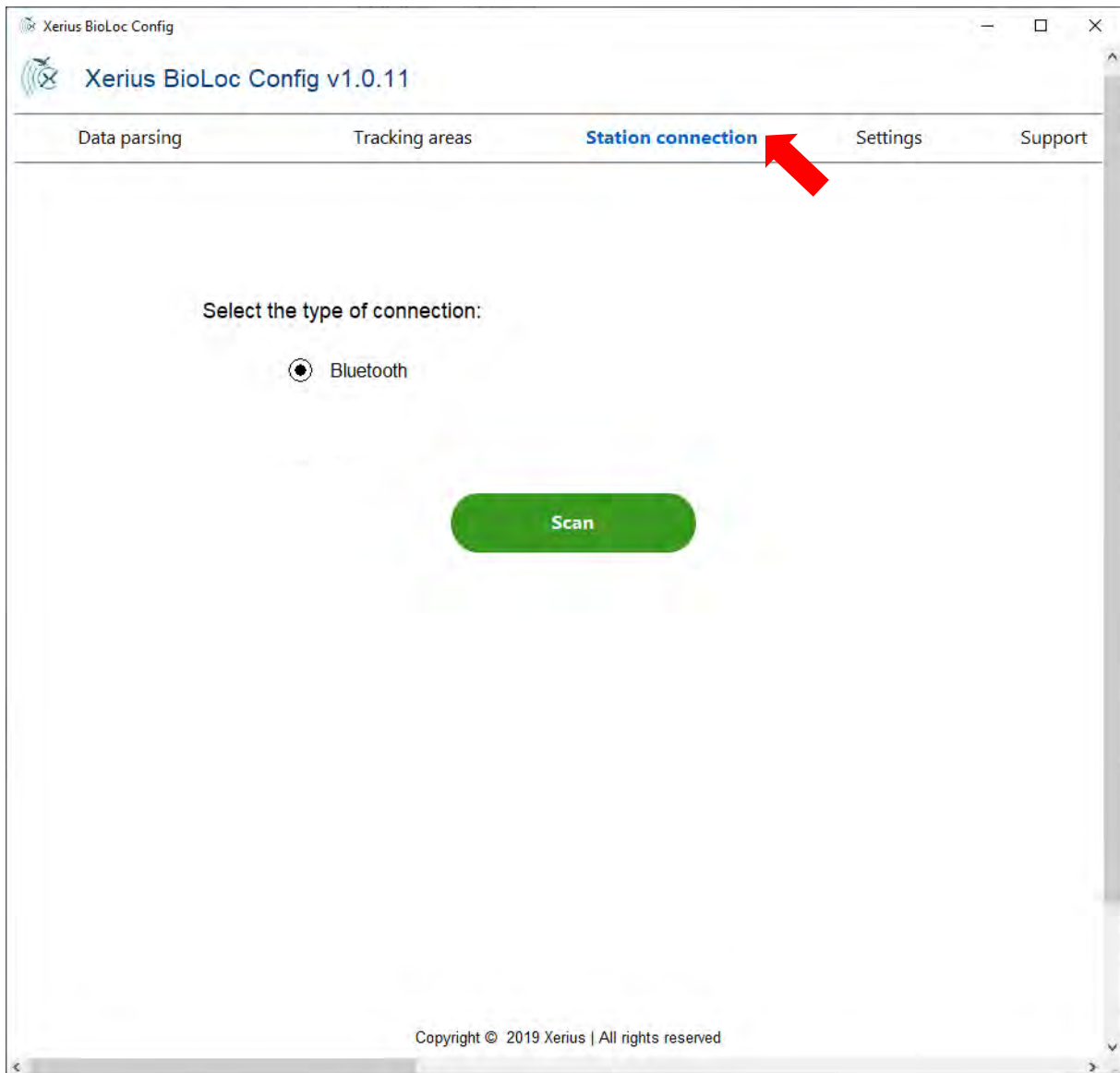
3/ Select the Master station. Please make sure the icon in front of the name represents a mobile phone. Enter the given password in the banner and connect



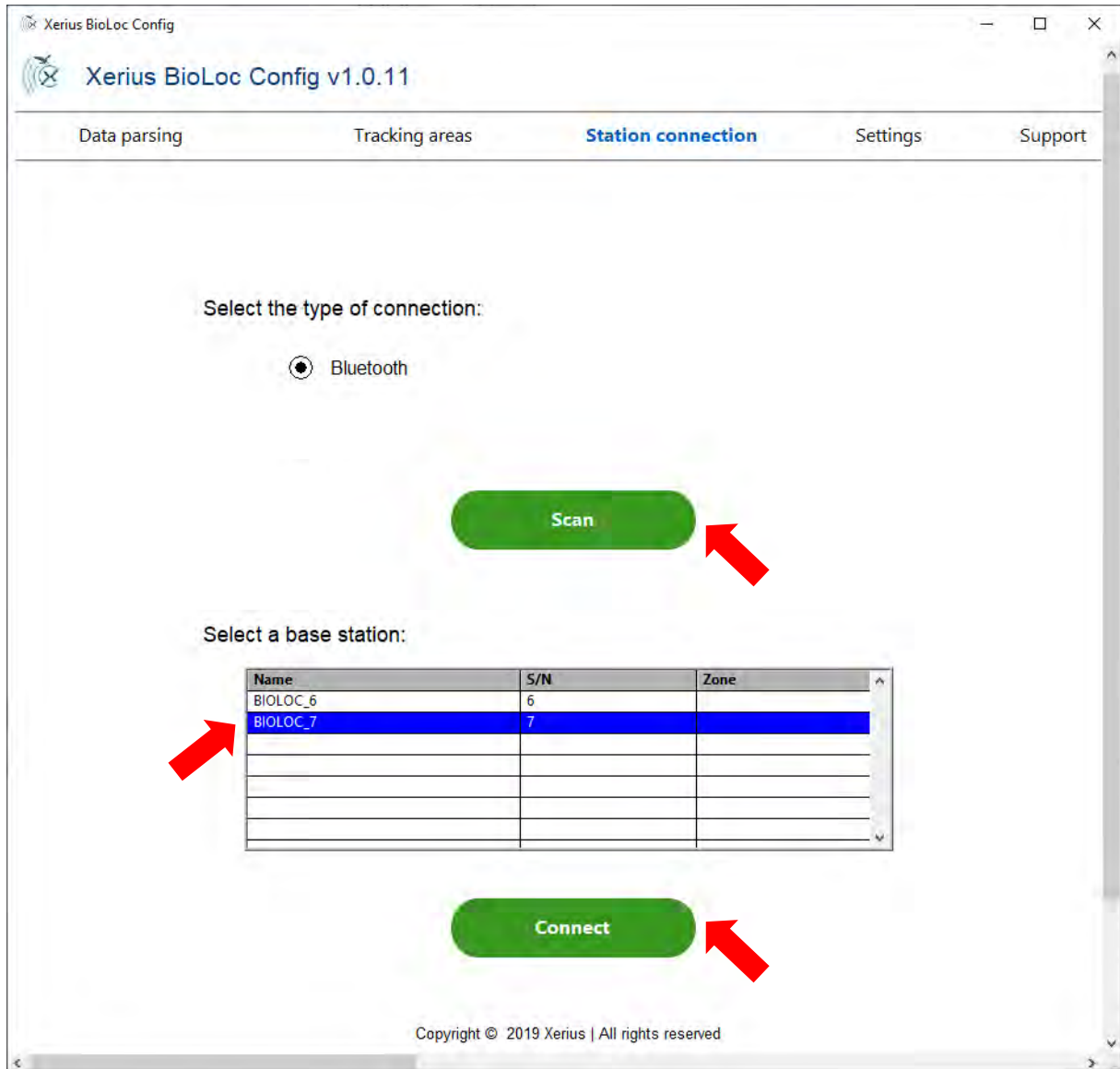
A validation window will appear.



4/ Go back to BioLoc Rx software and go to the tab « Connection station »



5/ Click on « Scan », select the station and « Connect »

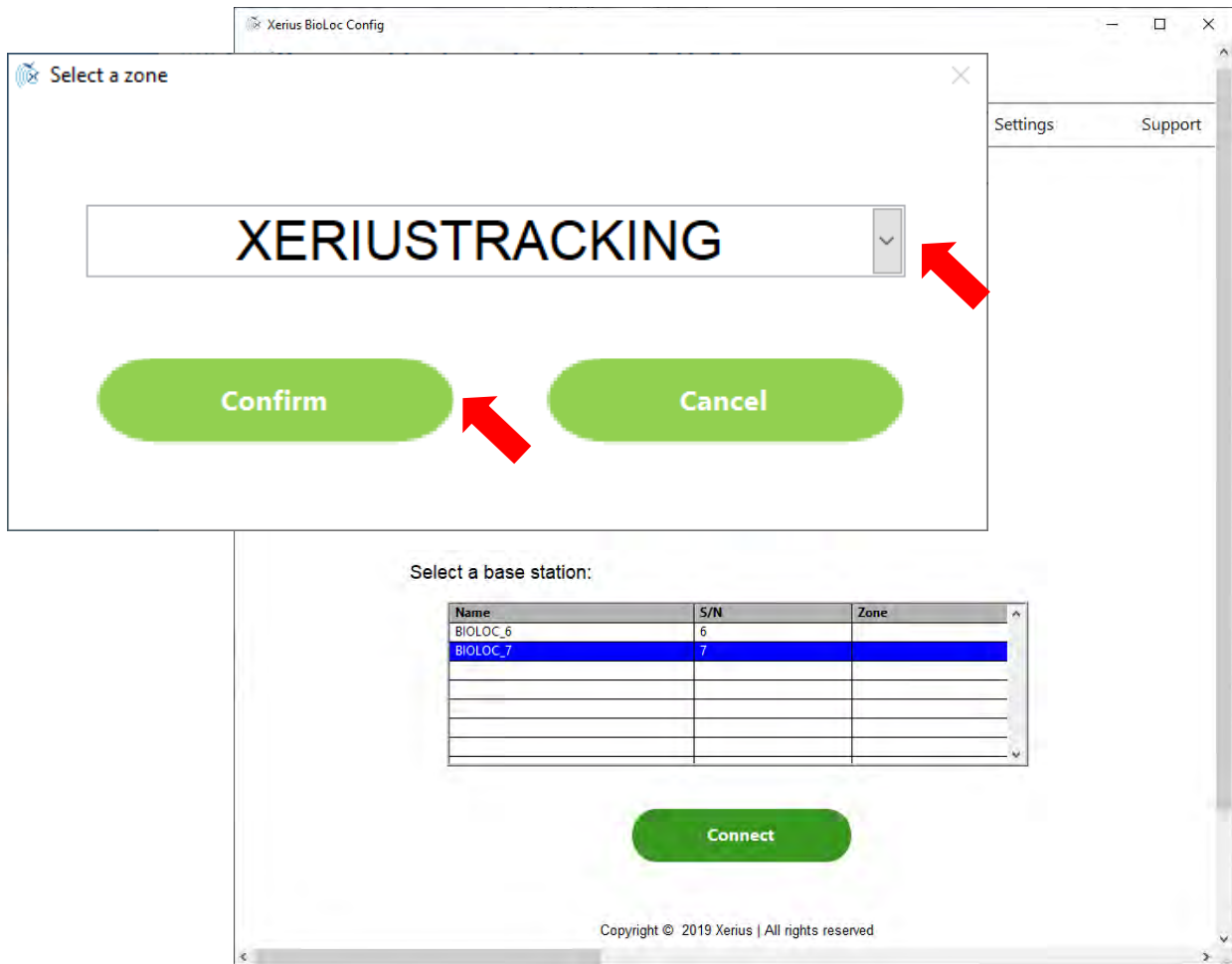


You are now connected to the station.



6/ No zones are assigned to BioLoc Rx station, « Select a zone » window appears.

Select the zone you have previously created and « Save »

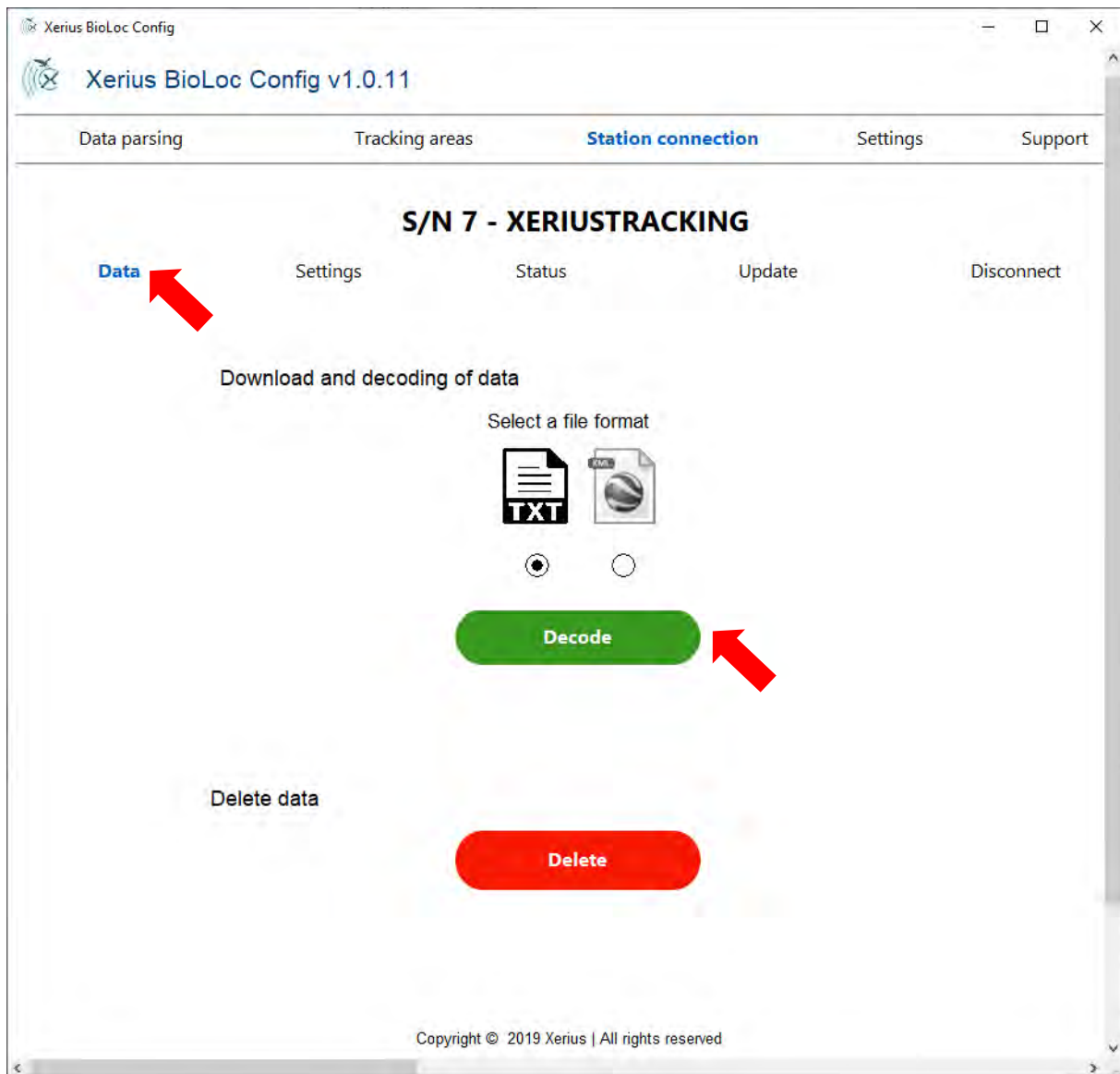


You are now connected to the station.

Download data remotely via Bluetooth

To download data directly via Bluetooth from the Master station, go to the tab « Data » while staying connected to the station.

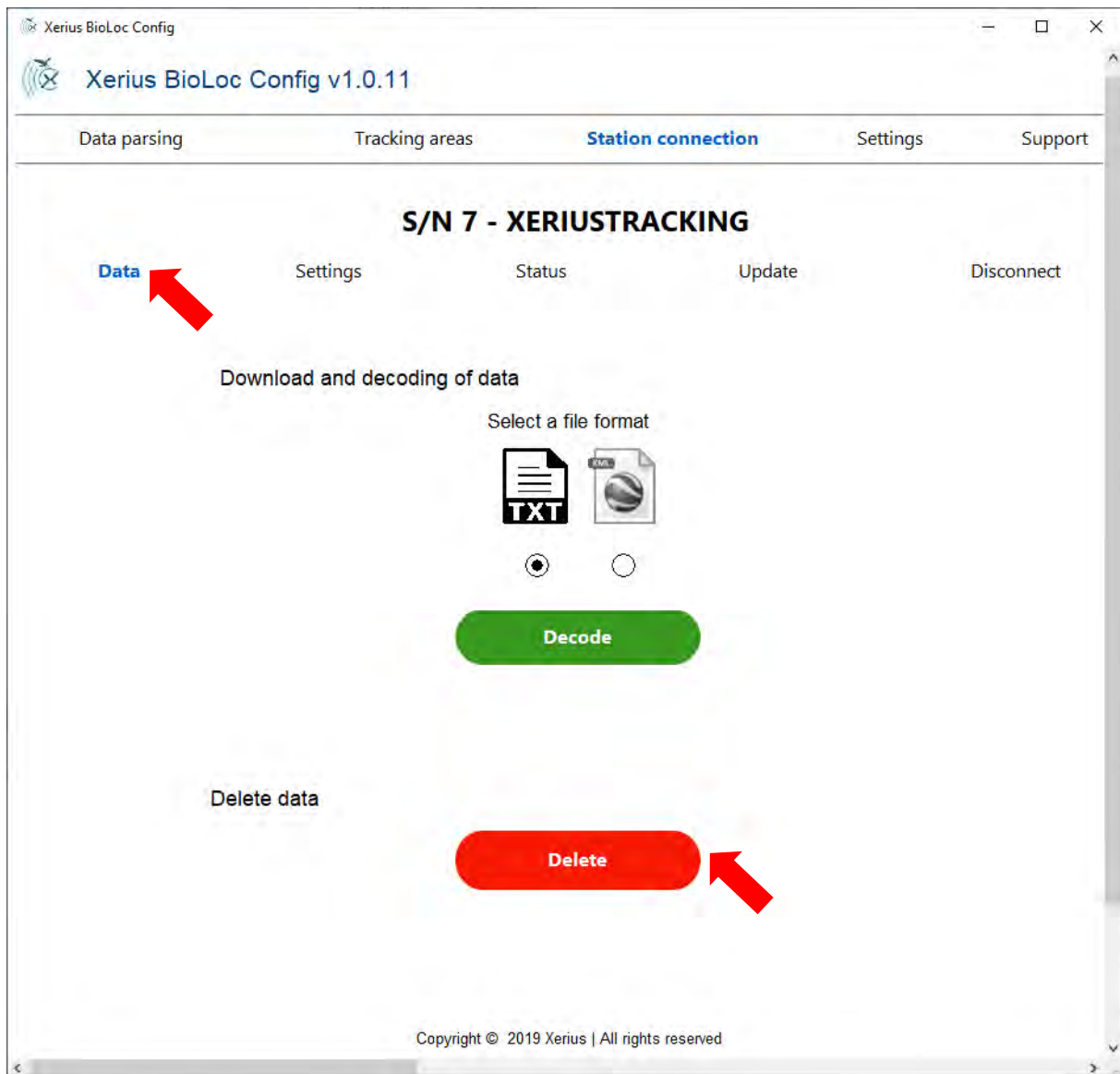
Select the format and click on « Decode ».



Erase data

To erase data, go to the tab « Data », while staying connected to the station.

Click on « Erase ».



Station settings

To change the configuration, go to the tab «Settings», while staying connected to the station.

Xerius BioLoc Config v1.0.11

Data parsing Tracking areas **Station connection** Settings Support

S/N 7 - XERIUSTRACKING

Data **Settings** Status Update Disconnect

State OFF

Name

Id

Master / Slave

Type SIM

SIM card PIN code

APN SIM

Phone numbers1

Phone numbers2

Phone numbers3

Mail 1

Mail 2

Mail 3

Send alert

Send data

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Switch ON/ Switch OFF

Red button -> Switch OFF

Green button -> Switch ON

You must « Save » your informations.

Xerius BioLoc Config v1.0.11

Data parsing Tracking areas **Station connection** Settings Support

S/N 7 - XERIUSTRACKING

Data **Settings** Status Update Disconnect

State **OFF**

Name FWSCSC

Id 0

Master / Slave Master

Type SIM No SIM card

SIM card PIN code

APN SIM

Phone numbers1

Phone numbers2

Phone numbers3

Mail 1

Mail 2

Mail 3

Send alert No sending

Send data No sending

Save

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SIM card management

Activate the SIM card by selecting « Type SIM».

Enter PIN code in « SIM card PIN code ».

The APN SIM corresponds to the chosen operator previously informed by XERIUS. Do not modify it without our agreement.

You must « Save » your informations.

Xerius BioLoc Config v1.0.11

Data parsing Tracking areas **Station connection** Settings Support

S/N 7 - XERIUSTRACKING

Data **Settings** Status Update Disconnect

State **OFF**

Name FWSCSC

Id 0

Master / Slave Master

Type SIM No SIM card

SIM card PIN code

APN SIM

Phone numbers1

Phone numbers2

Phone numbers3

Mail 1

Mail 2

Mail 3

Send alert No sending

Send data No sending

Save

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Add, edit or delete phone number and email

To add, edit or delete a phone number or email address, fill the sections « Phone number » and « Mail ».

It is not mandatory to fill in all boxes.

You must « Save » your informations.

Xerius BioLoc Config v1.0.11

Data parsing Tracking areas **Station connection** Settings Support

S/N 7 - XERIUSTRACKING

Data **Settings** Status Update Disconnect

State OFF

Name FWSCSC

Id 0

Master / Slave Master

Type SIM No SIM card

SIM card PIN code

APN SIM

Phone numbers1

Phone numbers2

Phone numbers3

Mail 1

Mail 2

Mail 3

Send alert No sending

Send data No sending

Save

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Sending alerts configuration

Select the configuration you want in the section « Send alert ».

You must « Save » your informations.

The screenshot shows the 'Station connection' configuration page for a device with S/N 7 - XERIUSTRACKING. The 'Settings' tab is active, and the 'State' is currently 'OFF'. The configuration fields are as follows:

Field	Value
State	OFF
Name	FWSCSC
Id	0
Master / Slave	Master
Type SIM	No SIM card
SIM card PIN code	
APN SIM	
Phone numbers1	
Phone numbers2	
Phone numbers3	
Mail 1	
Mail 2	
Mail 3	
Send alert	No sending
Send data	No sending

Red arrows point to the 'Send alert' dropdown menu and the 'Save' button.

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Data sending configuration

Select the configuration you want in the section «Send data».

You must «Save» your informations.

Xerius BioLoc Config v1.0.11

Data parsing Tracking areas **Station connection** Settings Support

S/N 7 - XERIUSTRACKING

Data **Settings** Status Update Disconnect

State OFF

Name

Id

Master / Slave

Type SIM

SIM card PIN code

APN SIM

Phone numbers1

Phone numbers2

Phone numbers3

Mail 1

Mail 2

Mail 3

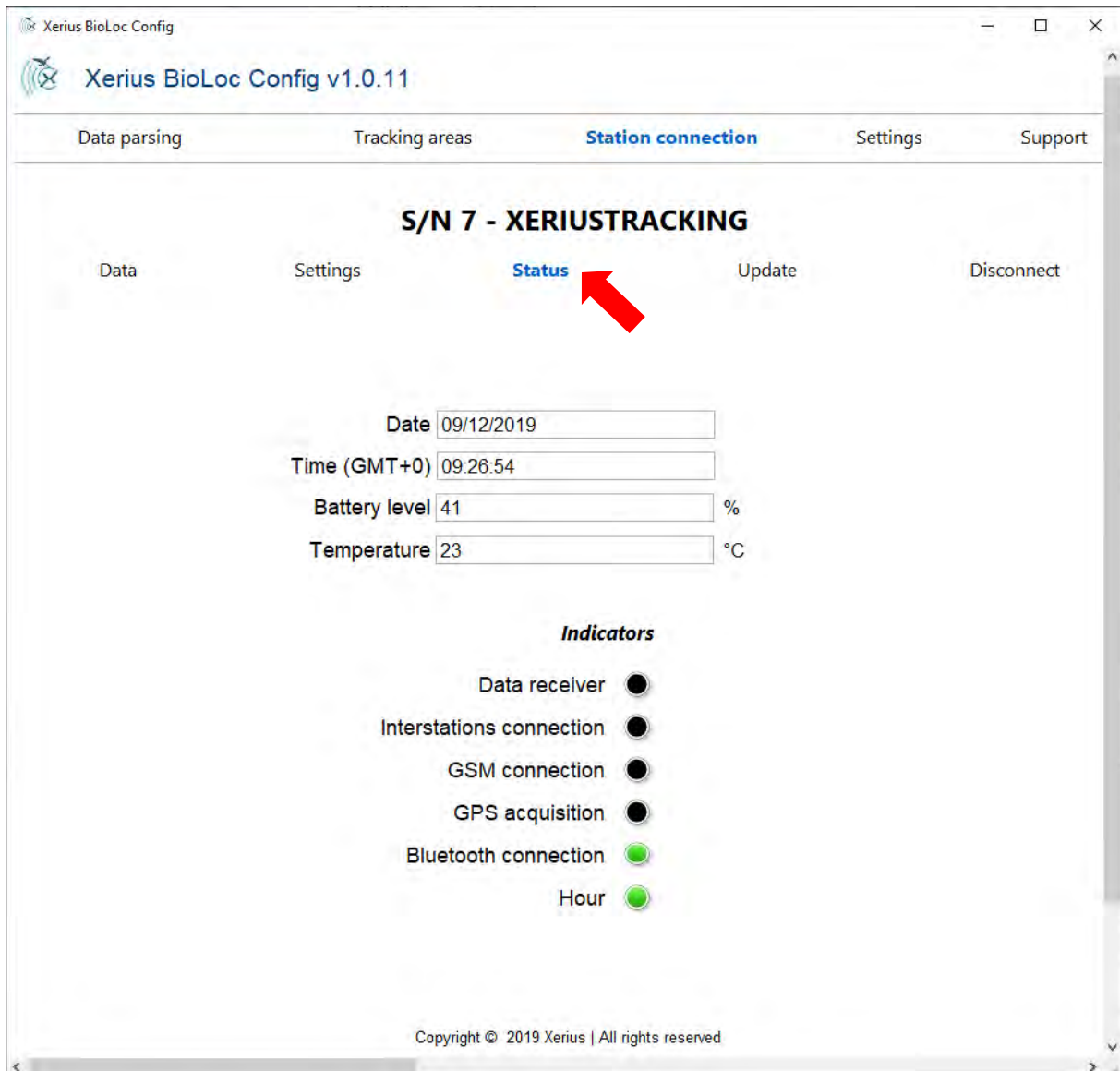
Send alert

Send data

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Check the status of the station

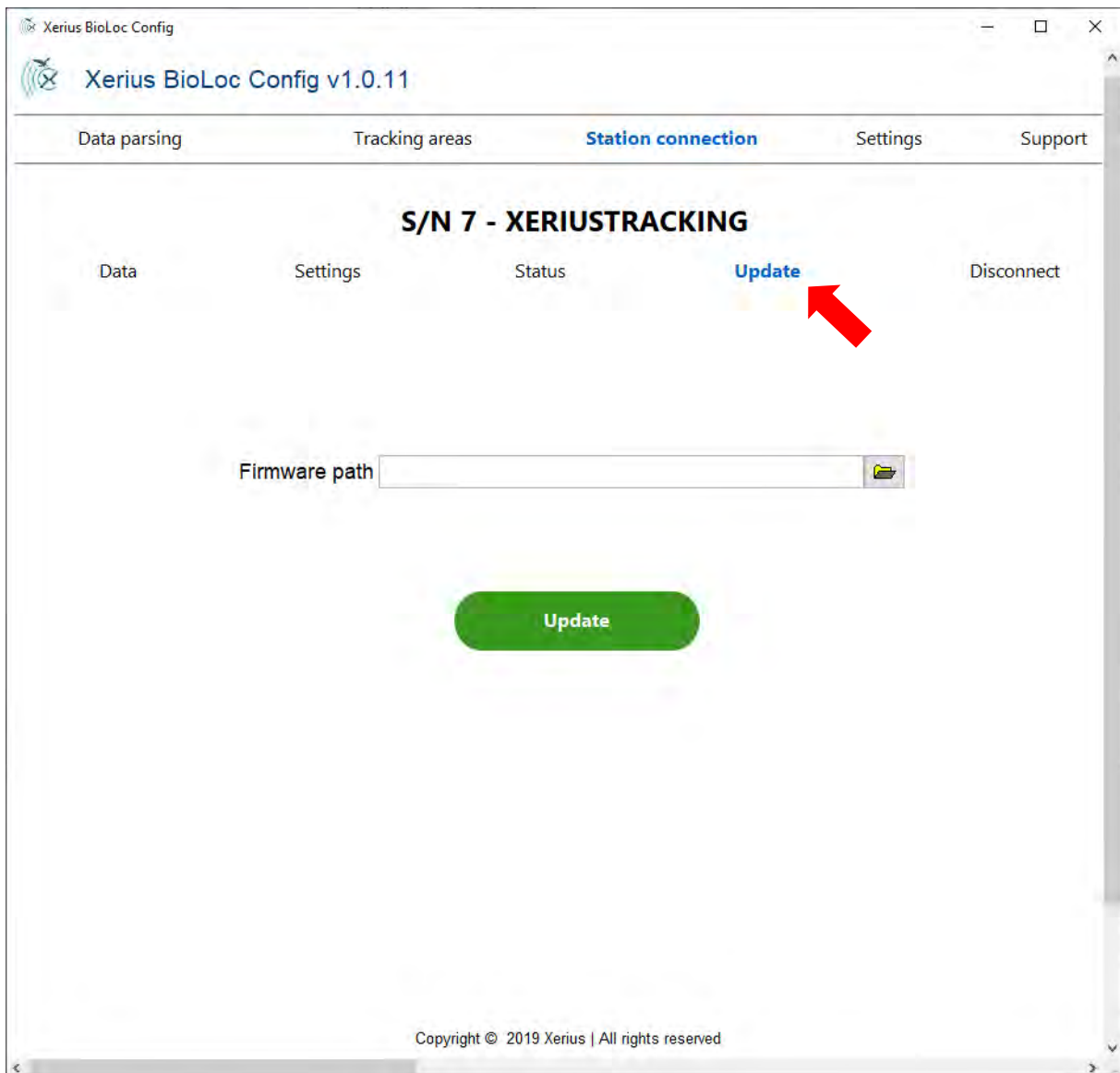
In the tab « Status », you can access to your station status in real-time.



The screenshot displays the 'Xerius BioLoc Config v1.0.11' application window. The 'Station connection' tab is active, showing the station name 'S/N 7 - XERIUSTRACKING'. A red arrow points to the 'Status' sub-tab. Below the sub-tabs, there are input fields for Date (09/12/2019), Time (GMT+0) (09:26:54), Battery level (41%), and Temperature (23°C). An 'Indicators' section lists several connection types with status indicators: Data receiver (black), Interstations connection (black), GSM connection (black), GPS acquisition (black), Bluetooth connection (green), and Hour (green). The footer contains the copyright notice: 'Copyright © 2019 Xerius | All rights reserved'.

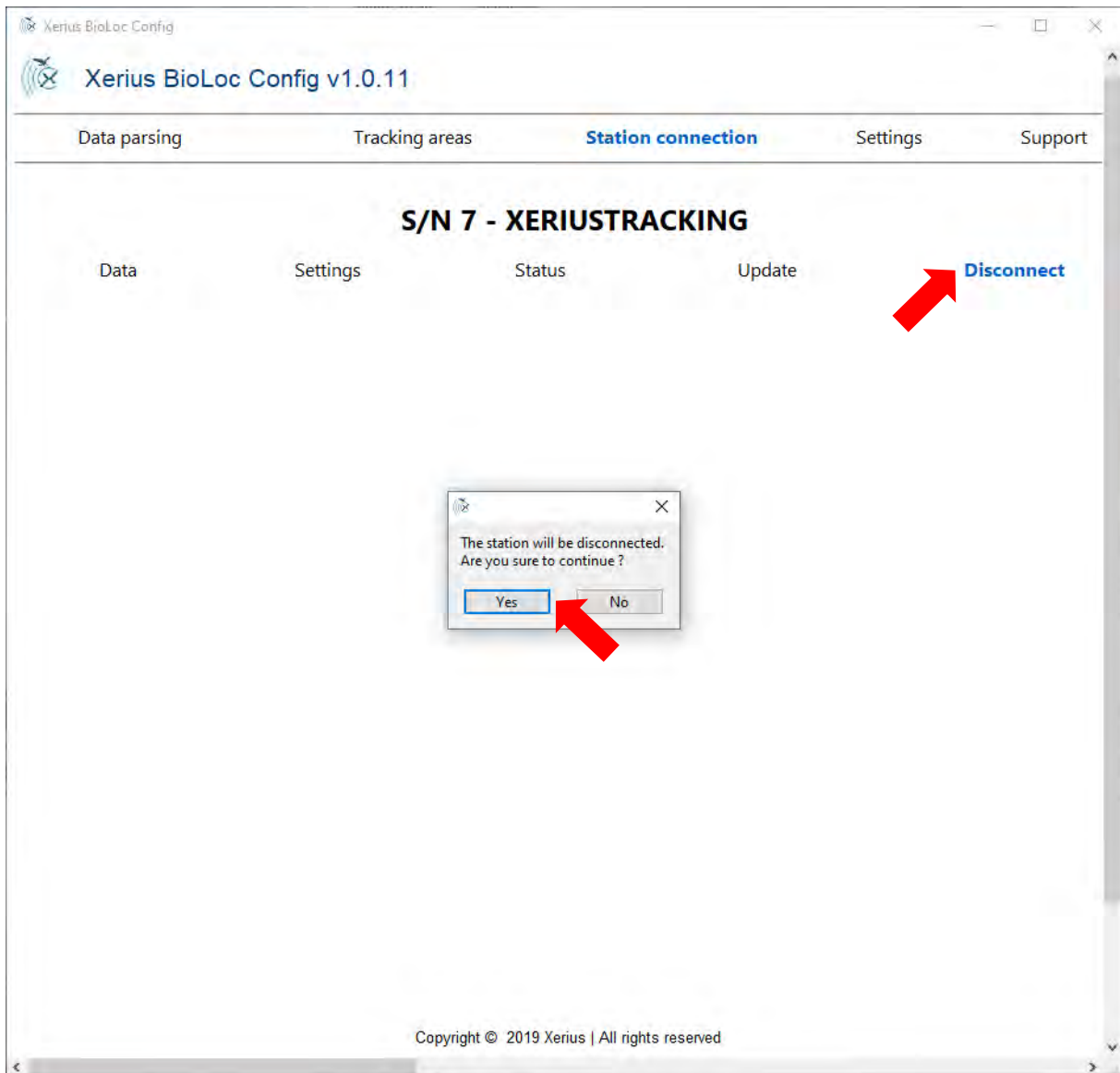
Update station software

In the tab « Update » reprogram the station at any time in case of modification.



Disconnect from the station

Click on « Disconnect » and confirm your choice.

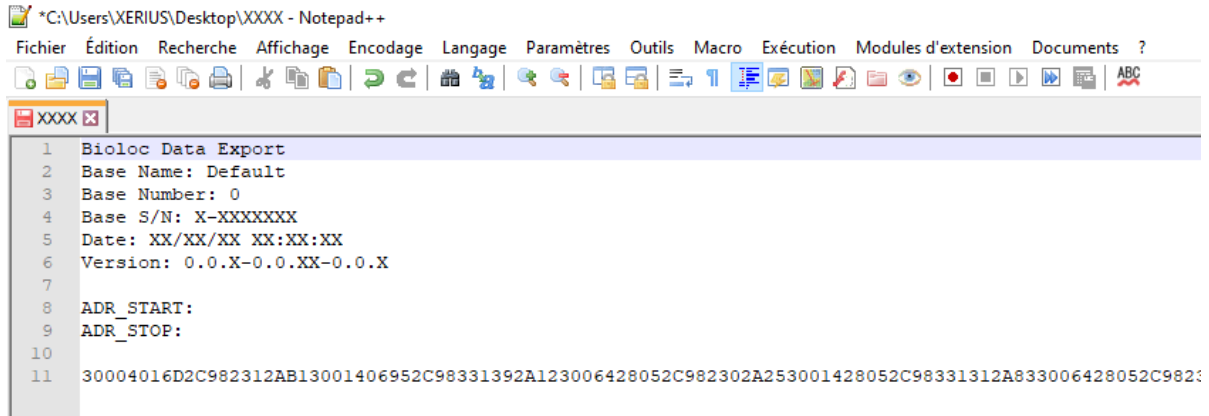


About downloaded files

Raw data: XXXX.txt

This file contains encoded data to be decoded on the BioLoc Rx software after downloading.

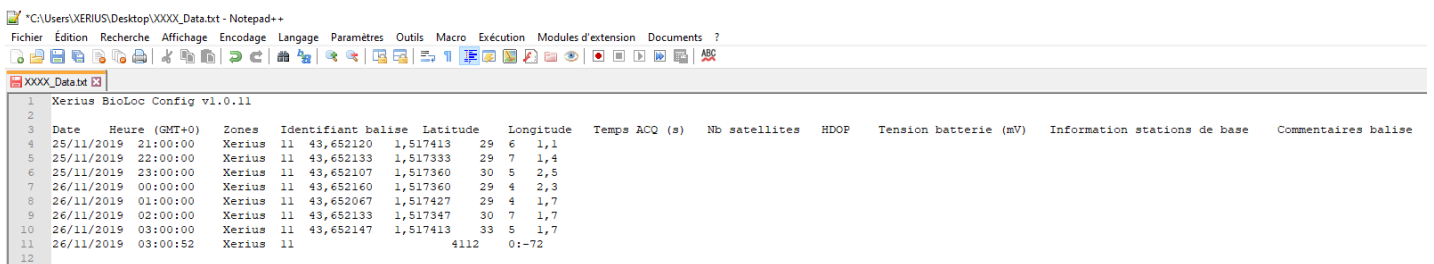
After selecting raw files, choose the decoding format/s and the location of the decoded file, you will get back all your data like a direct downloading from the station.



```
*C:\Users\XERIOUS\Desktop\XXXX - Notepad++
Fichier  Édition  Recherche  Affichage  Encodage  Langage  Paramètres  Outils  Macro  Exécution  Modules d'extension  Documents ?
XXXX
1  Bioloc Data Export
2  Base Name: Default
3  Base Number: 0
4  Base S/N: X-XXXXXXXX
5  Date: XX/XX/XX XX:XX:XX
6  Version: 0.0.X-0.0.XX-0.0.X
7
8  ADR_START:
9  ADR_STOP:
10
11  30004016D2C982312AB13001406952C98331392A123006428052C982302A253001428052C98331312A833006428052C9823
```

BioLoc Tx file: XXXX_Data.txt

This file contains BioLoc Tx data as GPS fixes, battery level and receiving station.



```
*C:\Users\XERIOUS\Desktop\XXXX_Data.txt - Notepad++
XXXX_Data.txt
1  Xerius BioLoc Config v1.0.11
2
3  Date  Heure (GMT+0)  Zones  Identifiant balise  Latitude  Longitude  Temps ACQ (s)  Nb satellites  HDOP  Tension batterie (mV)  Information stations de base  Commentaires balise
4  25/11/2019  21:00:00  Xerius  11  43,652120  1,517413  29  6  1,1
5  25/11/2019  22:00:00  Xerius  11  43,652133  1,517333  29  7  1,4
6  25/11/2019  23:00:00  Xerius  11  43,652107  1,517360  30  5  2,5
7  26/11/2019  00:00:00  Xerius  11  43,652160  1,517360  29  4  2,3
8  26/11/2019  01:00:00  Xerius  11  43,652067  1,517427  29  4  1,7
9  26/11/2019  02:00:00  Xerius  11  43,652133  1,517347  30  7  1,7
10 26/11/2019  03:00:00  Xerius  11  43,652147  1,517413  33  5  1,7
11 26/11/2019  03:00:52  Xerius  11  4112  0:-72
12
```

- **Date** : GPS fixes date and/or sending message date ;
- **Time (GMT+0)** : time of the GPS fixes and/or sending message time in UTC ;
- **Zones** : affiliated tracking area ;
- **Tag identification** : identification number of the transmitter BioLoc Tx ;
- **Latitude** : GPS latitude ;
- **Longitude** : GPS longitude ;
- **Temps ACQ (s)** : time of acquisition of GPS fixes ;
- **Nb satellites** : number of satellites during GPS fixes ;
- **HDOP** : indicator reflecting the quality of the horizontal positioning of satellites at the GPS fixes time ;
- **Battery level (mV)** : battery level expressed in mV ;
- **Base station information** : indication of the station which have been received the messages (useful for a wide BioLoc network) and reception level. Low is this number, far is the tag at sending time. The minimum reception is -134. However, it is not an exact science. Indeed, level can be low if the individual is near the ground or behind an obstacle while it is closed to the station ;
- **Tag comments** : auxiliary information related to BioLoc Tx.

BioLoc Rx file: XXXX_Info.txt

This file contains BioLoc Rx data.

Its informs us about the station operation as temperature and battery level.

```
CAUsers\XERIOUS\Desktop\XXXX_Info.txt - Notepad++
Fichier  Édition  Recherche  Affichage  Encodage  Langage  Paramètres  Outils  Macro  Exécution  Modules d'extension  Documents  ?
XXXX_Info.txt
1  Xerius BioLoc Config v1.0.11
2
3  Date      Heure (GMT+0)  Zones  Information stations de base  Commentaires balise
4  19/11/21  11:30:00      Taiwan 0      GSM : Stop BT,
5  19/11/21  11:30:00      Taiwan 0      434 : Stop,
6  19/11/21  11:50:00      Taiwan 0      434 : Start,
7  19/11/21  11:50:00      Taiwan 0      GSM : Start Bluetooth,
8  19/11/21  11:50:00      Taiwan 0      434 : Start,
9  19/11/21  11:51:00      Taiwan 0      868 : Master / MAJ slave request,
10 19/11/21  12:00:00      Taiwan 0      GSM : Stop BT,
11 19/11/21  12:00:00      Taiwan 0      434 : Stop,
12 19/11/21  12:00:00      Taiwan 0      Monitoring : Info,17,4237,
13 19/11/21  12:20:00      Taiwan 0      434 : Start,
14 19/11/21  12:20:00      Taiwan 0      GSM : Start Bluetooth,
15 19/11/21  12:20:00      Taiwan 0      434 : Start,
16 19/11/21  12:21:00      Taiwan 0      868 : Master / MAJ slave request,
17 19/11/21  12:30:00      Taiwan 0      GSM : Stop BT,
18 19/11/21  12:30:00      Taiwan 0      434 : Stop,
19
```

Google Earth file: XXXX_Data.kml

This file permits to quickly visualise GPS fixes via Google Earth software.



To go further...

View our video BioLoc Rx on Youtube @XeriusTracking

Link : <https://youtu.be/okn1vCxFfR8>



