

Wildlife Tracker User Manual

(V3.1)



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1. Product Introduction

HQXS wildlife micro-tracker uses satellite positioning technology and dual-mode hybrid positioning technology to obtain information such as latitude and longitude, speed, heading, altitude, etc. At the same time, the device is equipped with a variety of sensors to collect other corresponding data. All collected data is sent to the company's data center via GSM/4G/satellite network, and the data can also be stored inside the tracker. The solar panel outside the device can ensure the long-term power supply of the product, and the built-in lithium battery ensures that the product can run normally when there is no sunlight. This product is independently developed by our company and has completely independent intellectual property rights. It has ultra-small size, ultra-low power consumption, and high-precision positioning characteristics.

2. Daily maintenance of products

- After purchasing this product, if it has not been used for more than one month, please put it in the sun to charge for three days, and then charge it once a month regularly (charge in the sun for three days).
- When installing this product, please contact our company two days in advance. The technicians will set relevant parameters for your product to ensure that the product can be used normally. Before installation, please place this product in an open and sunny place (such as an open yard, roof of a house, etc.)
- A magnetic switch controls the power switch mode of the tracker. The device is in shutdown mode when the magnetic strip is attached to the product. When the magnetic stripe is removed, the device will automatically turn on. The factory default is the shutdown state (with the magnetic strip attached). Before releasing the species into the wild, please be sure to remove the magnetic stripe. Otherwise, the device will not work properly.
- To ensure this product's standard and stable operation, the company provides complete management services for each product.
- If you fail to implement the above items, it may cause the product not to be used normally, and please be aware.

3. The meaning and description of each indicator of the tracker

3.1 The meaning of the indicators of the tracker

No.	Index Parameter	Explanation
1	Time	The time when the location point was collected (subject to Beijing time)
2	Longitude	GPS longitude, in degrees, accurate to five decimal places, using the WGS-84 geodetic coordinate system
3	Latitude	GPS latitude, in degrees, accurate to five decimal places, using the WGS-84 geodetic coordinate system
4	Speed	Km/h
5	Course	The angle formed by the clockwise direction with the north direction of 0°
6	Altitude	The altitude with sea level as a reference, this parameter has reference value only when GPS is 3D positioning mode
7	Temperature	The temperature value collected by the device, in degrees Celsius
8	Voltage	Device battery voltage
9	Exercise	The number of activities in a collection period
10	Accuracy	The accuracy of GPS positioning is divided into five grades: A, B, C, D and E. See the table below for details.
11	HDOP	Horizontal precision factor, reflecting the GPS positioning error, the smaller the parameter, the higher the GPS positioning accuracy
12	VDOP	Vertical precision factor

3.2 Description of positioning accuracy

(1) Overview of positioning accuracy

Positioning accuracy is the closeness between a spatial entity's location information (usually coordinates) and its true location. Our company's products provide the original GPS positioning accuracy factor data, and the equipment positioning accuracy adopts the linear regression analysis method: $\text{Error} = 2.679243 * \text{HDOP} + 0.59144$.

(2) Accuracy class and deviation

The Hunan Provincial Institute approves the HQXS satellite tracker of Quality Supervision and Inspection of Products. The specific accuracy grades and deviations are as follows:

A	B	C	D	E
5 meters	10 meters	20 meters	100 meters	2000 meters

(3) Reliability of positioning accuracy

The positioning accuracy of the satellite tracker is 95% reliable.

4. Parameters and Specifications

Model	HQNT	HQBV0702	HQBG0603	HQBG0803
Category	backpack	backpack	backpack	backpack
Weight	0.6 ~ 3 grams	2.2 grams	3 grams	3.2 grams
Height	5.5 mm	7 mm	7.5 mm	8 mm
Width	5 mm	12 mm	17 mm	14 mm
Length	6 mm	18 mm	21 mm	17 mm
Inner Diameter	-	-	-	-
Default Frequency	3 s	1 hour	1 hour	4 hours
Dense Tracking	1 s	1 minute	1 minute	1 minute
Data Storage Capacity	-	5000 points	12000 points	12000 points
International Roaming	-	-	support	support
No Signal Processing	-	local storage	local storage	local storage
Positioning Method	VHF	BDS/GPS/ GLONASS	BDS/GPS/ GLONASS	BDS/GPS/ GLONASS
Positioning Accuracy	-	5 meters	5 meters	5 meters
Signal Transmission	VHF	VHF	GSM	Cat-M1/ Cat-NB2
Antenna	external	external	external	external
Duration without Light (built-in lithium battery)	15 days	15 days	6 days	5 days
Lifetime in the Wild (average sunshine 2 hours)	-	>5 years	>5 years	>5 years
Waterproof Level	IP68	IP68	IP67	IP68
Waterproof Depth	10 meters	10 meters	2 meters	10 meters
Operating Temperature	-40~70℃	-40~70℃	-40~70℃	-40~70℃
Working Altitude	<10000 meters	<10000 meters	<10000 meters	<10000 meters
Low Battery Protection	support	support	support	support
Death Warning	support	support	support	support
Client Software	Windows Android	Windows Android	Windows Android	Windows Android

Model	HQBG0804	HQBG1206	HQBG2009P	HQBG1310
Category	backpack	backpack	backpack	backpack
Weight	4.5 grams	6.5 grams	9 grams	10 grams
Height	9 mm	12 mm	16 mm	13 mm
Width	18 mm	20 mm	21 mm	19 mm
Length	22.5 mm	33 mm	35 mm	36 mm
Inner Diameter	-	-	-	-
Default Frequency	4 hours	3 hours	2 hours	2 hours
Dense Tracking	1 minute	1 minute	1 minute	1 minute
Data Storage Capacity	12000 points	12000 points	12000 points	12000 points
International Roaming	support	support	support	support
No Signal Processing	local storage	local storage	local storage	local storage
Positioning Method	BDS/GPS/ GLONASS	BDS/GPS/ GLONASS	BDS/GPS/ GLONASS	BDS/GPS/ GLONASS
Positioning Accuracy	5 meters	5 meters	5 meters	5 meters
Signal Transmission	GSM	GSM	GSM	GSM
Antenna	external	external	external	external
Duration without Light (built-in lithium battery)	7 days	10 days	7 days	12 days
Lifetime in the Wild (average sunshine 2 hours)	>5 years	>5 years	>5 years	>5 years
Waterproof Level	IP68	IP68	IP68	IP68
Waterproof Depth	10 meters	10 meters	10 meters	10 meters
Operating Temperature	-40~70℃	-40~70℃	-40~70℃	-40~70℃
Working Altitude	<10000 meters	<10000 meters	<10000 meters	<10000 meters
Low Battery Protection	support	support	support	support
Death Warning	support	support	support	support
Client Software	Windows Android	Windows Android	Windows Android	Windows Android

Model	HQBG2210	HQBG1512S	HQBG2512S	HQBG1815S
Category	backpack	backpack	backpack	backpack
Weight	10 grams	13 grams	14 grams	15~18 grams
Height	22 mm	15 mm	25 mm	18 mm
Width	21 mm	21 mm	24 mm	23 mm
Length	47 mm	48 mm	48 mm	63 mm
Inner Diameter	-	-	-	-
Default Frequency	2 hours	1 hour	1 hour	1 hour
Dense Tracking	1 minute	1 minute	1 minute	1 minute
Data Storage Capacity	12000 points	12000 points	12000 points	12000 points
International Roaming	support	support	support	support
No Signal Processing	local storage	local storage	local storage	local storage
Positioning Method	BDS/GPS/ GLONASS	BDS/GPS/ GLONASS	BDS/GPS/ GLONASS	BDS/GPS/ GLONASS
Positioning Accuracy	5 meters	5 meters	5 meters	5 meters
Signal Transmission	GSM	GSM	GSM	GSM
Antenna	internal	external	internal	internal
Duration without Light (built-in lithium battery)	7 days	7 days	7 days	7 days
Lifetime in the Wild (average sunshine 2 hours)	>5 years	>5 years	>5 years	>5 years
Waterproof Level	IP68	IP68	IP68	IP68
Waterproof Depth	10 meters	10 meters	10 meters	10 meters
Operating Temperature	-40~70℃	-40~70℃	-40~70℃	-40~70℃
Working Altitude	<10000 meters	<10000 meters	<10000 meters	<10000 meters
Low Battery Protection	support	support	support	support
Death Warning	support	support	support	support
Client Software	Windows Android	Windows Android	Windows Android	Windows Android

Model	HQBG2715L	HQBG3621L	HQBG2830L	HQBG5037L
Category	backpack	backpack	backpack	backpack
Weight	17 grams	23~29 grams	27 grams	50~65 grams
Height	24mm	35mm	28mm	44mm
Width	24mm	24mm	27mm	39mm
Length	58mm	70mm	63mm	98mm
Inner Diameter	-	-	-	-
Default Frequency	1 hour	1 hour	1 hour	1 hour
Dense Tracking	1 minute	1 minute	1 minute	1 minute
Data Storage Capacity	12000 points	12000 points	12000 points	12000 points
International Roaming	support	support	support	support
No Signal Processing	local storage	local storage	local storage	local storage
Positioning Method	BDS/GPS/ GLONASS	BDS/GPS/ GLONASS	BDS/GPS/ GLONASS	BDS/GPS/ GLONASS
Positioning Accuracy	5 meters	5 meters	5 meters	5 meters
Signal Transmission	GSM	GSM	GSM	GSM
Antenna	internal	internal	external	internal
Duration without Light (built-in lithium battery)	7 days	15 days	30 days	30 days
Lifetime in the Wild (average sunshine 2 hours)	>5 years	>5 years	>5 years	>5 years
Waterproof Level	IP68	IP68	IP68	IP68
Waterproof Depth	10 meters	10 meters	10 meters	10 meters
Operating Temperature	-40~70℃	-40~70℃	-40~70℃	-40~70℃
Working Altitude	<10000 meters	<10000 meters	<10000 meters	<10000 meters
Low Battery Protection	support	support	support	support
Death Warning	support	support	support	support
Client Software	Windows Android	Windows Android	Windows Android	Windows Android

Model	HQLG4037S	HQNG4625P	HQAN40L	HQAN40M
Category	leg ring	neck ring	neck ring	neck ring
Weight	37~44 grams	34~75 grams	600~800 grams	400~600 grams
Height	-	-	-	-
Width	-	32mm	50mm	32mm
Length	51mm	40~80mm	-	-
Inner Diameter	18~24mm	30~60mm	customize	customize
Default Frequency	1 hour	1 hour	1 hour	1 hour
Dense Tracking	1 minute	1 minute	1 minute	1 minute
Data Storage Capacity	12000 points	12000 points	12000 points	12000 points
International Roaming	support	support	support	support
No Signal Processing	local storage	local storage	local storage	local storage
Positioning Method	BDS/GPS/ GLONASS	BDS/GPS/ GLONASS	BDS/GPS/ GLONASS	BDS/GPS/ GLONASS
Positioning Accuracy	5 meters	5 meters	5 meters	5 meters
Signal Transmission	GSM	GSM	GSM	GSM
Antenna	internal	internal	internal	internal
Duration without Light (built-in lithium battery)	7 days	15 days	1000 days	800 days
Lifetime in the Wild (average sunshine 2 hours)	>5 years	>5 years	>5 years	>5 years
Waterproof Level	IP68	IP68	IP68	IP68
Waterproof Depth	10 meters	10 meters	10 meters	10 meters
Operating Temperature	-40~70°C	-40~70°C	-40~70°C	-40~70°C
Working Altitude	<10000 meters	<10000 meters	<10000 meters	<10000 meters
Low Battery Protection	support	support	support	support
Death Warning	support	support	support	support
Client Software	Windows Android	Windows Android	Windows Android	Windows Android

Model	HQAN40S	HQAI-L	HQAI-M	HQAI-S
Category	collar	collar	collar	collar
Weight	100~300 grams	800~1600 grams	350~700 grams	100~300 grams
Height	-	-	-	-
Width	22mm	50mm	44mm	22mm
Length	-	-	-	-
Inner Diameter	customize	customize	customize	customize
Default Frequency	1 hour	1 hour	1 hour	1 hour
Dense Tracking	1 minute	1 minute	1 minute	1 minute
Data Storage Capacity	12000 points	12000 points	12000 points	12000 points
International Roaming	support	support	support	support
No Signal Processing	local storage	local storage	local storage	local storage
Positioning Method	BDS/GPS/ GLONASS	BDS/GPS/ GLONASS	BDS/GPS/ GLONASS	BDS/GPS/ GLONASS
Positioning Accuracy	5 meters	5 meters	5 meters	5 meters
Signal Transmission	GSM	GSM/iridium	GSM/iridium	GSM/iridium
Antenna	internal	internal	internal	internal
Duration without Light (built-in lithium battery)	365 days	900 days	700 days	200 days
Lifetime in the Wild (average sunshine 2 hours)	>5 years	>5 years	>5 years	>5 years
Waterproof Level	IP68	IP68	IP68	IP68
Waterproof Depth	10 meters	10 meters	10 meters	10 meters
Operating Temperature	-40~70℃	-40~70℃	-40~70℃	-40~70℃
Working Altitude	<10000 meters	<10000 meters	<10000 meters	<10000 meters
Low Battery Protection	support	support	support	support
Death Warning	support	support	support	support
Client Software	Windows Android	Windows Android	Windows Android	Windows Android

Model	HQAB-L	HQAB-M	HQAN40MC	HQZN
Category	collar	collar	collar	customize
Weight	1000~1600 grams	500~1000 grams	500~1000 grams	customize
Height	-	-	-	customize
Width	50mm	44mm	44mm	customize
Length	-	-	-	customize
Inner Diameter	customize	customize	customize	customize
Default Frequency	1 hour	1 hour	1 hour	> 1 s
Dense Tracking	1 minute	1 minute	1 minute	> 1 s
Data Storage Capacity	12000 points	12000 points	6 million points	customize
International Roaming	support	support	support	support
No Signal Processing	local storage	local storage	local storage	local storage
Positioning Method	BDS/GPS/ GLONASS	BDS/GPS/ GLONASS	BDS/GPS/ GLONASS	BDS/GPS/ GLONASS
Positioning Accuracy	5 meters	5 meters	5 meters	5 meters
Signal Transmission	GSM/ Beidou short message	GSM/ Beidou short message	4G/iridium	GSM/BDS/iridium
Antenna	internal	internal	internal	customize
Duration without Light (built-in lithium battery)	800 days	800 days	800 days	customize
Lifetime in the Wild (average sunshine 2 hours)	>5 years	>5 years	>5 years	>5 years
Waterproof Level	IP68	IP68	IP68	IP68
Waterproof Depth	10 meters	10 meters	10 meters	10 meters
Operating Temperature	-40~70℃	-40~70℃	-40~70℃	-40~70℃
Working Altitude	<10000 meters	<10000 meters	<10000 meters	<10000 meters
Low Battery Protection	support	support	support	support
Death Warning	support	support	support	support
Client Software	Windows Android	Windows Android	Windows Android	Windows Android

Start-up Test and Debugging

➤ **Unpacking inspection**

After receiving the product, please check whether the appearance is in good condition and whether the installation accessories are complete (see the list of accessories). If you have any questions, please contact our company in time.

➤ **Installation**

(1) Start the Product

When installing this product, please contact our company two days in advance, and the technicians will set relevant parameters for your product to ensure that the product can be used normally.

(2) Product Registration

Please note the product number and study species number when installing the product. After installing the product, please contact our company in time, and submit the installation information to the engineer so that the technician can bind the product and the species for you in the background and provide better service.

➤ **Product Management**

When the product is turned on, if it is not used for a short period, please notify the company to turn it off in time to maintain the power of the product and avoid extra communication charges.

Software Operation Process and Use Method

1.1. **Software Installation**

(1) Quickly Understand

- The operating systems are WindowsXP, Windows7 (32-bit/64-bit), and Windows8.
- Operating environment: .NET Framework 4.5.2.
- Installation time: If your computer has .net Framework 4.5.2 installed, it only takes 30 seconds to complete the installation.

(2) Installation steps

Step 1: Open the installation folder, run Setup.exe, and start the program installation. Figure 1:



Figure 1

Step 2: If the computer does not have the .net Framework 4.5.2 environment installed, it will automatically start to install the .net Framework 4.5.2, as shown in Figure 2. (If the computer has already installed .net Framework 4.5.2 or above, go directly to the fourth step, as shown in Figure 4.)

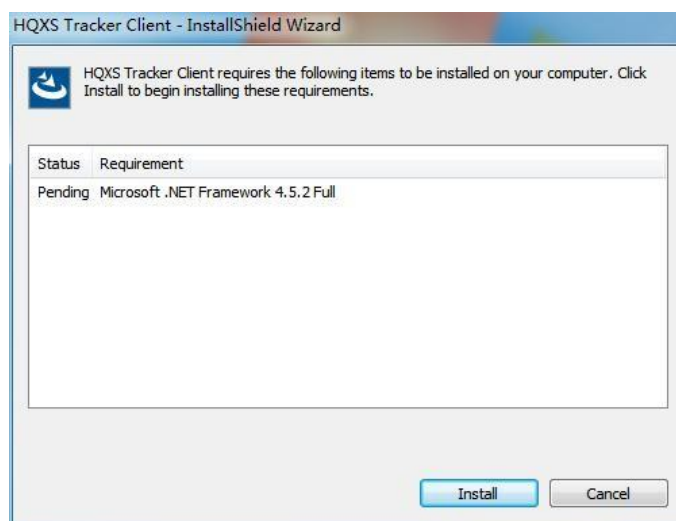


Figure 2

Step 3: Select "Install" to start the automatic installation of .net Framework 4.5.2, about 2-3 minutes, as shown in Figure 3.



Figure 3

Step 4: After the installation of .net Framework 4.5.2 is completed, enter the "InstallShield Wizard for HQXS Tracker Information Service Platform", as shown in Figure 4.



Figure 4

Step 5: Select "Next" to start the installation, as shown in Figure 5.

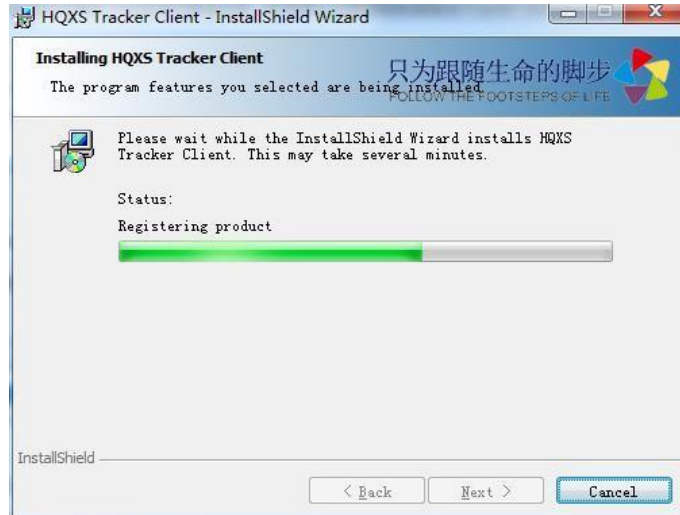


Figure 5

Step 6: Click "Finish" to complete the installation, as shown in Figure 6.

Step 7: The desktop will generate a shortcut icon of "Global Messenger", as shown in Figure 7.

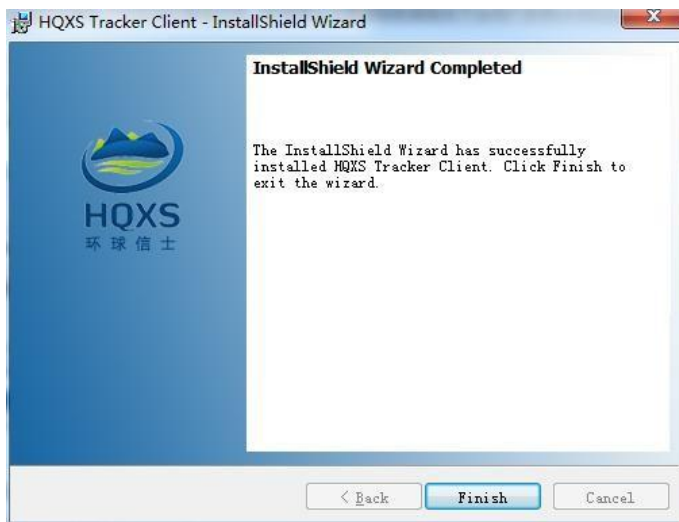


Figure 6



Figure 7

Global Messenger Tracker Data Service Platform (V3.1)

User's Manual

1. Introduction to the platform

Global Messenger Tracking Data Service Platform V3.1 is a wildlife tracking platform from Hunan Global Messenger Technology. The system is based on GIS technology and incorporates knowledge of animal ecology. It has functions such as device management and remote control, historical track data retrieval, animal behaviour analysis, map services, track visualization, data import and export, camera photo and video management.

2. Accounts and permissions

Hunan Global Messenger Technology provides the platform account. (hereafter "Company"). The account is divided into two types: master account and general account. If you don't have an account, you can only login as a guest.



Fig. 1 Login

2.1. Language and site settings

The software language and the access site's location can be set as required.



Fig. 2 Setup

2.2. Master account

The master account has permissions for project management, equipment changes, remote control, data export, offline packet generation, etc. The team leader or supervisor usually uses the master account, and only one master account is assigned to a research team.

2.3. General account

The general account could view data from the authorised equipment, data export and offline data generation functions available upon application. The data query period and fields for general accounts can also be restricted by request. The general account is usually used by sub-project leaders, team researchers or students.

Terminal	TIME	RV Longitude	RV Latitude	Speed Course	Altitude	Temperature	Voltage	Exercise	Satellites	RDPF	WDFP	PrecisionGrade	Validity
跟踪器1 - 左红-10号	2022-07-02 14:01:00	99.6573900	36.8841600	0.0	0.0	3217.5	28.00	4.258				B	Valid
跟踪器1 - 左红-10号	2022-07-02 14:01:29	99.6573900	36.8822000	0.0	0.0	3219.8	21.00	4.207				B	Valid
跟踪器1 - 左红-10号	2022-07-02 12:01:29	99.6569900	36.8831000	0.0	228.1	3209.1	31.25	4.250				B	Valid
跟踪器1 - 左红-10号	2022-07-02 10:01:08	99.6569900	36.8833000	0.0	1194	3205.7	28.25	4.278				B	Valid
跟踪器1 - 左红-10号	2022-07-02 08:00:36	99.6523900	36.8833000	4.1	143.5	3187.4	22.25	4.228				A	Valid
跟踪器1 - 左红-10号	2022-07-02 18:01:07	99.6554200	36.8836000	3.8	135.5	3172	22.25	4.206				B	Valid
跟踪器1 - 左红-10号	2022-07-02 16:01:23	99.6549300	36.8831900	29.0	183	3211.4	21.25	4.256				B	Valid
跟踪器1 - 左红-10号	2022-07-02 14:01:13	99.6569100	36.8831900	0.0	0.0	3199.1	31.00	4.284				B	Valid
跟踪器1 - 左红-10号	2022-07-02 12:01:36	99.6562000	36.8823000	1.9	273.1	3222.9	23.25	4.281				C	Valid
跟踪器1 - 左红-10号	2022-07-02 10:01:05	99.6523900	36.8840200	0.0	158.5	3179.8	21.00	4.272				B	Valid
跟踪器1 - 左红-10号	2022-07-02 08:01:06	99.6536000	36.8840200	0.0	0.0	3187.7	22.00	4.282				B	Valid
跟踪器1 - 左红-10号	2022-07-02 06:00:29	99.6562400	36.8840200	1.5	138.5	3193.7	22.00	4.284				A	Valid
跟踪器1 - 左红-10号	2022-07-02 04:02:00	99.6536000	36.8839000	0.0	94.8	3199.8	22.00	4.119				C	Valid
跟踪器1 - 左红-10号	2022-07-02 02:00:00	99.6536000	36.8847000	4.4	333.4	3187.1	23.25	4.171				A	Valid
跟踪器1 - 左红-10号	2022-06-30 18:00:44	99.6118000	36.8832900	2.1	321.1	3196.3	24.00	4.204				A	Valid
跟踪器1 - 左红-10号	2022-06-30 16:01:23	99.6558600	36.8833000	0.0	0.0	3210.9	24.00	4.201				B	Valid
跟踪器1 - 左红-10号	2022-06-30 14:01:31	99.6564200	36.8834000	0.0	282.4	3204.1	24.25	4.202				C	Valid
跟踪器1 - 左红-10号	2022-06-30 12:00:59	99.6567500	36.8833000	0.0	207.3	3218.2	30.25	4.285				B	Valid
跟踪器1 - 左红-10号	2022-06-30 10:02:00	99.6578600	36.8824900	0.0	140.2	3189.3	28.00	4.272				C	Valid
跟踪器1 - 左红-10号	2022-06-29 10:01:23	99.6536000	36.8839000	0.0	0.0	3205.8	22.00	4.229				B	Valid
跟踪器1 - 左红-10号	2022-06-29 08:01:00	99.6572000	36.8837000	0.0	241.7	3219.9	24.25	4.285				B	Valid
跟踪器1 - 左红-10号	2022-06-29 06:00:30	99.6567000	36.8838000	0.0	48.8	3186.1	23.25	4.295				A	Valid
跟踪器1 - 左红-10号	2022-06-29 04:01:16	99.6567000	36.8832000	2.1	228.5	3215.5	27.25	4.279				B	Valid
跟踪器1 - 左红-10号	2022-06-29 02:01:05	99.6567000	36.8832000	3.0	282.3	3185.2	24.00	4.258				C	Valid
跟踪器1 - 左红-10号	2022-06-29 00:00:29	99.6573900	36.8833000	2.7	96.8	3200.2	27.00	4.206				A	Valid
跟踪器1 - 左红-10号	2022-06-29 00:01:35	99.6533600	36.8836000	0.0	0.0	3200.5	28.25	4.128				C	Valid
跟踪器1 - 左红-10号	2022-06-29 00:01:18	99.6546400	36.8832300	0.0	0.0	3229.4	25.00	4.271				B	Valid
跟踪器1 - 左红-10号	2022-06-29 00:01:25	99.6562900	36.8825400	0.0	134.2	3225.9	27.25	4.169				C	Valid
跟踪器1 - 左红-10号	2022-06-29 00:01:28	99.6543300	36.8844000	0.0	345.5	3185.5	24.25	4.124				B	Valid
跟踪器1 - 左红-10号	2022-06-29 00:01:47	99.6531400	36.8841000	0.0	0.0	3186	22.00	4.082				B	Valid
跟踪器1 - 左红-10号	2022-06-29 00:01:54	99.6538800	36.8844000	2.0	44.2	3183.3	21.00	3.961				C	Valid
跟踪器1 - 左红-10号	2022-06-29 00:02:14	99.6543400	36.8839000	0.0	287.8	3214.4	22.24	3.978				B	Valid
跟踪器1 - 左红-10号	2022-06-29 00:00:53	99.6543800	36.8839700	0.0	0.0	3202.5	22.24	3.995				B	Valid
跟踪器1 - 左红-10号	2022-06-27 22:00:44	99.6543200	36.8840000	2.3	44	3194.8	21.00	3.996				A	Valid
跟踪器1 - 左红-10号	2022-06-27 20:01:35	99.6537000	36.8839000	0.0	97.8	3183.1	20.00	4.044				C	Valid
跟踪器1 - 左红-10号	2022-06-27 18:01:53	99.6543100	36.8831500	0.0	286.9	3225.2	25.25	4.256				C	Valid

Fig. 3 System interface 1

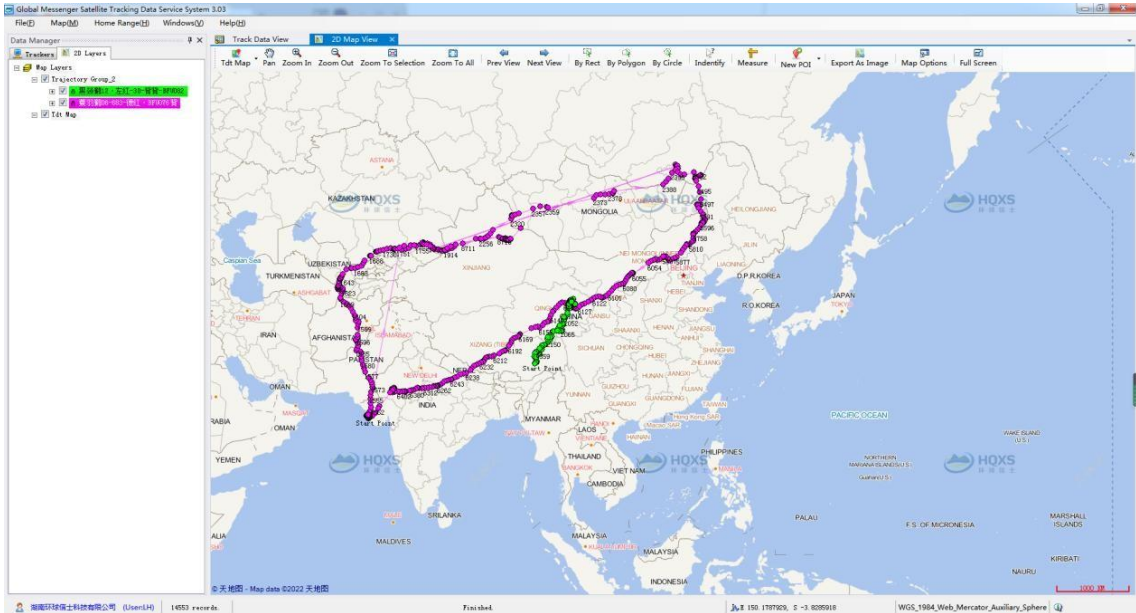


Fig. 4 System interface 2

2.4. Visitors

Visitors can directly access the platform without an account and password. Visitor accounts cannot query data online and can only access offline track data, including offline projects, offline track data package data and external GIS files.

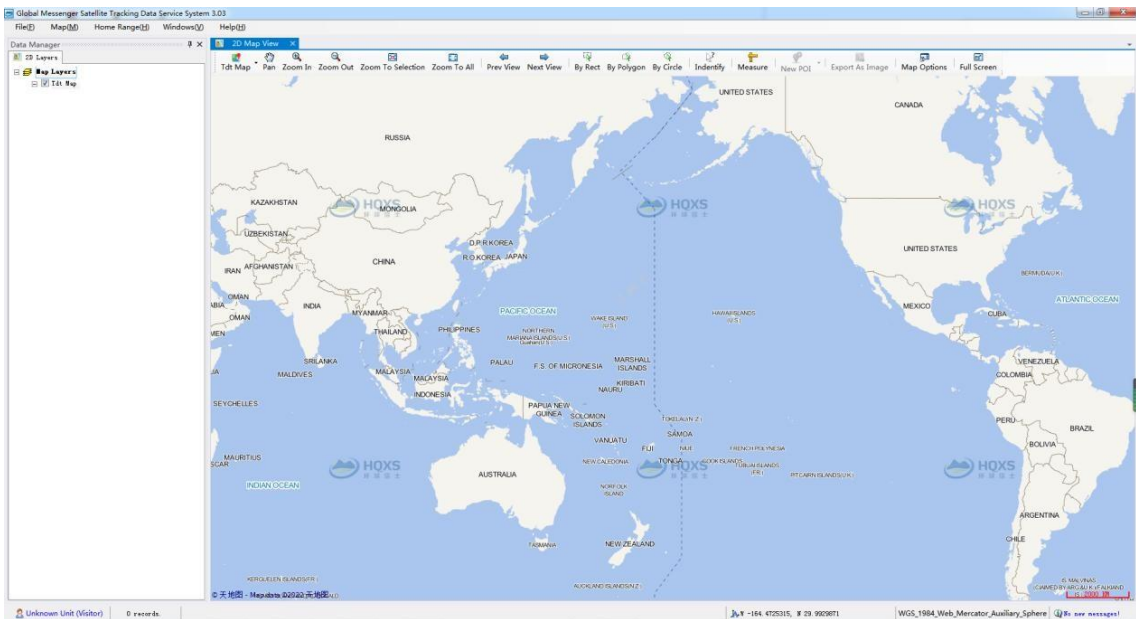


Fig. 5 Visitor account interface

2.5. Account information maintenance

Click on the account information in [File] to change your account name, phone number, email address and login password and to view your current account permissions.



Fig. 6 Account information maintenance

3. Tracker management

3.1. List of trackers

The list is divided into three levels: customer, project and tracker. The number after the customer's name is the total number of devices.

The first number after the project name is the number of active devices in the last seven days, and the second is the total number of devices under the project.

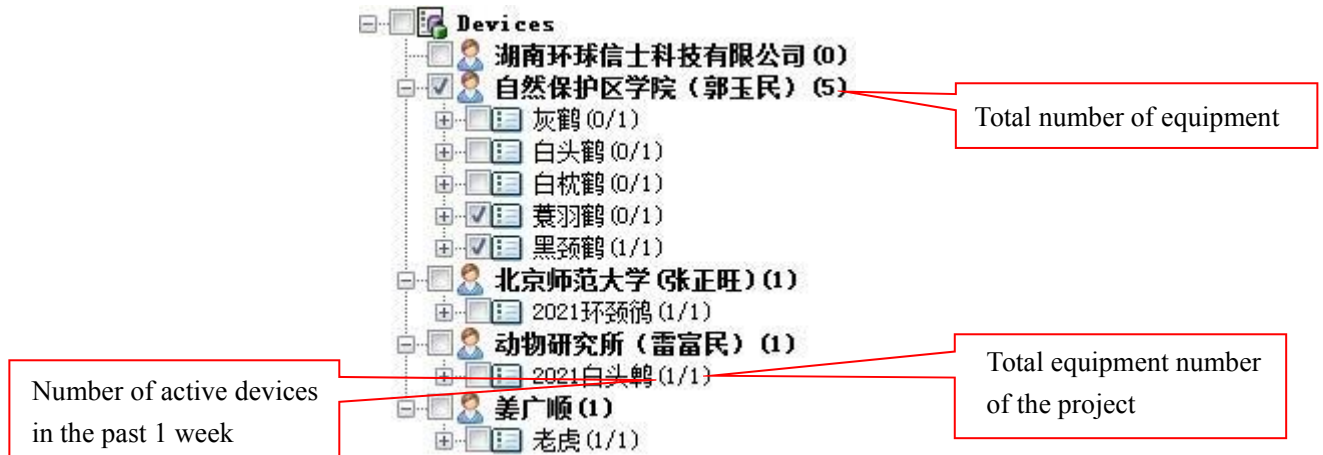


Fig. 7 List of devices

Find a tracker: Enter the device name, hardware number and other information in the search box to quickly find a device and support fuzzy queries.



Fig. 8 Device search

Check the latest location: right click menu on [Device List], [Project], [Tracker]

Select "Last position" in the map to display the latest location of the tracker on the map.

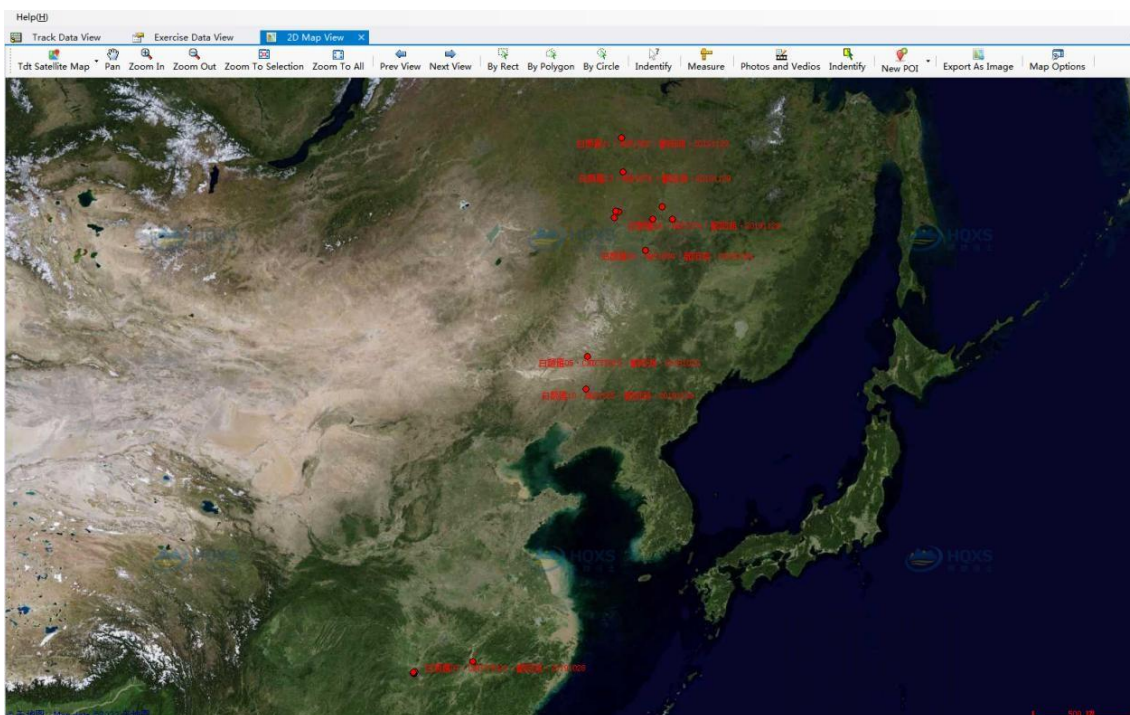


Fig. 9 Final position of the equipment

3.2. Project management

New project: The master account can create a new project, modify project names and manage the subordination of projects to trackers by dragging the mouse.

Deleting items: The master account can delete a project that does not contain trackers.

3.3. Tracker management

Rename trackers: accounts with a permit can change the tracker's name.

Mover trackers: The master account can move a tracker to a different project.

Remote control: In the tracker list, select a tracker and click remote control of the data collection time and transmission time in the right-click menu. Collection time can be set to collect every hour or can be customised. The battery and the last transmission time can also be viewed here. Data transmission time can be modified according to the number of fixes (recorded locations). Modifications can be viewed in the command window.

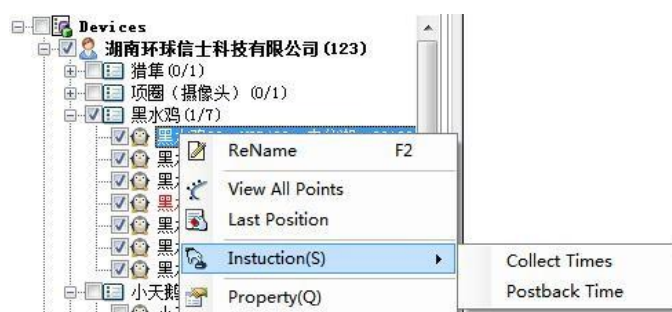


Fig. 10 Remote command menu

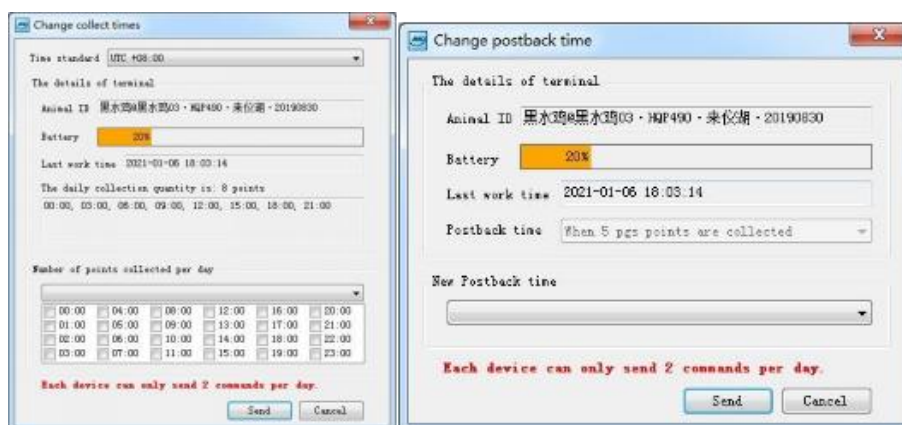


Fig. 11 Remote command modification screen

Terminal	IMEI	Instruction	Detail	Status	SendTime	Estimate	ExecuteTime	Actual	ExecuteTime
黑水鸡13 · HQP1332 · 来...	038504732	Change collect times	UTC +08:00 [00:00, 04:00, 08:00, 12:0...	SENT	2022-07-02 17:25:25	-	-	-	-
黑水鸡12 · HQP1331 · 来...	038052681	Change postback time	When 1 gps point is collected (Real t...	SENT	2022-07-02 17:25:01	-	-	-	-
黑水鸡04 · HQP491 · 来...	038404677	Change postback time	When 10 gps points are collected	SENT	2022-07-02 17:24:52	-	-	-	-
黑水鸡03 · HQP490 · 来...	038518336	Change collect times	UTC +08:00 [09:00, 10:00, 11:00, 12:0...	SENT	2022-07-02 17:24:30	-	-	-	-

Fig. 12 Command window interface

Tracker Properties: View details of the tracked device, including hardware number, project, device model, device status, battery, last transmission time, data expiry date, installation time, installation location and other information.

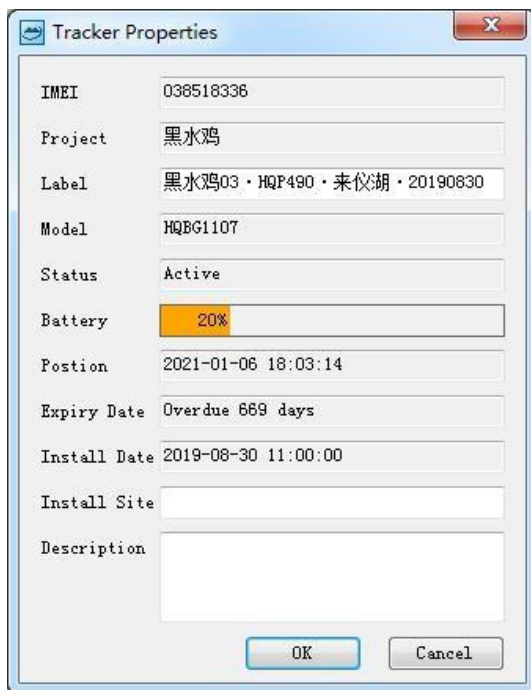


Fig. 13 Tracker details

Tracker Information Table: Select [Tracker Information Window] in the [Window] menu to display the details of all trackers under the current account, which can be exported as an Excel sheet.

IMEI	Project	Caption	Type	Status	Expired Alarm	Installation time	Voltage	Last time	Descriptions	Owner
038518336	黑水鸡	黑水鸡03·HQF490·来仪湖·20190830	NHQB2012	Active	Overdue 669 days	2019-07-31 13:29:00	4.131	2021-01-06 18:03:14	自然保护学院 (彭玉民)	
038518336	黑水鸡	黑水鸡03·HQF490·来仪湖·20190830	NHQB2012	Active	Overdue 669 days	2019-07-31 13:29:00	4.131	2021-01-06 18:03:14	自然保护学院 (彭玉民)	
380463482	丹顶鹤	丹顶鹤01-A14·HF052-A	NHQB	Fault	Overdue 1111 days	2015-04-08 09:16:57	3.633	2017-09-16 13:00:35	自然保护学院 (彭玉民)	
380381578	丹顶鹤	丹顶鹤02-A20·HF052-J	NHQB	Fault	Overdue 1111 days	2015-04-09 21:47:29	4.3	2017-03-28 07:00:18	自然保护学院 (彭玉民)	
V15080431	丹顶鹤	丹顶鹤03-A25·HF026	NHQB2527	Virtual	Overdue 1111 days	2015-04-27 10:04:43	3.998	2018-08-12 17:00:42	自然保护学院 (彭玉民)	
380380823	丹顶鹤	丹顶鹤04-A26·HF050	NHQB	Fault	Overdue 1111 days	2015-04-27 09:40:09	4.096		自然保护学院 (彭玉民)	
380380823	丹顶鹤	丹顶鹤05-ACC·HF049-1岁+	NHQB	Fault	Overdue 1111 days	2015-04-27 10:05:52	3.768	2016-05-22 09:00:29	自然保护学院 (彭玉民)	
380479028	丹顶鹤	丹顶鹤06-S43·HF0107	NHQB	Fault	Overdue 1111 days	2016-05-16 00:00:00	3.963	2016-06-24 03:05:41	自然保护学院 (彭玉民)	
380380823	丹顶鹤	丹顶鹤07-285·HF0110	NHQB	Fault	Overdue 1111 days	2016-05-10 17:05:54	3.649	2016-06-12 15:20:05	自然保护学院 (彭玉民)	
380479028	丹顶鹤	丹顶鹤08-381·HF0111	NHQB	Fault	Overdue 1111 days	2016-05-10 17:10:46	3.623	2016-06-20 18:05:11	自然保护学院 (彭玉民)	
380380823	丹顶鹤	丹顶鹤09-187·HF0113	NHQB	Fault	Overdue 1111 days	2016-05-10 17:19:14	3.606	2016-05-14 11:13:44	自然保护学院 (彭玉民)	
561252728	丹顶鹤	丹顶鹤10·HF0176-206-左腿-保鲁教-2岁	NHQB2028	Fault	Overdue 1111 days	2017-03-14 17:28:26	3.979	2017-04-11 06:02:33	自然保护学院 (彭玉民)	
561252728	丹顶鹤	丹顶鹤11·HF0176-206-右腿-4-20-二次	NHQB2028	Scrap	Overdue 1111 days	2017-03-14 17:28:26	3.641	2017-12-15 18:00:58	自然保护学院 (彭玉民)	
024272169	丹顶鹤	丹顶鹤12·285·HF0103	NHQB2037	Active	Overdue 1111 days	2017-04-24 16:36:58	4.122	2018-04-26 08:01:29	自然保护学院 (彭玉民)	
V02153719	丹顶鹤	丹顶鹤13·381·HF0105	NHQB2037S	Virtual	Overdue 1111 days	2017-04-24 16:37:07	3.5		自然保护学院 (彭玉民)	
020290305	丹顶鹤	丹顶鹤14·S43脱漆-德白红·HF0106	NHQB2037S	Active	Overdue 1111 days	2017-04-24 16:37:14	4.069	2017-06-24 07:05:26	自然保护学院 (彭玉民)	
05882446	丹顶鹤	丹顶鹤15·左德漆-右10-HF0275	NHQB2021S	Active	Overdue 1111 days	2018-04-15 10:00:00	4.098	2022-06-29 18:03:24	自然保护学院 (彭玉民)	
034600041	丹顶鹤	丹顶鹤16·左德漆-左腿HF01900	NHQB2021S	Active	Overdue 1111 days	2018-04-15 10:00:00	4.173	2018-05-09 12:00:21	自然保护学院 (彭玉民)	
034658596	丹顶鹤	丹顶鹤17·右A41-左腿HF0176-1	NHQB2037S	Active	Overdue 1111 days	2018-05-09 15:00:00	3.991	2022-07-04 06:00:25	自然保护学院 (彭玉民)	
035940948	小白鹭	小白鹭01·TBDT009·20180706	NHQB25122	Active	Overdue 1111 days	2018-07-06 00:00:00	3.649	2020-09-25 14:00:42	东洞庭湖国家级自然保护区 (张琪)	
035916038	小白鹭	小白鹭02·TBDT010	NHQB25122	Active	Overdue 1111 days	2018-07-06 00:00:00	3.851	2019-10-29 05:03:17	东洞庭湖国家级自然保护区 (张琪)	
035940966	小白鹭	小白鹭03·TBDT011·20180706	NHQB25122	Active	Overdue 1111 days	2018-07-06 00:00:00	3.697	2020-07-16 18:00:42	东洞庭湖国家级自然保护区 (张琪)	
038293151	小白鹭	小白鹭04·TBDT014	NHQB1107	Active	Overdue 1111 days	2018-07-06 00:00:00	3.669	2019-09-27 12:00:43	东洞庭湖国家级自然保护区 (张琪)	
038254342	小白鹭	小白鹭05·TBDT015	NHQB1107	Active	Overdue 1111 days	2018-07-06 00:00:00	3.642	2019-03-25 00:03:18	东洞庭湖国家级自然保护区 (张琪)	
038254390	小白鹭	小白鹭06·TBDT016	NHQB1107	Active	Overdue 1111 days	2018-07-06 00:00:00	3.945	2019-10-18 21:00:15	东洞庭湖国家级自然保护区 (张琪)	
038292899	小白鹭	小白鹭07·TBDT018·20180706	NHQB1107	Active	Overdue 1111 days	2018-07-06 00:00:00	4.041	2022-07-03 12:01:31	东洞庭湖国家级自然保护区 (张琪)	
038256290	小白鹭	小白鹭08·TBDT019	NHQB1107	Active	Overdue 1111 days	2018-07-06 00:00:00	3.594	2019-09-10 12:00:43	东洞庭湖国家级自然保护区 (张琪)	
038256278	小白鹭	小白鹭09·TBDT021	NHQB1107	Active	Overdue 1111 days	2018-07-06 00:00:00	3.858	2018-08-10 03:00:43	东洞庭湖国家级自然保护区 (张琪)	
038256143	小白鹭	小白鹭10·TBDT023	NHQB1107	Active	Overdue 1111 days	2018-07-06 00:00:00	3.666	2019-06-27 12:00:43	东洞庭湖国家级自然保护区 (张琪)	
038252125	小白鹭	小白鹭11·TBDT020·20180706	NHQB1107	Active	Overdue 1111 days	2018-07-07 00:00:00	4.026	2020-09-24 06:00:39	东洞庭湖国家级自然保护区 (张琪)	
038252049	白鹭	白鹭001·TBDT028·洞庭湖·20181206	NHQB46252	Active	Overdue 1111 days	2018-12-05 21:00:00	3.701	2019-04-01 00:03:24	东洞庭湖国家级自然保护区 (张琪)	
038252132	白鹭	白鹭002·TBDT029·洞庭湖·20181206	NHQB46252	Active	Overdue 1111 days	2018-12-05 21:00:00	3.727	2019-03-07 12:03:16	东洞庭湖国家级自然保护区 (张琪)	
038252143	白鹭	白鹭003·TBDT031·洞庭湖·20181206	NHQB46252	Active	Overdue 1111 days	2018-12-05 20:00:00	4.125	2019-05-11 03:00:23	东洞庭湖国家级自然保护区 (张琪)	
038252132	白鹭	白鹭004·TBDT032·洞庭湖·20181206	NHQB46252	Active	Overdue 1111 days	2018-12-05 20:00:00	3.495	2019-03-22 00:01:00	东洞庭湖国家级自然保护区 (张琪)	
038252143	白鹭	白鹭005·TBDT033·洞庭湖·20181206	NHQB46252	Active	Overdue 1111 days	2018-12-05 20:00:00	3.399	2020-01-30 12:01:01	东洞庭湖国家级自然保护区 (张琪)	
038252143	白鹭	白鹭006·TBDT034·洞庭湖·20181206	NHQB46252	Active	Overdue 1111 days	2018-12-05 20:00:00	4.167	2022-04-28 13:00:42	东洞庭湖国家级自然保护区 (张琪)	
038252143	白鹭	白鹭007·TBDT044·洞庭湖·20181206	NHQB46252	Active	Overdue 1111 days	2018-12-05 20:00:00	4.128	2021-04-24 16:11:12	东洞庭湖国家级自然保护区 (张琪)	
380380823	天鹅	天鹅009	NHQB2527	Active	Overdue 1111 days	2015-02-13 14:34:05	4.202	2015-08-09 01:09:38	全国鸟类救护中心 (韩国明)	
020290961	天鹅	CAS432	NHQB20309F	Active	Overdue 1111 days	2018-06-21 00:00:00	4.091	2018-10-03 20:00:34	生态研究中心 (曹益)	
031998991	天鹅	CAS447	NHQB1107	Active	Overdue 1111 days	2019-01-06 16:00:00	3.619	2019-11-26 18:01:03	生态研究中心 (曹益)	
031994591	凤头鹰	凤头鹰01·HQB036·20180409	NHQB25122	Active	Overdue 1111 days	2019-04-09 10:00:00	3.575	2022-03-15 18:01:08	湖南省野生动物救护中心 (李立)	
380481832	鸳鸯	鸳鸯03·HQF051	NHQB25122	Active	Overdue 1111 days	2019-04-19 00:00:00	3.5	2019-06-07 06:03:44	湖南环珠信士科技有限公司	
035740037	鸳鸯 (鸳鸯头)	HQ147	NHQB052	Active	Overdue 1111 days	2019-07-20 10:00:00	3.6	2020-09-02 01:00:18	湖南环珠信士科技有限公司	
038518336	黑水鸡	黑水鸡03·HQF490·来仪湖·20190830	NHQB1107	Active	Overdue 1111 days	2019-08-30 11:00:00	3.765	2021-01-06 18:03:14	湖南环珠信士科技有限公司	
038540477	黑水鸡	黑水鸡04·HQF491·来仪湖·20190830	NHQB1107	Active	Overdue 1111 days	2019-08-30 11:00:00	4.044	2022-07-04 03:01:13	湖南环珠信士科技有限公司	

Fig. 14 Device information window

4. Track data query

4.1. quick track search

In the tracker list, select a tracker and select 'View all tracks' in the right-click menu or double-click on the tracker to query all tracks for this device and display the tracks on the map.

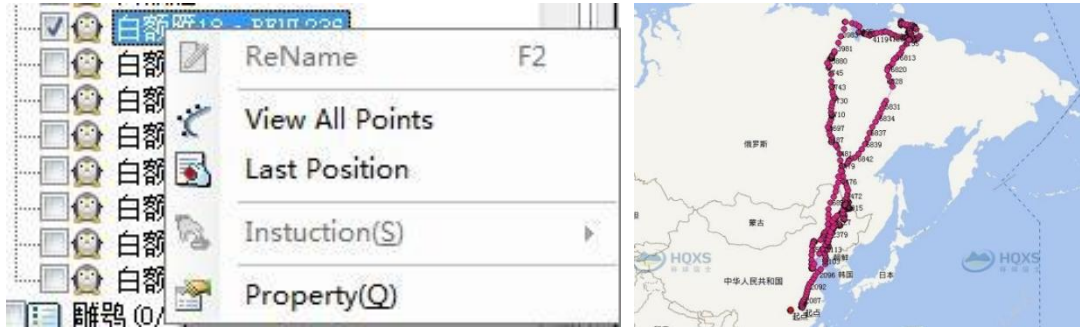


Fig. 15 View all tracks for a single device

4.2. Searching for tracks by condition

Check the device to be queried in the tracker list. It is possible to search the track of multiple devices by recent [days] and [time period], and you can also attach more search conditions, such as speed, altitude, accuracy level and time.

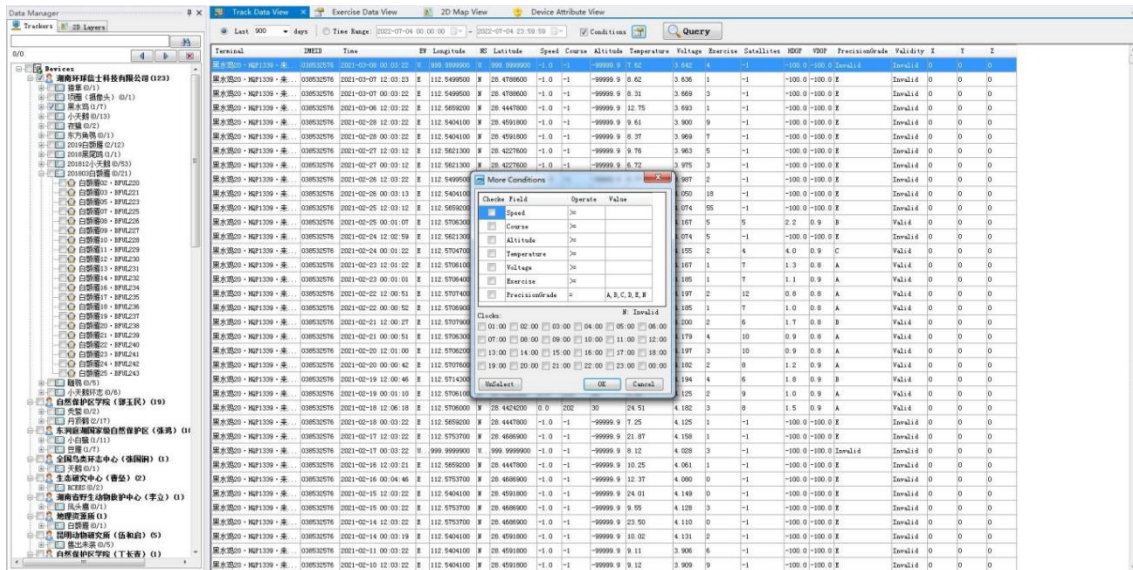


Fig. 16 Searching for tracks by condition

Note: Different tracker models have different track data fields, e.g., dual channel trackers have a signal source field; high accuracy activity sensor devices have activity 1, activity 2 and activity 3 fields; trackers with bathymetry sensor have a bathymetry field; trackers with gyroscope sensor record data from X, Y and Z axis, respectively.

4.3. Invalid data handling

When some fixes need to be filtered, they can be selected as "invalid data", which will be screened out during track generation and statistical analysis. (note: this operation is not reversible)

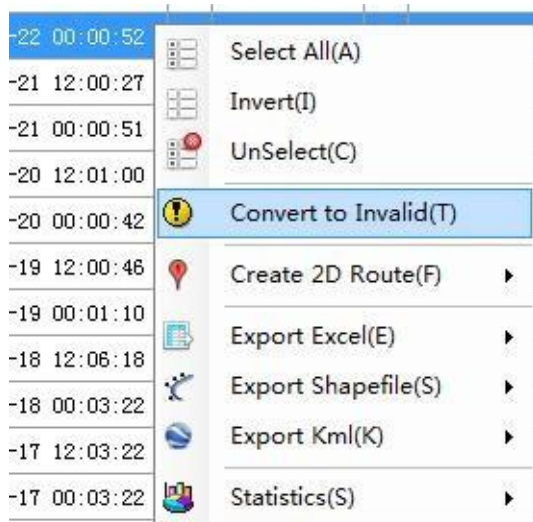


Fig. 17 Invalid data handling

5. Track visualisation

5.1. Track visualisation

The track data table window selects "2D Track" from the right-click menu to generate 2D tracks from the selected row or all rows.

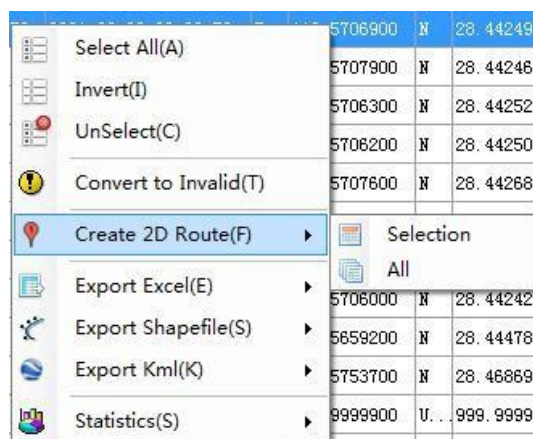


Fig. 18 Track generation menu

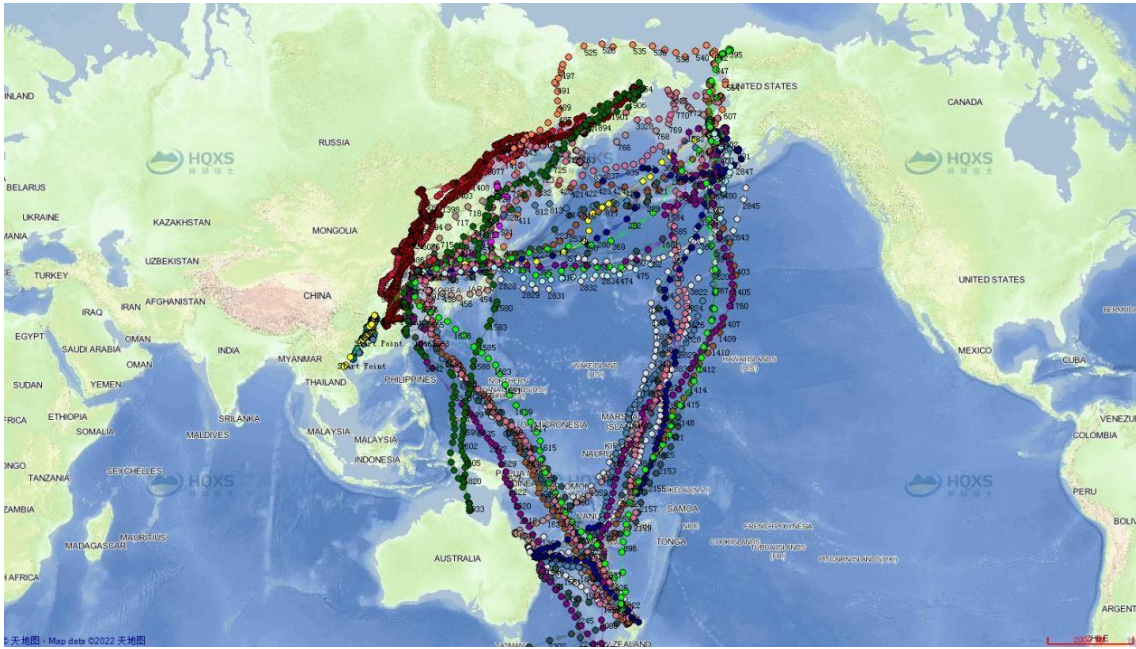


Fig. 19 2D Track map interface

5.2. Data export

In the track data table window, select "Export Excel file", "Export .Shp file", and "Export .Kml file" from the right-click menu to export the currently selected rows. Data can be exported to Excel/CSV, .Shape and Kml format. The geographic coordinate system is WGS84.

6. Map options

6.1. Online map options

There are four online maps available: Sky Maps, ESRI Maps, Open Street Maps and Google Maps, with various modes such as vector maps, satellite maps, hybrid maps and topographic maps. The map coordinate system is Web Mercator projection coordinates.

6.2. Browse the map

- **Panning:** press and hold the left mouse button to move the map.
- **Zoom in:** zoom in on the map.
- **Zoom out:** zoom out on the map.
- **Zoom to all:** Zoom the map to the geometric range of all fixes.
- **Zoom to selection fixes:** Zoom the map to the geometric range of the selected fixes.
- **Previous View:** Switch the map view to the previous view.
- **Next View:** Switch the map view to the next view.

6.3. Selection function

- **Rectangular selection:** draw a rectangle on the map to select fixes.
- **Polygon selection:** draw a polygon on the map to select fixes.
- **Circle selection:** draw a circle on the map to select fixes.
- **Save selected fixes:** select fixes or tracks and save them as a vector layer, as shown below.

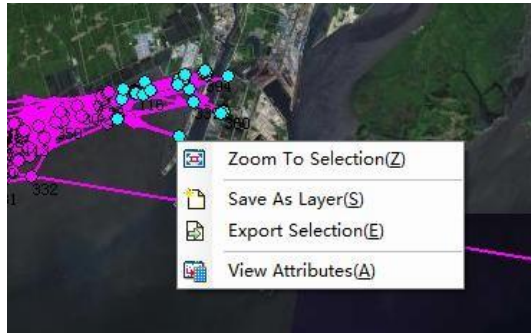


Fig. 20 Save vector data as a layer

6.4. Information query

The "Information Query" tool queries the map window for information about the properties of a graphic object. Click on the "Previous" and "Next" buttons in the information box to browse the adjacent objects in the same layer and choose whether to centre the selected object; click anywhere to query the address information.

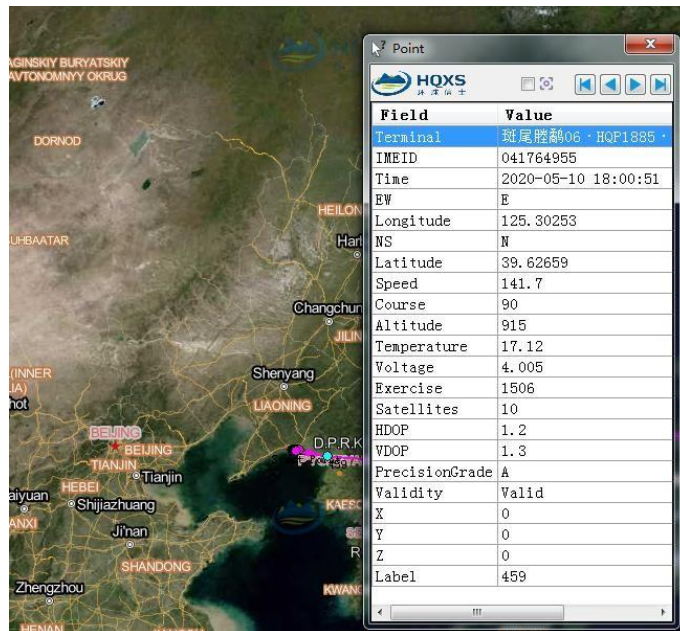


Fig. 21 Graphical information query

Address information is available on the Web Map, which can be turned off on the Web Map layer node

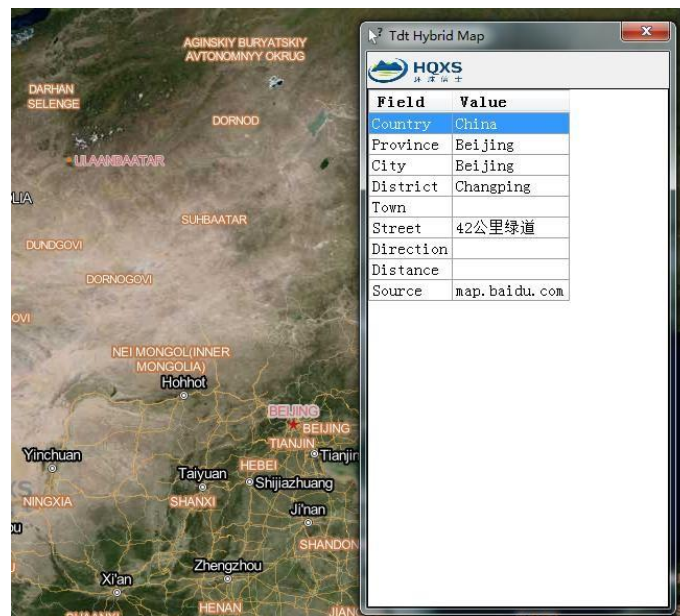


Fig. 22 Address information search

6.5. measuring tools

The multi-point distance and area measurements can be performed by mouse clicks in the map window.

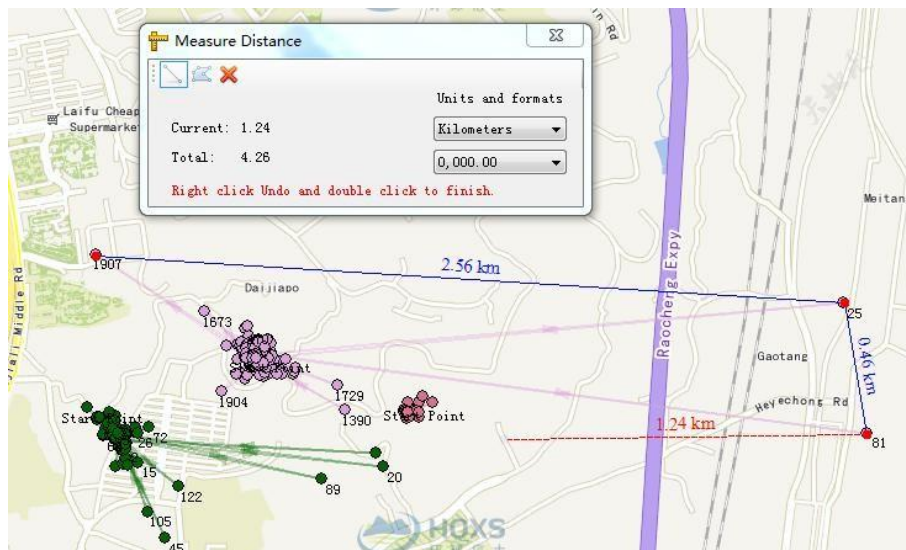


Fig. 23 Measuring distances

6.6. Map options

Settings for map background colour, coordinate format, meridian offset degrees, and sky map permissions.



Fig. 24 Map options settings screen

6.7. Map export

Users with data download permissions can export the contents of the current map window as an image. The guide is available in both standard and HD formats.

Standard format: After setting the image format, image quality and export path of the exported image, the current map content is directly exported as an image.

HD format: box the area to be exported on the map, set the export map level and click [Cache Tile]. When the tile cache is complete, click the [Export Image] button to generate HD pictures.

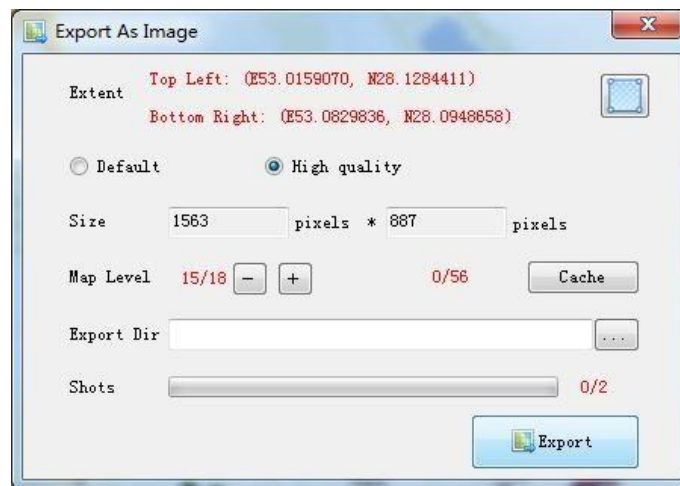


Fig .25 Map export interface

7. Layer management

The layer manager is divided into projects, layer groups and layers. Layer groups can contain multiple layers or groups of layers. The layer types are point, line, surface, vector, raster, image and web map layers.

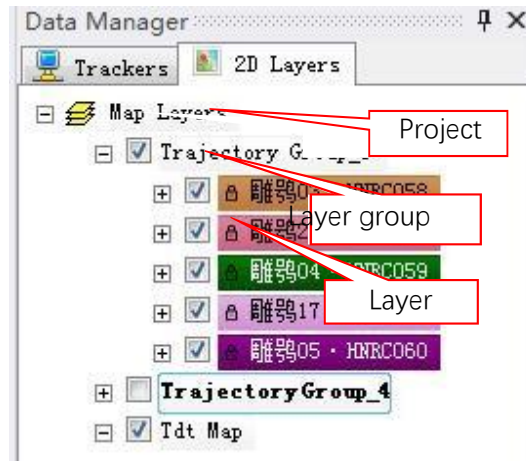


Fig. 26 Layer management

7.1. Project operations

The project node corresponds to the current map framework. It enables adding local map layers, Spatialite database layers, Wms layers, creating new layer groups, importing offline data packages, emptying map data, etc. Create new layer groups, import offline data packs, clear map data and more.

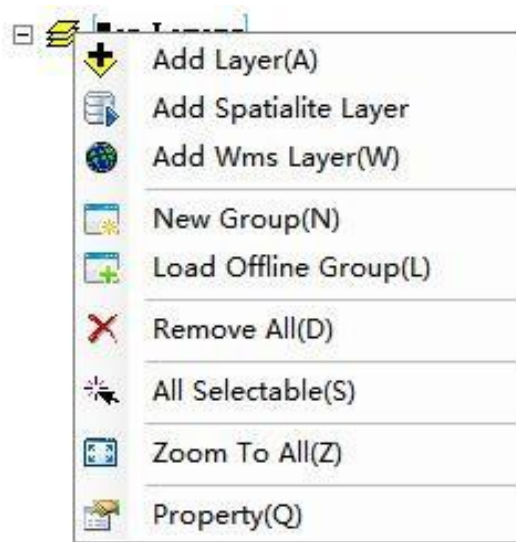


Fig. 27 Project node menu

Add layers: add local spatial data to the map, support vector, raster and image data, and the coordinate system of the imported data is automatically converted to the current map coordinates.

Add Spatialite layer: reads spatial data from the SQLite database and adds it to the map.

Add Wms layer: Get a WMS layer via a network request and add it to the map.

New layer group: Create a new layer group in the project.

Import offline data pack: Import offline data pack from outside to the map, and the coordinate system of the imported data is automatically converted to the current map coordinates. The offline layer group format is 2D Data group file (*.dg2), and accounts with data download permission can export track data as an offline data pack to share with others.

Clear: removes all data from the map. This operation does not delete the source data.

All selectable: Batch sets whether all vector layers in the map are selectable or not.

Zoom to all: Zooms the map to the maximum visible area, including all objects.

Properties: View coordinate information for the map frame.

7.2. Layer group operations

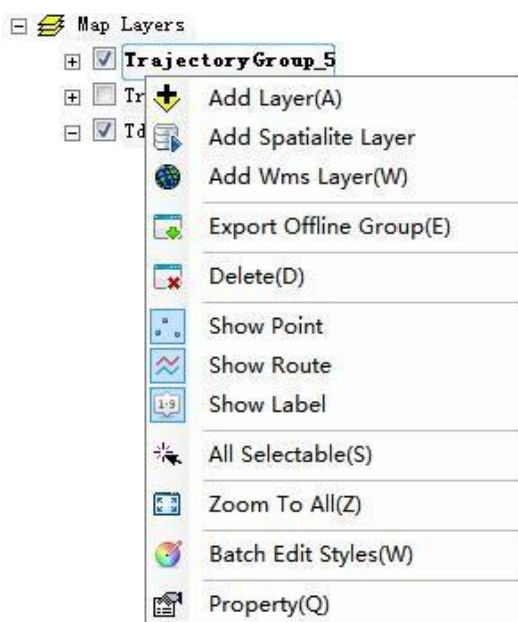


Fig. 28 Layer group node menu

Adding layers: as above.

Adding the Spatialite layer: as above.

Add Wms layer: as above.

Export offline data pack: Users with data download permission can export the currently selected layer group as an offline data pack file (2D Data group file *.dg2).

Delete: Deletes the currently selected layer group and all sub-layer groups and layers below the layer group; this operation does not delete the source data.

Separate control over the display of track points, track lines and point numbers: if the layer group type is a system-generated 'track layer group', the visibility of track points, track lines and track point numbers can be controlled separately.

Selectable All: Batch sets whether all vector layers in a layer group are selectable.

Zoom to all: zooms the map to the geometric extent of all objects in the selected layer group.

Properties: View coordinate information for the selected layer group, with the same coordinate system for all layers in the layer group.

Batch Modification: Batch personalisation of track points, lines, and numbers.

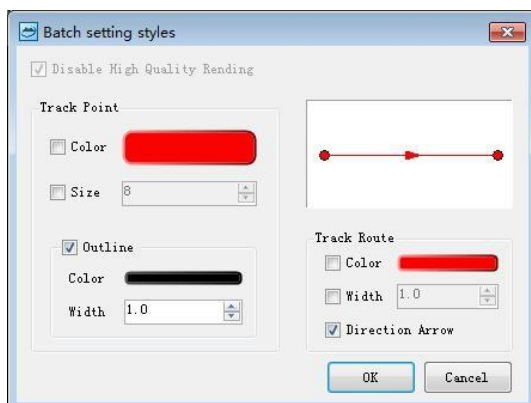


Fig. 29 Batch setting style screen

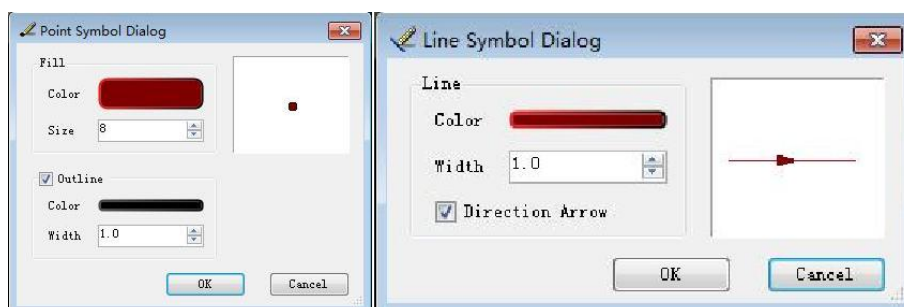


Fig. 30 Dot and line symbol setting interface

7.3. Layer manipulation

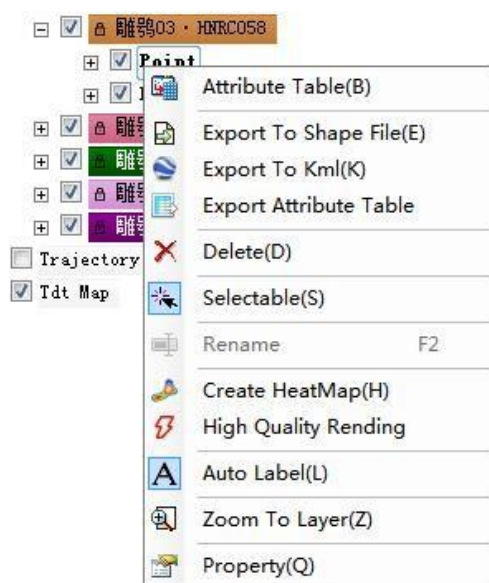


Fig. 31 Layer node menu

Open property sheet: view all property data for the selected layer.

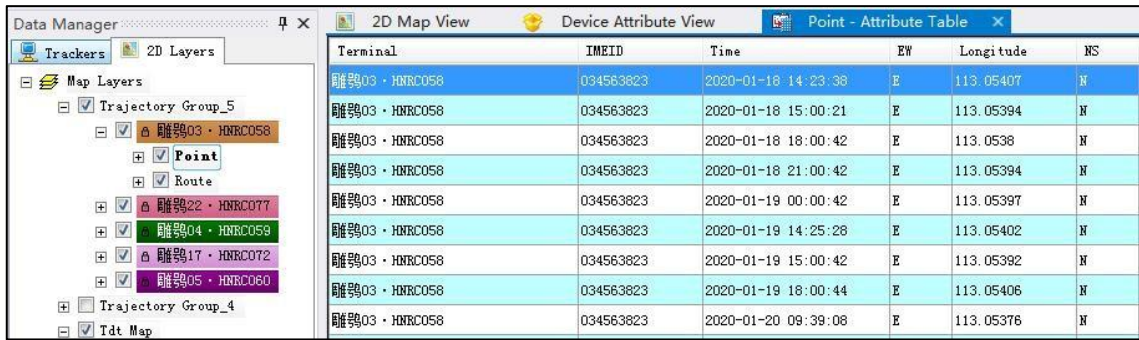


Fig. 32 Property sheet window

Export shape data: Users with data download permission can export the currently selected layer as an offline data file in a Shapefile format (*.shp), which supports coordinate conversion.

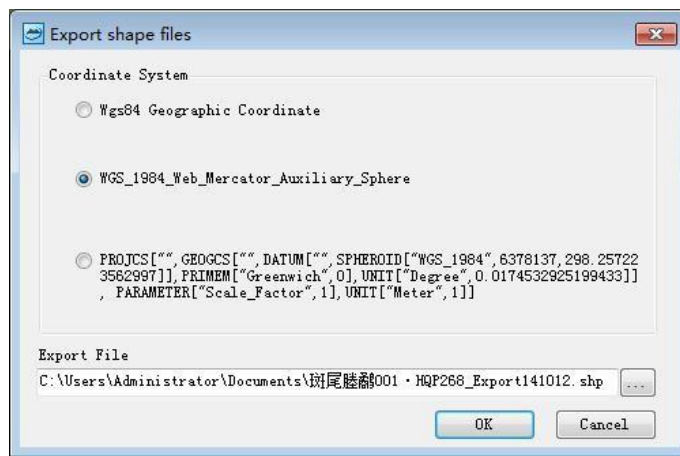


Fig. 33 Interface for exporting shape file data

Export kml data: Users with data download permission can export the currently selected layer as an offline data file in the format of a kml file.

Export property sheet: Users with data download permission can export the property sheet of the currently selected layer to an excel file.

Delete layer: removes the specified layer from the current layer group. This operation does not delete the data source file.

Selectable: Set whether the objects in the vector layer are selectable. After setting selectable, you can view the layer object information.

Create a heat map: select the point layer to create a heat map, and the gradient colour can be personalized.

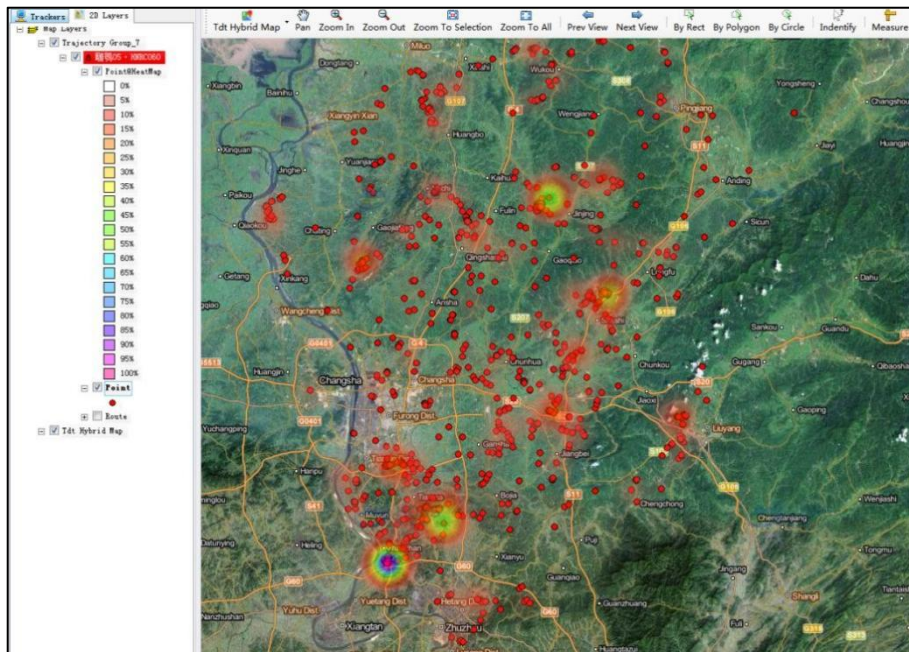


Fig. 34 Heat map interface

High-Quality Rendering: When High-Quality Rendering mode is on, richer point symbols and line patterns can be set, but the graphics rendering speed is reduced.

Automatic annotation: show or hide the numbering of fixes.

Zoom to layer: Zoom the map to the maximum extent of the current layer.

Properties: view the spatial extent of layers, number of shapes, coordinate information, etc.

8. Track statistics and analysis

The platform analyses the trend of each variable over time. Select "Statistics" in the [Track Query Window] to open the data statistics window.

8.1. Time series statistics

Time series analysis can be performed on attributes such as longitude, latitude, altitude, speed and temperature of the track data.

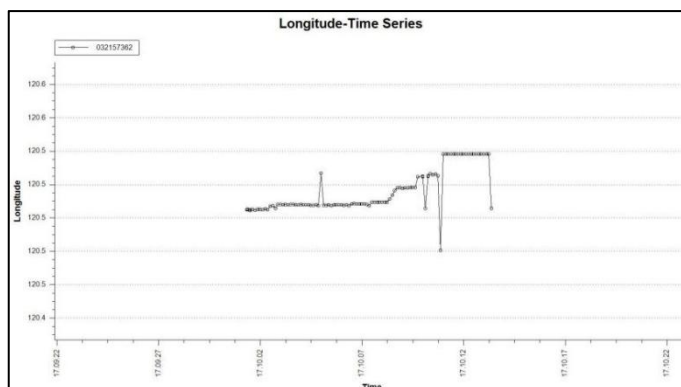


Fig. 35 Time series analysis

8.2. Aggregate statistics

The track data's attributes, such as longitude, latitude, altitude, speed and temperature, can be analysed by time.

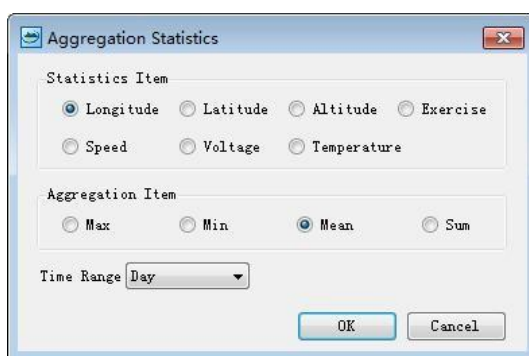


Fig. 36 Aggregate statistics interface

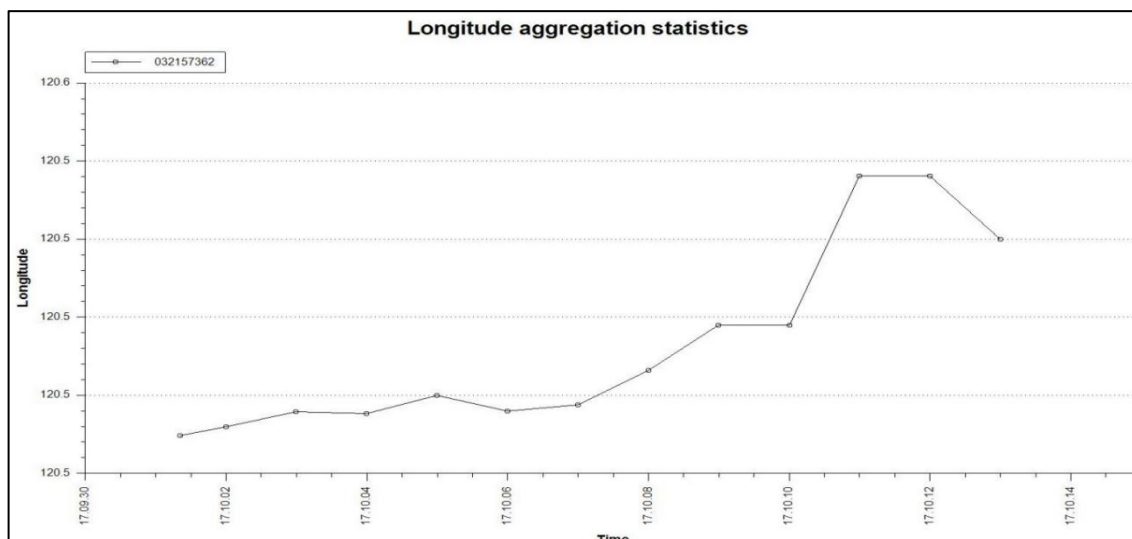


Fig. 37 Time-aggregate statistics

8.3. Accuracy ratio statistics

The number and percentage of fixes with different positioning accuracy levels can be scaled for track data, as shown in the figure below.

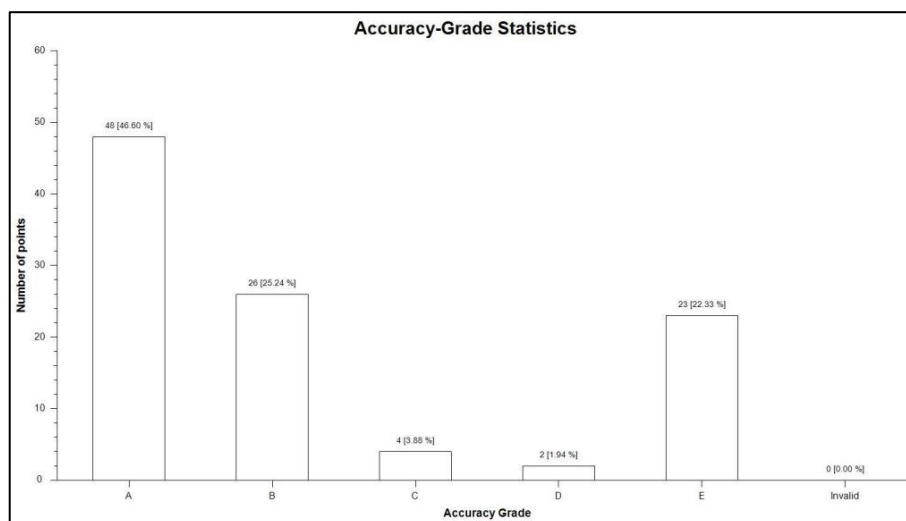


Fig. 38 Data Accuracy-Grade Statistics

9. Home Range Computing

The platform has a species home range calculation function. Select the track layer, click [Home range calculation] in the main menu and select the minimum Minimum Convex polygons (MCP) or kernel density estimates (KDE) can be calculated.

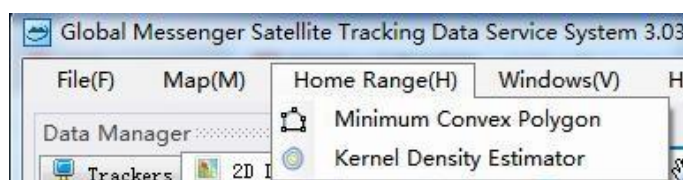


Fig. 39 Home Domain Calculation

9.1. Minimum convex polygon (MCP) calculation

Select a layer with tracks or group of layers, select a time field as required, and carry out home domain analysis calculations for single or all individuals via the least convex polygon algorithm, generating a resultant line layer and surface layer on the map with attributes containing information such as percentage of selection, area etc.

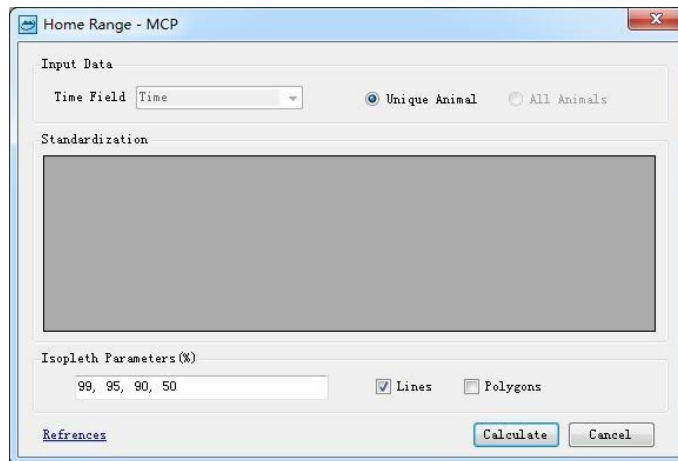


Fig. 40 Minimum convex polygon setting interface

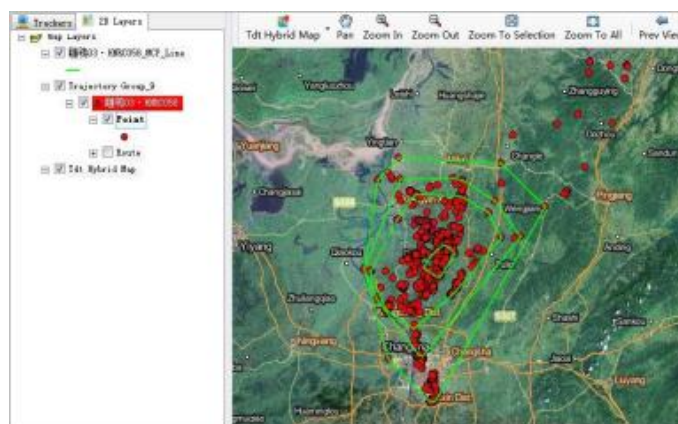


Fig. 41 Minimum Convex Polygon (MCP) calculation model

9.2. Kernel Density Estimation (KDE) calculations

Select a layer with tracks or a group of layers, select a time field and set the kernel method, raster parameters and bandwidth (kernel smoothing). Home range calculations for single or all individuals by a density estimation algorithm generate documentation of the calculation process and results.

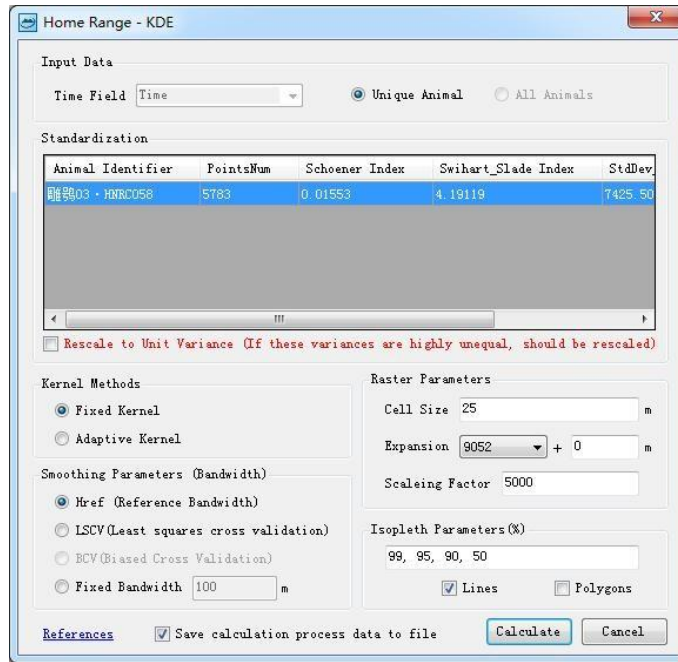


Fig. 42 Nuclear density setting screen

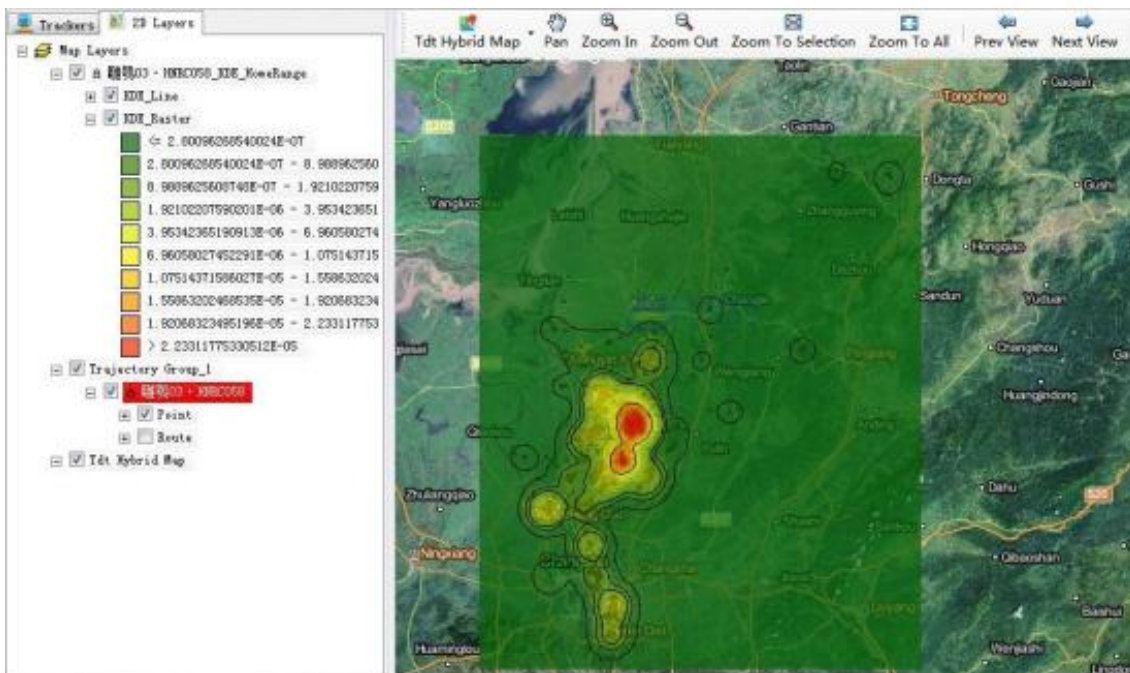


Fig. 43 Kernel Density (KDE) calculation model

Note: Raster symbol and line can be customised.

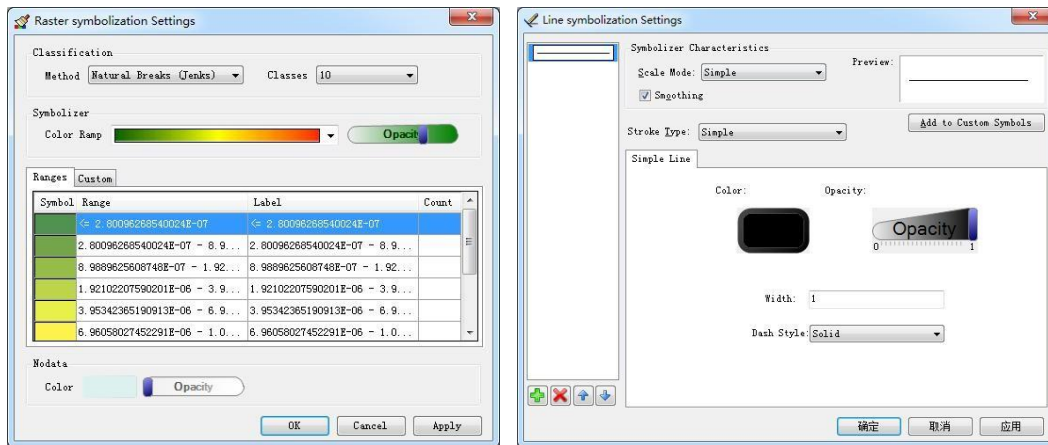


Fig. 44 Kernel Density (KDE) style settings

10. High-frequency activity queries

Check the trackers in the list, and query the activity data of multiple devices by [days] and [time period].

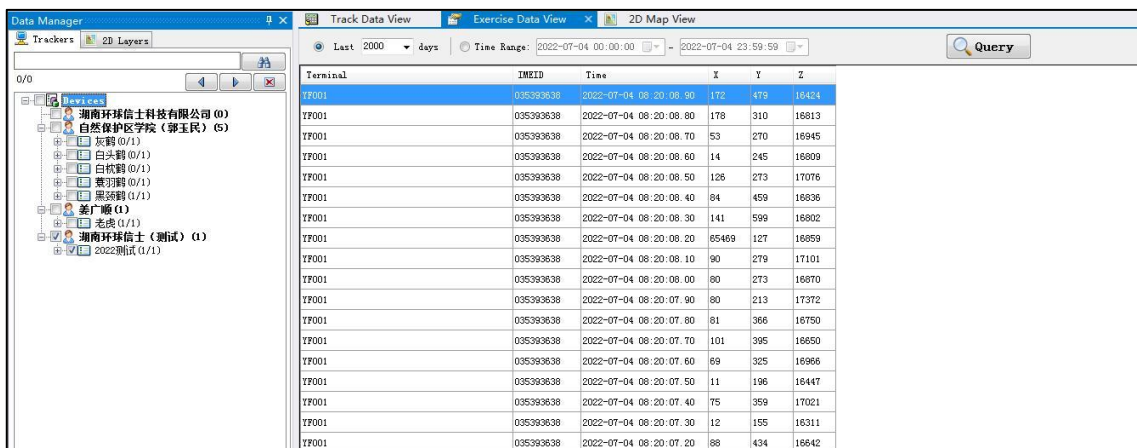


Fig. 45 Active devices query window

11. Camera data query

11.1. Photo video points

Photo & Video Layer Loading: Select [Photo & Video] in the toolbar of the map window, check the device in the pop-up dialogue box and set the time slot to present the pictures and videos taken by the tracker camera will be given as points on the map.

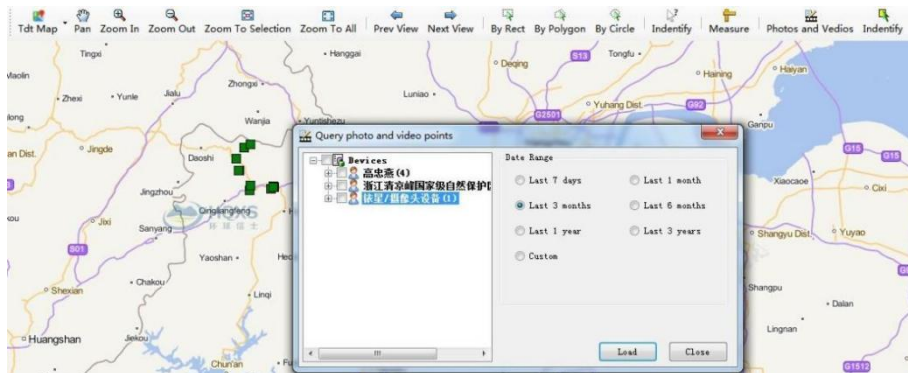


Fig. 46 Photo and video search interface

View photos and videos: Select [View photos and videos] in the toolbar of the map window to activate the viewing function. Clicking on photo and video points in the map will automatically associate them with the playback of photos and videos.

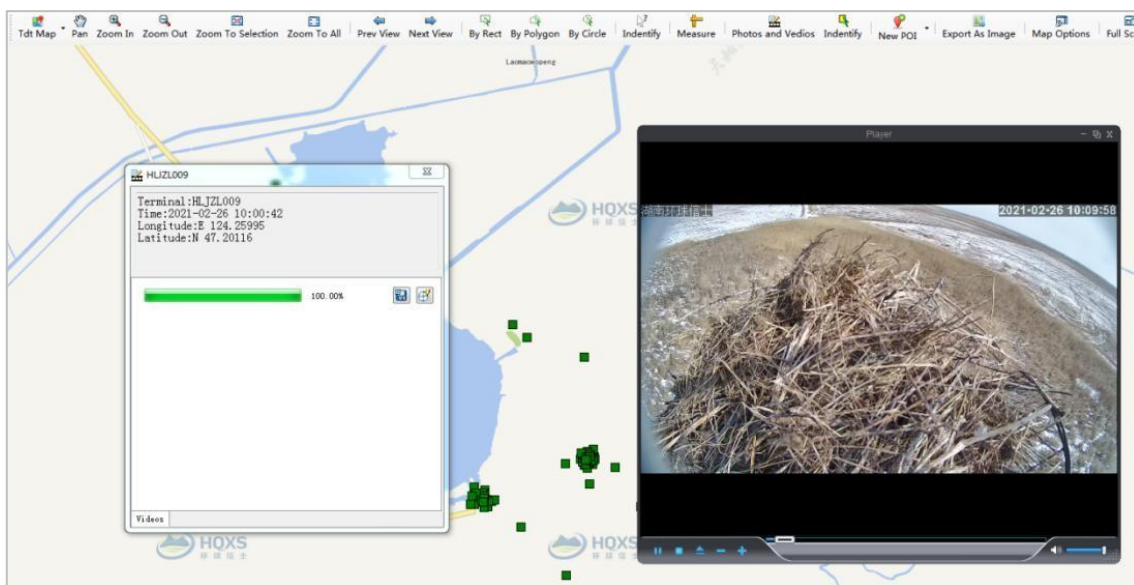


Fig. 47 View video

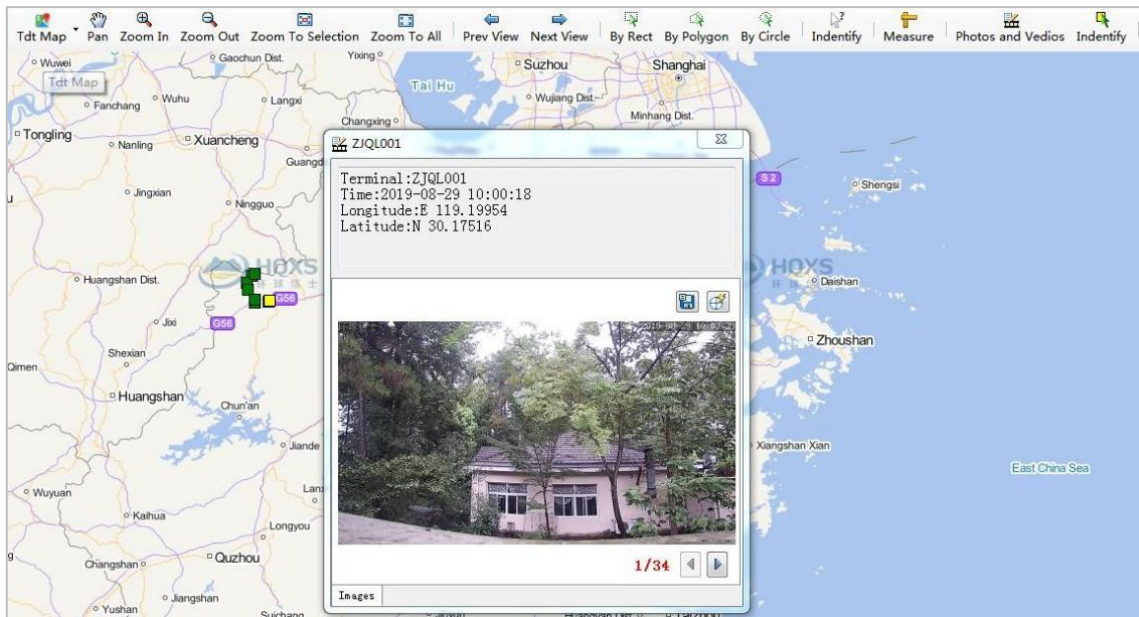


Fig. 48 View photos

11.2. Photo video management

Select [Photo & Video Window] in the [Window] menu to manage all photos and videos taken by the tracker camera, providing "batch download" and playback functions.

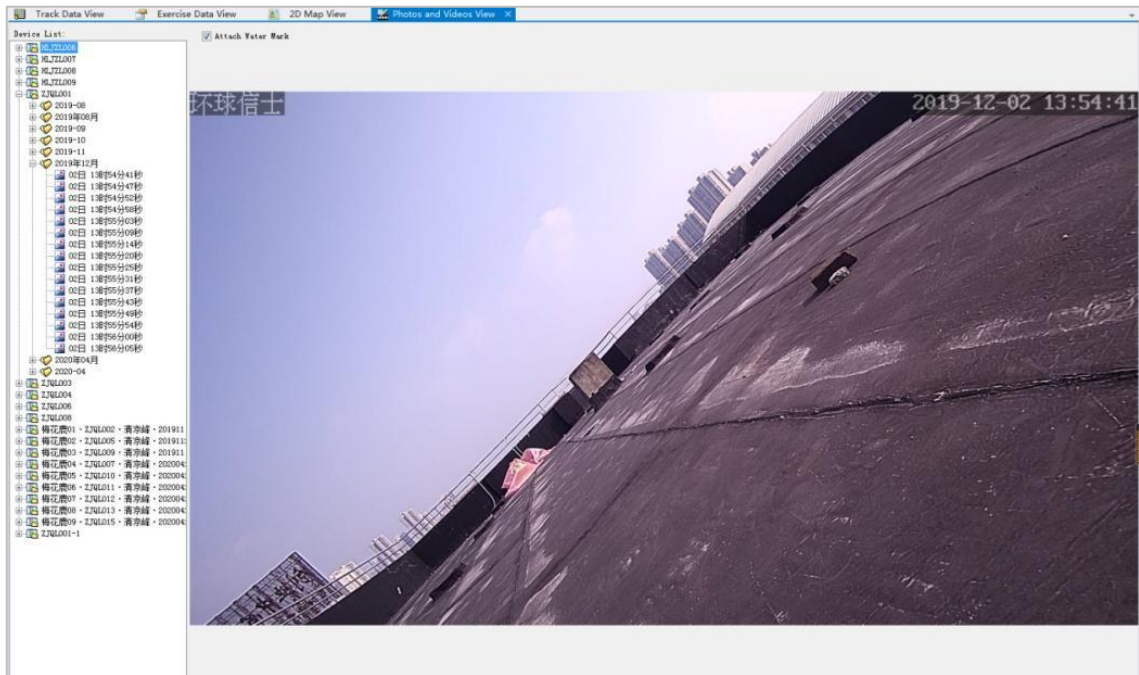


Fig. 49 Photo and video management window

12. Point-of-interest management

12.1. New points of interest

Select [Add Point of Interest] in the toolbar of the map window to choose the point of interest on the map. Add relevant attribute information and image data to the point of interest.

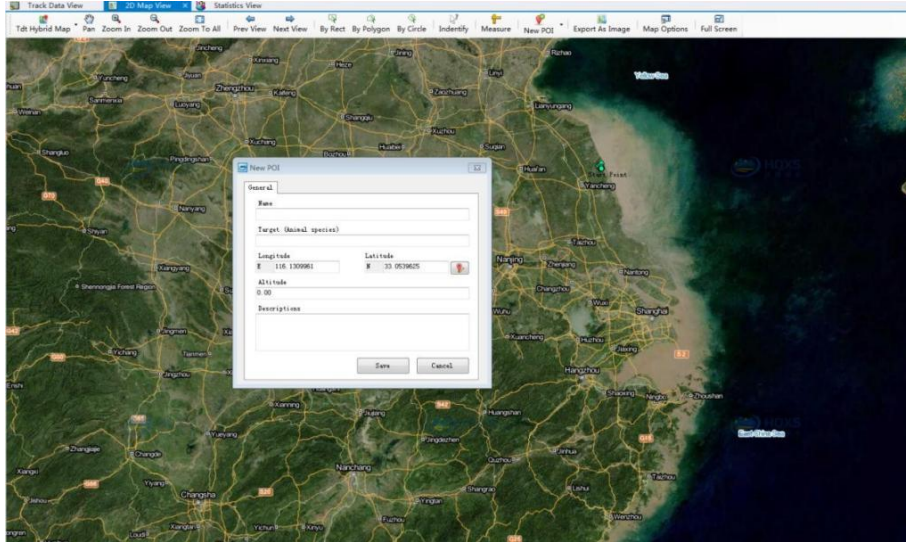


Fig. 50 New points of interest

12.2. Editing points of interest

Select [Edit Point of Interest] in the toolbar of the map window to re-edit the attribute information and picture data of the point of interest in the map window.

12.3. Point of interest management

The [Window] menu opens the interest point management window, where users can view all the points of interest under their account and make changes to

Points of interest can be edited, deleted, displayed and refreshed, and points of interest can also be generated and displayed on the map.

Pid	Label	Target	EF	Longitude	NS	Latitude	Altitude	Address	Description	UpdateTime
428	斑尾鹟鵂15日18:00最后点位	斑尾鹟鵂	E	121.03934	N	32.70452	0		20171008环志并佩戴跟踪器, 15日晚信号消失, 历时6天。	2017-10-20 09:28:53
429	斑尾鹟鵂9日24:00环志并佩戴跟踪器点位	斑尾鹟鵂	E	120.95753	N	32.75578	0			2017-10-20 09:31:21
2387	AAAA		E	119.8224	N	34.912224	0			2022-01-26 14:24:13

Fig. 51 Point of interest management

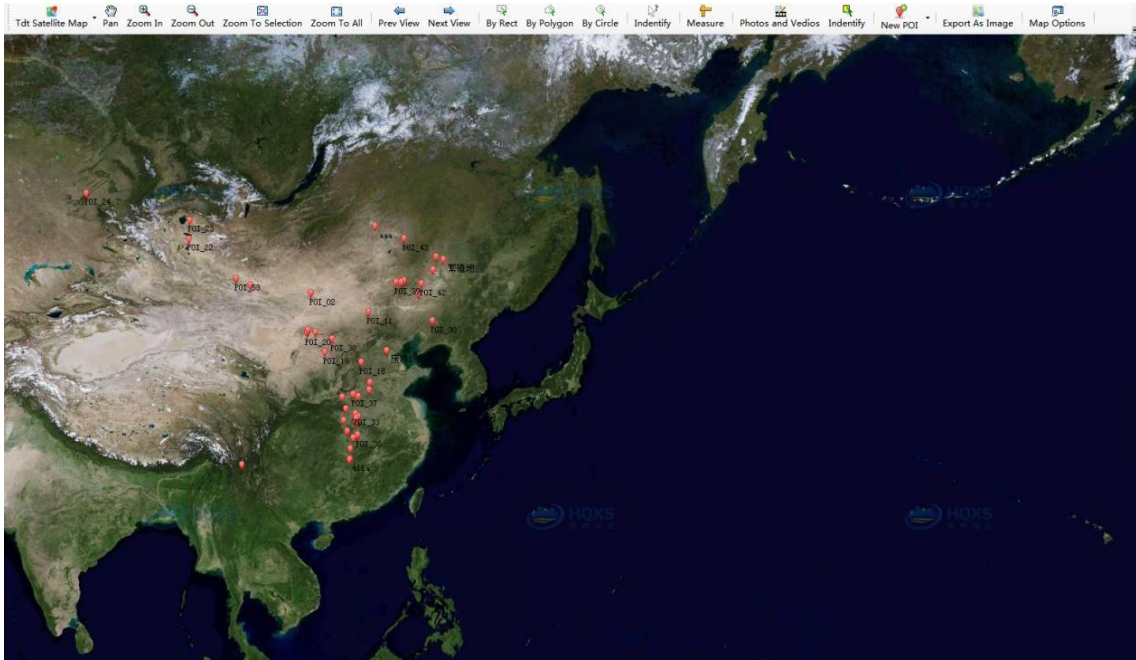


Fig. 52 Showing points of interest in the map

Data descriptions are available in the "Help" menu to view the system's criteria for each data item.

13. Global tracking mobile phone APP

Based on the mobile Internet thinking, the "Global" Tracking mobile APP is developed to synchronize remote server data services in real-time. The APP mainly includes five functions: field installation assistant, device location attention, track view, point of the interest collection and "find it".

Field installation assistant: by scanning the QR code, you can quickly obtain the hardware information of the tracker, support custom names and on-site photos, and facilitate customer management and maintenance of equipment information.

Attention device: After setting the attention device, the service background can automatically push the position dynamic of the device, and the abnormal low voltage warning information, so that users can understand the device and species status in real-time.

Location and track view: it can view the distribution of all devices, view the latest location and movement track of the specified equipment, view the detailed information of any site, etc., and can

share the location information with colleagues and friends through Wechat, QQ, SMS and other ways.

POI collection: users can add places of interest to favourites, and can be associated with photos and other media.

Find it:display the location,speed and other information of the target individuals and the current users in real-time, and automatically calculate the distance and orientation between the two, so as to provide help for tracking and searching for individuals in the field.

14. Precautions

Thank you for purchasing our product. To better use this product, please read this manual carefully before using it. This product specification is designed to guide you about the functions and characteristics of our products:

The description of this manual is based on the default settings of the HQ Series tracker.

Please keep this instruction properly for future reference.

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