

YO**SENSI**.IO

# Yosensi Management Platform

Short Guide v 1.2

## Release notes

Released	Version	Key changes
17.10.2022	1.0	Initial release.
08.03.2023	1.1	Addition of firmware update and configuration information.
10.10.2023	1.2	Changed description of connecting nodes with Yosensi Management Platform.

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# General

[Yosensi Management Platform](#) is a convenient and powerful environment for managing your LoRaWAN-based devices. In this document, we briefly discuss the key features and components of this tool.

## Dashboard

The first view after logging in is the dashboard. Its purpose is to present the most critical information in an abbreviated and easily accessible form. It shows, among other things, the total number of applications, nodes, and gateways owned by the user, information on any transmission errors in the last seven days, the last frames sent with the option of viewing them, and information about user-defined alerts. In addition, the organisation's administrator can see an abbreviated version of the settlement and the number of frames sent by devices in the last few days.

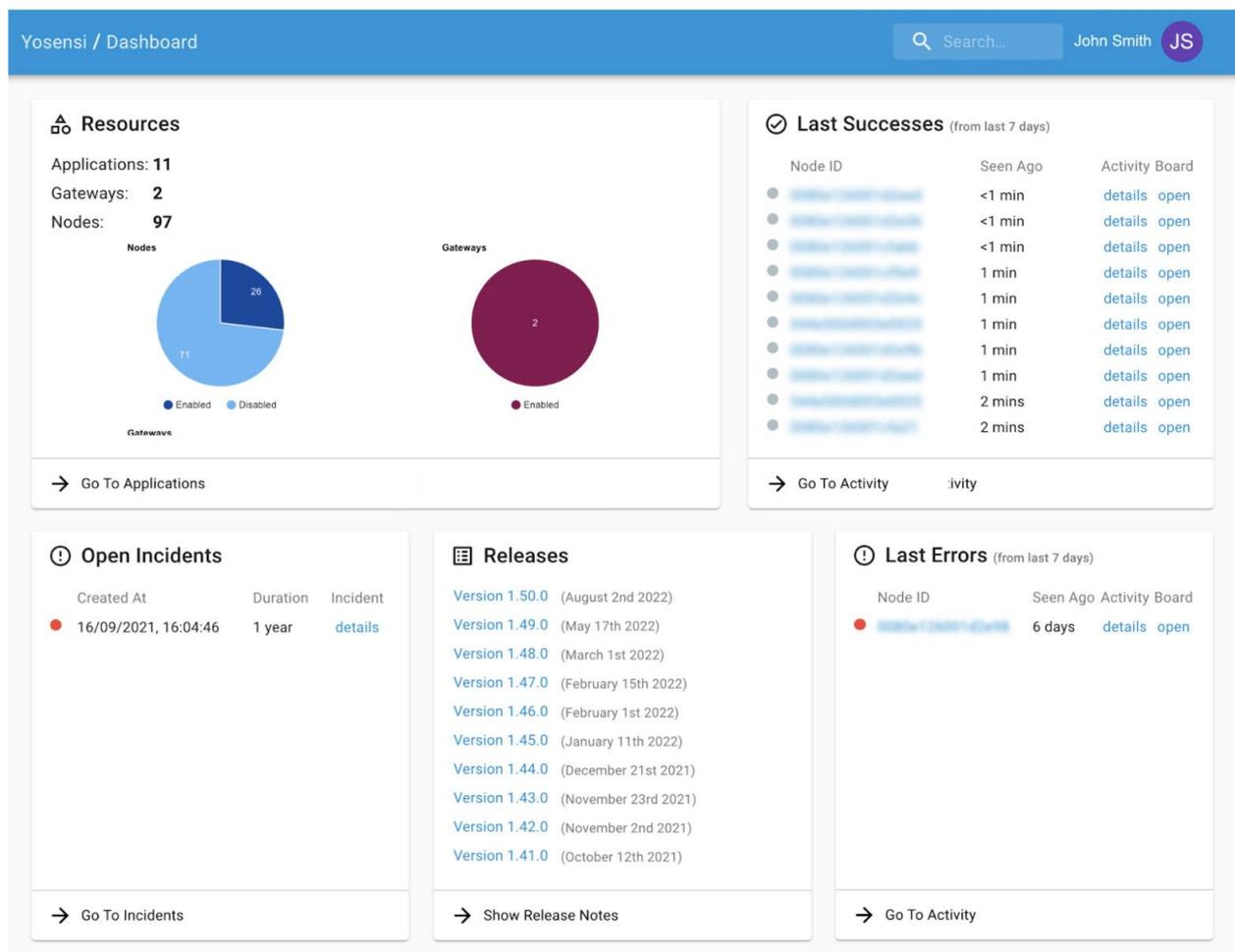


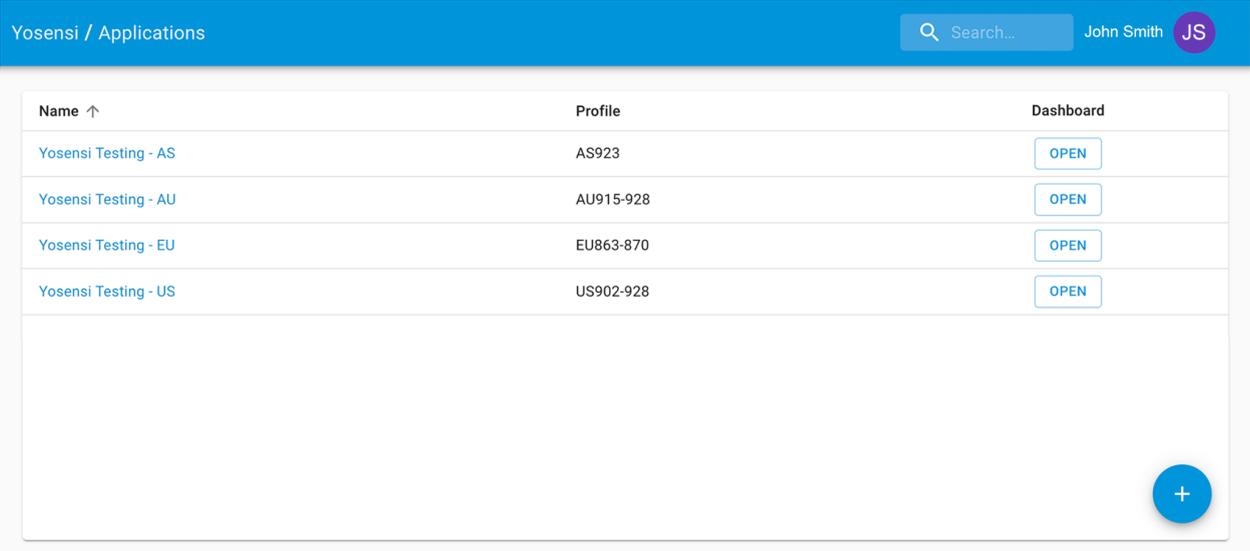
Figure 1 Dashboard view in Yosensi Management Platform

# Applications

Each customer in the Yosensi Management Platform receives a private organisation in which they can create their applications. The applications manage devices clearly and simply. Here you can add and group devices to manage them more easily (e.g., in multiple locations) and check detailed information from the devices (when they last appeared, their application key, node ID, name, etc.) It is also possible from here to access the graphs and display the data collected. The data display system in the Yosensi Management Platform is Grafana, an open-source platform with tools to analyse data, extract metrics, monitor through clear, multi-functional dashboards, and trigger notifications for various events.

## Applications - first view

Applications is a subdivision within the client's private organisation. This tab in the first view contains the list of applications created by the client. You can access the details of an application or the statistics collected for the entire application from here.



Name ↑	Profile	Dashboard
Yosensi Testing - AS	AS923	<a href="#">OPEN</a>
Yosensi Testing - AU	AU915-928	<a href="#">OPEN</a>
Yosensi Testing - EU	EU863-870	<a href="#">OPEN</a>
Yosensi Testing - US	US902-928	<a href="#">OPEN</a>

Figure 2 Application view in Yosensi Management Platform

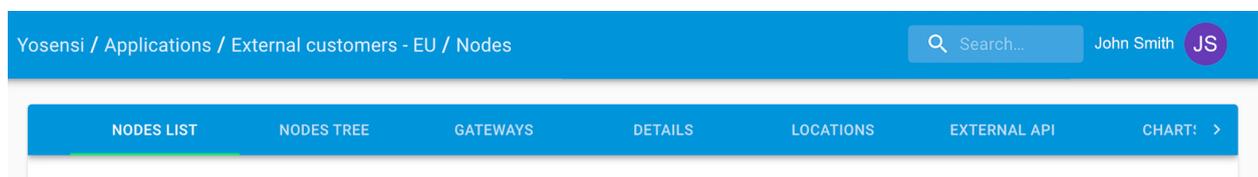
## Applications - creating a new one

To create a new app, click on the '+' checkmark at the bottom right of the main app screen and fill in all the fields in the form. We can add specific devices under the created application. This option manages your devices, e.g., in a particular building.

Figure 3 Creating a new Application in Yosensi Management Platform

## Applications - functions

When you click on a specific application name in the main section view, a list of devices assigned to the selected application and key information, such as DevEUI, model, last seen, etc., appears. In addition, you can see detailed information about the device, access the charts (CHARTS), and much more. The top bar enables the navigation:



NODE LIST - list of nodes assigned to a specific application

NODE TREE - list of nodes assigned to specific locations

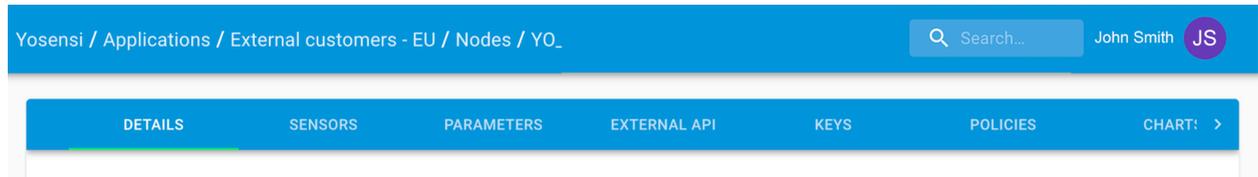
GATEWAYS - list of gateways assigned to a particular application

DETAILS - the editable name and description of the application

LOCATIONS - the place to create and manage locations

EXTERNAL API - the place to connect an external application for routing data collected by devices

From the device list, it is possible to enter the device details. Here you can see all the data within the scope of the selected device. When a specific device is accessed, the top bar and its functions also change, as explained below:



DETAILS - basic device information such as network, DevEUI, model, time of last activity, name, description, and location, which allows the grouping of devices. From here, it is possible to change the names of existing devices in the system.

SENSORS - defining the name, type, and unit for a specific measurement. In addition, you can convert raw values from the sensor here according to your needs (expression field, e.g., conversion of distance from centimetres to metres or temperature from degrees Celsius to Fahrenheit).

EXTERNAL API - possibility to select a checkbox for the sensor(s) of a specific node whose data transmits to the external API. As a reminder, the external API is added for the entire application. All checked sensors will be sent via webhook provided in application **External API** settings.

KEYS - In this section, the user can select the activation mode according to the device configuration, OTAA (always by default) or ABP, for reading the frames sent to the server by the device

POLICIES - selection of the policy defined earlier in MONITORING

CHARTS - charts with the data collected by the device.

COMMANDS - commands to communicate between the server and the device.

EVENT - section with the various changes that have occurred in the device including: reading the configuration, changing the configuration, reading the software version

FIRMWARE - where we can configure the device and update the firmware to the latest version.

## Applications - adding a new device

Adding a new device is possible from within a specific application. Just click the '≡' button in the bottom right corner and select one of the two options to add a device to the system:

- add device via Ble
- add device manually

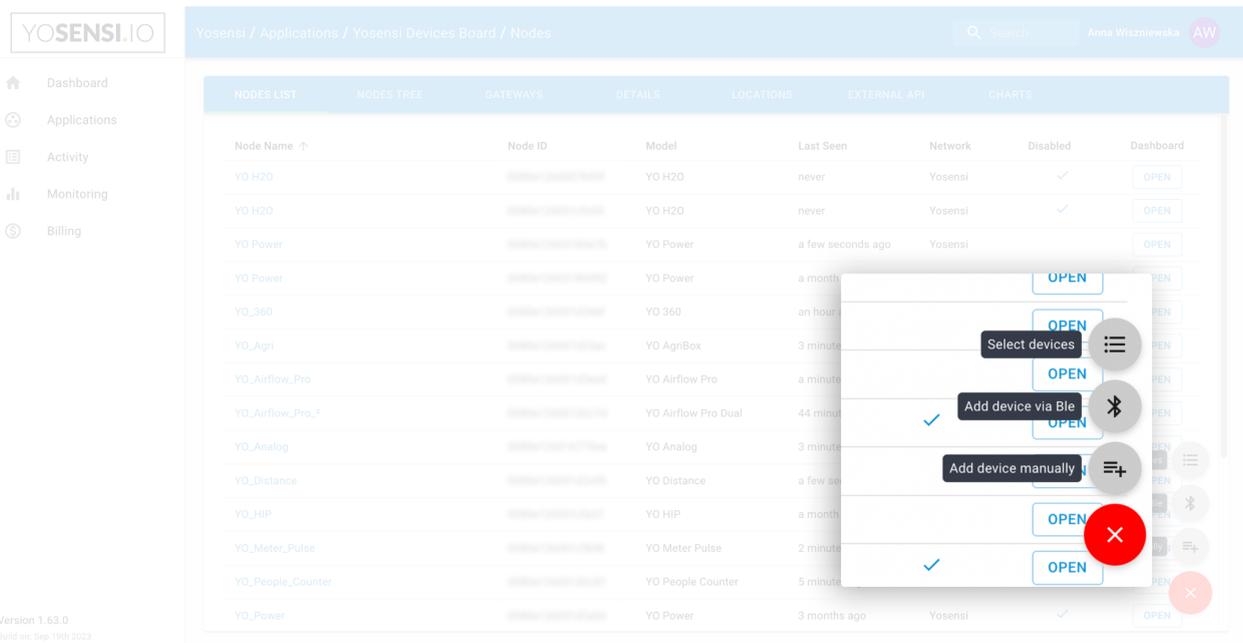


Figure 4 Adding a new device in Yosensi Management Platform

After clicking 'Add via Ble', select the device to add. The list of devices available to connect to the application will appear. The node name will be generated automatically based on the device model and DevEUI, with the OTAA and DevEUI key filled in, press create.

If you wish to **add a device manually** fill in the form that appears to you after selecting this option. You will find a detailed explanation of the fields to be filled in in the [user guide](#) dedicated to the device you are adding.

The device is added as an OTAA by default, which only needs two parameters: the DevEUI and OTAA Key. The user can change the connection type to ABP after adding the device. Three additional fields are necessary for connection in ABP mode: Device Address, Application Key, and Network Key.

When changing the configuration, ensure that the activation key on the Yosensi Management Platform matches the device's key configuration. Configuration of the device can occur in the FIRMWARE tab mentioned above.

## Applications - firmware update & configuration

To update firmware or change device settings, select one device from the node list. The node list is visible by going to the "Application" tab and clicking on the specific application name.

Detailed information on how to configure the device and update the firmware can be found in the [user guide](#) dedicated to the specific device.

## Applications - firmware update

Once the device has been selected from the list of nodes, navigate to the firmware section. This is located on the right side of the navigation tab.

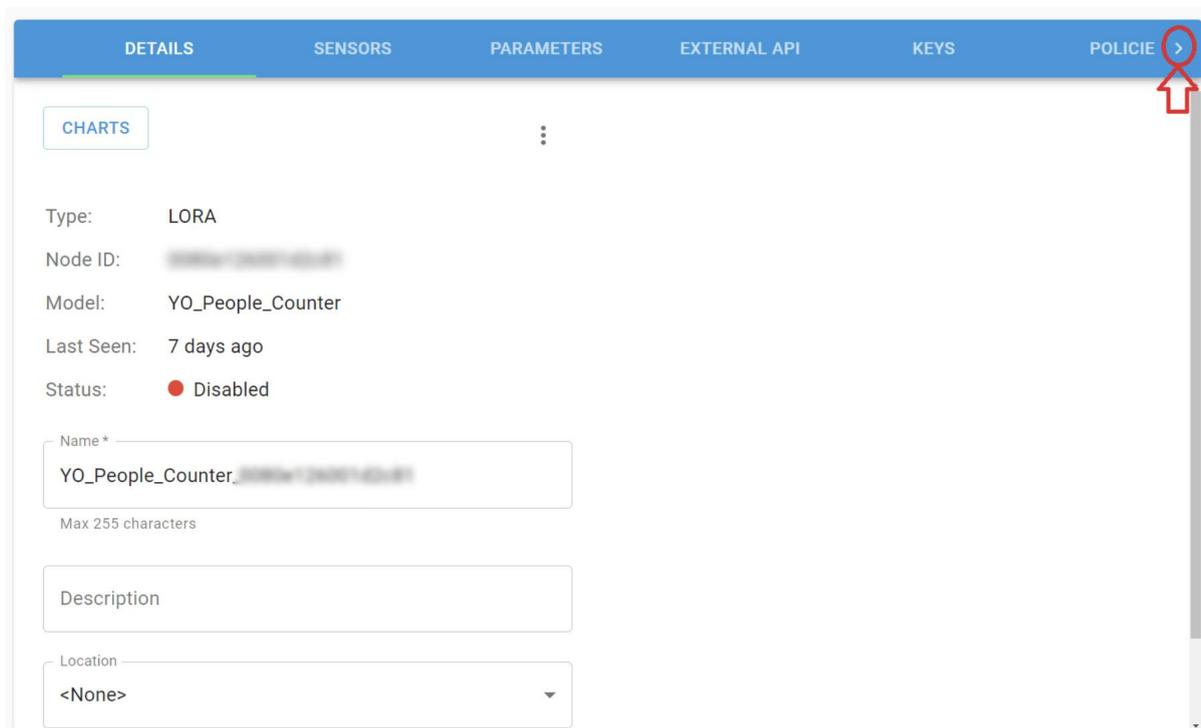


Figure 5 Navigation tab of the device instruction

Now you can select three different options:

- **Configure**
- **Update firmware**
- **Recover device**

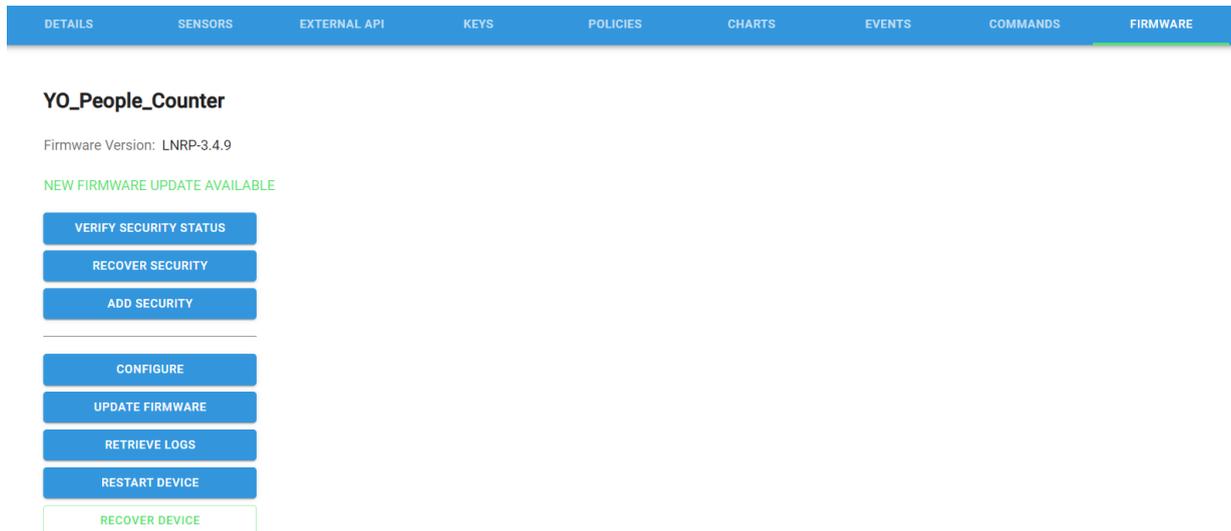


Figure 6 Firmware section view of the device.

Yosensi configuration web tool works with firmware 3.4.0 and the latest. Check installed firmware on your device. If there is new firmware available, update it before configuration. Click **update firmware** button and follow instructions in next steps.

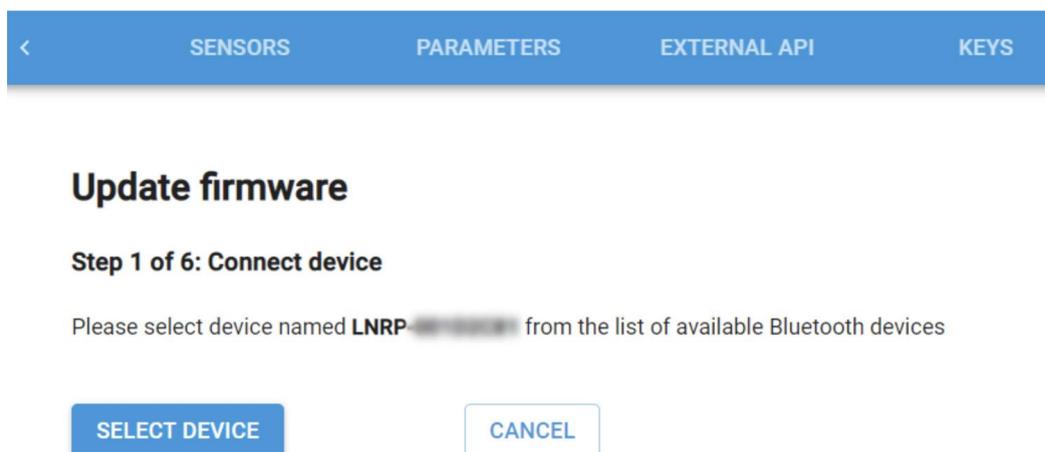


Figure 7 Update firmware and connecting to the device.

**Select device** and follow the instructions shown on the platform. Now your system will look for nodes on the list via Bluetooth. You will see the name of the device with last digits of DevEUI. Select and pair it.

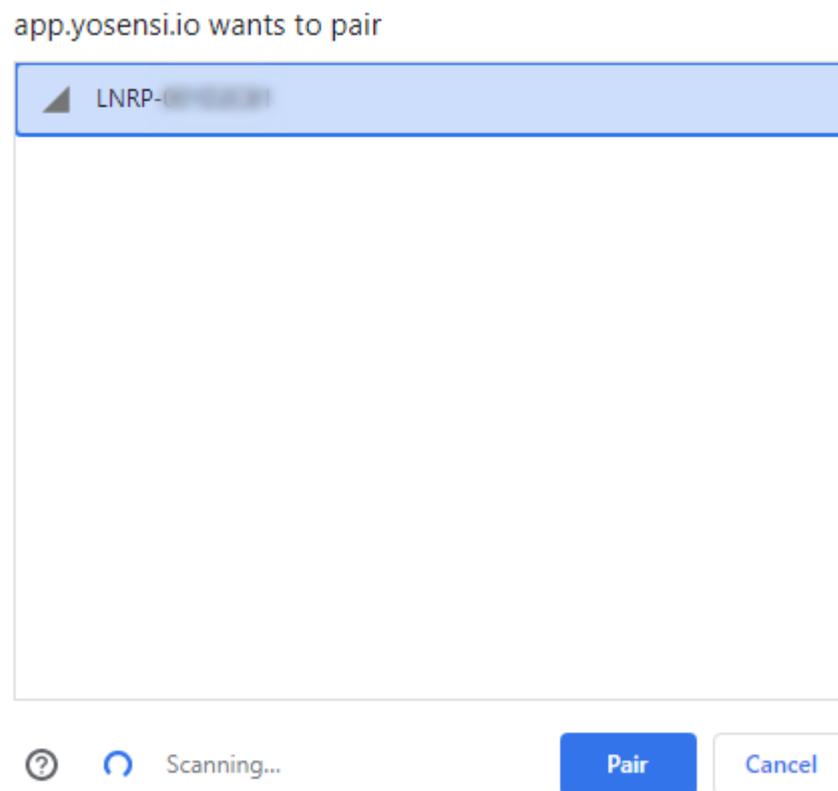


Figure 8 Pairing to the device section view.

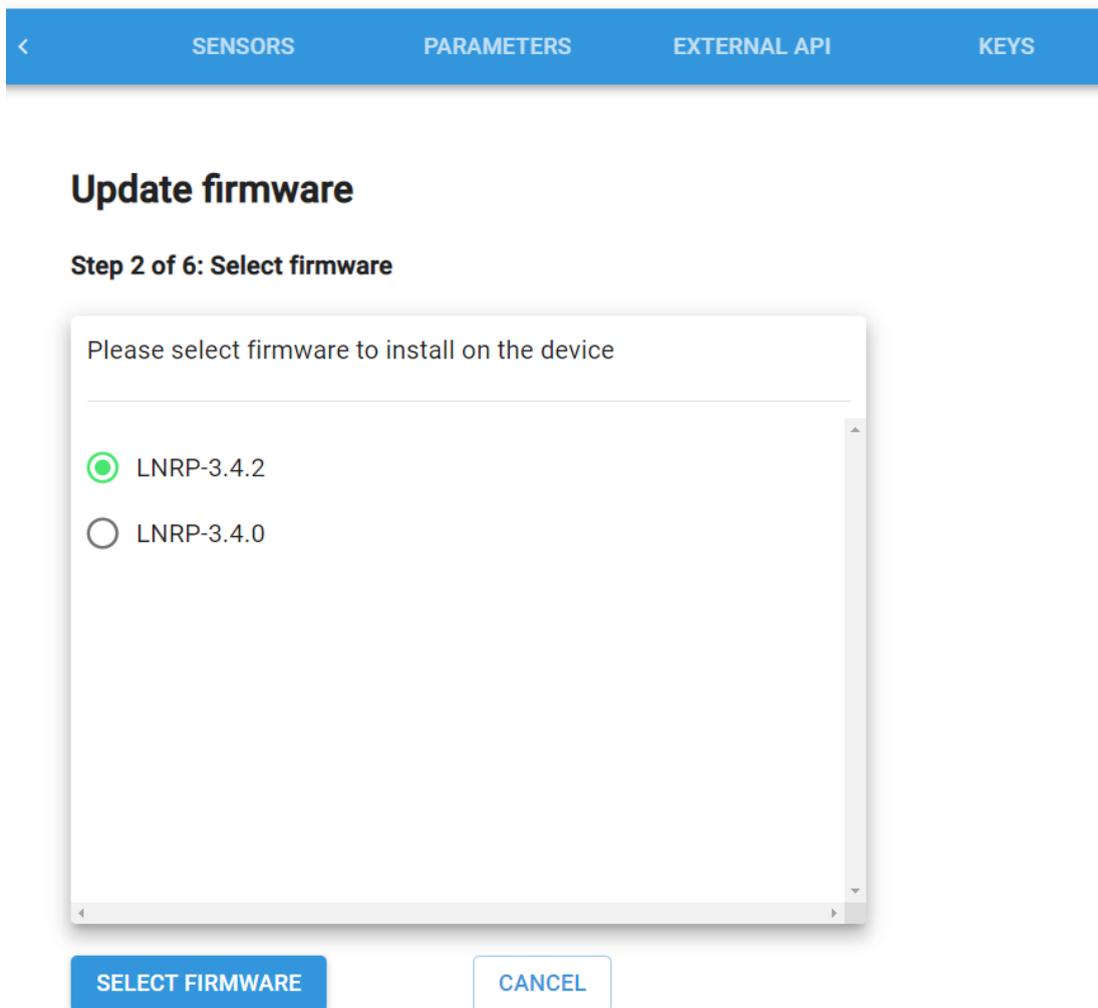


Figure 9 Selecting firmware view in Yosensi Management Platform.

Node is paired, choose a new firmware version to install on the device and press the select button.

**Warning**, this step will erase old firmware, process it with caution.

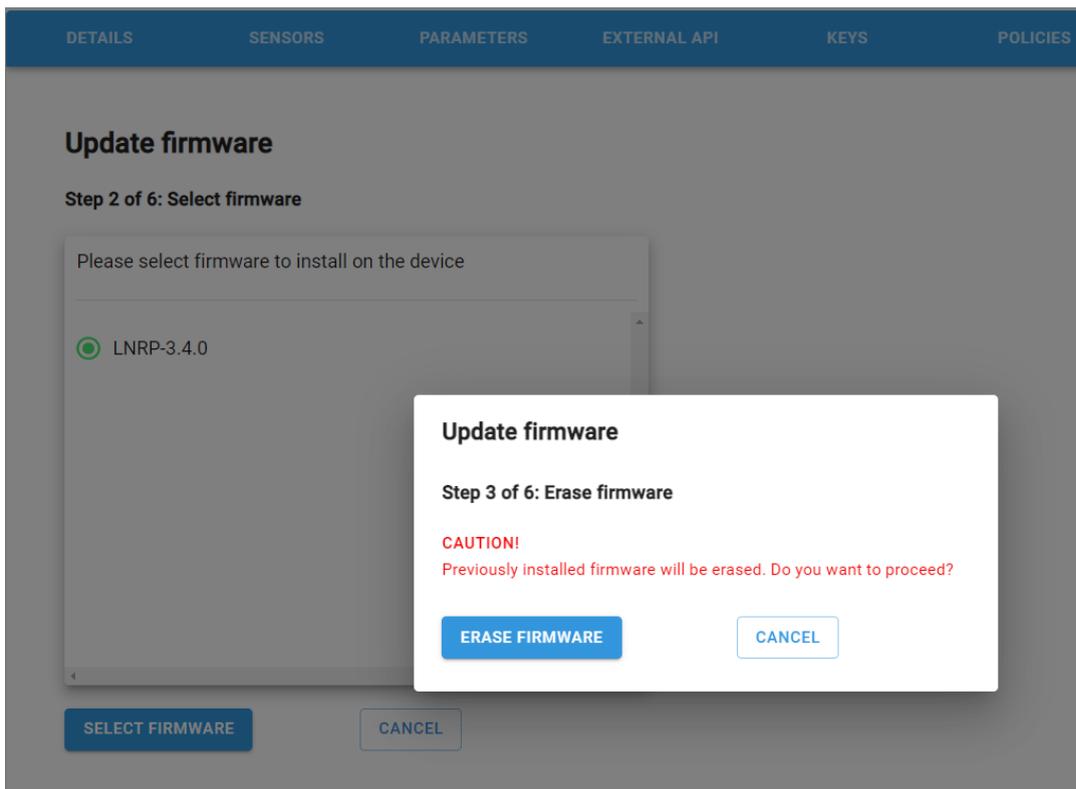


Figure 10 Erasing firmware section view.

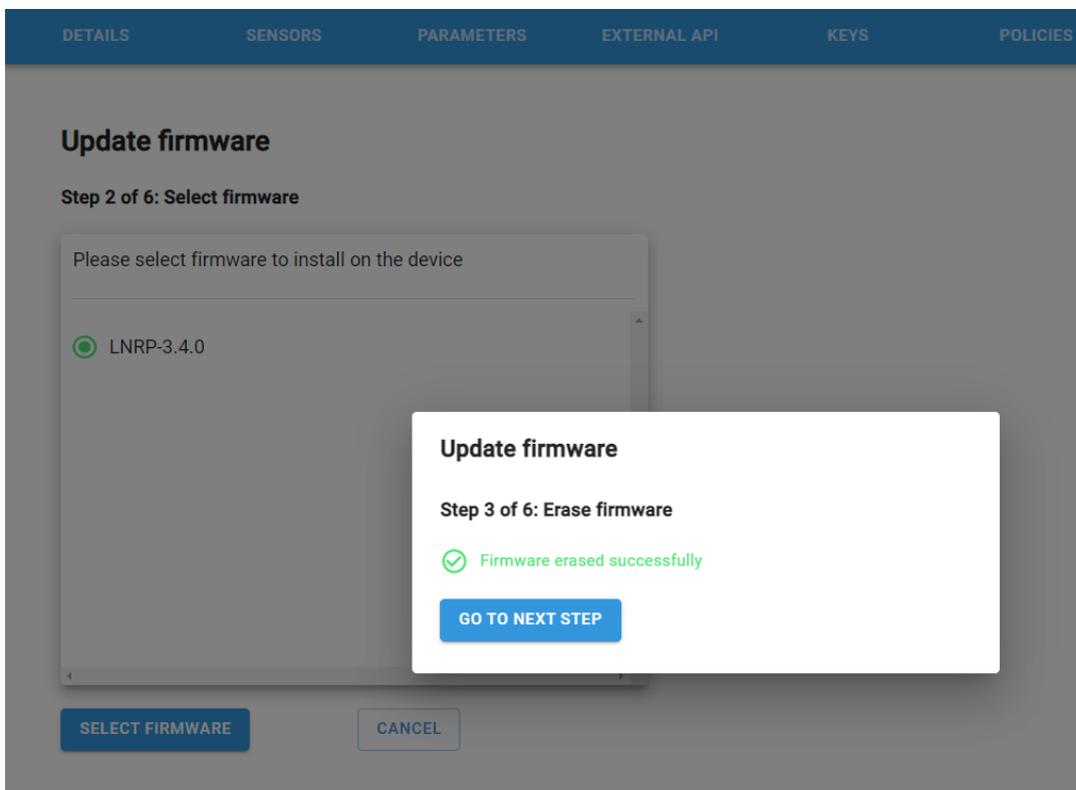


Figure 11 Successful erased firmware section view.

<SENSORSPARAMETERSEXTERNAL APIKEYS

## Update firmware

**Step 4 of 6: Reconnect to the device**

Please select device named **YO-██████████** from the list of available Bluetooth devices

Please select the firmware update mode

---

Short range

Medium range

Long range

SELECT DEVICE

Figure 12 Firmware update mode section view.

To update firmware choose the mode:

- Short range - maximum data sent per packet, the fastest, use with good signal RSSI,
- Medium range - less data sent per packet, takes more time,
- Long range - minimum data sent per packet, the longest time needed.

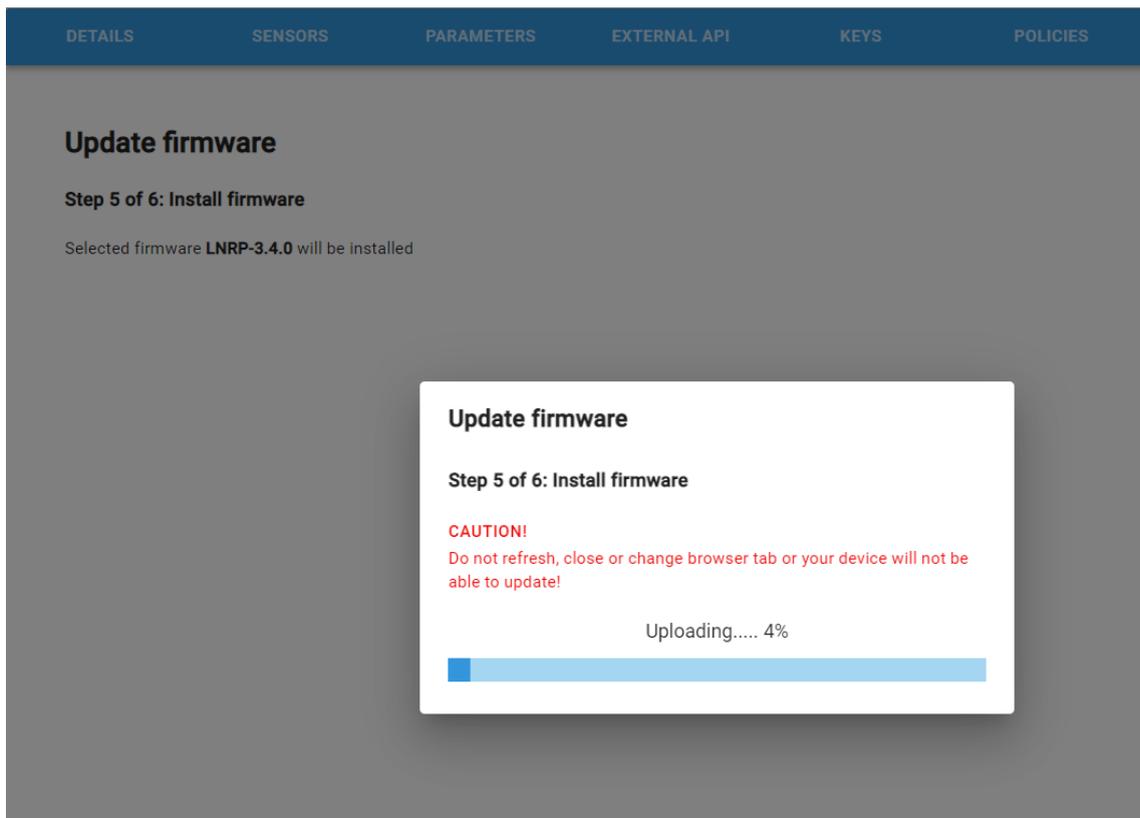


Figure 13 Firmware installation section view.

After successful installation you can connect to the device and check configuration. In case of problems with firmware installation you can press **recover device** button to go back to the previous configuration and firmware version.

## Applications - configuration

In this section the user can learn how to change device settings for his own purpose. In the firmware section tab choose the **configure** button and follow next steps. Select the device and pair it with your system. It can take a while depending on Bluetooth advertising and signal quality.

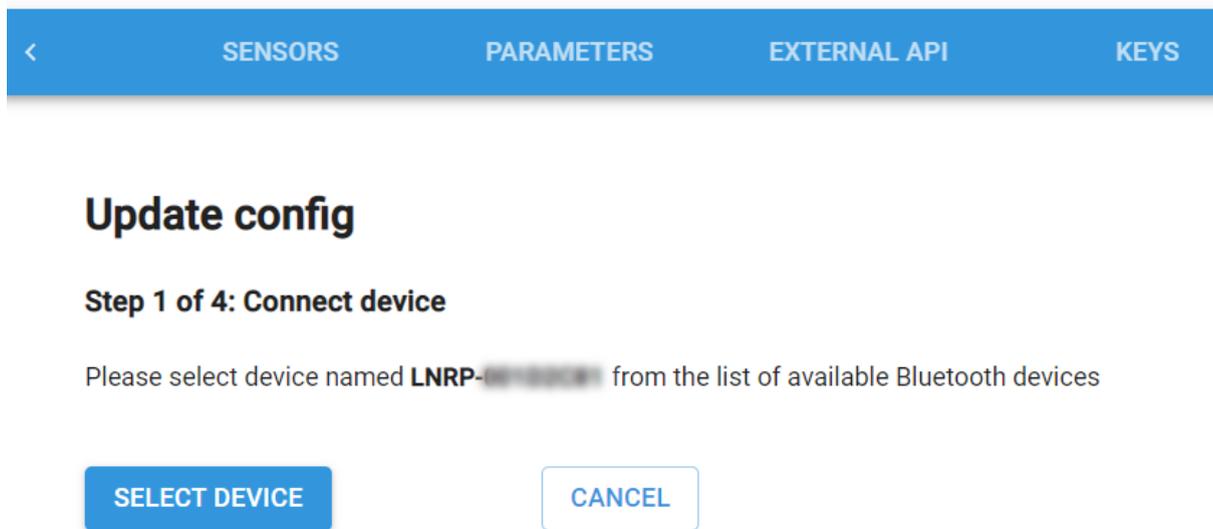


Figure 14 Update config view.

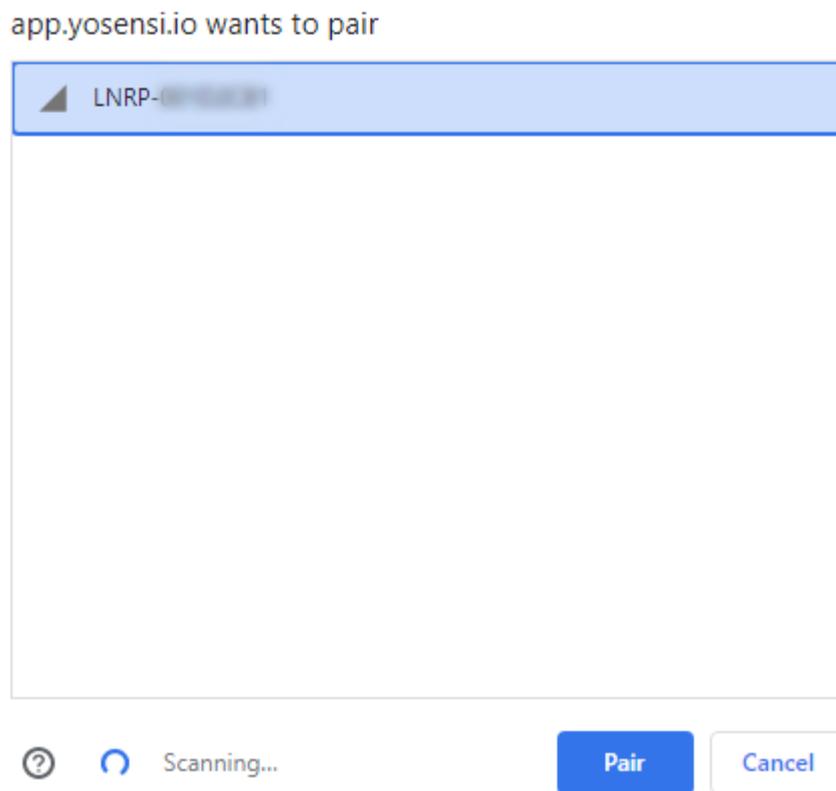


Figure 15 Pairing to the device section view.

After pairing your computer to the node you can see the configuration view tab. Now depending on the device in this section you can change parameters in “device” section or other section that appears below “device”. In this example using YO People Counter you can change parameters in the “detectionarea” as well.

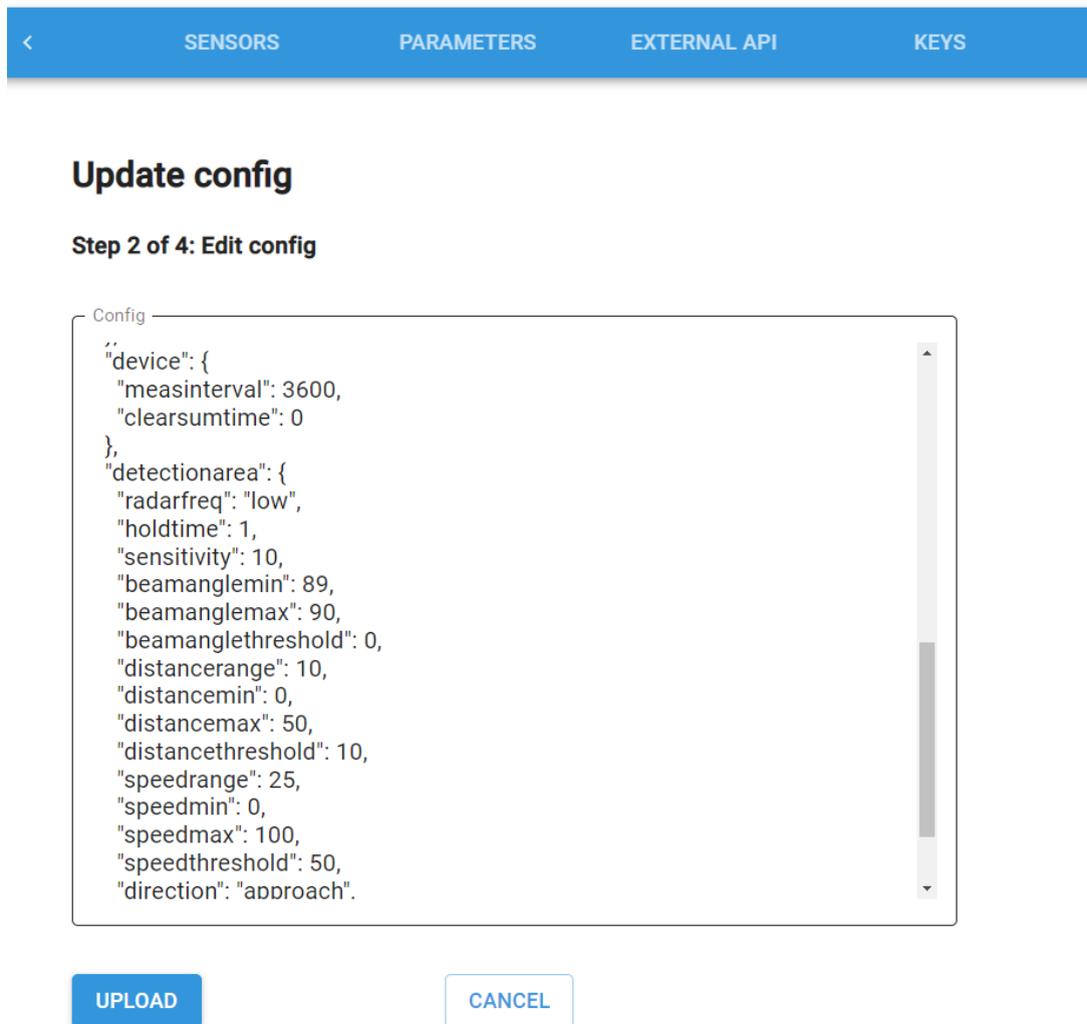
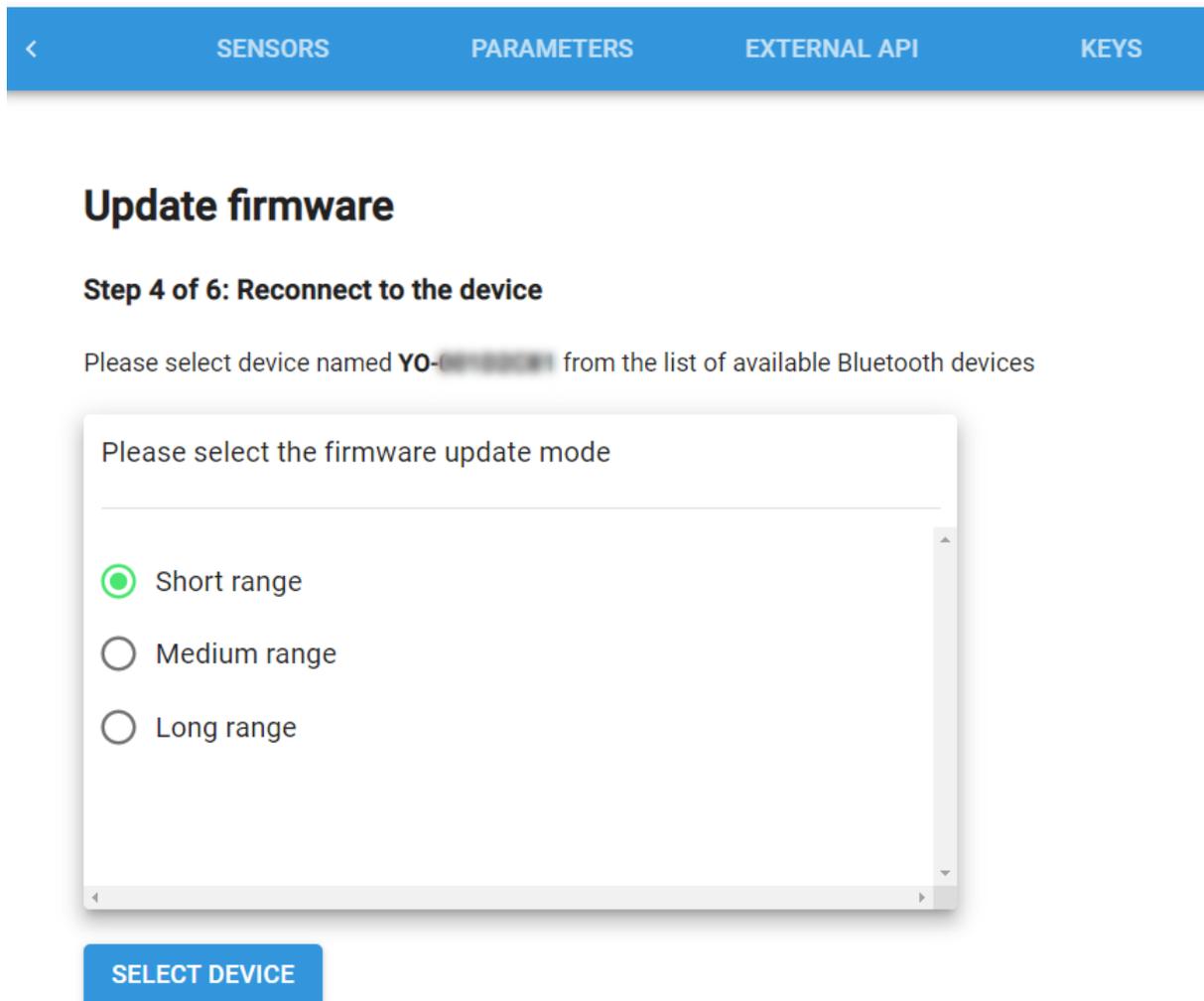


Figure 16 Example YO People Counter configuration.

Press the **Upload** button after making changes in config, then wait a moment. In case of error during uploading parameters check if you uploaded valid values. In other case of any problems you can find us on [support@yosensi.io](mailto:support@yosensi.io).

## Applications - recover device

In case of some problems during updating firmware or disconnection with the device during upload, the user should make a recovery procedure. In the firmware section select the **Recover device** button. Now follow the steps it will take you to the reconnect device section to update firmware with operating mode. This time Bluetooth web tool will look for a YO CoMod device with the same DevEUI number.



The screenshot shows a web interface with a blue navigation bar at the top containing the following tabs: < (back), SENSORS, PARAMETERS, EXTERNAL API, and KEYS. Below the navigation bar is the heading "Update firmware". Underneath is the sub-heading "Step 4 of 6: Reconnect to the device". A text instruction reads: "Please select device named YO-██████████ from the list of available Bluetooth devices". A modal dialog box is open with the title "Please select the firmware update mode". Inside the dialog, there are three radio button options: "Short range" (which is selected), "Medium range", and "Long range". Below the dialog is a blue button labeled "SELECT DEVICE".

Figure 17 Firmware update mode section view.

Select device and reconnect to the node. After that it will take you to the next step to install firmware you chose with dedicated mode. Wait a moment, it can take a while. Successful installation allows you to connect with the device and check configuration.

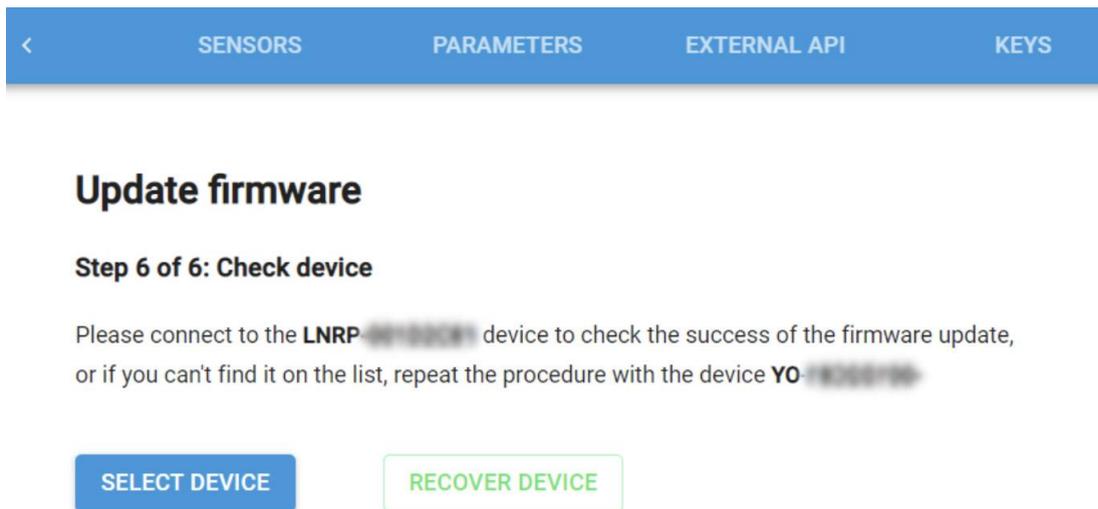


Figure 18 Firmware update check mode section view.

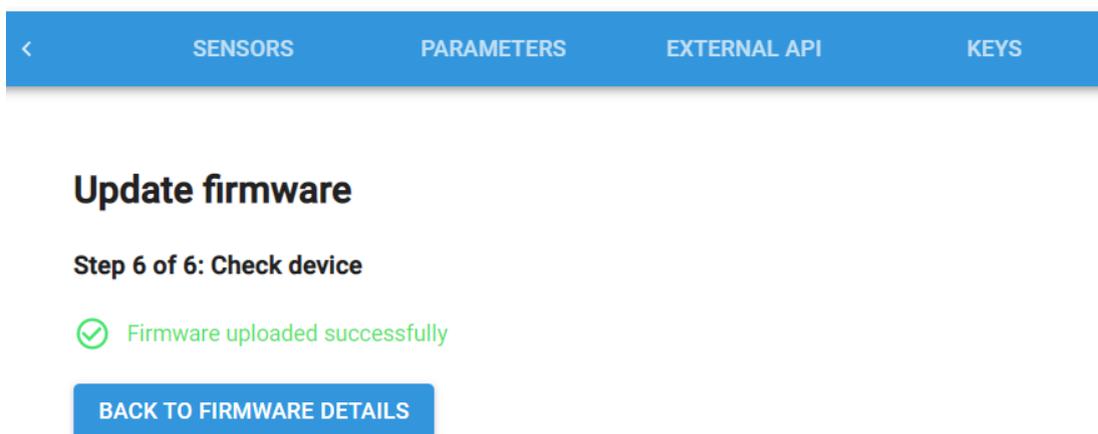


Figure 19 Firmware update success section view.

# Activity

This tab shows the latest device activity. It displays all sent data frames, which it can filter by application or a specific node. In addition, the Activity tab shows decoded raw frames from the device and responses from the server.

Called At	Node ID	Status	Time	Message	
23/09/2022, 14:42:39	0000e12a0214234b	● -200	3 ms	No URL for sending data defined	<a href="#">DETAILS</a>
23/09/2022, 14:42:26	544e555a003a0025	● -200	2 ms	No URL for sending data defined	<a href="#">DETAILS</a>
23/09/2022, 14:42:17	544e555a003a0025	● -200	2 ms	No URL for sending data defined	<a href="#">DETAILS</a>
23/09/2022, 14:42:14	0000e12a0214234f	● -200	2 ms	No URL for sending data defined	<a href="#">DETAILS</a>
23/09/2022, 14:42:06	0000e12a0214234e	● -200	3 ms	No URL for sending data defined	<a href="#">DETAILS</a>
23/09/2022, 14:42:03	0000e12a0214234d	● -200	6 ms	No URL for sending data defined	<a href="#">DETAILS</a>
23/09/2022, 14:41:38	0000e12a0214234c	● -200	5 ms	No URL for sending data defined	<a href="#">DETAILS</a>
23/09/2022, 14:41:30	0000e12a02142343	● -200	3 ms	No URL for sending data defined	<a href="#">DETAILS</a>
23/09/2022, 14:41:21	0000e12a0214234a	● -200	3 ms	No URL for sending data defined	<a href="#">DETAILS</a>
23/09/2022, 14:40:56	544e555a003a0025	● -200	1 ms	No URL for sending data defined	<a href="#">DETAILS</a>
23/09/2022, 14:40:27	0000e12a02142346	● -200	3 ms	No URL for sending data defined	<a href="#">DETAILS</a>
23/09/2022, 14:40:25	544e555a003a0024	● -200	4 ms	No URL for sending data defined	<a href="#">DETAILS</a>
23/09/2022, 14:40:19	0000e12a02142341	● -200	2 ms	No URL for sending data defined	<a href="#">DETAILS</a>
23/09/2022, 14:39:56	0000e12a02142340	● -200	1 ms	No URL for sending data defined	<a href="#">DETAILS</a>
23/09/2022, 14:39:56	0000e12a0214234d	● -200	1 ms	No URL for sending data defined	<a href="#">DETAILS</a>

1-15 of 1000 < >

Figure 20 Viewing device activity

## Monitoring

This tab has vital functions and helps control the status of the devices. We can check that the equipment is functioning correctly and the measured values from the sensors do not exceed critical values. Here, it is possible to create policies (conditions), add users who receive notifications when these conditions are unmet, and, above all, monitor errors resulting from the failure to meet the conditions of the policies. Yosensi Management Platform sends event notifications to an email address, webhook, or SMS. An example of the application of a policy could be information about the battery voltage of a device. For a policy with a voltage limit of 3.0 V, the INCIDENTS LIST tab will provide information about all devices that fail to meet the condition. The users should replace the batteries in these devices.

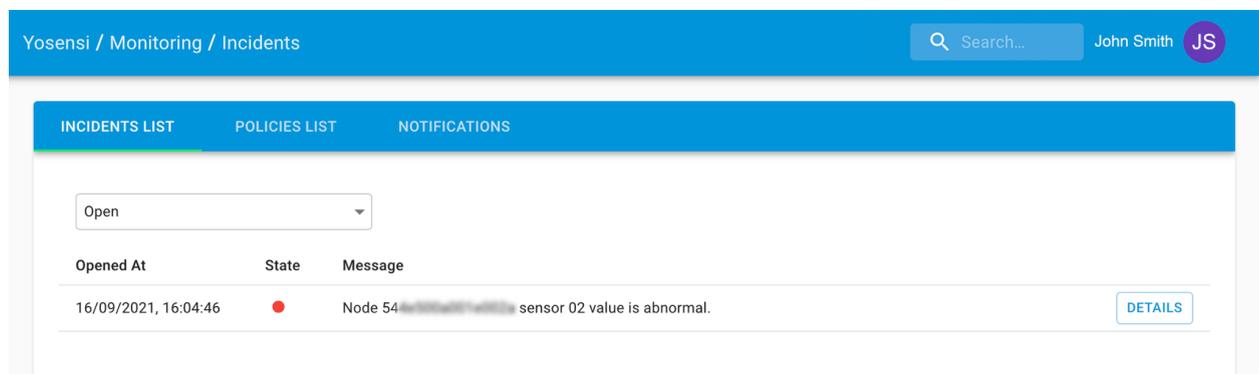


Figure 21 Monitoring of incidents in Yosensi Management Platform

## Billing

A customer account with access to the Billing section can view the payments due for the Yosensi Management Platform. The amount due depends on the number of devices in the system and the frequency of data uploads. This tab displays which applications cost the most and how much total data has been transferred over a certain period. Several filtering functions provide insight into the costs of individual applications.

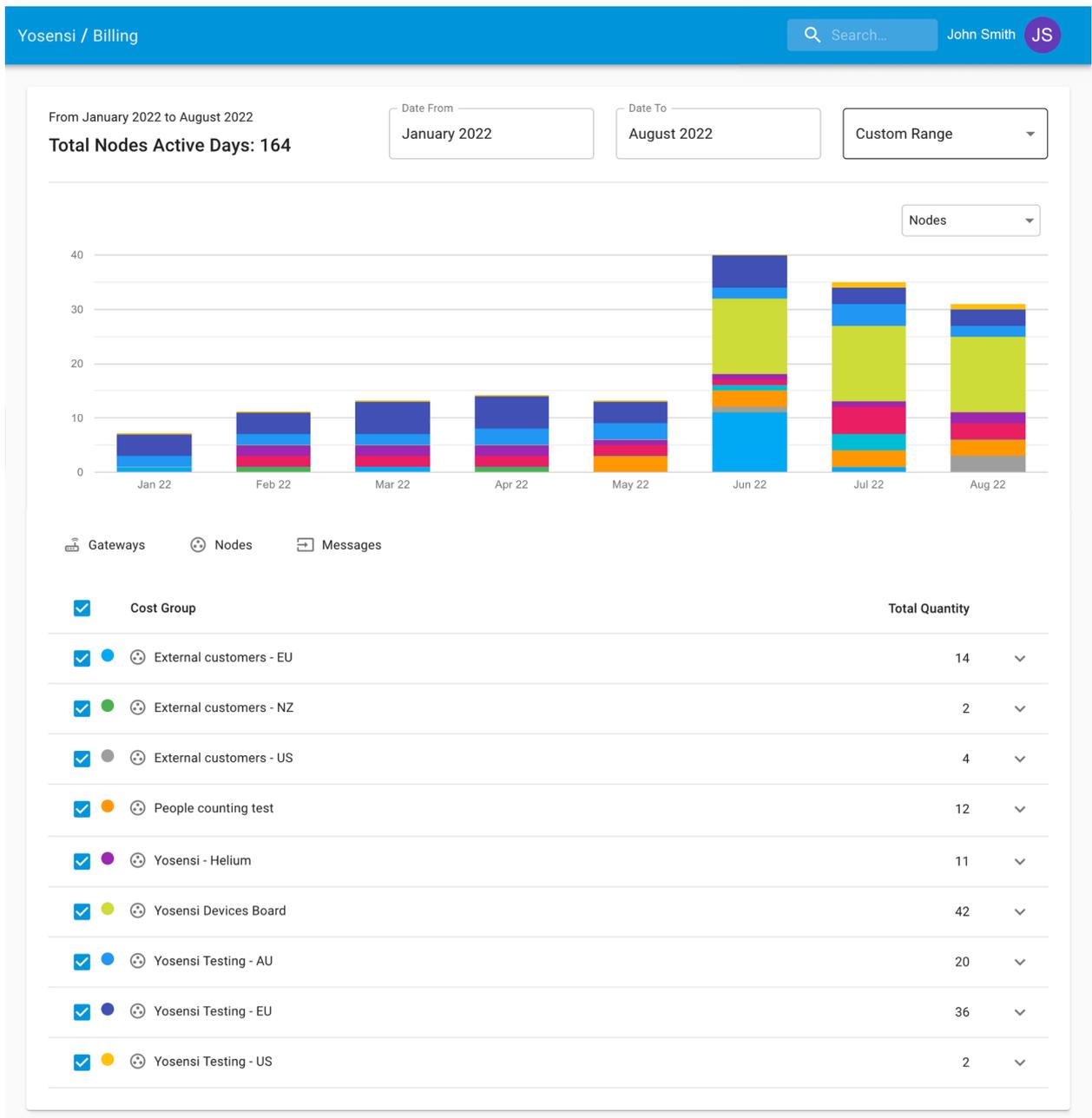


Figure 22 Viewing the billing in Yosensi Management Platform