



# Sigfox Backend

First contact



# Content

1. Sigfox Cloud GUI
2. Organization & Hierarchy
3. Devices & Device type
4. Service map
5. APIs & Callbacks

1

# Sigfox Cloud GUI

# Pre-requisites

## User checklist:

- ✓ Internet access
- ✓ Computer with correct date/time
- ✓ Recent web browser  
(Chrome, Firefox & Safari preferred)
- ✓ Account creation email received

**Production cloud:**  
[backend.sigfox.com](https://backend.sigfox.com)

**Support contact:**  
[support.sigfox.com](https://support.sigfox.com)

# Sigfox Cloud GUI



[SITE](#) [BASE STATION](#) [DEVICE](#) [DEVICE TYPE](#) [USER](#) [GROUP](#) [RADIO PLANNING](#) [BILLING](#)



NEWS

SERVICE MAPS

KNOWN ISSUES

SIGFOX\_Singapore\_Unabiz

Welcome to  
**sigfox portal**

OPERATOR

CLIENT

## Release 12.3

Devices, Device types and Callbacks

[Overusage \[improvement\]](#)

When a device exceeds the number of messages allowed per day at contract level, a unique overusage event is triggered until the end of the day (vs. 1 event per message in overusage previously). The overusage counter is reinitialized at the end of the day.

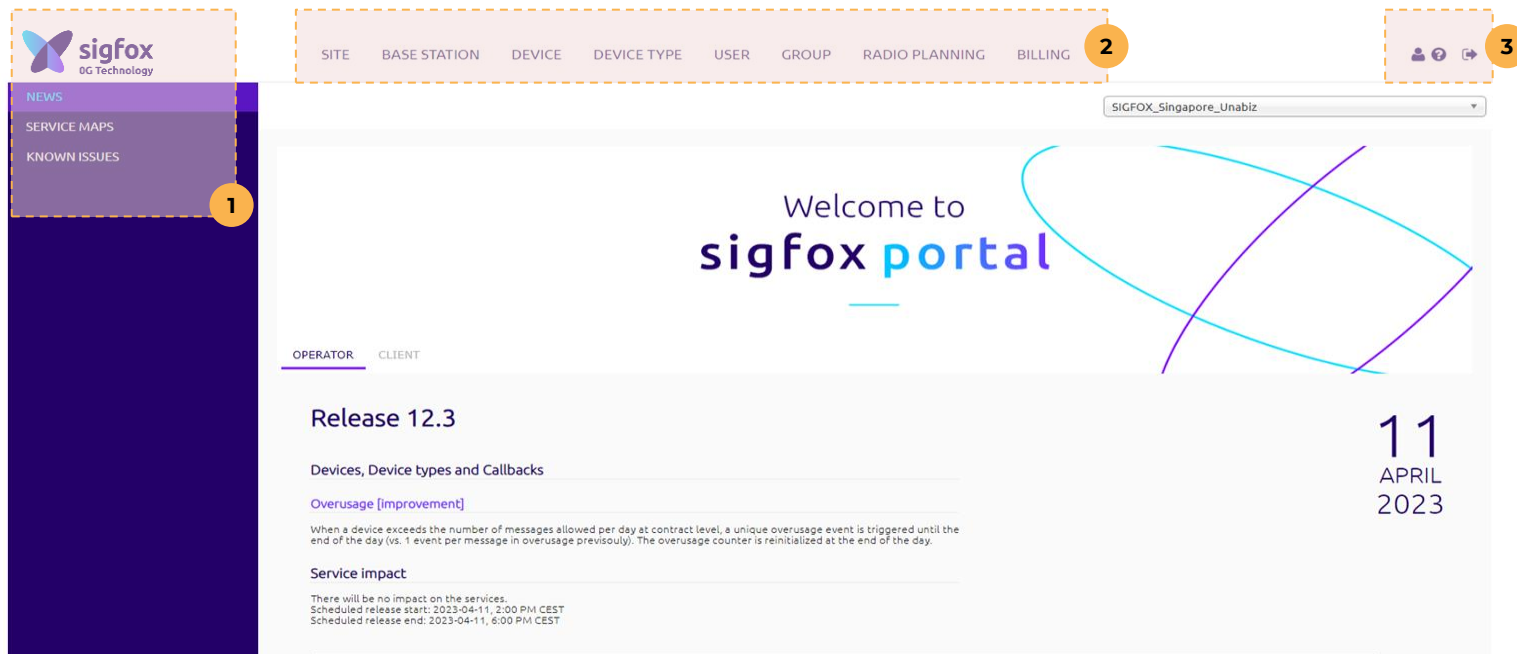
Service impact

There will be no impact on the services.  
Scheduled release start: 2023-04-11, 2:00 PM CEST  
Scheduled release end: 2023-04-11, 6:00 PM CEST

11  
APRIL  
2023

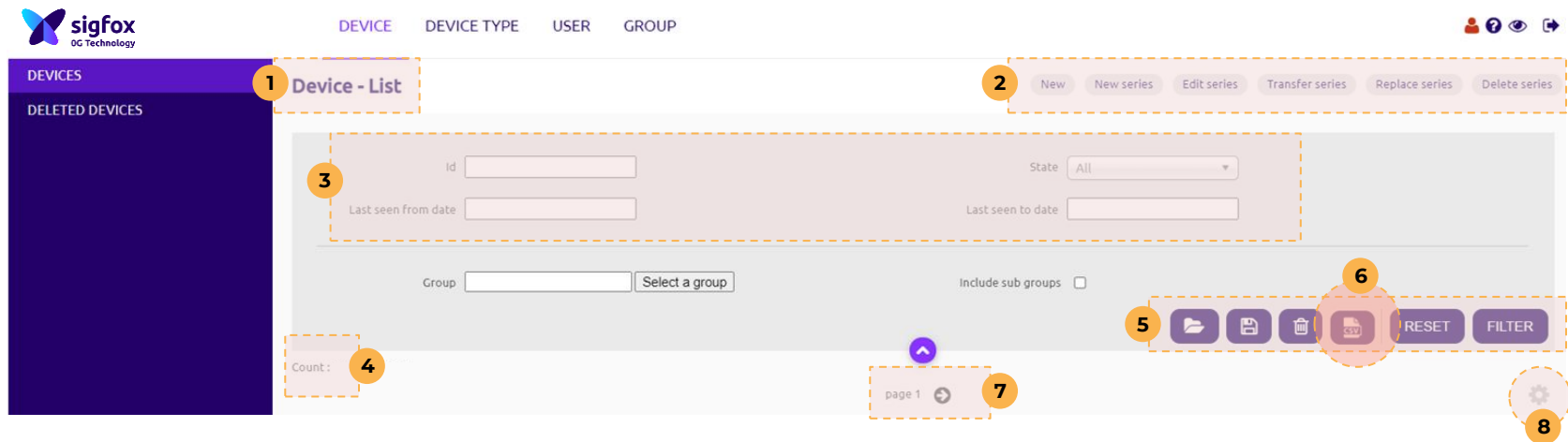


# Sigfox Cloud GUI



- 1 Main page shortcut** (News, service maps, known issues)
- 2 Category selection** (Device, Device type, User, Group)
- 3 Global entries** (profile, online help, logout)

# Sigfox Cloud GUI



- 1 Selected category
- 2 Action buttons
- 3 Filter conditions
- 4 Displayed items/total
- 5 Filter operations
- 6 Export list to CSV
- 7 Page switch
- 8 Column display customization

# Sigfox Cloud GUI

The screenshot displays the Sigfox Cloud GUI's 'Device - List' page. The interface includes a top navigation bar with tabs for 'DEVICE', 'DEVICE TYPE', 'USER', and 'GROUP'. Below this, a 'Device - List' section contains filters for 'ID', 'State', 'Last seen from date', and 'Last seen to date'. A 'Group' dropdown menu is highlighted with an orange dashed box and labeled '1'. To the right of the filters, a 'Field selection' panel is visible, listing various fields like 'Activation date', 'Automatic token renewal', 'Com status', 'Device type', 'Group', 'Id', 'Last purge', 'Last seen', 'Modem certificate', 'Name', 'PAC', 'Product certificate', 'Protocol', and 'Token state'. This panel is also highlighted with an orange dashed box and labeled '2'. At the bottom of the 'Field selection' panel, an 'Apply' button is highlighted with an orange dashed box and labeled '3'. The main content area shows a table of devices with columns for 'Communication status', 'Device name', 'Group', 'Id', 'Last seen', 'Status', and 'Token state'. The table contains several rows of device data.

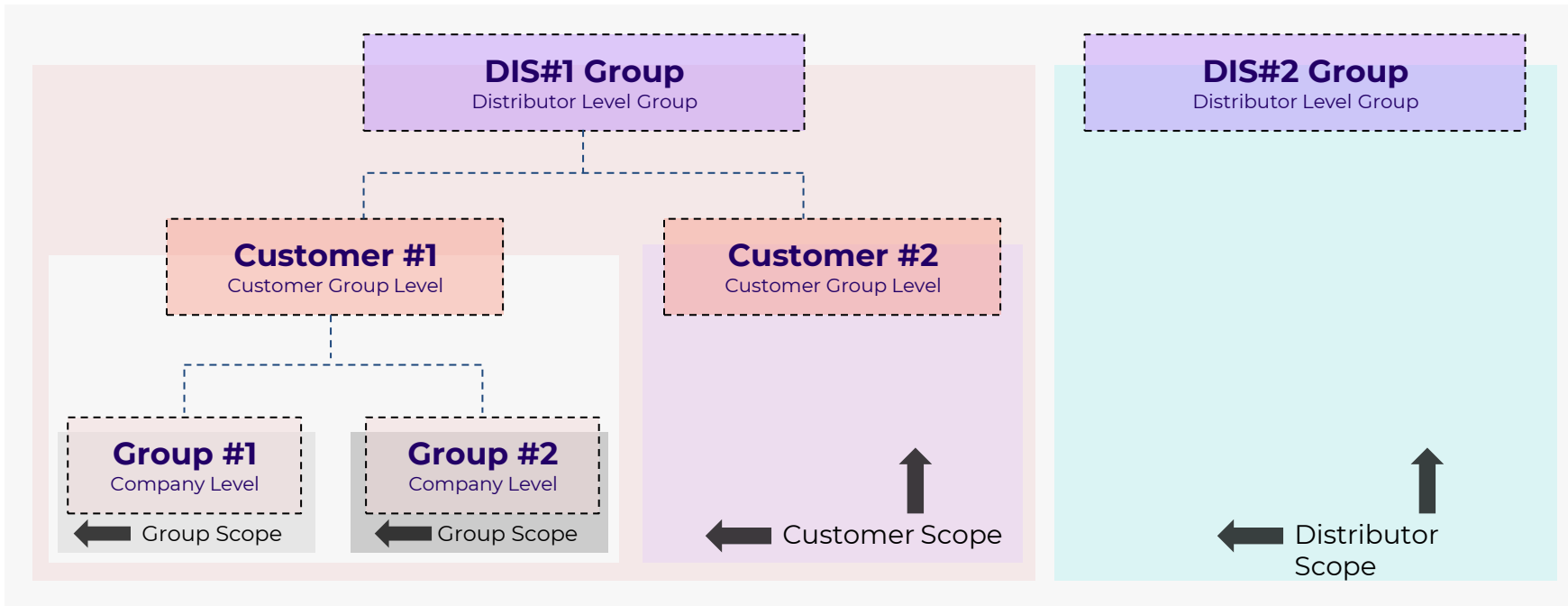
- 1 Selected category
- 2 Column edition menu (max. 8 columns)
- 3 Column edition validation

# 2

## Organization & hierarchy

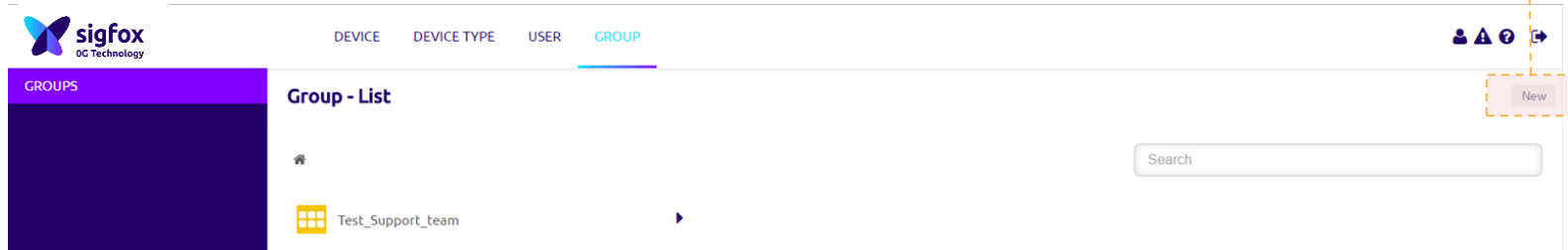
# Group & Subgroups

Cloud organization is hierarchically structured

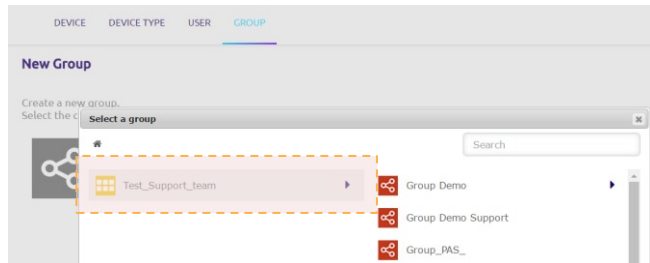


# Group creation in detail

**Step 1:** Click on New button in Group tab



**Step 2:** Select the Parent Group



**Step 3:** Enter Group information

The screenshot shows the 'Group - New' form. The form contains the following fields:

- Group information
- Name:
- Description:
- Parent group: Group Demo
- Timezone: UTC (dropdown menu)

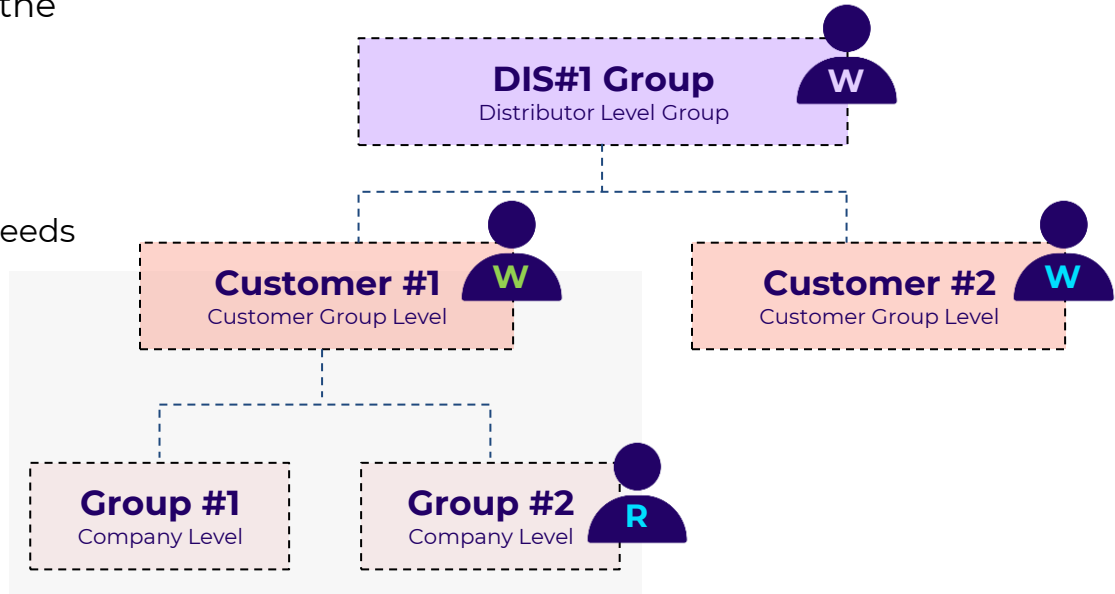
At the bottom of the form are 'Ok' and 'Cancel' buttons.

# User roles

User creation is linked to **rights allocation on groups**.

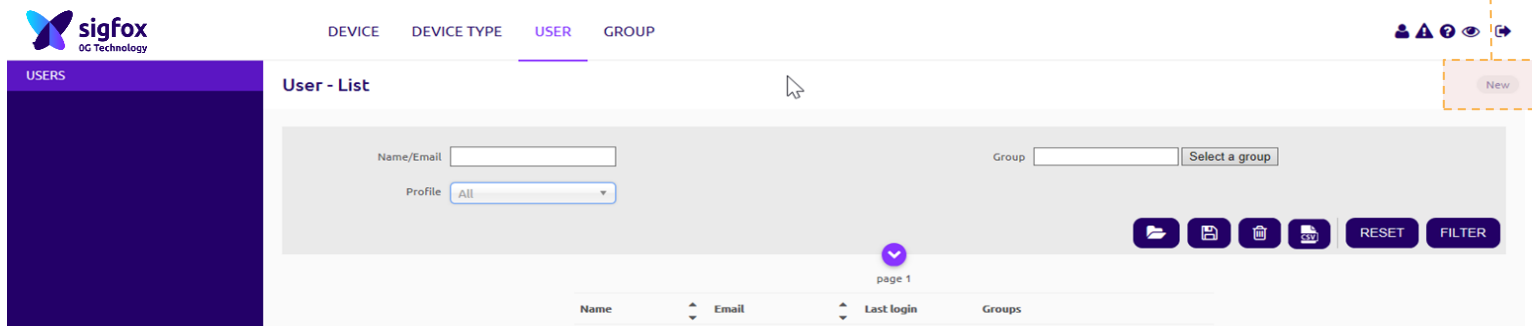
A specific attention shall be given to the user role allocation:

- SIGFOX CORP predefines user roles
- DIS/Customers are granted with the rights that correspond to their needs
- User rights can be fine tuned (R/W)



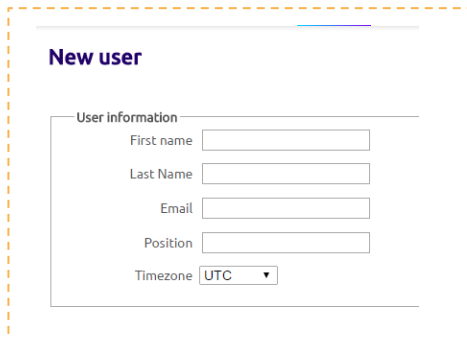
# User Creation in detail (1/2)

**Step 1:** Click on New button in User tab



The screenshot shows the Sigfox User Management interface. The top navigation bar includes tabs for DEVICE, DEVICE TYPE, USER (selected), and GROUP. On the left, there is a sidebar with a 'USERS' tab. The main content area is titled 'User - List'. It features a search bar with 'Name/Email' and 'Group' fields, and a 'Profile' dropdown menu set to 'All'. Below the search bar, there are icons for folder, document, trash, and CSV, along with 'RESET' and 'FILTER' buttons. A 'New' button is highlighted with a dashed orange box in the top right corner. The bottom of the page shows a table header with columns: Name, Email, Last login, and Groups. The page number 'page 1' is displayed in the center.

**Step 2:** Enter user information



The screenshot shows the 'New user' form. It is titled 'New user' and contains a section for 'User information'. The form fields are: First name, Last Name, Email, Position, and Timezone (set to UTC). A dashed orange box highlights the entire form area.

# User Creation in detail (2/2)



Helpful resources:  
Backend user roles



**Step 3:** Click select a group button and choose a group


Profiles

Group

Profiles Select the profiles below

Select a group

Search

 CORP\_SD\_Support

**Step 4:** Choose profiles

Profiles

Group

Profiles Select the profiles below

Info	Name	Select
?	DEVICE MANAGER [R]	<input type="checkbox"/>
?	DEVICE MANAGER [W]	<input type="checkbox"/>
?	LIMITED_ADMIN	<input type="checkbox"/>
?	ONLINE_HELP	<input type="checkbox"/>
?	OPT_DEVICE_TYPE_ORDER [W]	<input type="checkbox"/>
?	OPT_DEVICE_TYPE_READ	<input type="checkbox"/>
?	OPT_NOC_ENHANCED	<input type="checkbox"/>
?	OPT_SERVICE_MAP	<input type="checkbox"/>
?	PUBLIC_SERVICE_MAP	<input type="checkbox"/>
?	TEST_RIGHT_DEVICE_CREATE	<input type="checkbox"/>

Click on question marks to get full description of profiles



# 3

## Devices & device type

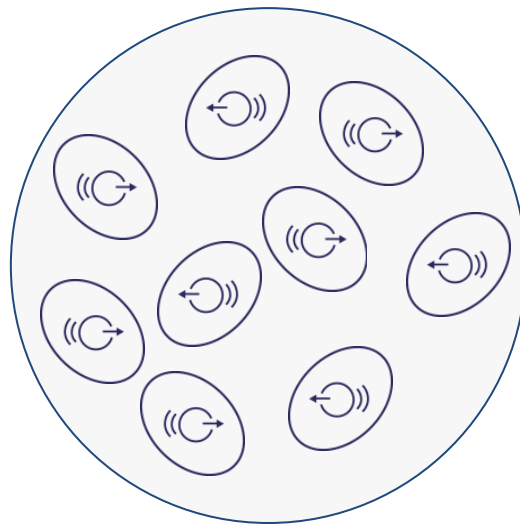
# Device & device types

## **Device** notions:

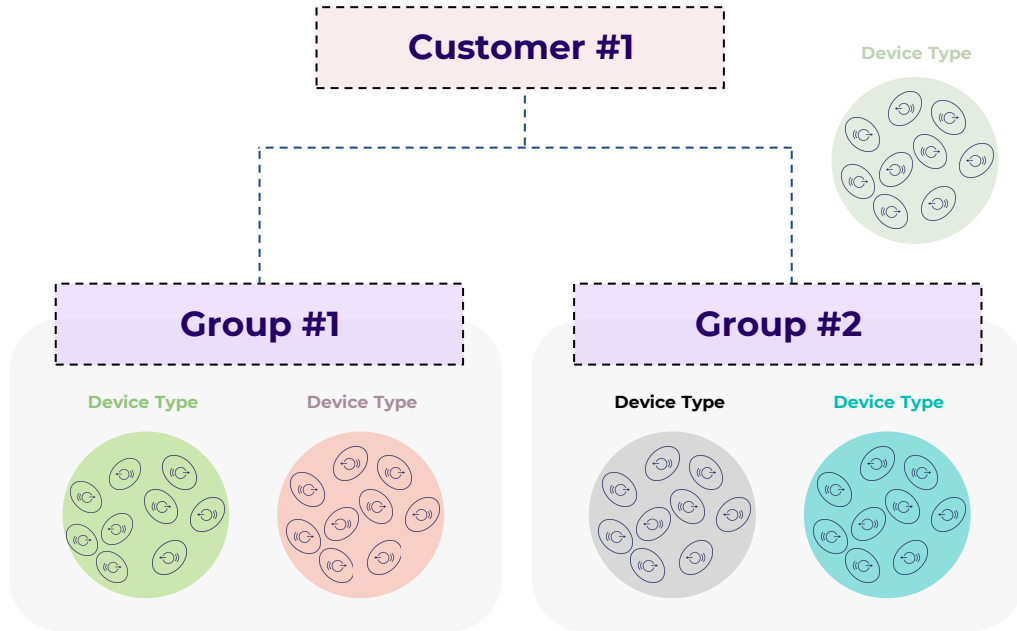
- Unique ID per device
- One property title for each one: PAC (Porting Authorization Code)

## **Device type** notions:

- Set of devices with the same behavior
- Linked to a single order (same subscription levels and duration)
- Belongs to a unique group
- Callback availability to retrieve messages



# Device & Device type

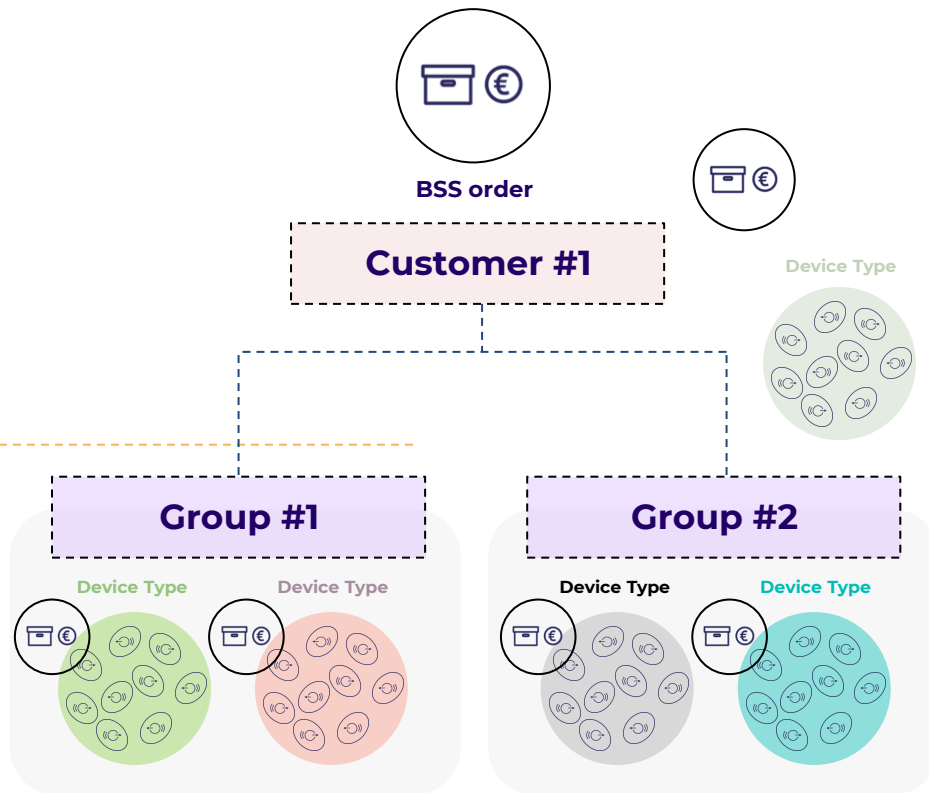


# Order allocation

## Customers validate order:

Customers allocate contracts to Groups and possibly to device type.

Groups allocate contracts to device type in their group or in sub-groups below



# Device type creation in details (1/2)

**Step 1:** Click on New button in Device type tab

sigfox  
OG Technology

DEVICE DEVICE TYPE USER GROUP

LIST  
DEVICES BEING REGISTERED  
GEOLOCATION PAYLOAD  
BULK OPERATIONS

Device type - List

Name

Group  Select a group

Include sub groups ☐

Display type

Count: 1 / 1

page 1

RESET FILTER

New

**Step 2:** Select a group

Device type - List

Select a group

Include sub groups ☐

Count: 4 / 4

Search

CORP\_SD\_Support

RESET FILTER

# Device type creation in details (2/2)

## Step 3: Enter device type information

**Device type - New**

**Device type information**

Device type name: Name

Description

Keep-alive (in minutes)

Subscription automatic renewal ☒

Contract:

Alert email:

**Downlink data**

Downlink mode:

Downlink data in hexa:

**Payload display**

Payload parsing:

**Annotations:**

- Device type name
- Keep-alive configuration
- Enable/disable Subscription automatic renewal for all devices
- Select a contract
- Email address configured for callback failure
- Direct=> Downlink data sent by the backend
- Callback=> Downlink data sent through callback
- Downlink data sent in DIRECT mode
- Display customization (Data encoding)

# Device management in details (1/5)

## Device - List

New New series Edit series Transfer series Replace series Delete series SIGFOX\_Singapore\_Unabiz

Id  State

Last seen from date  Last seen to date

Count: 151476 / 151476

page 1

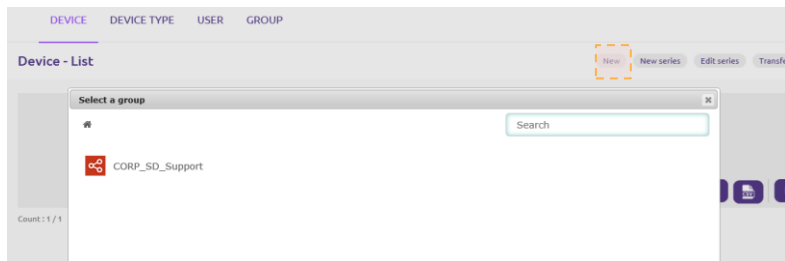
Communication status	Device type	Group	Id	Last seen	Name	Token state	PAC
----------------------	-------------	-------	----	-----------	------	-------------	-----

## Step 1 : Select a way to register devices

- New: register devices one by one
- New series: register batch of devices
- Edit series: edit device information
- Transfer series: move devices from device types (same or different contract)
- Replace series: replace a broken device by a new
- Delete series: batch of devices deletion

# Device management in details (2/5)

**Step 2a :** If New has been chosen, select a group to register the device



**Step 3a :** Enter device information

A screenshot of the 'Device - New' form. The form is titled 'Device - New' and contains several fields for entering device information. Annotations with orange dashed lines point to specific fields: 'Device ID' points to the 'Identifier (hex)' field; 'PAC\*' points to the 'PAC' field; 'End product certificate if the device is certified (Sigfox Ready)' points to the 'End product certificate' field; 'Select a Device Type' points to the 'Type' dropdown menu; 'Device location for static devices' points to the 'Lat' and 'Lng' fields. The form also includes a 'Where can I find the end product certificate?' section with a 'Type' dropdown, 'Lat' and 'Lng' fields, and a 'Map' button. At the bottom, there are 'Ok' and 'Cancel' buttons.

# Device management in details (3/5)

**Step 2B :** If **New series** has been chosen

## Device - Bulk creation

Use this feature to create several devices simultaneously

**Device information**

Batch name

Batch description

Devices names prefix

Group: **test\_onboarding**

Type

Identifiers  Aucun fichier sélectionné.

End product certificate

Where can I find the end product certificate?

Subscription automatic renewal ☒

Activable ☒

Ok Cancel

Device name =  
prefix + increment

Device type

csv or txt  
file with ID/PAC

End product  
certificate if the  
devices are certified  
(Sigfox Ready)

Allows device to keep  
communicate after the end of  
its subscription date

Allows device to take a token after  
the end of its subscription date

**Step 2C :** If **Edit series** has been chosen

## Device - Bulk edition

Use this feature to edit several devices simultaneously

**Device information**

Devices  Browse...

Ok Cancel

csv or txt file with  
devices information



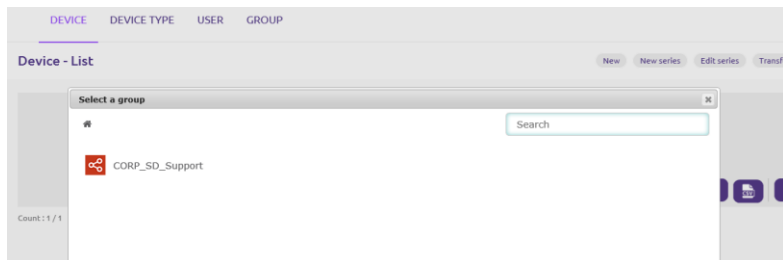
### Helpful resources:

[Register a batch of  
devices in one go](#)

[Edit multiple devices simultaneously](#)

# Device management in details (4/5)

**Step 2D :** If **Transfer series** has been chosen, select the destination group



**Step 3D :** Enter transfer information

## Device - Bulk Transfer

**Transfer options**

New Device Type: DT\_fordemo (test\_onboarding) Device type destination

Identifiers file: Parcourir... Aucun fichier sélectionné. ? csv or txt file with ID

(or) Identifiers list (hex): ID list (one by line)

N.B: list must contain only one id per line

Keep history: ☐ Keep message history

N.B: if you leave this option unchecked, all the messages receive

Activable: ☒ Allows device to take a token after the end of its subscription date

Ok Cancel

# Device management in details (5/5)

**Step 2E :** If **Replace series** has been chosen

## Device - Bulk replacement

Use this feature to transfer information from several devices to others simultaneously

**Device information**

Devices   ?



**Helpful resources:**  
[Replace a device](#)



**Step 2F :** If **Delete series** has been chosen

## Device - Bulk Delete

**Delete options**

Identifiers file  Choisir un fichier | Aucun fichier choisi ?

**Format of the file to choose**

The format of the file has to be .txt or .csv  
per line : one device identifier (hex)

Example file :

```
0017B46C
0017B46D
0017B46E
0017B46F
0017B470
0017B471
0017B472
0017B473
```

(or) Identifiers list (hex)

N.B: list must contain only one id per line

csv or txt file with  
identifier only (hex)  
to be deleted

**OR** enter the list of  
devices you want  
to delete in this field

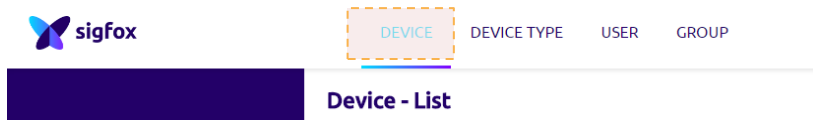


**Helpful resources:**  
[Deleting devices](#)





# Check device messages

**Step 1 :** Go to Device tab



**Step 2 :** Select a device by clicking on the ID

Communication status	Device type	Id	Last seen	Name	Token state
	TestSD	77FFF	2019-02-20 12:54:33	00077FFF	

**Step 3 :**

Go to the message tab



**Step 4 :** Send a message and check that the message has been received by the backend

Time	Seq Num	Data / Decoding	LQI	Callbacks	Location
2023-04-13 05:28:59	4037	00000000000000000000000000000000			



**Helpful resources:**  
[Communication status indicator](#)

[Link Quality: general knowledge](#)



4

## Service Prediction

# Service Prediction

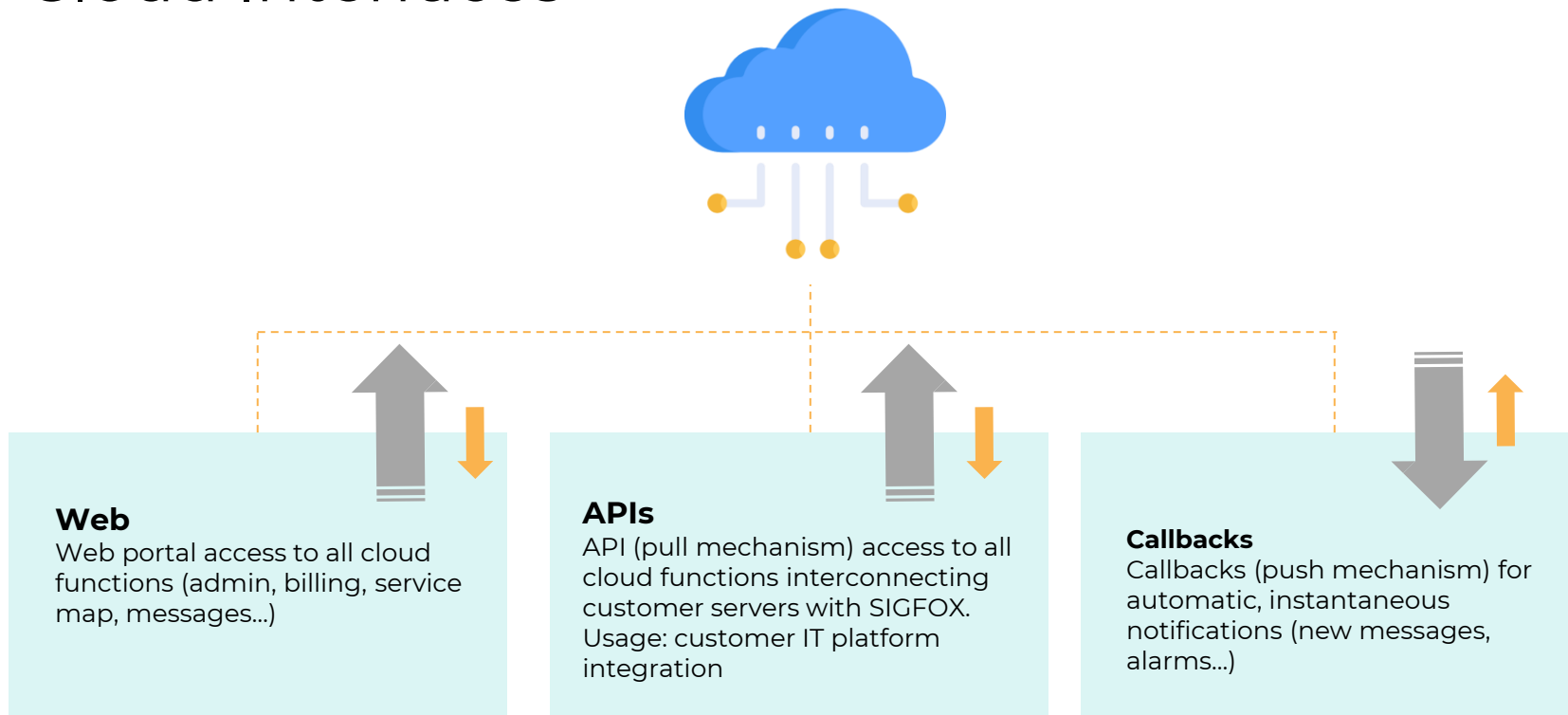
The screenshot shows the Sigfox service maps web application. On the left is a dark blue sidebar with navigation links: NEWS, SERVICE MAPS (highlighted with a purple bar and a yellow circle 1), and KNOWN ISSUES. The main content area is titled 'Sigfox service maps' and has tabs for OPERATOR SERVICE MAP and MONARCH COVERAGE MAP (highlighted with a yellow circle 4). Below the tabs, there is instructional text: 'Select your product uplink class and desired radiolink margin to obtain Sigfox service map corresponding to your application. Select "max" for outdoor and "20dB" for indoor. For other specific product operating condition please contact Sigfox directly'. A yellow circle 5 points to the text 'The last complete coverage calculation ended at 2019-09-26 17:00:00 (time zone: Europe/Paris)'. A yellow circle 6 points to the 'Forecast' option in the 'Product class' dropdown menu. A yellow circle 3 points to the 'Service overlap for max link budget' dropdown. A yellow circle 2 points to the 'Operators' dropdown menu, which currently shows 'SIGFOX\_France X'. A yellow circle 7 points to the search input field labeled 'Enter an address or coordinates (e.g. 41.40338, 2.17403)'. Below these controls is a map of Europe with France highlighted in red. A 'Plan' button is visible in the top left of the map area.

- 1 Service map
- 2 Territory selection
- 3 Installation type
- 4 Monarch service map
- 5 SIGFOX Ready Device class
- 6 Forecast
- 7 Specific place selection

# 5

## APIs & callbacks

# Cloud Interfaces



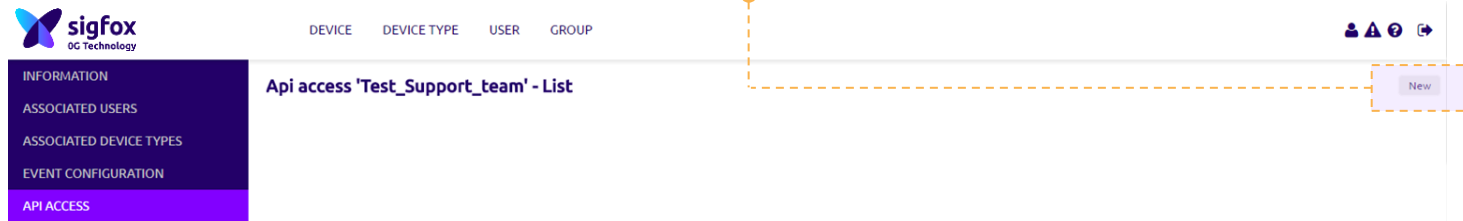
# API Creation (1/2 )



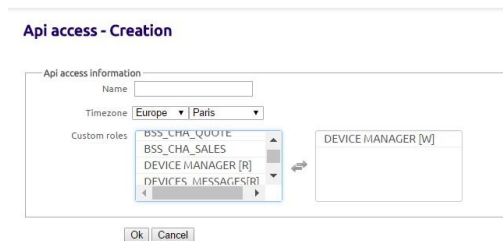
Helpful resources:  
[API credential creation](#)



**Step 1 :** Click on New in API access tab (in Group tab)



**Step 2 :** Grant API the appropriate rights



**Step 3 :** Retrieve credentials to use API



# API Creation (2/2)

**Step 4:** API documentation is generated according to API access rights

Api access 'CORP\_SD\_Support' - List

Check out the [Public documentation](#) and the [API v2 Documentation article](#) on the Sigfox Support site for more details.



[SITE](#) [BASE STATION](#) [DEVICE](#) [DEVICE TYPE](#) [USER](#) [GROUP](#) [RADIO PLANNING](#) [BILLING](#)



HOW TO? find documentation

[online documentation links](#)

HOW TO? register devices

SIGFOX Device registration for  
modern manufacturers and product  
integrators

HOW TO? read Basestation Built-In  
tests

HOW TO? Customize Device Type

HOW TO? read devices events

How to? Read Signal Indicators

Devices management

## HOW TO? find documentation

[Export section](#) [Export all](#)

### [online documentation links](#)

Online documentation is available and contains exhaustive interface description.  
It can be accessed using the following links:

- [Callback documentation](#): <https://support.sigfox.com/docs/callbacks-documentation>

- [API documentation](#): <https://support.sigfox.com/apidocs>  
[-> Please note that an [API Access](#) has to be created beforehand (Click on New under Group/API Access)



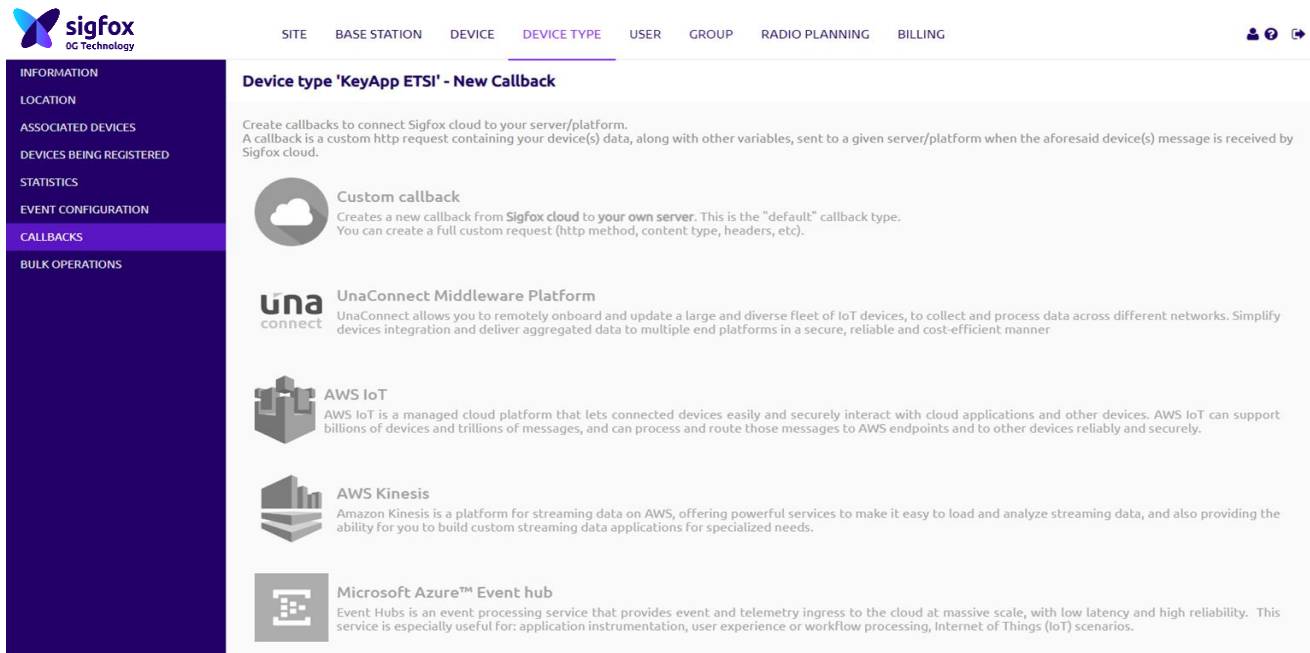
# Callback creation (1/5)

**Step 1 :** Click on New in Callback tab (for a given device type)

The screenshot displays the Sigfox OG Technology web interface. On the left is a dark purple sidebar with a list of navigation items: INFORMATION, LOCATION, ASSOCIATED DEVICES, DEVICES BEING REGISTERED, STATISTICS, EVENT CONFIGURATION, CALLBACKS (highlighted in a lighter purple), and BULK OPERATIONS. The top navigation bar includes the Sigfox logo, the text 'OG Technology', and tabs for DEVICE, DEVICE TYPE (selected), USER, and GROUP. On the right of the top bar are icons for user, alert, help, and share. The main content area is titled 'Device type 'Keyapp ETSI' - Callbacks'. Below the title is a descriptive text: 'These callbacks transfer data received from the devices associated to this device type to your infrastructure. For more informations, please refer to the [Callback documentation](#)'. In the top right corner of the main content area, there is a 'New' button, which is highlighted by a dashed orange box and a dashed orange line extending from the 'Step 1' instruction.

# Callback creation (2/5)

## Step 2: Choose a callback type (e.g. Custom callback)



The screenshot displays the Sigfox management console interface. On the left is a dark purple sidebar with a menu containing: INFORMATION, LOCATION, ASSOCIATED DEVICES, DEVICES BEING REGISTERED, STATISTICS, EVENT CONFIGURATION, CALLBACKS (highlighted in a lighter purple), and BULK OPERATIONS. The top navigation bar includes the Sigfox logo, the text 'OG Technology', and several menu items: SITE, BASE STATION, DEVICE, DEVICE TYPE (underlined), USER, GROUP, RADIO PLANNING, and BILLING. On the right side of the top bar are three icons: a user profile, a question mark, and a share icon.

The main content area is titled 'Device type 'KeyApp ETSI' - New Callback'. Below the title, there is a descriptive paragraph: 'Create callbacks to connect Sigfox cloud to your server/platform. A callback is a custom http request containing your device(s) data, along with other variables, sent to a given server/platform when the aforesaid device(s) message is received by Sigfox cloud.'

Below this text are five callback options, each with an icon and a description:

- Custom callback**: Represented by a cloud icon. Description: 'Creates a new callback from Sigfox cloud to your own server. This is the "default" callback type. You can create a full custom request (http method, content type, headers, etc).'
- UnaConnect Middleware Platform**: Represented by the 'una connect' logo. Description: 'UnaConnect allows you to remotely onboard and update a large and diverse fleet of IoT devices, to collect and process data across different networks. Simplify devices integration and deliver aggregated data to multiple end platforms in a secure, reliable and cost-efficient manner'
- AWS IoT**: Represented by an AWS IoT icon. Description: 'AWS IoT is a managed cloud platform that lets connected devices easily and securely interact with cloud applications and other devices. AWS IoT can support billions of devices and trillions of messages, and can process and route those messages to AWS endpoints and to other devices reliably and securely.'
- AWS Kinesis**: Represented by an AWS Kinesis icon. Description: 'Amazon Kinesis is a platform for streaming data on AWS, offering powerful services to make it easy to load and analyze streaming data, and also providing the ability for you to build custom streaming data applications for specialized needs.'
- Microsoft Azure™ Event hub**: Represented by an Azure Event Hubs icon. Description: 'Event Hubs is an event processing service that provides event and telemetry ingress to the cloud at massive scale, with low latency and high reliability. This service is especially useful for: application instrumentation, user experience or workflow processing, Internet of Things (IoT) scenarios.'

# Callback creation (3/5)

## Step 3A : Enter callback information

Device type Keyapp\_PA\_BSS - Callback new



### Helpful resources:

[Custom Callback Creation](#)

[Downlink acknowledgement](#)

[Callbacks and connectors](#)



Callback Type  
(DATA, SERVICE, ERROR)

Callbacks

Type: DATA UPLINK

Channel: URL

Communication channel  
(URL, Batch\_URL, email)

### DATA :

- *Uplink*: send uplink messages to customer platform
- *BIDIR* : send uplink messages to customer platform and wait for DOWNLINK messages from the same platform;

**ERROR :** in case of communication failure, it allows to know if it is a device (based on keepalive value defined in the device type edition page) or a network issue

**SERVICE :** provide additional services based on service messages or network information

- *STATUS*: device battery and temperature information provided by service messages (e.g. keepalive messages)
- *ACKNOWLEDGE*: status about the downlink emission. This does not ensure that the device received the message
- *REPEATER*: service messages (battery, number of repeated messages,...) from repeater devices
- *DATA\_ADVANCED*: Some variables are computed over the different BS which received the messages and thus this callback is delayed by approximately 30s. The list of available variables is displayed on the backend upon creation.

Using batch\_URL is strongly recommended to limit the number of request when retrieving messages. Batch\_URL gathers messages within 1 seconds prior to sending the HTTP request.

# Callback creation (4/5)

**Step 3B :** Enter callback information

**Device type KeyApp ETSI - Callback new**

Callbacks

Type: **DATA** **UPLINK** Callback mode (Uplink or BIDIR)

Channel: **URL**

Custom payload config Customized payload decoding

URL syntax: `http://host/path?id={device}&time={time}&key1={var1}&key2={var2}...`  
Available variables: device, time, data, seqNumber, deviceTypeId  
Custom variables:

Use HTTP Method **POST** HTTP method (GET, POST, PUT)

Send SNI ☒ (Server Name Indication) for SSL/TLS connections

Headers: header value

Content type: **application/x-www-form-urlencoded**

Body HTTP body (if applicable)

Variables to be used in callback

Ok Cancel

# Callback creation (5/5)

**Step 4 :** Check that Callback is **ENABLED** and downlink (if BIDIR callback configured)

## Device type 'Keyapp\_PA\_BSS' - Callbacks

New

These callbacks transfer data received from the devices associated to this device type to your infrastructure. For more informations, please refer to the

Callback documentation

### DATA callbacks

Downlink	Enable	Channel	Subtype	Duplicate	Batch	Information	Edit	Errors	Delete
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		UPLINK	<input type="checkbox"/>	<input type="checkbox"/>	Test (john.doe@sigfox.com) Test {device}			

Link to Callback documentation



# Thank you!

For more information, visit [www.sigfox.com](http://www.sigfox.com)

**Singapore** 22 New Industrial Road, #07-01/02, Primax, Singapore 536208, Phone: +65 6386 4932

**Taiwan** 10F, No. 618, Ruiguang Rd., Neihu District, 114 Taipei, Taiwan, Phone: +886 2 2657 7123

**Japan** Shibuya Scramble Square 39F 2-24-12 Shibuya Shibuya-ku Tokyo 150-6139

**France** 425 Rue Jean Rostand, 31670 Labège, Phone: +33 5 34 31 03 16

**Spain** P.º de La Habana, 9, 11, 28036 Madrid

**Netherlands** Seggeweg 32a 3237MK Vierpolders, Phone: +31 10 8 92 91 90