

SMM ePlus

User Manual

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1. Introduction

The SMM ePlus allows complete control of all procedures related to Meters remote control and management, particularly:

- Device installation and configuration
- Management and verification operations
- Work Order generation and management
- Maintenance
- Reporting

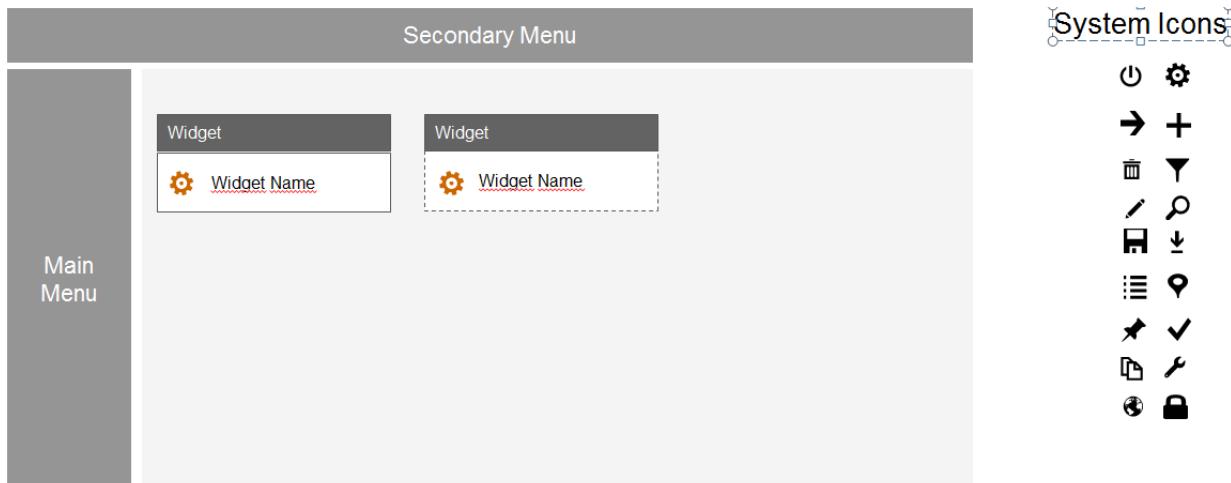
The SMM ePlus is completely scalable and allow the integration with external System using web services.

2. SMM ePlus Main Features and Basic Workflow

The SMM ePlus system is characterized by a set of basic objects and forms for accessing to the system functionalities, the following paragraphs describe the Common forms for accessing to the basic system features, also their associated objects are detailed.

There are three common generic forms:

- Widgets form
- Functions form
- Detailed Functions form



The Widgets form is characterized by the follow objects:

- A Main Menu where selecting each voice it's possible to enter in the main basic areas of the system (for example: Commercial Area, System)
- A Secondary Menu where the voices are variable according to the Main Menu voice selected (for example: Manufacturing, Work Orders)
- A set of variable widgets in according to the Secondary Menu voices selected (for example: Concentrators, Communication)

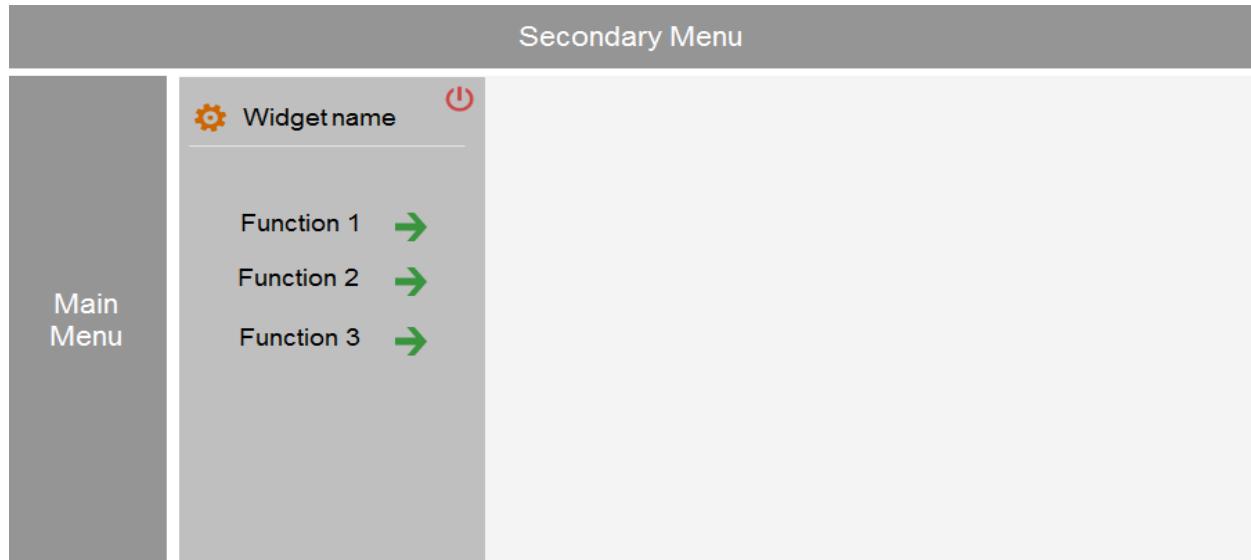
The system icons selectable in SMM ePlus are the following:

- form closure
- widget features
- opening and closure of the filter form
- new object adding
- object drop
- filter
- object update
- search
- save
- download
- objects list
- geolocation
- form attach

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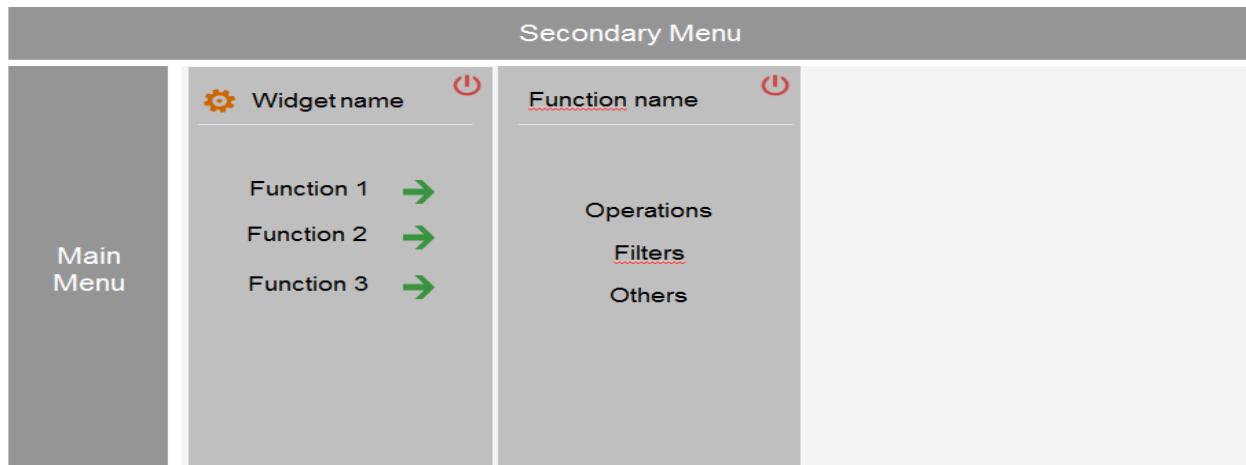
- ✓ selection flag
- ⌂ copy/paste
- 🌐 browser
- 🔒 lock

In the Widgets form clicking on a widget the Functions form is displayed



The Functions could be Meter provisioning, Concentrator provisioning etc.

Clicking on a Function of the list the detailed function form is displayed on the right



In the detailed Function form it is possible to filter data, adding new objects, edit the objects.

2.1. Main features and basic workflow

SMM ePlus consists of some parts: configuration, manufacturing, operation and report areas.

When main settings are made, in order to start working with concentrators and meters the first thing to do is to manage related manufacturing, connect them to proper devices and install them in field.

MANUFACTURING

Below the user can find some short videoclips describing “how-to” for most common ePlus manufacturing operations:

| | |
|----------------------------|----------------------|
| Meter addition (manual) -> | AddMeter.mp4 |
| Meter addition (.csv) -> | Add Meter by csv.mp4 |
| Pod addition -> | AddPod.mp4 |

| | |
|-----------------------------------|--|
| Customer addition -> |  AddCustomer.mp4 |
| Pod-Meter association -> |  Pod-Meter association.mp4 |
| Pod-Customer association -> |  Pod-Customer link.mp4 |
| Concentrator addition (manual) -> |  AddConcentrator.mp4 |
| Concentrator addition (.csv) -> |  Add Concentrators by csv.mp4 |
| Substation addition -> |  AddSubstation.mp4 |
| Transformer addition -> |  AddTransformer.mp4 |
| Sim addition -> |  AddSim.mp4 |
| Module addition -> |  AddModule.mp4 |
| Ethernet addition -> |  AddEthernet.mp4 |
| Apn addition -> |  AddApn.mp4 |
| Sim-Apn association -> |  Sim-Apn association.mp4 |

| | |
|-------------------------------|--|
| Procedure Profile addition -> |  AddProcedureProfile. mp4 |
|-------------------------------|--|

Please find below, in short, list of sections related to manufacturing with their own positions on website:

Meters

- Add Meter (Commercial Area --> Manufacturing --> Meter Management)
- Add Pod (Commercial Area --> Manufacturing --> Pod Management)
- Customer (optional... Commercial Area --> Manufacturing --> Customer Management)
- POD-Meter Association (Commercial Area --> Workorders --> Pod-meter and pod-customer association --> Pod meter management)
- POD-Customer Association (optional like customer... Commercial Area --> Workorders --> Pod-meter and pod-customer association --> Pod customer management)

Concentrators

- Add Substation (System --> Provisioning --> Manufacturing, substation, FW --> Substation Management)
- Add Transformer (System --> Provisioning --> Manufacturing, substation, FW --> Transformer Management)
- Add Concentrator (System --> Provisioning --> Manufacturing, substation, FW --> Concentrator Management)

Communication Data

- Add Sim (System --> Provisioning --> Module, sims, apn, ethernet --> Sim management)
- Add Ethernet (System --> Provisioning --> Module, sims, apn, ethernet --> Ethernet management)
- Add Module (System --> Provisioning --> Module, sims, apn, ethernet --> Module management)
- Add Apn (System --> Provisioning --> Module, sims, apn, ethernet --> Apn management)
- Add Sim-Apn association (System --> Provisioning --> Module, sims, apn, ethernet --> Sim apn management)

INITIALIZATION/INSTALLATION

When devices are ready on manufacturing, some operations need to be executed on ePlus in order to take advantage of a working smart metering system; both concentrators and meters have to be initialized/installed.

Technical area on website includes all technical activities for devices configuration..

Please find below how to proceed on **concentrator** side:

- Check that valid Procedure Profile (concentrators' internal procedures configurations) and Spontaneour Profile (used by WakeUp service) exist for the company, and settings are coherent with expected ones; profiles can also be inserted, if required;
- Proceed with Concentrator Installation by selecting all devices before initialization

Then, meters have to be linked to their specific concentrators (if not autodiscovered, but please note that in case of concentrator with FW22 meters must be autodiscovered) and the commissioned:

- use Network Management feature (Technical Area --> Configuration --> Meters --> Network Management) to link each meter to a concentrator, when not autodiscovered;
- proceed to commissioning, by concentrator or by one or more meters at a time (Technical Area --> Configuration --> Meters --> Meter Commissioning).

While commissioning is complete, there are some operations system do by itself by communicating with concentrator: they also include Verify Commissioning and, depending on results, Meter Tech Configuration, Meter Tech Config on Concentrator in case of successful verify, decommissioning in case of error while verifying commissioning.

In more detail, Meter Tech Config on Concentrator configures load profiles, daily closures and CEData collections for commissioned meter.

At the end, meter is ready to get readings.

OPERATIONS

Both concentrators and meters can execute some operations listed and accessible on Technical Area → Operations

Concentrator's Operations list:*

- Repeater table reading (repeater chains update in system)
- Set concentrator DST (Daylight Saving Time configuration)
- ACM concentrator (Script uploading – concentrator side)
- Send ACM commands (Script send and execution – concentrator side)
- Update concentrator firmware
- Autodiscovery conflicts (list and details for not yet autodiscovered meters)
- MAA configuration (Mutual Authentication configuration area)

Meter's Operations list:*

- ACM meter (Script uploading – meter side)
- Send ACM meter commands (Script send and execution – meter side)
- Synchro meter
- Meter outage check (quick reachability check)
- Meter auto diagnostic (status words updates reading)
- Set meter DST (Daylight Saving Time configuration)
- Prepay configuration (Switch to prepaid plan)
- Prepay disable (prepaid plan disabling)
- Reset "UC SET" (feature to be used in case of locked daily closure in meter)

*for further information please refer to single feature's chapter

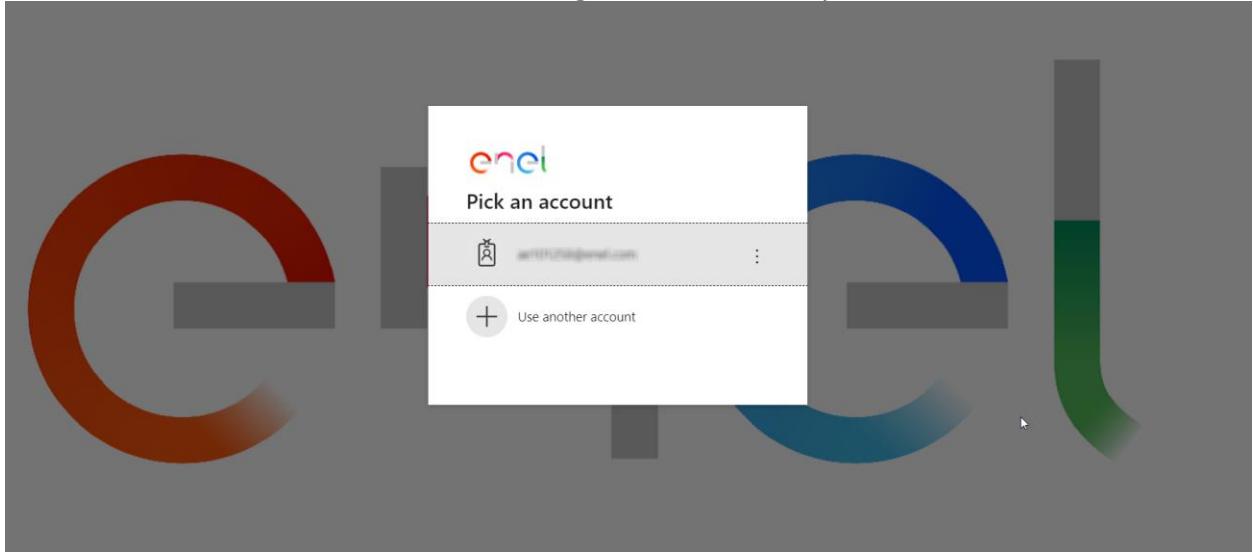
3. Account Registration - Login – Sessions

Based on release installed on user's country, one of the following access method is show:

- Microsoft/Enel authentication;
- ePlus dedicated authentication.

3.1. Microsoft authentication (Azure Active Directory)

With AAD authenticator the user has to login with Microsoft/Enel account



3.2. ePlus dedicated authentication

In order to access SMM ePlus a user needs to be registered with a specific account; an account is based on username (unique) and password chosen by the user on sign up.

While signing up, a new page appears and the user is required to fill in all the fields in page:

Home | enel | SMM ePlus - SMART METERS MANAGER | English | Register | Log In

Register a new account.

Username:

Password:

Confirm password:

Name:

Email:

Identification:

Language: Default - English ▾

Check the companies you work with:

- Italy
- Enel Inglesi
- Enel Toscana
- Collezione
- TechnoAutomation Company
- Sistech

Password must respect some security requirements:

- a. Length (>=8)
- b. Complexity (>= 3 different kind of characters, see videoclip)
- c. History (=5 – the user cannot repeat the last 5 user passwords)
- d. Minimum duration (1 day)
- e. Expiration (90 days)
- f. Maximum fails (user is locked out for 5 minutes in case of 5 wrong passwords input – counter is reset at the time when login complete successfully)



New account.mp4

When registered, the account needs to be activated by an ePlus main admin, and it has to be granted some privileges (previously defined in “Group Management” section).

Each password has a minimum duration time of 1 day (**d**), expires every 90 days (**e**) and must be replaced when prompted after its expiration; the user cannot repeat one of the past 5 passwords used (**c**).

Please note that data inserted on “Identification” field will appear on ePlus activity’s reports, to indicate who has performed the operation.

On login, a maximum number of wrong attempts for each account is set to 5; when reached, any further retry is inhibited for 5 minutes (**f**).

Each session on browser is set to expire after 20 minutes of inactivity, after which it is necessary to login again.

Multisession is not allowed (the same user can't be logged twice at the same time).

4. Administration Area (*fully visible with ePlus dedicated authentication only*)

The SMM ePlus is accessible to three types of users:

- Main Admin Users
- Admin Users
- Users

The Users can access to the functionalities granted them by an Admin User or by a Main Admin User.

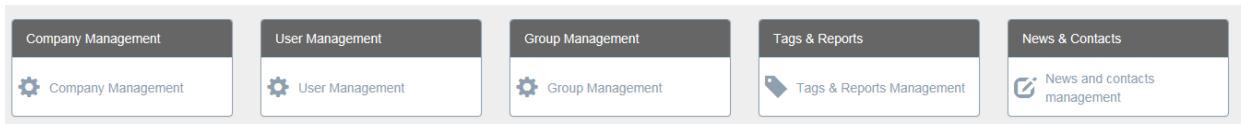
An Admin User can access to the functionalities granted them by a Main Admin User.

The Main Admin User is able to do anything in the system.

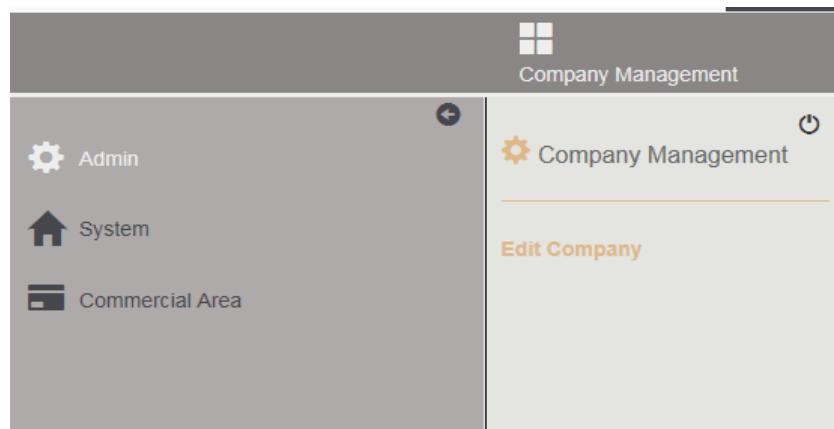
In this manual will be described the Admin and Users features.

4.1. Admin User (with ePlus dedicated authentication only)

When the Admin User login into the system there is a widgets set he can access to:



Clicking on the Company Management Widget a Functions Menu appears

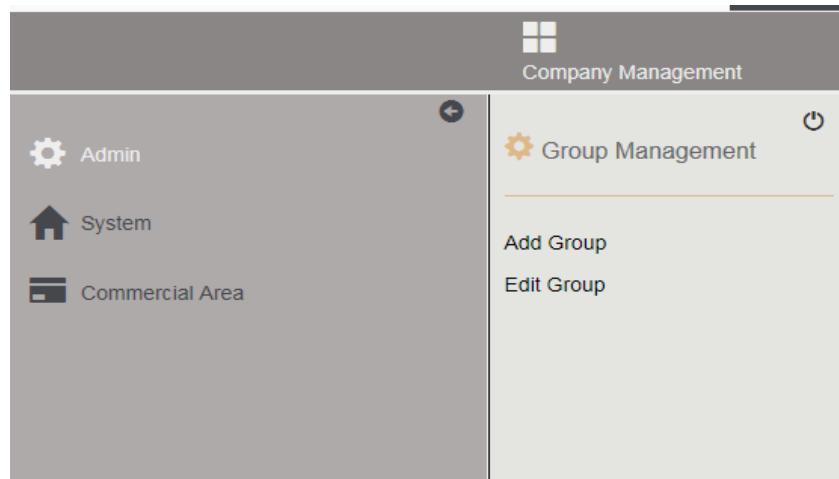


Clicking on the Edit Company voice the update form of the Company is shown

| Filter by | | Set company properties | Select company coordinate limit |
|--|--|---|---|
| <input type="button" value="Company"/> Enel Distribuzione Chile | | Name * Enel Distribuzione Ch | Description * An Enel Company |
| | | Select profile * Default | |
| | | Logo <input type="file"/> Browse... | |
| | | <input type="checkbox"/> Company is lock | |
| | | Map Satellite | |

From the form it's possible to change the Company Name, the Company Logo, the geo localization coordinates selecting the range directly on the map.

Clicking on the Group Management Widget a Functions Menu appears



Clicking on the **Add Group** button it's possible to insert a new Group, the Group is an entity where assign the registered Users, this entity is useful for setting roles which are attributed on the SMM ePlus application.

| | |
|--|------------------------------------|
| Name * | <input type="text"/> |
| Description * | <input type="text"/> |
| Select profile * | <input type="text"/> |
| <input type="checkbox"/> is lock | <input type="button" value="Add"/> |
| Add companies and servicekinds <input type="checkbox"/> Chile_UAT | |
| Add roles <input type="checkbox"/> Commercial <input type="checkbox"/> Mobile <input type="checkbox"/> Provisioning <input type="checkbox"/> Report <input type="checkbox"/> Technical | |

The Add button becomes enabled when all the mandatory parameters in the forms on the right are checked. For any group it's possible to select a **profile** (set the Default profile because this functionality it's not active in this moment).

Setting **is lock** flag it is possible to disable the users belonging to the group to access in SMM ePlus environment.

It needs to select the Company and set the roles in the Add roles form on the right.

Clicking then on the **Add** button the group is created.

It's possible also to edit a group clicking on the **Edit Group** link.

For example using the Report Role group is possible to assign to the group the grants over All the reports or selecting only some reports as in the form below:

Edit group

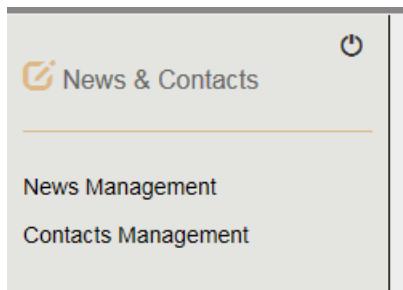
| | |
|--|---|
| Select Group <input type="text" value="ChileAdmin"/> <input type="button" value="▼"/> <hr/> Name * <input type="text" value="ChileAdmin"/> <input type="button" value="i"/> <hr/> Description * <input type="text" value="Admin group"/> <hr/> Select profile * <input type="text" value="Default"/> <input type="button" value="▼"/> <hr/> <p><input checked="" type="checkbox"/> is admin <input type="checkbox"/> is lock</p> <input type="button" value="Save"/> | Edit companies and servicekinds <input type="button" value="▼"/> <ul style="list-style-type: none"> ▶ <input checked="" type="checkbox"/> Chile_UAT ▶ <input type="checkbox"/> Colombia_UAT ▶ <input type="checkbox"/> Peru_UAT ▶ <input type="checkbox"/> SaoPaolo_UAT ▶ <input type="checkbox"/> Argentina_UAT ▶ <input type="checkbox"/> Rio_UAT ▶ <input type="checkbox"/> Ceara_UAT ▶ <input type="checkbox"/> Goias_UAT Edit roles <input type="button" value="▼"/> <ul style="list-style-type: none"> ▶ <input type="checkbox"/> Administration ▶ <input checked="" type="checkbox"/> Commercial ▶ <input checked="" type="checkbox"/> Mobile ▶ <input type="checkbox"/> Provisioning ▶ <input checked="" type="checkbox"/> Report <ul style="list-style-type: none"> ▶ <input checked="" type="checkbox"/> POD ▶ <input checked="" type="checkbox"/> Concentrators ▶ <input checked="" type="checkbox"/> Meters ▶ <input checked="" type="checkbox"/> Company LP ▶ <input checked="" type="checkbox"/> Concentrator LP ▶ <input checked="" type="checkbox"/> Company DC ▶ <input checked="" type="checkbox"/> Concentrators in field ▶ <input checked="" type="checkbox"/> Meters in field ▶ <input checked="" type="checkbox"/> Count Meters By Concentrator ▶ <input checked="" type="checkbox"/> Concentrator Autodiscovery ▶ <input type="checkbox"/> Conflicts <ul style="list-style-type: none"> ▶ <input checked="" type="checkbox"/> Pending Works ▶ <input checked="" type="checkbox"/> Completed Works ▶ <input checked="" type="checkbox"/> Commercial Pending ▶ <input type="checkbox"/> Workorder <ul style="list-style-type: none"> ▶ <input checked="" type="checkbox"/> Commercial Completed ▶ <input type="checkbox"/> Workorder <ul style="list-style-type: none"> ▶ <input checked="" type="checkbox"/> Concentrator Activity Settings ▶ <input checked="" type="checkbox"/> Technical Pending Workorder ▶ <input checked="" type="checkbox"/> Technical Completed ▶ <input type="checkbox"/> Workorder <ul style="list-style-type: none"> ▶ <input checked="" type="checkbox"/> Sim Cards ▶ <input checked="" type="checkbox"/> Modules |
|--|---|

Clicking then on the 'Add button' the grants are saved; the users assigned to the created group will be able to see only the reports assigned to the group.

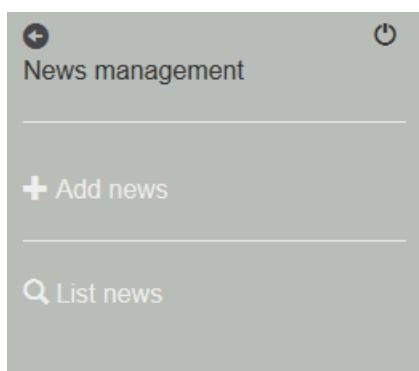
NEWS & CONTACTS WIDGET

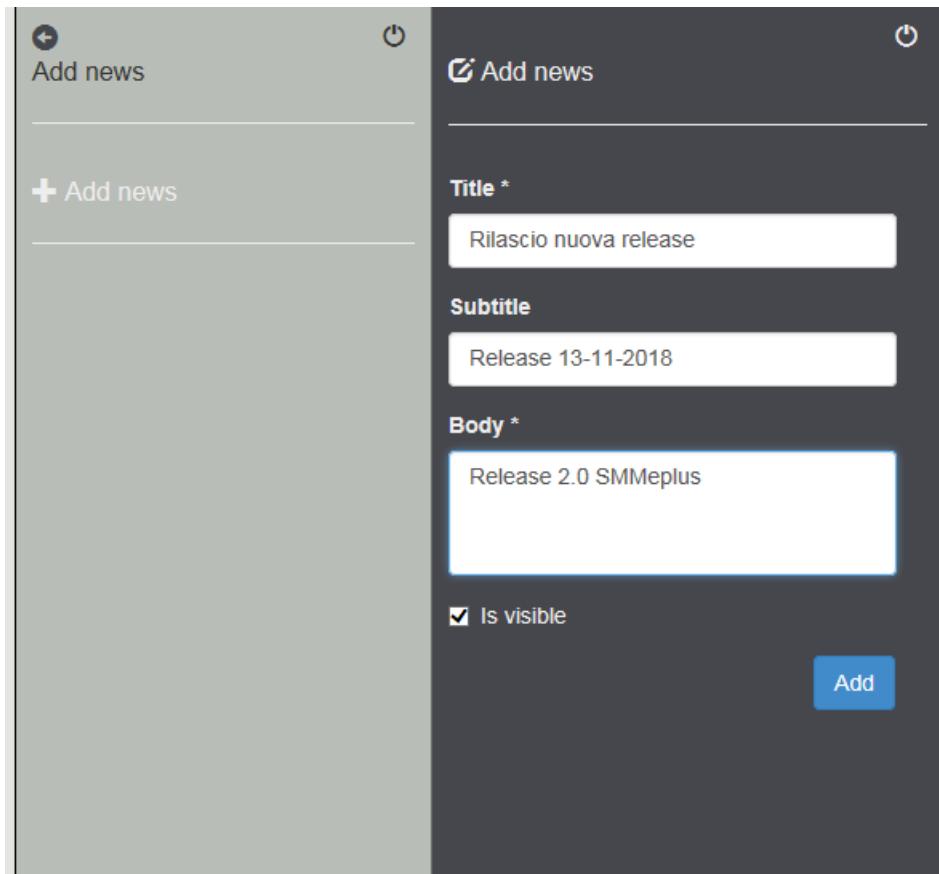
Clicking on the News & Contacts Widget a Functions Menu appears

e-distribuzione



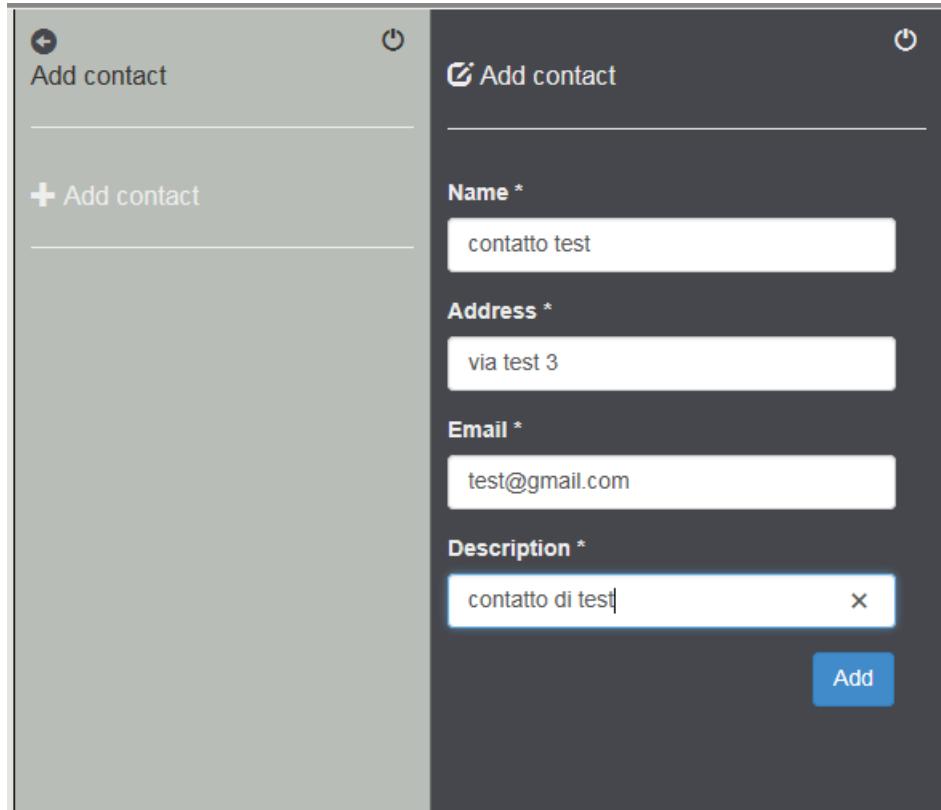
Clicking on the **News management** link it's possible to insert a news clicking on the Add news button:



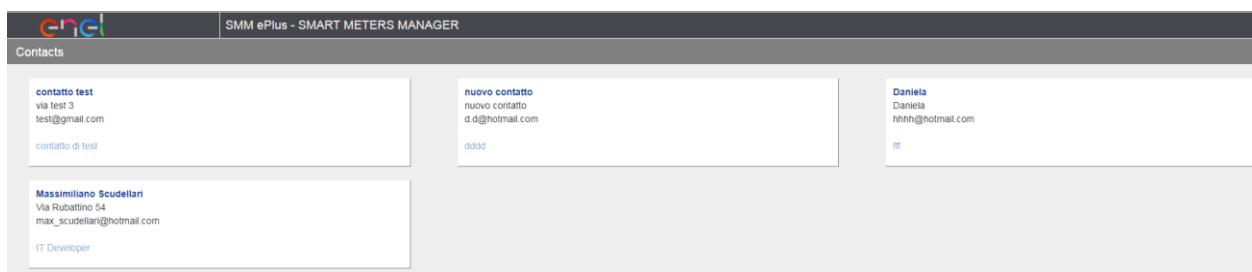


This news will be visible in the Home page.

Clicking on the **Contacts management** link it's possible to insert a new contact using the Contacts Management button:

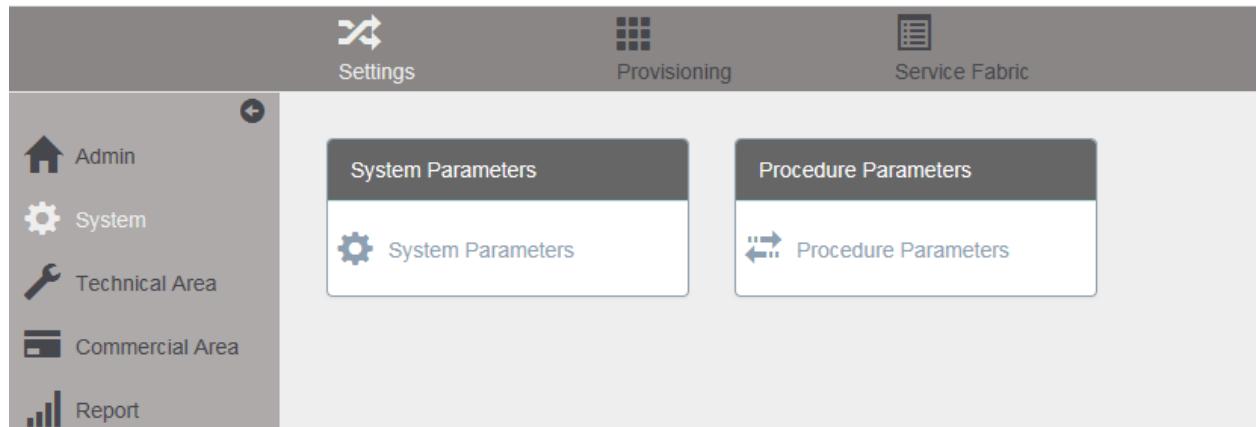


Adding a new contact this name is visible in the Contacts area:

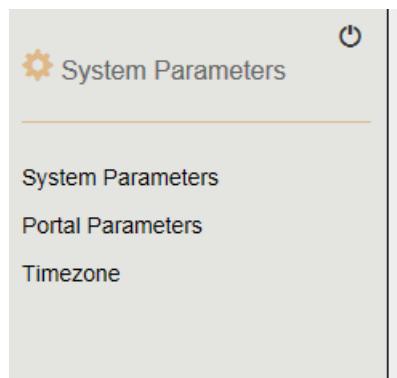


5. Settings area

The settings area is used for settings parameters used by the system for configuring the system or the procedures used by the system:



Clicking on the **System Parameters** widget it's possible to set System Parameters Portal Parameters or timezone.



5.1. System Parameters

Clicking on the **System Parameters** link it's possible to configure System parameters:

The screenshot shows the 'Set parameters' interface. On the left, there's a sidebar with 'Parameters management' and a 'Select a company' dropdown. Below that is a button labeled 'Click to set parameters' with a magnifying glass icon. The main area contains several configuration sections:

- Autodiscovery configuration**: Includes checkboxes for enabling network change for meters (commissioned/not reachable), meters (commissioned/reachable), meters (not commissioned), and automatic re-commissioning.
- External devices**: Includes checkboxes for Smartphone Support, SLC Support, and Keypad Support.
- Meter configuration**: Includes checkboxes for enabling KP for all meters, DST for the company, and Instant Breaker Closure for all meters.
- TLP Value**: A numeric input field containing '15' and '60' with a dropdown arrow.
- Reachability**: Includes fields for 'Meter Maximum NRN value' (containing 'num') and 'Concentrator Maximum NRN value' (containing 'num').

A large blue arrow points from the 'Click to set parameters' button towards the 'TLP Value' section. In the bottom right corner, there's a green 'Save' button.

The meaning of the flags and other settings is the following:

- **Enable network change for meters commissioned but not reachable**
If checked, automatic commissioning is generated for discovered meters that are commissioned but not reachable;
- **Enable network change for meters commissioned and reachable**
If checked, automatic commissioning is generated for discovered meters that are commissioned and reachable
- **Enable network change for meter not commissioned**
If checked, automatic commissioning is generated for discovered meters that are not commissioned
- **Enable automatic re-commissioning for commissioned meters**
If checked, automatic re-commissioning is generated for discovered meters that are already commissioned on the same concentrator.

- **IP of internal LB used for concentrator spontaneous messages:**
IP used for spontaneous profiles. To be set by admin
- **Port to use for wakeup messages**
Port used by wakeup spontaneous
- **Port to use for last gasp messages**
Port used by Last Gasp spontaneous
- **Smartphone support**
Enable/Disable smartphone operations for selected company ("ePlus Mobile" app required). When disabled related pages are hidden.
- **Prepayment support**
Enable/Disable prepayment support for meters. When disabled related pages are hidden.
- **Default k coefficient reduction**
Value corresponding to Default percentage of power reduction
- **Enable KP for all meters**
If it's flagged the system uses the Provisional Key for accessing to the meters
- **Enable DST for this Company**
If this flag is enabled the concentrators and the meters work in automatic Daylight Saving Time
- **Enable instant breaker closure for all meters**
If this flag is enabled the system sends a special command to the meter for automatically to close the breaker
- **TLP value**
If this flag is set = 15 the load sample are generated every 15 minutes otherwise every 60 minutes
- **Meter maximum NRN value**
It's the max number of operations that could fail, for a number equal to the NRN set the meter become unreachable

For meters, the system executes:

- On demand activities (configurations, workorders)
- Collection of information through scheduled activities of concentrators

Every time the system tries to contact the meter and the connection fails, the nrn is incremented.

Every time the system tries to contact the meter and the connection succeeds, the nrn is reset to 0.

In addition, when the system analyzes the result of scheduled activities, the system checks if the data provided by concentrator for that meter has already been collected. If the answer is yes (last time the concentrator has given me the same information) it means that the meter hasn't been reached by the concentrator. So the nrn is incremented also in this case.

When the nrn value exceeded the maximum value defined in settings (visible in setting section of the website and usually set as **40**), the system changes the "is reachable" flag to FALSE.

- **Concentrator maximum NRN value**

It's the max number of operations that could fail, for a number equal to the NRN set the concentrator become unreachable

For concentrators, the system usually executes:

- 3/4 times per day the Daily Closure collection scheduled activity
- 3/4 times per day the N2Pload collection scheduled activity
- 1 time per day the CEData collection scheduled activity
- 1 time per day the Autodiscovery results collection scheduled activity
- 2/3 times per week the Autodiscovery Repeater collection scheduled activity
- On demand activities (configurations, workorders, ..)

Every time the system tries to contact the concentrator and the connection fails, the nrn is incremented.

Every time the system tries to contact the concentrator and the connection succeeds, the nrn is reset to 0.

When the nrn value exceeded the maximum value defined in settings (visible in setting section of the website and usually set as **40**), the system changes the "is reachable" flag to FALSE.

This behavior has been implemented because usually concentrators are not reachable every hour of the day. We set a concentrator as unreachable when the connectivity problems persist.

- **Automatically send to smartphone failed credit charge workorder**

If flagged, generate a mobile activity (to be managed with ePlus Mobile app) in case of credit charge failure for reachability reasons when automatic retries are ended (remote workorder)

- **Automatically send to smartphone failed prepay config workorder**
If flagged, generate a mobile activity (to be managed with ePlus Mobile app) in case of Prepayment configuration failure for reachability reasons when automatic retries are ended (remote workorder)
- **Automatically send to smartphone failed contract change work**
If flagged, generate a mobile activity (to be managed with ePlus Mobile app) in case of Contract Change failure for reachability reasons when automatic retries are ended (remote work)
- **Automatically send to smartphone failed credit read workorder**
If flagged, generate a mobile activity (to be managed with ePlus Mobile app) in case of Credit Read failure for reachability reasons when automatic retries are ended (remote workorder)
- **Send statusword on value change**
Status words events are generated only when the status of the alarm changes (become active or not active).

List of possible generated events:

| event code | event description |
|-------------|---------------------------------------|
| 3.36.17.85 | Meter Normal Status Word -> ORD |
| 3.36.17.79 | Meter Normal Status Word -> ONSI |
| 3.18.17.88 | Meter Normal Status Word -> SGR |
| 3.23.1.79 | Meter Normal Status Word -> AFC |
| 3.26.17.43 | Meter Extended Status Word -> INTA |
| 3.12.29.212 | Meter Extended Status Word -> CAPE |
| 3.18.85.85 | Meter Extended Status Word -> DRAM |
| 3.18.42.85 | Meter Extended Status Word -> DEEP |
| 3.18.92.85 | Meter Extended Status Word -> DFLA |
| 3.21.0.85 | Meter Extended Status Word -> DZCR |
| 3.21.67.85 | Meter Extended Status Word -> DMIS |
| 3.15.17.22 | Meter Extended Status Word -> NCO |
| 3.2.22.150 | Meter Extended Status Word -> BAT_LOW |
| 3.12.29.79 | Meter Extended Status Word -> TC_Rem |
| 3.12.32.62 | Meter Extended Status Word -> KP |
| 3.12.60.88 | Meter Extended Status Word -> OLU |
| 3.37.0.85 | Meter Extended Status Word -> WDOG |
| 3.12.202.76 | Meter Normal Status Word -> NPR |
| 3.12.282.76 | Meter Normal Status Word -> NPW |

| | |
|-------------|---|
| 3.12.66.257 | Meter Extended Status Word -> MAGN |
| 3.13.17.85 | Meter Extended Status Word -> DDSP |
| 3.26.0.85 | Meter Normal Status Word -> PUP |
| 3.12.298.62 | Meter Extended Status Word -> UNLOCKED |
| 3.39.74.42 | Meter Commissioned |
| 3.39.74.68 | Meter Decommissioned |
| 3.1.0.49 | Meter Reachable |
| 3.1.0.85 | Meter Unreachable |
| 3.20.81.150 | Meter Prepaid Status Word -> DBT_LMT |
| 3.20.81.286 | Meter Extended Status Word -> WRNTHD |
| 3.31.17.41 | Request preempted - replaced by another request |
| 3.31.17.1 | Request Aborted |
| 10.26.17.85 | Concentrator power OFF (Last Gasp spont) |
| 10.26.17.16 | Concentrator power ON (Last Gasp spont) |

- **Send meter syncro if ORD detected**
Enable syncro sending command in case clock is not aligned
- **External device flags**
If a support is flagged is possible to execute the Commercial Work Orders using the support (it's not in use in this moment)

5.2. Portal Parameters

Clicking on the **Portal Parameters** link it's possible to configure the Portal parameters:

The screenshot shows the 'Portal parameter management' interface. On the left, there is a sidebar with options like '+ Add parameter', 'Find parameter', and a dropdown for 'Company' set to 'Enel Inghilterra'. Below the company dropdown is a button 'Click to see results' with a magnifying glass icon. The main area is titled 'Parameter list' and contains a table with columns: Name, Description, Value, and Data type. Three parameters are listed:

| | Name | Description | Value | Data type |
|--|------------------|--------------------------------------|--|-----------|
| | AUTH_DEFAULT_PWD | Default Password Value | ACCbRURevKLYrvN7C741WQnjKsj2JeSjjuc... | input |
| | ZOOM_LEVEL | Level at which meters become visible | 18 | input |
| | PAGE_REFRESH | Page refresh used in WO Monitoring | 300 | input |

These parameters are used by SMMePlus for configuring some technical system values, they don't have to be changed by the user.

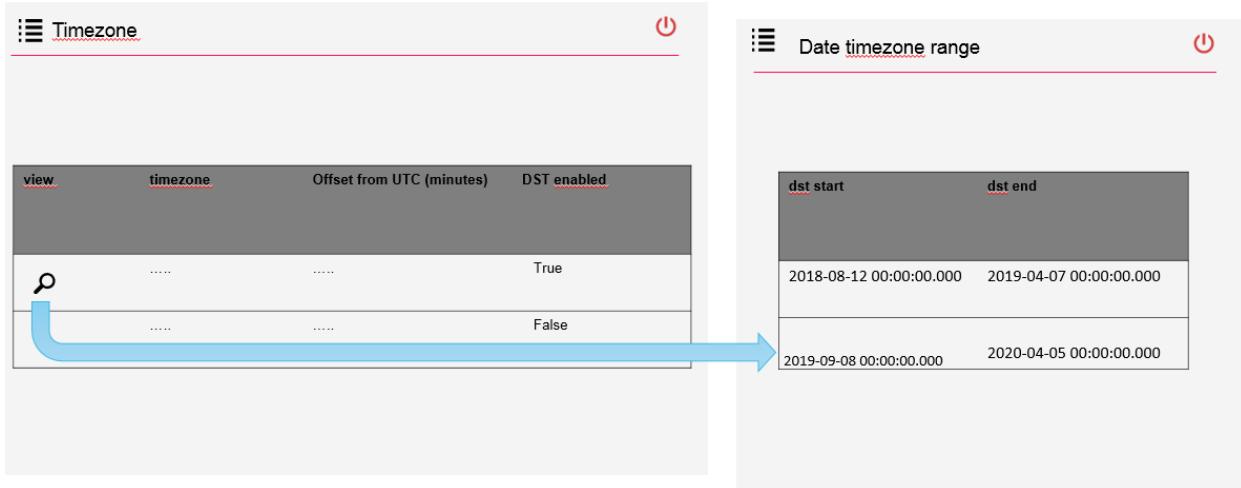
5.3. Timezone

Clicking on the Timezone link it's possible to see all the timezones configured in the system:

The screenshot shows the 'Timezone' configuration interface. On the left, there is a sidebar with a 'Concentrators Operations' section and a 'Timezone' link, indicated by a green arrow pointing to the right. The main area is titled 'Timezone' and contains a table with columns: view, timezone, Offset from UTC (minutes), and DST enabled. The table has three rows, each with a magnifying glass icon next to the 'view' column. The first row is fully visible, while the second and third rows are partially visible below it.

| view | timezone | Offset from UTC (minutes) | DST enabled |
|------|----------|---------------------------|-------------|
| | | | |
| | | | |
| | | | |

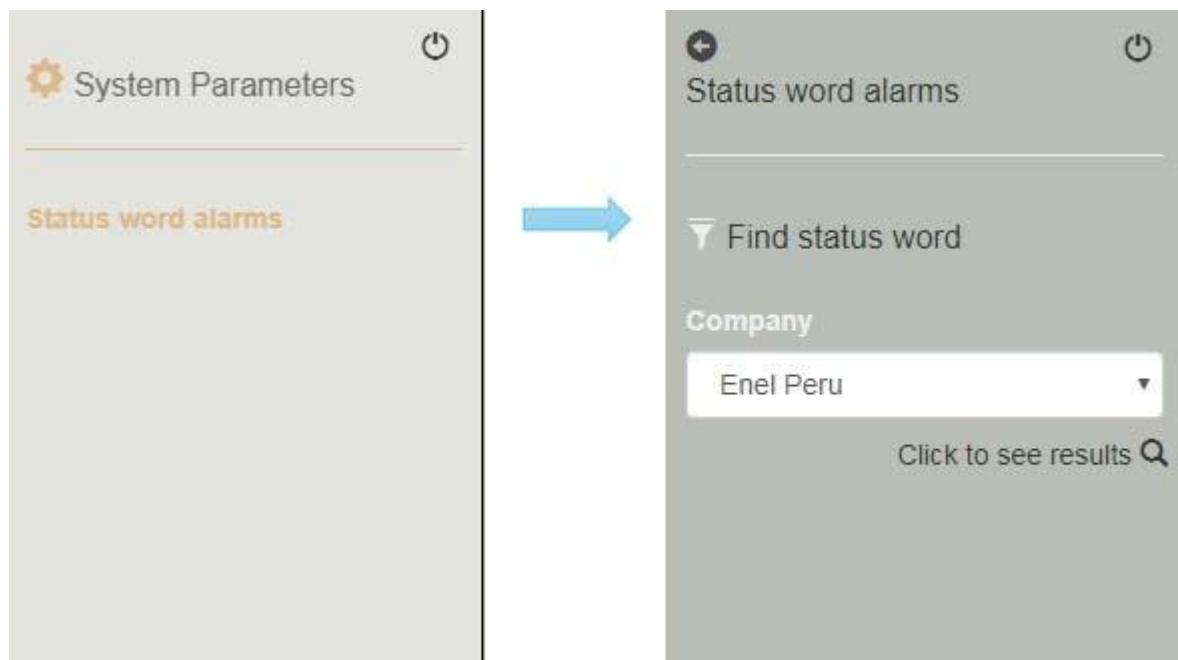
Only the Timezone having flag DST enabled = true are displayed with the magnifying glass on the left, clicking on it are shown the date range in the system for the timezone



Only these settings timezones could be used for setting the Substations in the Substation Management Provisioning Area (see chapter 5.3)

5.4. Status word alarm

Clicking on the **Status word alarm** link allows you to select the company to which to configure the status word alarm set.



After selecting the company a status word alarms set will appear in the form of a list of options to choose from.

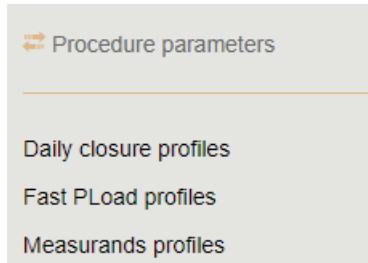
Status word list

| Description | Value |
|--------------------------------------|-------------------------------------|
| Voltage interruption (PUP) | <input checked="" type="checkbox"/> |
| Clock not aligned (ORD) | <input checked="" type="checkbox"/> |
| CE without temporal reference (ONSI) | <input checked="" type="checkbox"/> |
| Alarm on communication line (AFC) | <input checked="" type="checkbox"/> |
| Programming (PIC) | <input checked="" type="checkbox"/> |
| Data segregated (SGR) | <input checked="" type="checkbox"/> |
| Contract 1 active (C1_SCE1) | <input checked="" type="checkbox"/> |
| Contract 1 programmed (C1_SCE2) | <input checked="" type="checkbox"/> |
| Current load modulation (ALL) | <input checked="" type="checkbox"/> |
| Total Items: 76 | |

Save

5.5. Daily Closure Profiles

Clicking on the **Procedure Parameters** widget it's possible to set the Profiles of energy collecting:



Clicking on the Daily Closure Profiles link it's possible to configure the daily closure profile to use for collecting energy :

Daily closure profile management

+ Add daily closure profile

Find daily closure profile

Company

Enel Inghilterra

Click to see results

Daily Closure energy collection profiles data

Click the V in the first column to set the profile as active. Only one profile can be active for a company

| | Name | Description | Is active |
|-------------------------------------|-----------------------------|-----------------------------|-----------|
| <input checked="" type="checkbox"/> | DailyClosure Energy Profile | DailyClosure Energy Profile | false |
| <input type="checkbox"/> | dailyclosure profile 3 | dailyclosure profile 1 desc | false |
| <input checked="" type="checkbox"/> | prova 3 | f 3 | true |
| <input type="checkbox"/> | prova2 | prova2 | false |
| <input type="checkbox"/> | ddd | desc dddd | false |
| <input type="checkbox"/> | oo | | false |
| <input type="checkbox"/> | uu | | false |
| <input type="checkbox"/> | ddd2222 | | false |
| <input type="checkbox"/> | new daily c | new daily c | false |

Total Items: 11 (Selected items: 1)

Active profile: prova 3

For example 'prova3' profile is used in the previous example but it's possible to change it selecting another profile in the grid.

It's possible also to create a new profile:

Procedure parameters

Daily closure profiles

Fast PLoad profiles

Measurands profiles

Add daily closure profile

Company

+ Add daily closure profile

Add daily closure profile

Name *

Description

is active

Select the energies to collect for each meter type

Monophase

- Active forward energy
- Reactive forward energy
- Active reverse energy
- Reactive reverse energy

Polyphase

- Active forward energy
- Reactive forward energy
- Active reverse energy
- Reactive reverse energy

Add

Selecting in the previous form some different types of energy it's possible to collect them. Clicking on the 'Is active' flag the profile become the default one.

5.6. Fast Pload Profile

Clicking on the Fast PLoad Profile link it's possible to configure the Fast Pload profile to use for collecting energy :

The screenshot shows a two-panel interface. The left panel is titled "Fast PLoad profiles" and contains a "Find Fast PLoad profile" section with a dropdown set to "Enel Inghilterra" and a search button. The right panel is titled "Fast PLoad energy collection profiles" and displays a table of profiles. A note at the top of the table says: "Click the V in the first column to set the profile as active. Only one profile can be active for a company". The table has columns for Name, Description, and Is active. One row is highlighted with a blue background and checked in the first column, indicating it is the active profile. The table shows 15 total items and 1 selected item.

| | Name | Description | Is active |
|-------------------------------------|---------------------------------|------------------------------|-----------|
| <input checked="" type="checkbox"/> | fastuploadprofile2 | fuploadprofile2desription | false |
| <input checked="" type="checkbox"/> | profile 1 | description 1 | false |
| <input checked="" type="checkbox"/> | nome 22 | descrizione 22 | false |
| <input checked="" type="checkbox"/> | fuploadprofilo3 | desc3 | true |
| <input checked="" type="checkbox"/> | daily closure profile 1 xxx xxx | daily closure profile 1 desc | false |
| <input checked="" type="checkbox"/> | dddd | dd | false |
| <input checked="" type="checkbox"/> | d1 | | false |
| <input checked="" type="checkbox"/> | ss | dd | false |
| <input checked="" type="checkbox"/> | test reset model | desc | false |

Total Items: 15 (Selected items: 1)

Active profile: fuploadprofilo3

It's also possible to create a new profile and selecting the energies to collect:

The screenshot shows a user interface for managing energy profiles. On the left, a sidebar displays a list of profiles: 'Add Fast PLoad profile' (selected), 'Company' (Enel Inghilterra), and '+ Add Fast PLoad profile'. On the right, the detailed configuration page for 'Add Fast PLoad profile' is shown. It includes fields for 'Name *' (ddd), 'Description' (dd), and a checkbox for 'Is active'. Below these, a section titled 'Select the energies to collect for each meter type' lists 'Monophase' and 'Polyphase' categories, each with a single checkbox for 'Active Forward Energy'. A blue 'Add' button is located at the bottom right.

Add Fast PLoad profile

Company

Enel Inghilterra

+ Add Fast PLoad profile

Add Fast PLoad profile

Name *

ddd

Description

dd

Is active

Select the energies to collect for each meter type

Monophase

Active Forward Energy

Polyphase

Active Forward Energy

Add

5.7. Measurands profiles

The n2pmeas procedure of concentrators is in charge of collecting measurands from commissioned meters.

The configuration of procedures inside concentrators is performed through “Concentrator initialization” and “Concentrator modification” processes of SMMePlus.

The system writes inside the concentrator the parameters that have been defined in the concentrator profile.

Procedure profile's settings can be made on [procedure profile](#) page.

The screenshot shows a configuration form for the 'N2PMeas' procedure. It includes fields for Activation interval (min) set to 720, Activation instant set to 04:00:00, Priority set to 2, Timeout (min) set to 0, and an Enabled checkbox checked. The background is dark grey, and the text is white or light grey.

SMM ePlus gives user the chance to set many measurands collection profiles for both monophase and polyphase meters.

PROFILE SEARCH

Already created measurands profiles are listed inside a specific grid on System → Settings → Procedure Parameters → Measurands profiles → “find” → results area, with the following enumerated columns:

The screenshot shows the SMM ePlus - SMART METERS MANAGER interface. The left sidebar has links for Admin, System, Technical area, Commercial area, and Report. The main area has tabs for Settings, Provisioning, and Service fabric. Under Settings, there are sections for Procedure parameters, Daily closure profiles, Fast PLoad profiles, and Measurands profiles. The Measurands profiles section contains a sub-section for Measurands profiles with a 'Find measurands profile' search bar and a dropdown for Company. Below this is a table titled 'Measurands energy collection profiles' with columns: 1 (Activation toggle), 2 (Delete button), 3 (Edit button), 4 (Profile name), 5 (Profile description), 6 (Activation status), 7 (Supply type), and 8 (Tmp (Measurands)). The table lists 15 items. At the bottom of the table, it says 'Total items: 15'. A note at the bottom right says 'Active monophase profile: Measurands profile2 Active polyphase profile: ros_misurando'.

- 1) Activation toggle;
- 2) Delete button
- 3) Edit button
- 4) Profile name
- 5) Profile description
- 6) Activation status
- 7) Supply type
- 8) Tmp (Measurands)

At the end of the grid a summary shows active measurands for monophase and polyphase meters, that are set.

PROFILE ADDITION AND MODIFICATION

Profile addition can be executed by clicking on “Add measurands profile”, modification can be made by clicking on icon marked with number 3 in picture below instead.

On access a page appears on screen (empty for a new addition, already populated for modification):

Add measurands profile

Name *

Description *

is active

Supply type *

Monophase

Energy measurands tmp *

1 min

Energy measurands flag

- Measurands profile 1 (MSR_1)
- Measurands profile 2 (MSR_2)
- Measurands profile 3 (MSR_3)
- Measurands profile 4 (MSR_4)
- Measurands profile 5 (MSR_5)
- Measurands profile 6 (MSR_6)
- Measurands profile 7 (MSR_7)
- Measurands profile 8 (MSR_8)
- Measurands profile 9 (MSR_9)

On meters having fw 10 only the first 3 measurands exist

Supply type *

Monophase

Energy measurands tmp *

1 min

User is required to define all field in the first half of the area, then proceed to measurands flags by selecting one or more of them (click in name or icon). Then a page is expanded with new elements:

Add measurands profile

Company: [dropdown]

Name *: [input]

Description *: [input]

is active: [checkbox]

Supply type *: Monophase

Energy measurands tmp *: 1 min

Measurands flag:

- Measurands profile 1 (MSR_1)
- Measurands profile 2 (MSR_2)
- Measurands profile 3 (MSR_3)
- Measurands profile 4 (MSR_4)
- Measurands profile 5 (MSR_5)
- Measurands profile 6 (MSR_6)
- Measurands profile 7 (MSR_7)
- Measurands profile 8 (MSR_8)
- Measurands profile 9 (MSR_9)

On meters having fw 10 only the first 3 measurands exist

Add

Measurands profile 7 (MSR_7)

Measurands type (MSR_TYP)

- Positive active energy E+(t)
- Negative active energy E-(t)
- Positive inductive reactive energy R+L(t)
- Positive capacitive reactive energy R+C(t)
- Negative inductive reactive energy R-L(t)
- Negative capacitive reactive energy R-C(t)
- Positive active power W+(t)
- Negative active power W-(t)
- Positive inductive reactive power Q+L(t)
- Positive capacitive reactive power Q+C(t)
- Negative inductive reactive power Q-L(t)
- Negative capacitive reactive power Q-C(t)
- RMS R-line-phase voltage RMS_V(t)
- RMS R-line-phase current RMS_I(t)
- Power factor COS_PHI(t) (three phase measurement)
- Last quarter of hour mean positive active power LQM_W+(t)
- Last quarter of hour mean negative active power LQM_W-(t)
- RMS S-line-phase voltage RMS_V(t)
- RMS T-line-phase voltage RMS_V(t)
- RMS S-line-phase current RMS_I(t) (at secondary of CT in case of semi-direct meter)
- RMS T-line-phase current RMS_I(t) (at secondary of CT in case of semi-direct meter)

Measurands value type

- Instantaneous value synchronized with TMP period
- Average value evaluated in each TMP period (the value has to be stored at the end of each TMP period)
- Maximum value evaluated in each TMP period (the value has to be stored at the end of each TMP period)
- Minimum value evaluated in each TMP period (the value has to be stored at the end of each TMP period)

Average Type of Data is never supported by JOBI-M meter
In addition if current profile is written on a JOBI-M meter, the Type Of Data (instantaneous/maximum/minimum) for MSR_7, MSR_8 and MSR_9 will be always set as "instantaneous"

Each meter can register up to 9 measurands and each measurand can have 4 kind of value: maximum, minimum, average and instantaneous.

Below “Measurands type (MSR_TYP)” title there is a list that includes the following measurand registries:

| MSR_TYPx | Description | Note |
|----------|--|------|
| 0x01 | Positive active energy E+(t) | |
| 0x02 | Negative active energy E-(t) | |
| 0x03 | Positive inductive reactive energy R+L(t) | |
| 0x04 | Positive capacitive reactive energy R+C(t) | |
| 0x05 | Negative inductive reactive energy R-L(t) | |
| 0x06 | Negative capacitive reactive energy R-C(t) | |

| | | |
|------|--|-----------------------------|
| 0x07 | Positive active power W+(t) | |
| 0x08 | Negative active power W-(t) | |
| 0x09 | Positive inductive reactive power Q+L(t) | |
| 0x0A | Positive capacitive reactive power Q+C(t) | |
| 0x0B | Negative inductive reactive power Q-L(t) | |
| 0x0C | Negative capacitive reactive power Q-C(t) | |
| 0x0D | RMS R-line-phase voltage RMS_V(t) | |
| 0x12 | RMS S-line-phase voltage RMS_V(t) | |
| 0x13 | RMS T-line-phase voltage RMS_V(t) | |
| 0x0E | RMS R-line-phase current RMS_I(t) (at secondary of CT in case of semi-direct meter) | |
| 0x14 | RMS S-line-phase current RMS_I(t) (at secondary of CT in case of semi-direct meter) | |
| 0x15 | RMS T-line-phase current RMS_I(t) (at secondary of CT in case of semi-direct meter) | |
| 0x0F | Power factor COS_PHI(t) (three phase measurement) | |
| 0x10 | Last quarter of hour mean positive active power LQM_W+(t) | |
| 0x11 | Last quarter of hour mean negative active power LQM_W-(t) | |
| 0x16 | Power factor COS_PHI(t) for R-line-phase | Not available on monophasic |
| 0x17 | Power factor COS_PHI(t) for S-line-phase | Not available on monophasic |

| | | |
|------|---|---|
| 0x18 | Power factor COS_PHI(t) for T-line-phase | Not available on monophasic |
| 0x19 | Phase angle for R-line-phase | Not available on monophasic |
| 0x1A | Phase angle for S-line-phase | Not available on monophasic |
| 0x1B | Phase angle for T-line-phase | Not available on monophasic |
| 0x1C | Phase angle for three phase measurement | Available on monophasic on fw >= 13 and on JOBI-M |
| 0x1D | Network fundamental frequency | |
| 0x1E | Neutral current (only for direct meters) phase 2 of the project | |
| 0x1F | Phase angle for R-line-phase and Neutral Current phase 2 of the project | |
| 0x20 | RMS R-line-phase current RMS_I(t) Primary Circuit | |
| 0x21 | RMS S-line-phase current RMS_I(t) Primary Circuit | |
| 0x22 | RMS T-line-phase current RMS_I(t) Primary Circuit | |

About COS(PHI): please note, based on specifications, that when voltage or current are not applied to the R, S, T-line or Neutral-line, the expected value of COS(PHI) and/or phase angle is 0x7FFF (HEX) => -16383 (decimal).

Next to that list a new one, with 4 element, is shown: the type of data (previously mentioned):

| MSR_TODx | Description |
|----------|---|
| 0x00 | Instantaneous value synchronized with T_{MP} period |
| 0x01 | Average value evaluated in each T_{MP} period (the value has to be stored at the end of each T_{MP} period) |
| 0x02 | Maximum value evaluated in each T_{MP} period (the value has to be stored at the end of each T_{MP} period) |

| | |
|------|--|
| 0x03 | Minimum value evaluated in each T_{MP} period (the value has to be stored at the end of each T_{MP} period) |
|------|--|

The screenshot shows the 'Add measurands profile' screen. On the left, a sidebar has links for Admin, System, Technical area, Commercial area, and Report. The main area has a title 'Add measurands profile' with a back arrow. It includes fields for 'Company' (a dropdown menu), 'Name' (text input), 'Description' (text input), and a checkbox for 'is active'. Below these are dropdown menus for 'Supply type' (set to 'Monophase') and 'Energy measurands tmp' (set to '1 min'). A large list of checkboxes for 'Energy measurands flag' is present, with 'Measurands profile 7 (MSR_7)' checked. A note at the bottom says: 'On meters having fw10 only the first 3 measurands exist'. At the bottom right is a blue 'Add' button.

Please note that:

- Different measurands flag cannot be set with the same type+value couple;
- Meters with fw10 only support the first 3 measurands;
- JOBI-M fw 1.0 meters allows to set MSR_TODx as desired only first 6 measurands (if selected, MSR_7, MSR_8, MSR_9 will force MSR_TODx with instantaneous collection, the other 3 are not supported);
- Average Type of Data is never supported by JOBI-M meter

ACTIVE PROFILE MODIFICATION FOR INSTALLATIONS

Current active profiles (s) can be directly changed on results list; to do so the user has to click on the first column.

On element change the setting is updated and a confirmation message is shown

The screenshot shows a table with columns for Name and Description. Several rows have orange trash and edit icons. Some rows are highlighted in light green. Two rows have green checkmarks in the first column. The bottom of the screen displays a message: "Active monophase profile: [redacted] Active polyphase profile: [redacted]" and "Active profile updated".

| | Name | Description |
|-------------------------------------|------------|-------------|
| <input type="checkbox"/> | [redacted] | [redacted] |
| <input checked="" type="checkbox"/> | [redacted] | [redacted] |
| <input type="checkbox"/> | [redacted] | [redacted] |
| <input checked="" type="checkbox"/> | [redacted] | [redacted] |
| <input type="checkbox"/> | [redacted] | [redacted] |

Total items: 15

Active monophase profile: [redacted] Active polyphase profile: [redacted]
Active profile updated

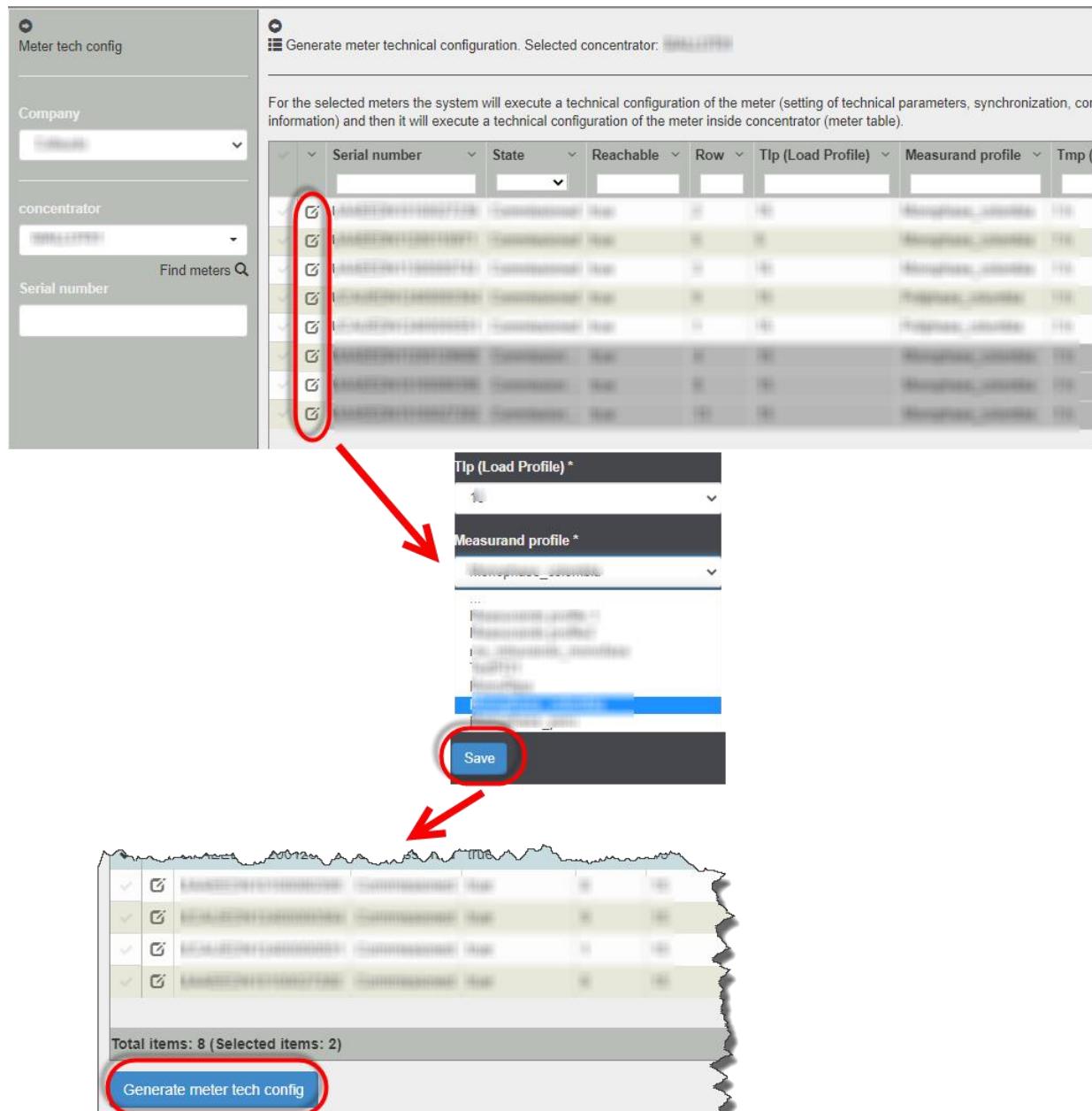
Only one active profile per meter type can be set.

Active measurands profile is used on new meter installations and it can be also customized during on-demand Meter Tech Config.

ACTIVE PROFILE MODIFICATION DURING ON-DEMAND METER TECH CONFIGURATION

As anticipated, on that phase the user can select one of the profiles recorded for the meter type he's working with and proceed with the operation.

The user is required to access to Meter Tech Config page, find desired meter, click icon to modify it, select the new profile and save; when done, an additional click is required to generate meter tech config job:



5.8. WO Reading Parameters

Clicking on the WO Reading Parameters link it's possible to select the energies to collect for the Reading Work Orders :

The screenshot shows a software interface for selecting reading parameters. On the left, there is a 'Company' dropdown menu with a placeholder 'Click to set parameters'. Below the dropdown is a 'Monophase' section containing several checkboxes. Some checkboxes are checked (indicated by a checked box icon) and others are unchecked (indicated by an empty box icon). The checked items include: 'Total amount forward active energy (Wh)', 'Total maximum demand forward (Watt)', and 'pre-paidcreditavailable'. The unchecked items include: 'Total amount reverse active energy (Wh)', 'Total amount forward reactive energy (Wh)', 'Total amount forward active energy previous (Wh)', 'Total amount reverse active energy previous (Wh)', 'Total amount forward reactive energy previous (Wh)', 'pre-paidcurrencyavailableineuro', and 'pre-paidcreditavailable'. Below the Monophase section is a horizontal line separator. Below this line is a 'Polyphase' section, which contains a similar set of checkboxes, all of which are currently checked. These checked items include: 'Total amount forward active energy (Wh)', 'Total maximum demand forward (Watt)', and 'pre-paidcreditavailable'.

| Monophase |
|---|
| <input checked="" type="checkbox"/> Total amount forward active energy (Wh) |
| <input type="checkbox"/> Total amount reverse active energy (Wh) |
| <input type="checkbox"/> Total amount forward reactive energy (Wh) |
| <input type="checkbox"/> Total amount forward active energy previous (Wh) |
| <input type="checkbox"/> Total amount reverse active energy previous (Wh) |
| <input type="checkbox"/> Total amount forward reactive energy previous (Wh) |
| <input checked="" type="checkbox"/> Total maximum demand forward (Watt) |
| <input type="checkbox"/> pre-paidcurrencyavailableineuro |
| <input checked="" type="checkbox"/> pre-paidcreditavailable |

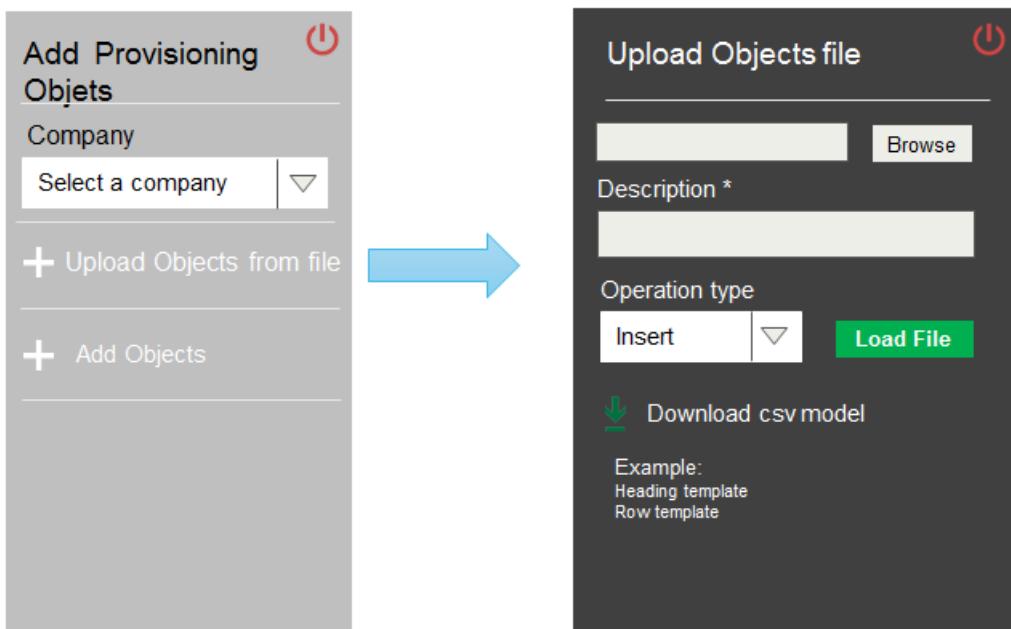
| Polyphase |
|---|
| <input checked="" type="checkbox"/> Total amount forward active energy (Wh) |
| <input type="checkbox"/> Total amount reverse active energy (Wh) |
| <input type="checkbox"/> Total amount forward reactive energy (Wh) |
| <input type="checkbox"/> Total amount forward active energy previous (Wh) |
| <input type="checkbox"/> Total amount reverse active energy previous (Wh) |
| <input type="checkbox"/> Total amount forward reactive energy previous (Wh) |
| <input checked="" type="checkbox"/> Total maximum demand forward (Watt) |
| <input type="checkbox"/> pre-paidcurrencyavailableineuro |
| <input checked="" type="checkbox"/> pre-paidcreditavailable |

6. Provisioning area

When the user login in into the system the Widgets form dashboard is shown. Selecting the Provisioning Secondary Menu voice the Provisioning Widgets are shown; selecting then the Widget desired its Functions list appears; it needs to select the desired Function in the list.
In the next paragraphs the Provisioning objects will be detailed.

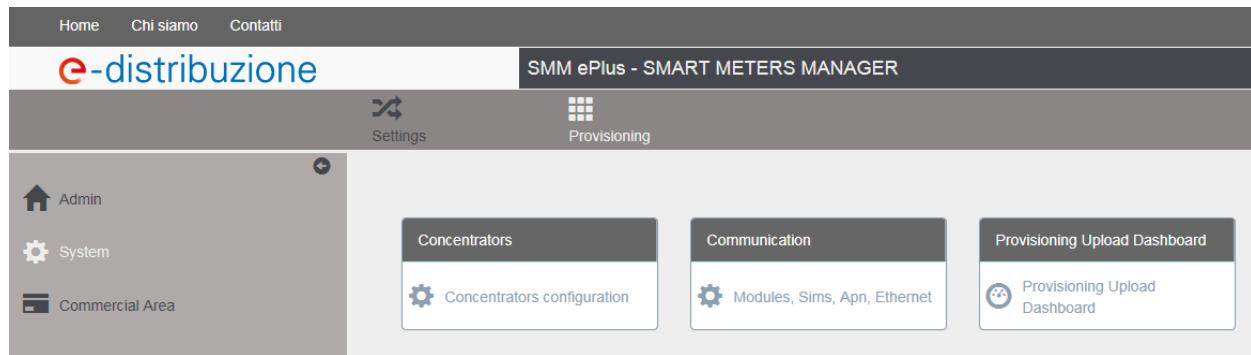
6.1. Main Provisioning features- Massive file loading

A main provisioning feature it's the possibility to load provisioning object using massive loading file.

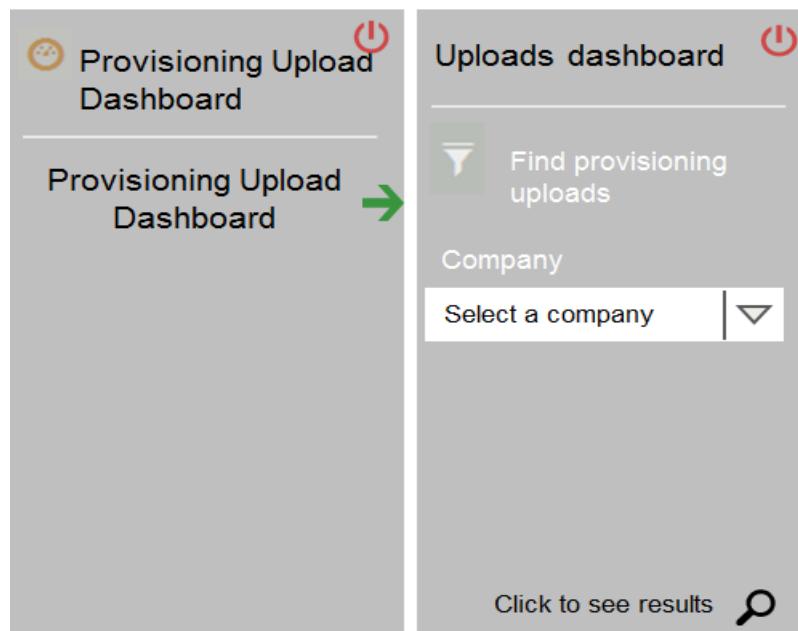


Clicking on the Download csv model icon it's possible to download a file template where loading the provisioning objects to load; after to have filled the file it's possible to load it using the form on the right, it's possible to select the uploading file clicking on the Browse button and through the Operation type it needs to select the operation type (Insert Update or Delete).
The objects of the file are not loaded in synchronous mode after the Load File action but are loaded in asynchronous mode for not to force the user to wait until the loading is completed; the file with the results list can be downloaded afterwards in the Provisioning Upload Dashboard form.

It's possible to open this form selecting the Provisioning Upload Dashboard widget.



Clicking on the Provisioning Upload Dashboard widget the filter form is open.



Selecting a Company in the combo box and clicking on the **Click to see results** the form grid is shown.

The screenshot shows two windows side-by-side. On the left is the 'Uploads dashboard' with a search bar for 'Find provisioning uploads', a dropdown for 'Company' with 'Select a company' and a dropdown arrow, and a button 'Click to see results' with a magnifying glass icon. A blue arrow points from the right side of this window to the right window. The right window is titled 'Provisioning Upload List' and contains a table with columns: Id, File Type, User, File Name, Description, Count, Ko count, Error code, Insert date, Operation, Process state, and Restart process. The table has three rows, each with five dots in the data cells.

The meaning of the main grid fields is the following:

- File Type – it's the provisioning area of the loading file
- User – the person who is loading the file
- Count – the total records file number to load
- Ko count – the number of discarded records (**Note:** clicking on the number an excel sheet is shown with the list of the errors)
- Error code- a system error has been detected, it shows the detail
- Operation – the loading operation type selected by the user (Insert, Update, Delete)
- Process state – the state of the loading (for example analysis completed means that the loading is finished), when there are some problems a red icon is shown, it needs to restart the process clicking on it:

| process state | restart process |
|-------------------|-----------------|
| analysis in queue | |

Clicking on the **Check service fabric connection** link it's possible to verify if the uploading service is running correctly.

| Provisioning Upload List | | | | | | | | | | | | |
|---------------------------------|--------------|-----------|----------------------------|-------------|-------|------------|------------|------|----------|--------------------|-----------|--|
| Check service fabric connection | | | | | | | | | | | | |
| Id. | file type | User | file name | description | count | ko count.. | error code | i.. | operat.. | process state | restart p | |
| 199 | Concentrator | MainAdmin | caricamento massivo OK.csv | ok | 27 | 0 | 0 | 0... | insert | analysis in queue | | |
| 198 | Meter | MainAdmin | serial18.csv | metr | 1 | 1 | 0 | 2... | insert | analysis completed | | |
| 197 | Substation | MainAdmin | SibOk.csv | ok | 1 | 1 | 0 | 2... | insert | analysis completed | | |
| 196 | Meter | MainAdmin | Cert3.csv | cert | 1 | 1 | 0 | 2... | insert | analysis completed | | |
| 193 | Pod | MainAdmin | PodcityKO.csv | d | 1 | 1 | 0 | 2... | insert | analysis completed | | |
| 192 | Pod | MainAdmin | PodItaly.csv | o | 1 | 0 | 0 | 2... | insert | analysis completed | | |
| 191 | Pod | MainAdmin | PodItaly.csv | jjj | 1 | 1 | 0 | 2... | insert | analysis completed | | |
| 186 | Meter | MainAdmin | serial18.csv | 18 | 1 | 0 | 0 | 2... | insert | analysis completed | | |
| 185 | Meter | MainAdmin | serial18.csv | serial18 | 1 | 1 | 0 | 2... | insert | analysis completed | | |
| 184 | Pod | MainAdmin | podmilano.csv | milano | 1 | 1 | 0 | 1... | insert | analysis completed | | |
| Total Items: 141 | | | | | | | | | | | | |

For example the loading file in the example is finished with one record discarded, for seeing the detail it needs to click on the red 1 , an excel sheet is open with the details.

6.2. Main Provisioning Widgets

The main provisioning area are partitioned in some main Widgets:

The screenshot shows two main sections: 'Concentrators' and 'Communication'. The 'Concentrators' section has a sub-item 'Concentrators configuration'. The 'Communication' section has a sub-item 'Modules, Sims, Apn, Ethernet'.

The Concentrators Widgets contains all the objects belonging to the Concentrator entity while the Communication Widget contains all the object through the Concentrator communicates with external environment.

Concentrators Widget detailed list:

- Substation Management
- Transformer Management
- Concentrator Management
- Firmware Management

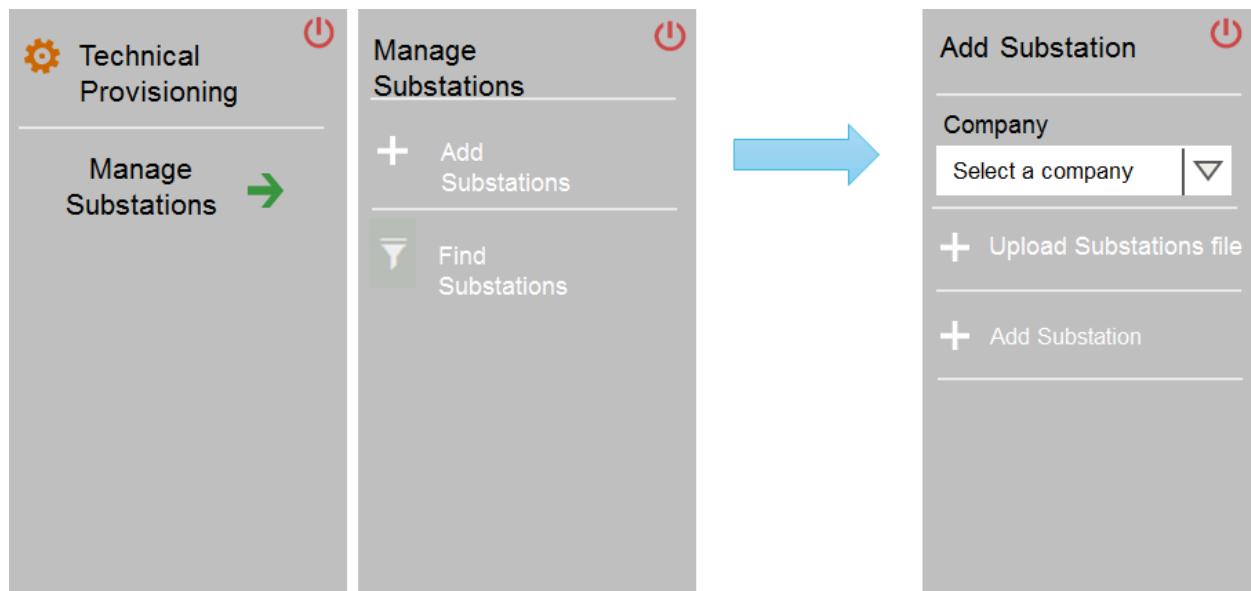
Communication Widget detailed list:

- Sim Management
- Module Management
- Apn Management
- Ethernet Management

In the follow paragraphs any single object will be detailed.

6.3. Substation Management

Clicking on the Substation Management function the Manage Substation form is open on the right.



ADD SUBSTATION

Selecting the **Add Substations** link the Add Substation form is shown, it's possible to Add a new Substation in the system using the Add form that is visible clicking on the **+ Add Substations** link, An Add Substation form filter is shown on the right, it needs to select a Company, populate all the region tree combo box and and clicking on the **Click to Add Substation** link

The figure consists of three side-by-side screenshots of a web application's 'Add Substation' form. A blue arrow points from left to right between the first two screenshots, and another blue arrow points from the second to the third.

- Screenshot 1:** Shows a 'Company' dropdown menu with the placeholder 'Select a company'. Below it are two buttons: '+ Upload Substations from file' and '+ Add Substation'.
- Screenshot 2:** Shows the same 'Company' dropdown. Below it is a 'Città' (City) dropdown with several options listed. At the bottom of the form is a green button labeled 'Click to Add Details' with a green arrow icon.
- Screenshot 3:** Shows the expanded form with several mandatory fields: 'Substation Name*' (with a red circle around the asterisk), 'Address*', 'Timezone*', 'Latitude*', 'Longitude*', and 'Altitude'. Each field has a corresponding input box. A green 'Add' button is located at the bottom right.

It's possible to fill the form, the fields with * are mandatory, Latitude and Longitude fields show a range of values with their format template, if other values are inserted the label is circled with a red line.

Es:

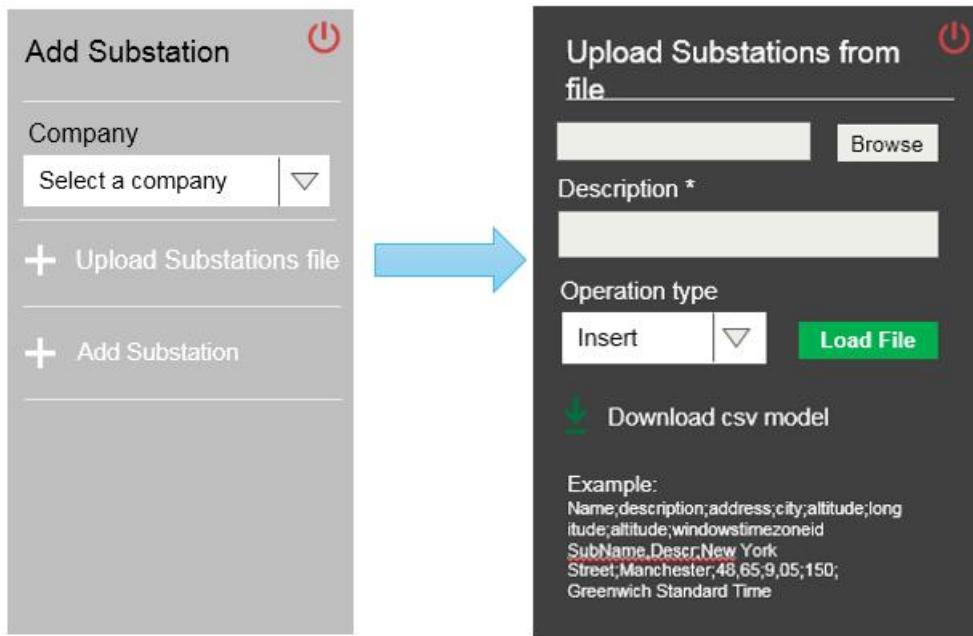
The figure shows two examples of input fields with validation messages:

- Latitude ***: The message says "between -35.68256 and -31.34340". The input field contains "-29".
- Longitude ***: The message says "between -71.92537 and -69.91761". The input field is empty.

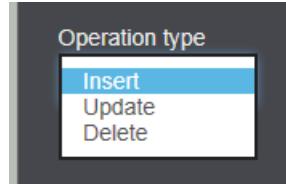
Filling the Add form and clicking then on the Add button the Substation is inserted in the system.

MASSIVE LOADING

It's possible to load a massive number of Substations using a loading file.

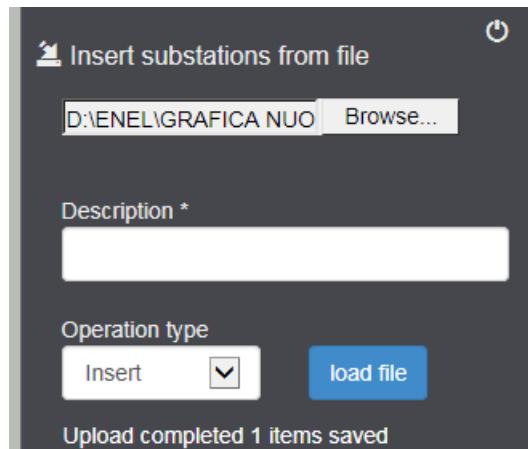


Clicking on the Download csv model icon it's possible to download a file template, then it's possible to fill it and choice then an operation type:



It's possible to load the massive file using the Browse button and clicking then on the **Load File** button.

When the loading has been executed a notify message is shown:



The .csv file template is the following:

| name | description | address | city | latitude | longitude | altitude | windowstimezoneid |
|----------|-----------------|-------------|-----------|----------|-----------|----------|--------------------|
| fakeName | fakeDescription | fakeAddress | fackeCity | 33.12 | 124.54 | | Greenwich Standard |

The windowstimezoneid is corrected if it's filled with one of the value shown in the timezone Settings (see 4.3 section)

For detail on this function see the chapter 4.1 - Main Provisioning features- Massive file loading
There are some constraints on the fields file:

The Name field is the key of the file

The Substation Name special char admitted are ('-', '_')

EDIT OR REMOVE SUBSTATIONS

It's possible to Edit or Remove a Substation filling the Find filter for viewing the desired substations list:

The screenshot shows two windows side-by-side. The left window is titled 'Find Substations' and contains fields for 'Company' (with a dropdown menu 'Select a company'), 'City' (with a dropdown menu 'Select a city'), and 'Select criteria' (with a dropdown menu 'Substation name...'). Below these is an 'Edit ...' button and a link 'Click to see results'. The right window is titled 'Substations data' and displays a grid with columns: Cancel, Edit, Id, Substation Name, Description, Address, Latitude, Longitude, Altitude, and Insert Date. Each row in the grid has a red trash icon and a green edit icon. A blue arrow points from the 'Find Substations' window to the 'Substations data' window.

It's possible to see All the Company Substations or to select a punctual Substation filling the field value combo box of the filter in the Select criteria;

Clicking then on **Click to see results** the Substations Data appears on the grid;

- It's possible to delete the substations clicking on the icon, a confirm message is shown.
- It's possible to update a substation record clicking on the icon.

The screenshot shows the 'Substations data' grid from the previous step and an 'Edit Substation' dialog box. The 'Substations data' grid has the same structure as before. The 'Edit Substation' dialog box has fields for 'Substation Name*', 'Description', 'Address*', 'Latitude*', 'Longitude*', and 'Altitude', each with a corresponding input field. A large blue arrow points from the 'Substations data' grid to the 'Edit Substation' dialog.

It's possible to modify some field, clicking then on the Edit button the Substation record is updated.

Substation associated to a Transformer: In the grid when a Substation is associated to a Transformer it's not possible to Delete the Substation, it's possible only to update it
For example:

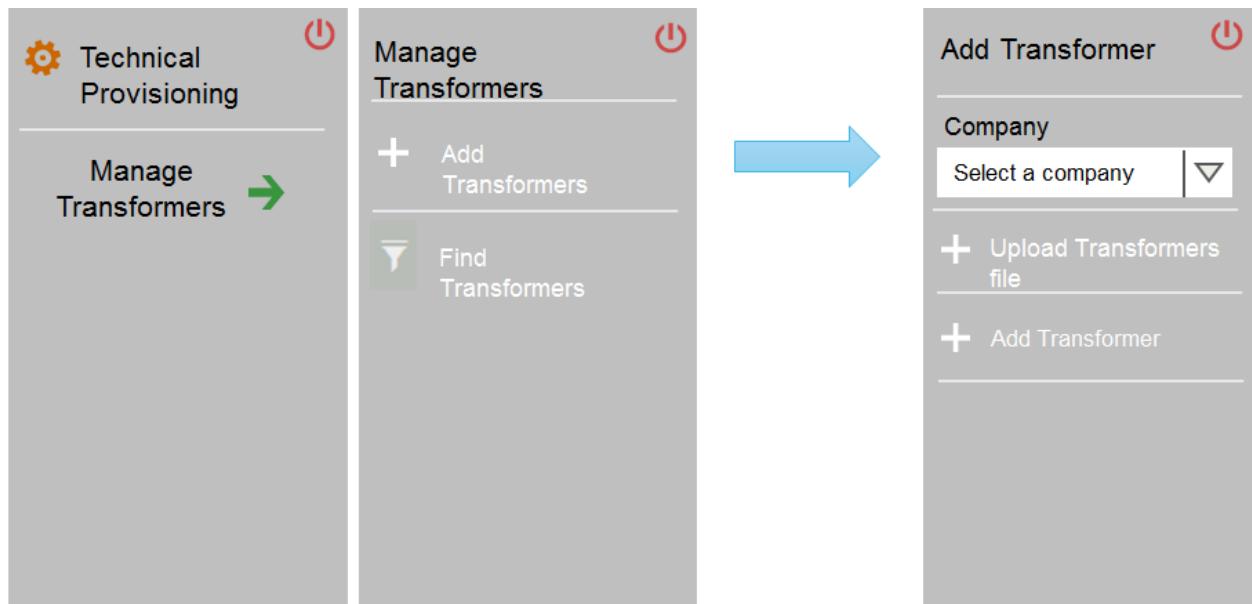
| | 50883 | SubItalyMi2 | SubItalyMi1 descr | Via Roma, 4 | zona1 | 39.1 | 7.1 | | |
|--|-------|-------------|-------------------|-------------|-------|------|-----|--|--|

Substation associated to an Installed Concentrator: In the grid when a Substation is associated to an installed Concentrator it's not possible to Delete and to Update the Substation. For example:

| | 4 | Substation Seve... | severino substati... | Via Severino Vill... | Quartiere 1 | 29.987654 | 32.987654 | | 22-03-2017 | |
|--|---|--------------------|----------------------|----------------------|-------------|-----------|-----------|--|------------|--|

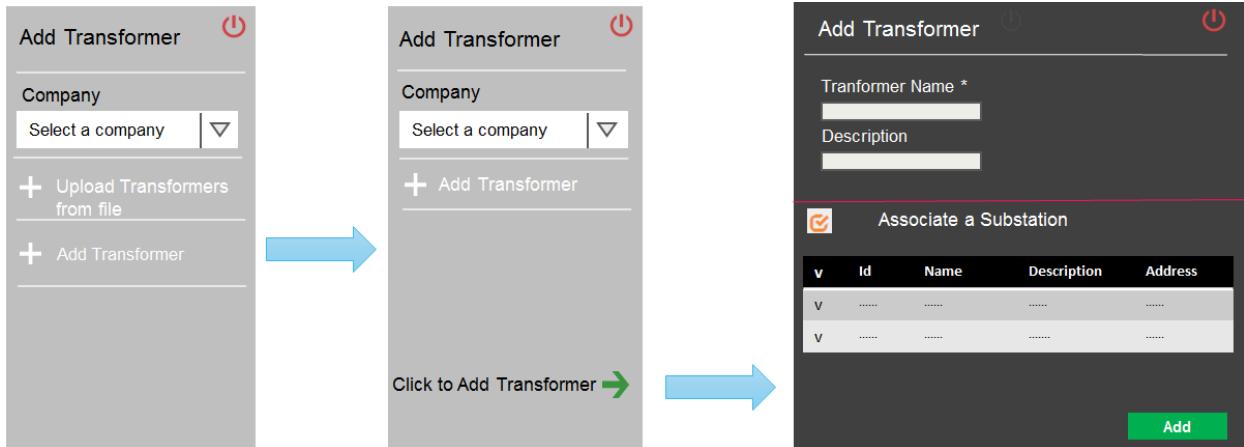
6.4. Transformer Management

Clicking on the Transformer Management function the Manage Transformer form is open on the right.



ADD TRANSFORMER

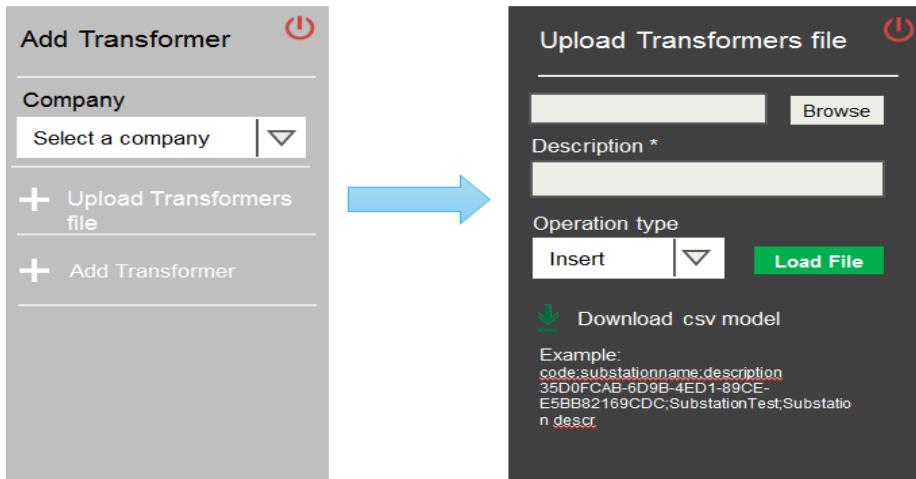
Selecting the **Add Transformers** link the Add Transformer form is shown, it's possible to Add a new Transformer in the system using the Add form that is visible clicking on the **+ Add Transformers** link. An Add Transformer form filter is shown on the right it needs to select a Company and clicking on the **Click to Add Transformer** link



It's possible to fill the form, the fields with * are mandatory, in the Associate a Substation table it needs to select a Substation, the Add button will be enabled, clicking then on the **Add** button the Transformer will be inserted in the system.

MASSIVE LOADING

It's possible to load a massive number of Transformers using a loading file.



Clicking on the Download csv model icon it's possible to download a file template, then it's possible to fill it (the only operation type is the Insert) and load it using the Browse button and clicking then on the **Load File** button.

When the loading has been executed a notify message is shown.

For detail on this function see the chapter 4.1 - Main Provisioning features- Massive file loading

Constraints:

- The Code or Transformer Name field is the key of the file
- It's possible to link many Transformers to a Substation

EDIT OR REMOVE TRANSFORMERS

It's possible to Edit or Remove a transformer filling the Find filter for viewing the desired transformers list:

The diagram illustrates the workflow for managing transformers. On the left, the 'Find Transformers' interface is shown, featuring a dropdown for 'Company' and a 'Select criteria' section with a dropdown for 'All, Transformer name'. A blue arrow points from this interface to the right, leading to the 'Transformers Data' grid. The grid has columns for 'Cancel', 'Edit', 'Id', 'Name', 'Description', 'Substation name', and 'Insert Date'. Each row contains a red trash icon and a green edit icon.

It's possible to see All the Company Transformers or to select a punctual Transformer filling the field value combo box of the filter in the Select criteria;

Clicking then on **Click to see results** the Transformers Data appears on the grid;

- It's possible to delete the transformers clicking on the icon, a confirm message is shown.
- It's possible to update a Transformer record clicking on the icon.

The diagram shows the 'Edit Transformer' form on the right, which includes fields for 'Transformer Name *' and 'Description'. Below these is a section titled 'Associate a Substation' with a table containing three rows. A large blue arrow points from the 'Transformers Data' grid on the left towards the 'Edit Transformer' form, indicating the process of selecting a specific transformer to edit its details.

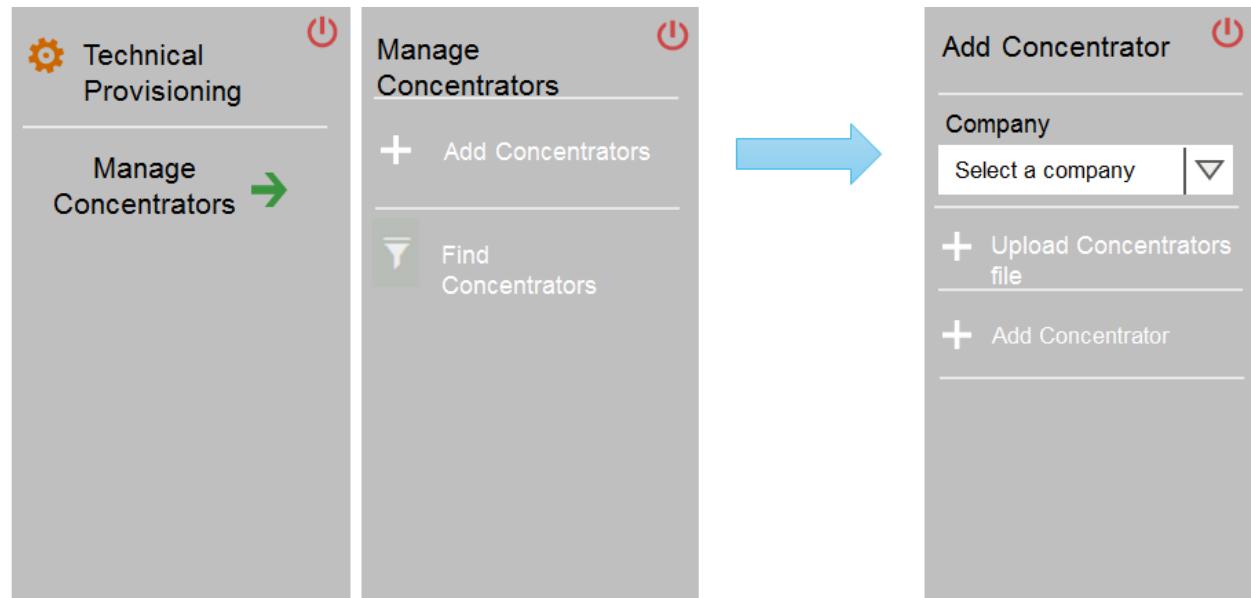
It's possible to modify the fields in the form except the **Transformer Name** field, clicking then on the **Edit** button the Transformer record is updated

Transformer associated to an Installed Concentrator: In the grid when a Transformer or many Transformers are associated to an installed Concentrator it's not possible to Delete or to Update the Transformer, the Update and Delete icons are not visible.
For example:

| | | Name | Description | Substations |
|--|-------|-----------|-------------|-------------|
| | 50795 | TD-800531 | TD-800531 | SubItalyRo2 |

6.5. Concentrator Management

Clicking on the Concentrator Management function the Manage Concentrator form is open on the right.



ADD CONCENTRATOR

Selecting the **Add Concentrators** link the Add Concentrator form is shown, it's possible to Add a new Concentrator in the system using the Add form that is visible clicking on the **+ Add**

Concentrators link. An Add Concentrator form filter is shown on the right, it needs to select a Company and clicking then on the **Click to Add Concentrator** link

Add Concentrator

Company

Select a company

+ Upload Concentrators from file

+ Add Concentrators

Add Concentrators

Company

Select a company

+ Add Concentrator

Click to Add Concentrator ➔

Add Concentrator

Serial Number *

AdIvc

Elenco tag

Add

It's possible to fill the form, the field with * are mandatory, a special field 'Elenco tag' is selectable in the form where it's possible to Tag a concentrator using a default set of tags; the tags are useful for searching punctual concentrators.

MASSIVE LOADING

It's possible to load a massive number of Concentrators using a loading file.

Add Concentrator

Company

Select a company

+ Upload Concentrators file

+ Add Concentrator

Upload Concentrators file

Description *

Operation type

Insert

Load File

Download csv model

Example:
serialnumber,adIvc;tag
13CEC50610011073;ABC;Cerco

Clicking on the Download csv model icon it's possible to download a file template, then it's possible to fill it and to load it using the Browse button and clicking then on the Load File button.

For detail on this function see the chapter 4.1 - Main Provisioning features- Massive file loading

There are some constraints on the fields file:

| Field | Field length | Field type |
|--------------------|-----------------------|--------------|
| serialnumber | 16 (not < or > of 16) | alphanumeric |
| ADLVC (o neuronid) | 12 (not < or > of 12) | alphanumeric |

- The serialnumber field is the key of the file

EDIT OR REMOVE CONCENTRATORS

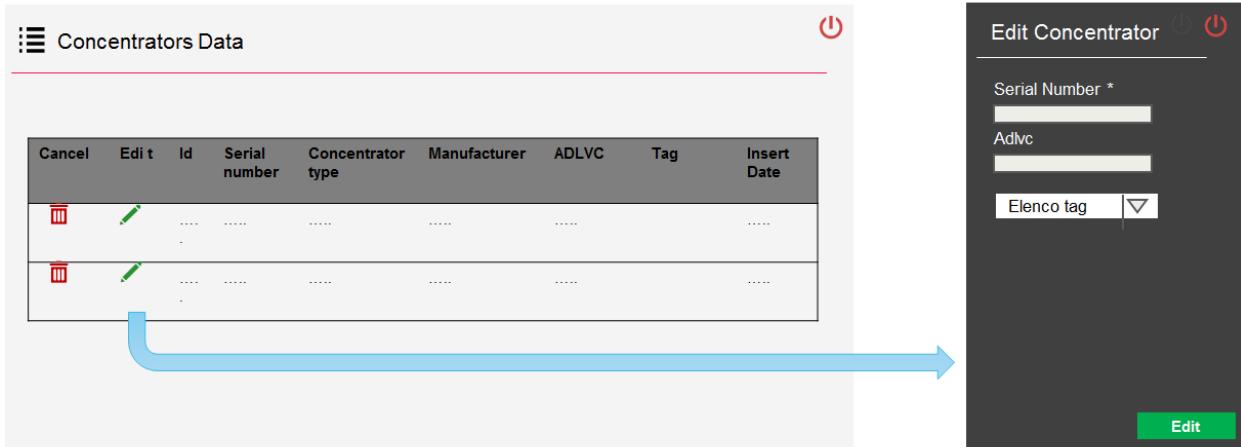
It's possible to Edit or Remove a concentrator filling the Find filter for viewing the desired concentrators list.

The image shows two screenshots illustrating the process of viewing concentrator data. On the left, the 'Find Concentrators' interface is displayed. It includes a 'Company' dropdown, a 'Select criteria' dropdown containing options like 'ALL, Tag, Serialnumber, Adlvc, Manufacturer, Concentrator Type ...', and a 'Click to see results' button with a magnifying glass icon. A blue arrow points from this interface to the right screenshot. On the right, the 'Concentrators Data' grid is shown. The grid has columns for 'Cancel', 'Edit', 'Id', 'Serial number', 'Concentrator type', 'Manufacturer', 'ADLVC', 'Tag', and 'Insert Date'. Each row in the grid contains a red trash can icon in the 'Cancel' column and a green pencil icon in the 'Edit' column.

It's possible to see All the Company Concentrators or to select a punctual Concentrator filling the field value combo box of the filter in the Select criteria section;

Clicking then on **Click to see results** the Concentrators Data appears on the grid;

- It's possible to delete the concentrators clicking on the icon, a confirm message is shown.
- It's possible to update a concentrator record clicking on the .



The Concentrator type field and the Manufacturer are not updatable because are detected automatically by the system through the Serial Number.

Concentrator with installed state: In the grid when a Concentrator has an installed state it's not possible to Delete or to Update the Concentrator, the Update and Delete icons are not visible. For example:

| | | Id | Serialnumber | Type | Manufacturer | ADLVC | Tag | Insert date |
|--|--|--------|------------------|--------|--------------|--------------|-----|-------------|
| | | 127167 | 14CEC50511000150 | CERC01 | Ducati | 829614010510 | | 24-01-2018 |

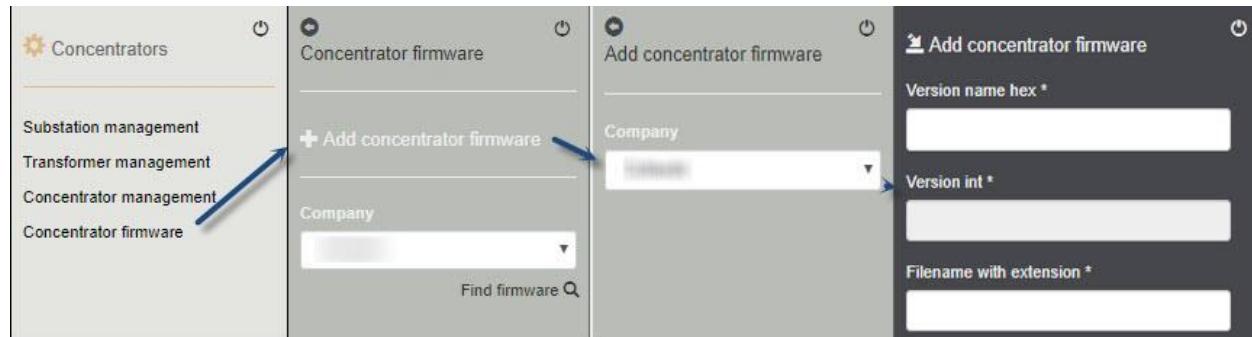
It's possible to download the Concentrator manufacturing report in the Report/Technical Reports widget (9.1)

6.6. Concentrator firmware

The feature allows to manage different releases of concentrator's firmware; to add a new firmware there is the need to upload on backend the file related to desired firmware, so the activity has to be coordinated with support team.

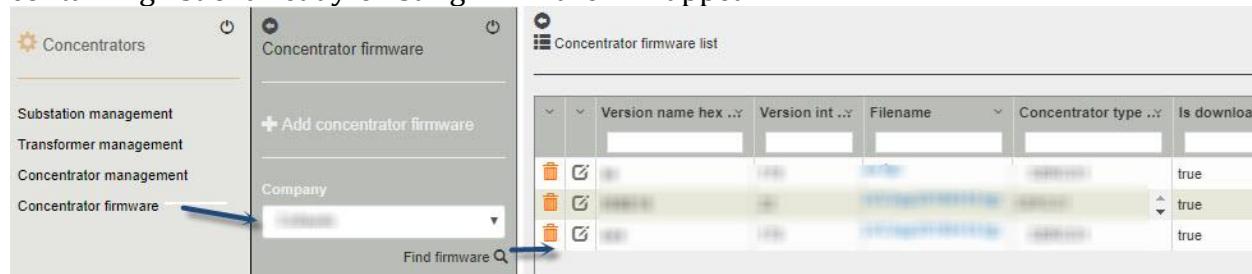
ADD CONCENTRATOR FIRMWARE

The user can add a specific reference to concentrator's firmware by indicating its version (both HEX and INT, the second one read-only and calculated in real-time), complete filename, type(s) of concentrator linked to and a flag in case firmware is downloadable. In addition, if "is file uploaded is flagged", the firmware's file should already been uploaded in storage; the textarea at the end of the frame show the path of firmware



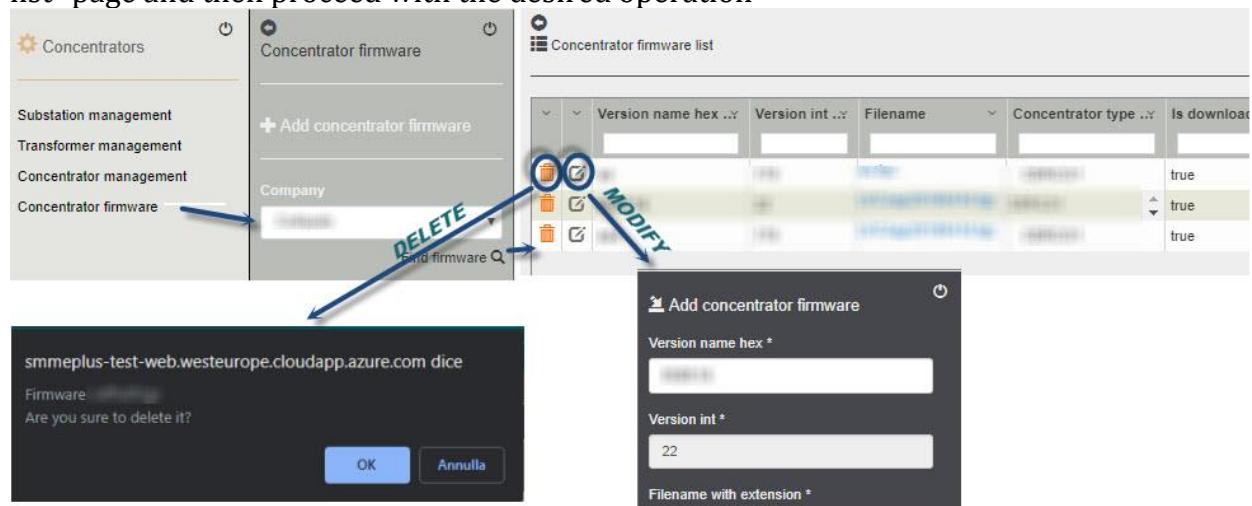
SEARCH CONCENTRATOR FIRMWARE

In order to find concentrators' firmware the user can access the same menu item and, while on "concentrator firmware" frame, choose desired company before clicking on lens button: a grid containing list of already-existing firmware will appear



EDIT OR REMOVE CONCENTRATOR FIRMWARE

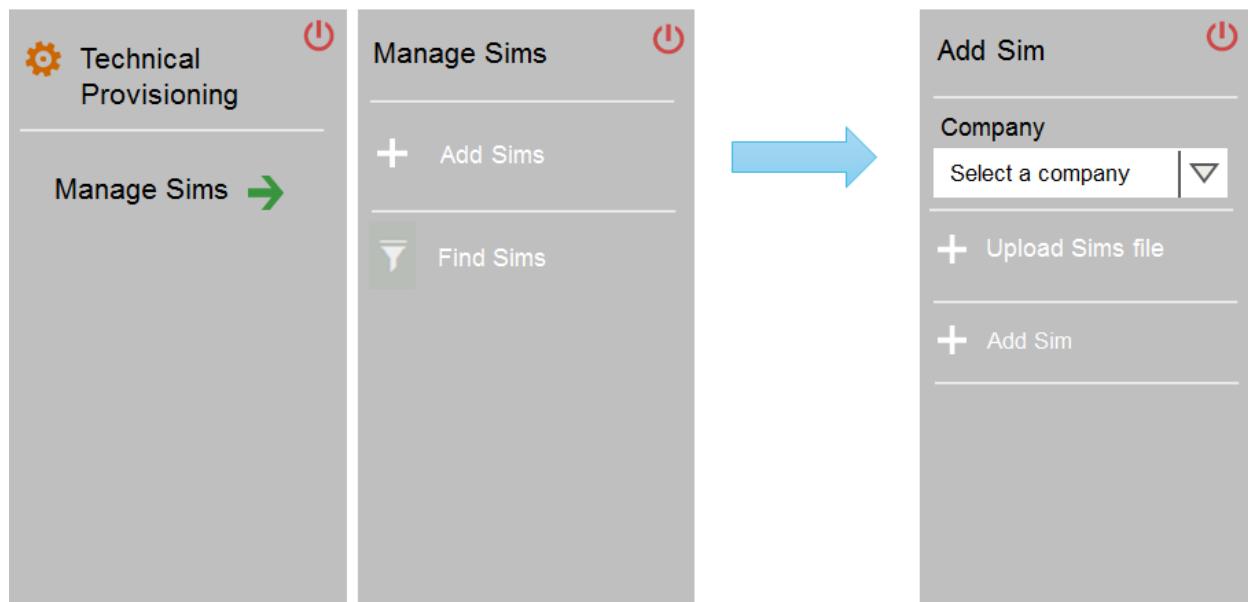
Details about concentrator firmware can be modified on ePlus as well as a concentrator can be completely deleted from system. To do so the user is required to access "concentrator firmware list" page and then proceed with the desired operation



Deletion shows a confirmation popup, while modification shows the same frame seen on firmware addition (with fields already filled in).

6.7. Sim Management

Clicking on the Sim Management function the Manage Sim form is open on the right.



ADD SIM

selecting the **Add Sims** link the Add Sim form is shown, it's possible to Add a new Sim in the system using the Add form that is visible clicking on the **+ Add Sims** link.

An Add Sim form filter is shown on the right and it needs to select a Company and clicking on the **Click to Add Sim** link

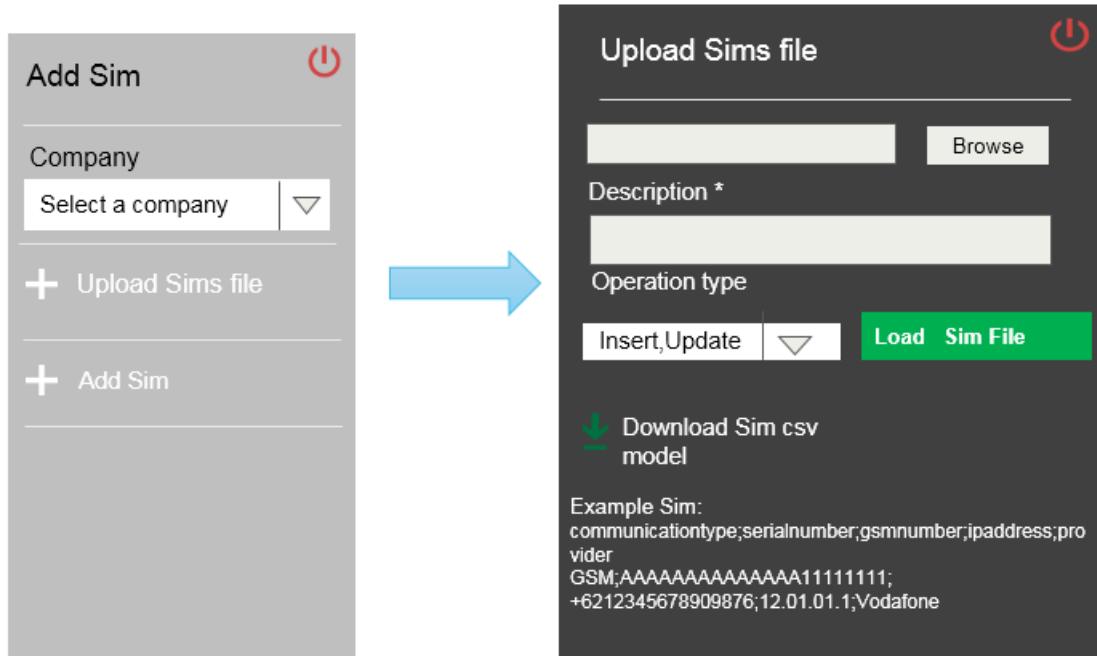
The figure consists of three screenshots of a mobile application interface for adding a SIM card:

- Screenshot 1:** Shows a simplified form with a "Company" field containing a dropdown menu "Select a company" and a "Upload Sims file" button.
- Screenshot 2:** Shows a more detailed form with a "Company" field, an "Add Sim" button, and a "Click to Add Details" button with a green arrow icon.
- Screenshot 3:** Shows a full form with fields for "Serial Number *", "GSM Number", "IP Address*", "Provider *", and "Communication Type *". The "Provider *" and "Communication Type *" fields have red asterisks indicating they are mandatory. An "Add" button is located at the bottom right.

It's possible to fill the form, the field with * are mandatory, if the IP Address or Gsm Number or Serial Number are filled with a wrong value the label is circled with a red line and a correct value is required, clicking then on the Add button the new Sim is inserted into the system.

MASSIVE LOADING

It's possible to load a massive number of Sims using a loading file.



Clicking on the Download csv model icon it's possible to download a file template, then it's possible to fill it and to load it using the Browse button and clicking on the Load File button. For details on this function see the chapter 4.1 - Main Provisioning features- Massive file loading

There are some constraints on the fields file:

| Field | Format description | Field type |
|--------------|---|--------------|
| serialnumber | Numeric with variable length | numeric |
| Gsm number | + (nnnnnnnnnnnnnn) Es: +6212345678909876 The field has to be a valid Gsm Number | alphanumeric |

- The serialnumber field is the key of the file

EDIT OR REMOVE SIMS

It's possible to Edit or Remove a Sim filling the Find filter for viewing the desired sim list.

The screenshot shows two windows side-by-side. On the left, the 'Find Sims' window has a dropdown menu 'Select a company' and a 'Select criteria' dropdown containing 'All, serialnumber, GSM Number.' A blue arrow points from this window to the right one. The right window is titled 'Sims Data' and displays a grid with columns: Cancel, Edit, Id, Serial number, Gsm number, Ip address, Provider, Communication type, and Insert Date. Each row in the grid contains a red delete icon and a green edit icon.

It's possible to see All the Company Sims otherwise to select a punctual Sim using select criteria combo box filters;

Clicking then on **Click to see results** the Sims Data appears on the grid;

- It's possible to delete the Sims clicking on the icon, a confirm message is shown.
- It's possible to update a Sim record clicking on the icon.

The screenshot shows two windows. On the left is the 'Sims Data' grid from the previous screenshot. A large blue arrow points from the bottom of the grid to the right window, which is titled 'Edit sim'. This window contains fields for 'Serial Number *' (with a red asterisk), 'GSM Number', 'IP Address *', 'Provider *', and 'Communication Type *'. A green 'Edit' button is at the bottom.

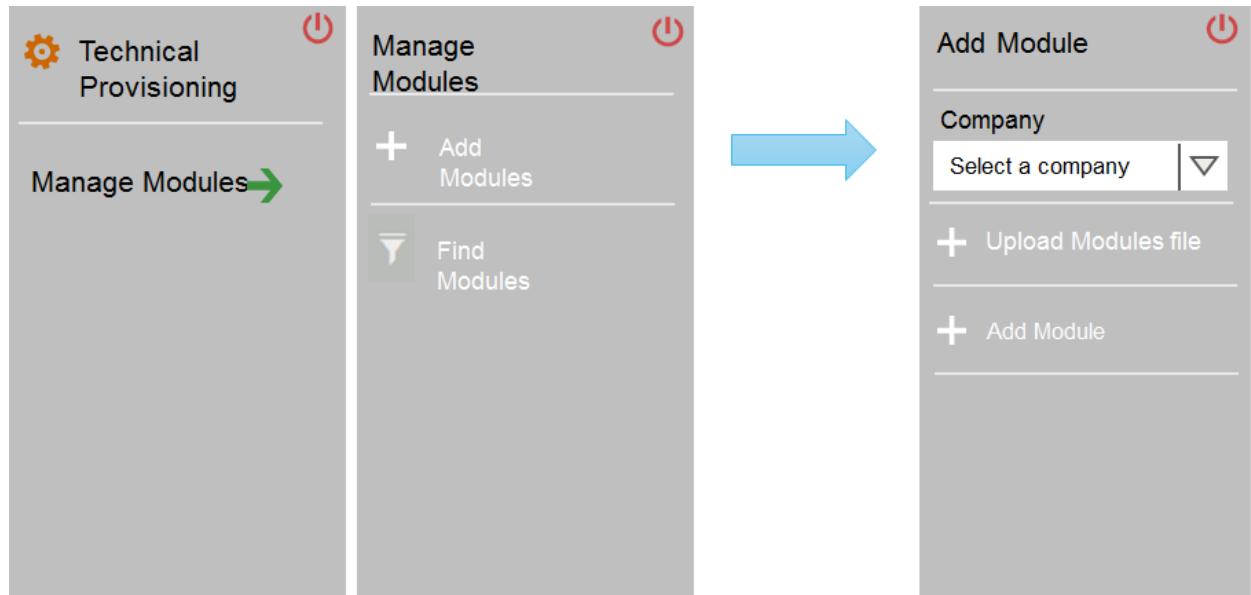
The Serial Number is not updatable because it is the record key.

Sim in installed state: In the grid when a Sim is associated to a Concentrator in installed state it's not possible to Delete or to Update the Sim, the Update and Delete icons are not visible. For example:

| | | Id | Serial number | GSM number | Ip address | Provider | Communication type | Date |
|--|--|--------|---------------|-----------------|---------------|----------|--------------------|------------|
| | | 104682 | 4496599 | +97211111111... | 192.122.19.51 | Vodafone | GSM | 31-01-2018 |

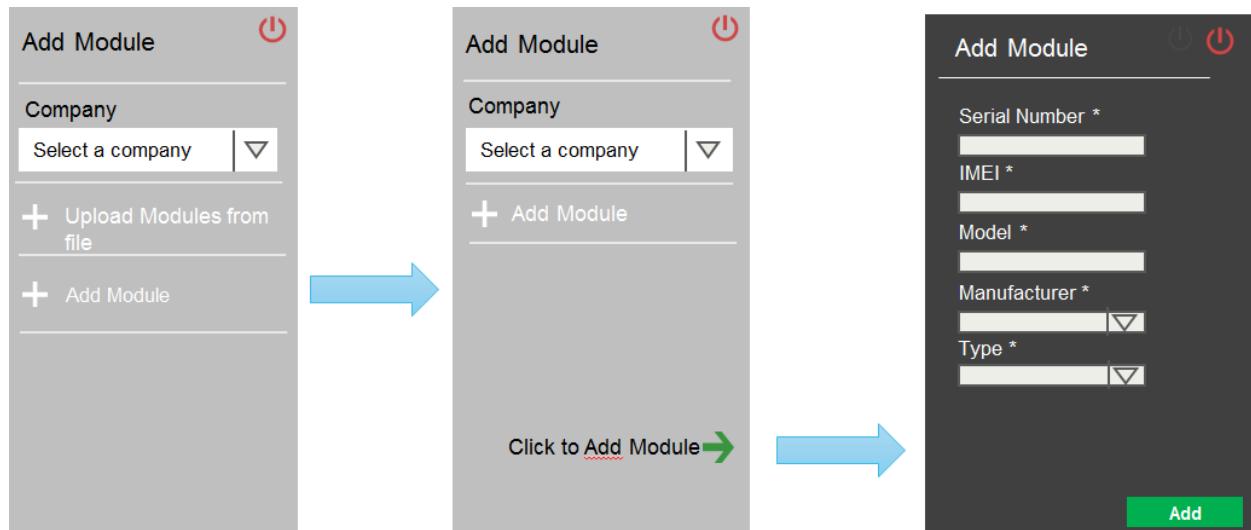
6.8. Module Management

With this function it's possible to insert the Modem objects in the manufacturing table. Clicking on the Module Management function the Manage Module form is open on the right.



ADD MODULE

selecting the **Add Module** link the Add Module form is shown, it's possible to Add a new Module in the system using the Add form that is visible clicking on the **+ Add Modules** link.
An Add Module form filter is shown on the right and it needs to select a Company and clicking on the **Click to Add Module** link.



It's possible to fill the form, the field with * are mandatory, when all the fields are filled the Add button becomes enabled, clicking on the Add button the new Module is inserted into the system.

MASSIVE LOADING

It's possible to load a massive number of Modules using a loading file.

The diagram illustrates the process of uploading a modules file. It shows two screens: 'Add Module' on the left and 'Upload Modules file' on the right. A large blue arrow points from the 'Add Module' screen to the 'Upload Modules file' screen.

Add Module Screen:

- Header: Add Module
- Section: Company
 - Select a company dropdown menu
- Buttons: + Upload Modules file, + Add Module

Upload Modules file Screen:

- Header: Upload Modules file
- Section: Description *
 - Input field
 - Browse button
- Section: Operation type
 - Insert dropdown menu
 - Load File button
- Links: Download csv model
- Text: Example:
manufacturer;serialnumber;imei;model;type;
A123456789A123456789A123456789BB;AABB
CCDD12345678;Model ABCD;PSTN

Clicking on the Download csv model icon it's possible to download a file template, then it's possible to fill it and to load it using the Browse button and clicking on the Load File button. For details on this function see the chapter 4.1 - Main Provisioning features- Massive file loading

There are some constraints on the fields file:

| Field | Field length | Field type |
|---------------|-----------------------|------------|
| serial number | < 50 | numeric |
| imei | 15 (not < or > of 15) | numeric |

The serialnumber field is the key of the file

EDIT OR REMOVE MODULES

It's possible to Edit or Remove a Module filling the Find filter for viewing the desired module list.

The screenshot shows the 'Find Modules' interface. On the left, there's a sidebar with a dropdown for 'Company' and a dropdown for 'Select criteria' (serialnumber, imei, model, type). Below these are 'Edit ...' and 'Click to see results' buttons with a magnifying glass icon. A blue arrow points from this interface to the right.

Modules Data

| Cancel | Edit | Id | Serial number | Type | Manufacturer | Imei | Model | Insert Date |
|--------|------|-------|---------------|-------|--------------|-------|-------|-------------|
| | | | | | | | | |
| | | | | | | | | |

It's possible to see All the Company Modules or to select punctual Module using select criteria
combo box filters;

Clicking then on **Click to see results** the Modules Data appears on the grid;

- It's possible to delete the Modules clicking on the icon, a confirm message is shown.
- It's possible to update a Module record clicking on the icon.

A blue arrow points from the 'Modules Data' grid on the left to the 'Add Module' form on the right.

Modules Data

| Cancel | Edit | Id | Serial number | Type | Manufacturer | Imei | Model | Insert Date |
|--------|------|-------|---------------|-------|--------------|-------|-------|-------------|
| | | | | | | | | |
| | | | | | | | | |

Add Module

| | |
|-----------------|----------------------|
| Serial Number * | <input type="text"/> |
| IMEI * | <input type="text"/> |
| Model * | <input type="text"/> |
| Manufacturer * | <input type="text"/> |
| Type * | <input type="text"/> |
| Add | |

The Serial Number is not updatable because it is the record key.

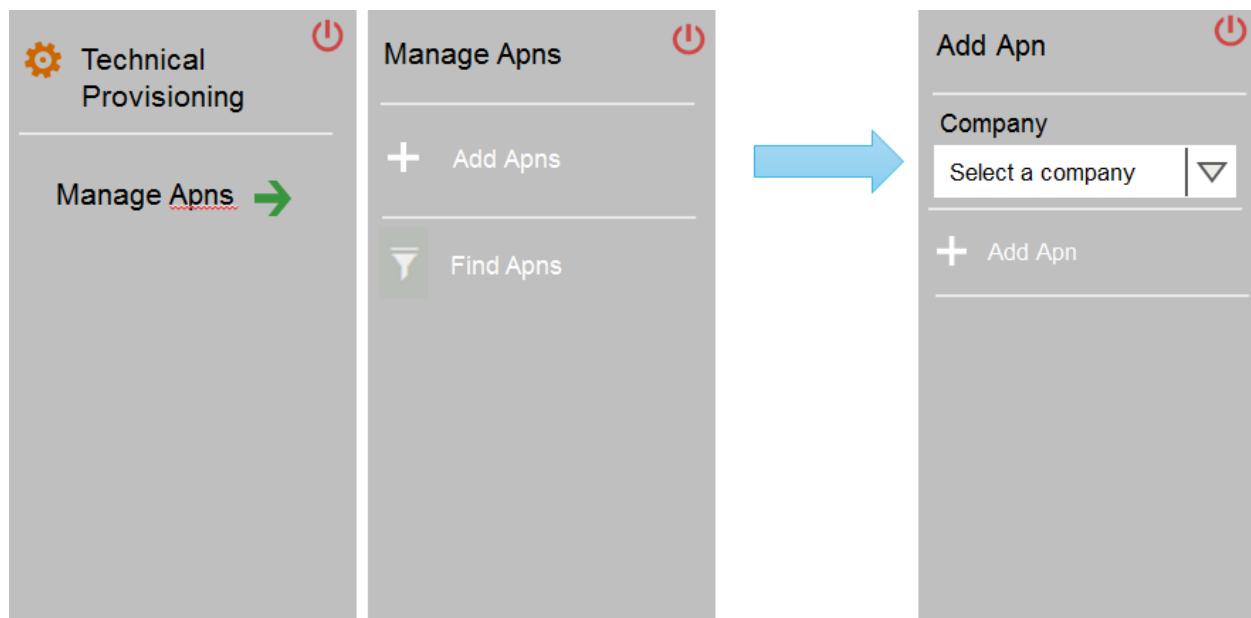
Module in installed state: In the grid when a Module is associated to a Concentrator in installed state it's not possible to Delete or to Update the Module, the Update and Delete icons are not visible

For example:

| | Id | Serial number | Type | Manufacturer | IMEI | Model | Insert date |
|--|-----|---------------|------|--------------|-----------------|----------|-------------|
| | 502 | 5449119 | GSM | Ducati | 552267077856788 | M3C-CM10 | 30-01-2018 |

6.9. Apn Management

With this function it's possible to insert the Apn objects in the manufacturing table. Clicking on the Apn Management function the Manage Apn form is open on the right.



ADD APN

selecting the **Add Apn** link the Add Apn form is shown, it's possible to Add a new Apn in the system using the Add form that is visible clicking on the **+ Add Apn** link.

An Add Apn form filter is shown on the right, it needs to select a Company and clicking on the **Click to Add Apn** link.

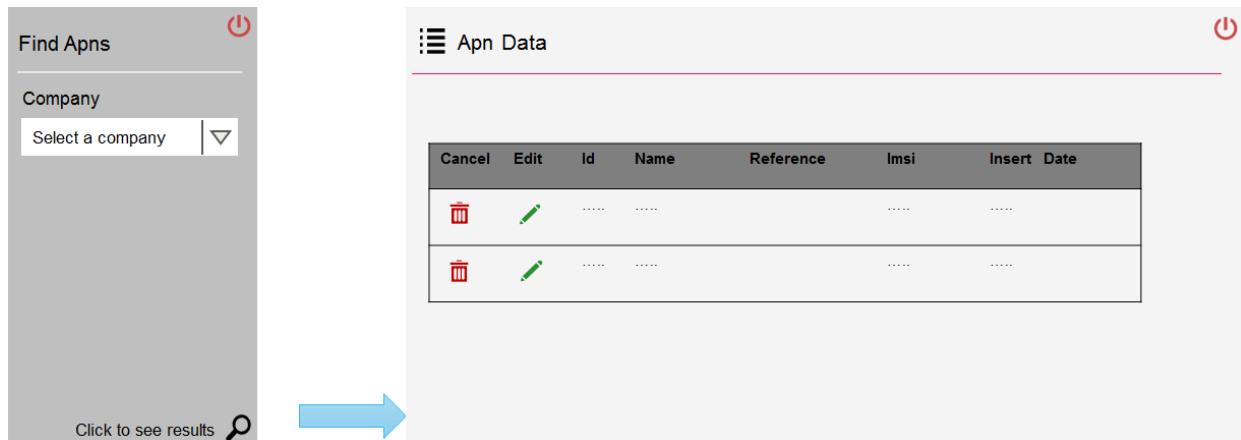
The figure consists of three screenshots of a web application interface for adding a new APN:

- Screenshot 1:** Shows a dropdown menu labeled "Select a company". A blue arrow points from this screen to the next one.
- Screenshot 2:** Shows a link labeled "+ Add Apn" and a button labeled "Click to Add Apn". A blue arrow points from this screen to the next one.
- Screenshot 3:** Shows a detailed form with fields for "Name *", "Reference *", and "IMSI *". At the bottom is a green "Add" button.

It's possible to fill the form, the field with * are mandatory, the **Reference** field has to be filled with the Server Name, when all the fields are filled the Add button becomes enabled, clicking then on the Add button the new Apn is inserted into the system.

EDIT OR REMOVE APNS

It's possible to Edit or Remove an Apn filling the Find filter for viewing the desired apn list.



It's possible to see All the Company Apns otherwise to select punctual Apn using select criteria combo box filters;

Clicking then on **Click to see results** the Apn Data appears on the grid;

- It's possible to delete the Apn clicking on the icon, a confirm message is shown.
- It's possible to update an Apn record clicking on the icon.

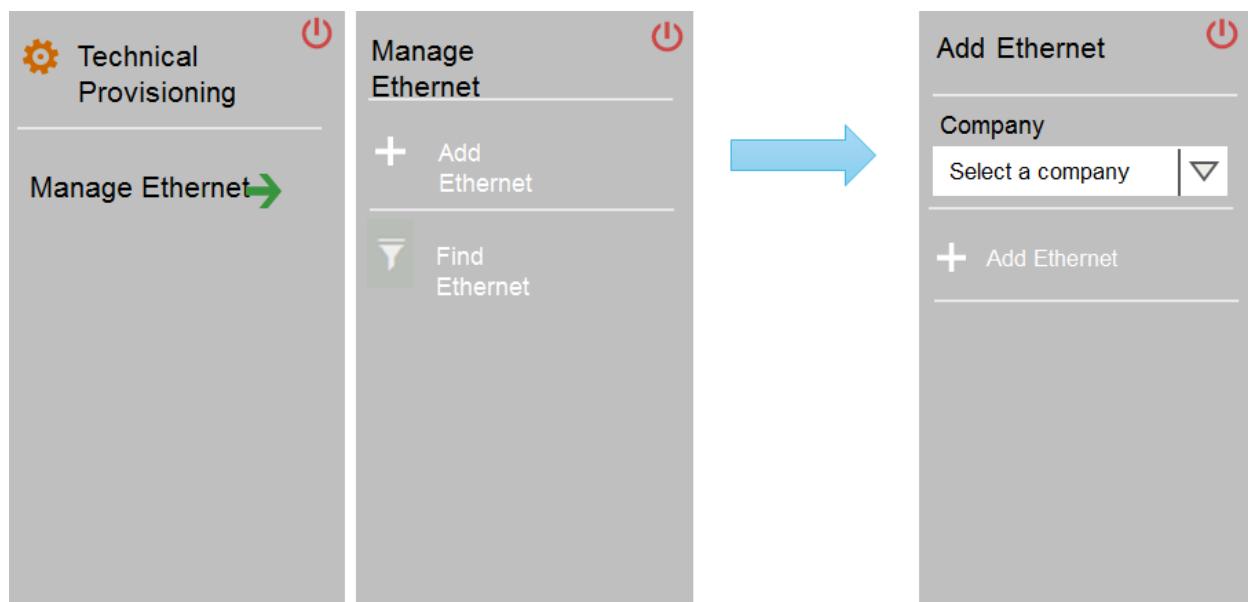


The Name is not updatable because it is the record key.

Apn in installed state: In the grid when an Apn is associated to a Sim and they are linked to a Concentrator in installed state it's not possible to Delete or to Update the Apn, the Update and Delete icons are not visible

6.10. Ethernet Management

With this function it's possible to insert the Ethernet objects in the manufacturing table. Clicking on the Ethernet Management function the Manage Ethernet form is open on the right.



ADD ETHERNET

selecting the **Add Ethernet** link the Add Ethernet form is shown, it's possible to Add a new Ethernet in the system using the Add form that is visible clicking on the **+ Add Ethernet** link.

An Add Ethernet form filter is shown on the right it needs to select a Company and clicking on the **Click to Add Ethernet** link

The figure consists of three side-by-side screenshots of a web interface for adding an Ethernet profile.
 - The first screenshot shows a basic form with a 'Company' dropdown menu and a '+ Add Ethernet' button.
 - The second screenshot shows the same form, but with a large, semi-transparent grey overlay covering most of the page. In the center of this overlay is the text 'Click to Add Ethernet' with a green arrow pointing to the right.
 - The third screenshot shows the full configuration form. It includes fields for 'Name Ethernet Profile*' (with a red asterisk indicating it's mandatory), 'Ethernet IP gateway*', 'Ethernet DNS1*', 'Ethernet DNS2', 'Ethernet IP address*', 'Ethernet IP mask*', and two checkboxes for 'Mutual Applicative Authentication' and 'Ethernet Enabled'. Below these are sections for 'Optional Parameters (up to 5 configurations)' and an 'Add' button.

It's possible to fill the form, the field with * are mandatory, The Ip address type field has to be a correct value otherwise the label field is circled with a red line and a correct value is required, when all the fields are filled the Add button becomes enabled, clicking on the Add button the new Ethernet is inserted into the system.

EDIT OR REMOVE ETHERNET

It's possible to Edit or Remove an Ethernet filling the Find filter for viewing the desired Ethernet list.

The screenshot shows two consecutive screens. The first screen is titled 'Find Ethernet' and contains a dropdown menu labeled 'Company' with the placeholder 'Select a company'. Below it is a button 'Click to see results' with a magnifying glass icon. A blue arrow points from this screen to the second one. The second screen is titled 'Ethernet Data' and displays a data grid with columns: Canc, Edit, Id, Name, Gateway, Address, Mask, DNS1, DNS2, Is maa, Is enabled, and Insert Date. Each row in the grid has a red trash can icon in the 'Canc' column and a green pencil icon in the 'Edit' column.

It's possible to see All the Company Ethernets otherwise to select punctual Ethernet using select criteria combo box filters;

Clicking then on **Click to see results** the Ethernet Data appears on the grid;

- It's possible to delete the Ethernet clicking on the icon, a confirm message is shown.
- It's possible to update an Ethernet record clicking on the .

The screenshot shows the 'Edit Ethernet' dialog box. It includes fields for 'Name Ethernet Profile*' (with a red circle around the label), 'Ethernet IP gateway*', 'Ethernet DNS1*', 'Ethernet DNS2*', 'Ethernet IP address*', 'Ethernet IP mask*', and checkboxes for 'Mutual Applicative Authentication' and 'Ethernet Enabled'. Below these are 'Optional Parameters (up to 5 configurations)' with fields for 'Ethernet IP address*', 'Ethernet IP mask*', and 'Metric*'. A green 'Edit' button is at the bottom right. A blue arrow points from the 'Edit' column of the 'Ethernet Data' grid in the previous screenshot to this dialog box.

The field 'Name Ethernet Profile' is not updatable because it is the record key.

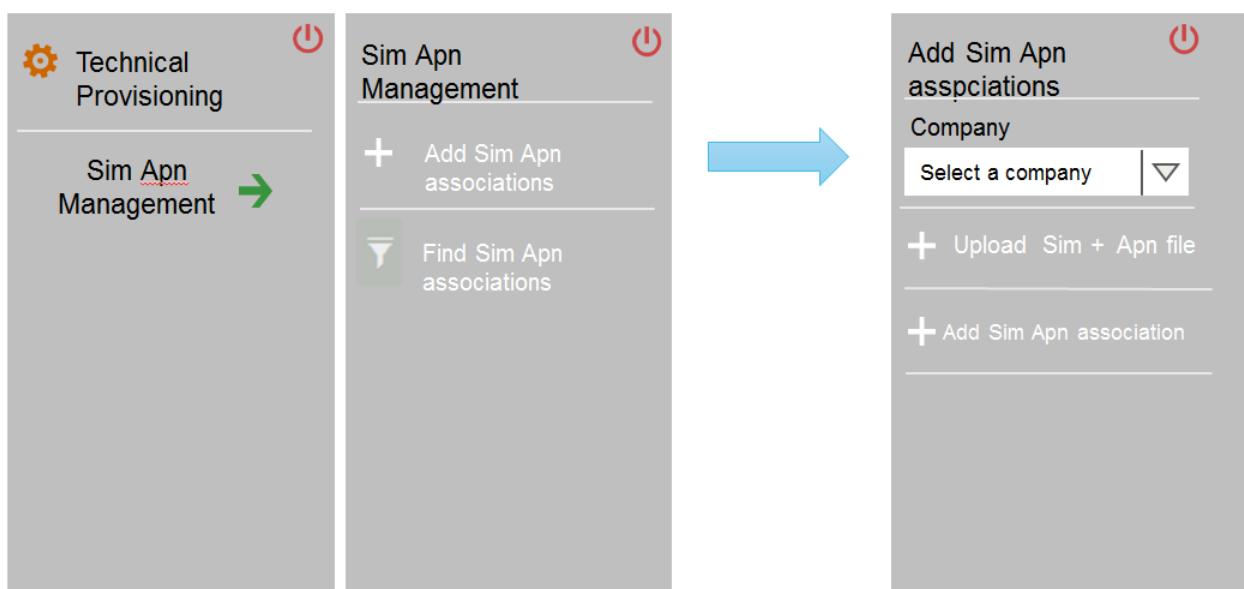
The Ip address type field has to be a correct value otherwise the label field is circled with a red line and a correct value is required.

Ethernet in installed state: In the grid when an Ethernet is associated to a Concentrator in installed state it's not possible to Delete or to Update the Ethernet, the Update and Delete icons are not visible

| | | Id | Name | Gateway | Address | Mask | DNS1 | DNS2 | Is m.. | Is e.. | Insert date |
|--|--|----|-----------|-----------------|---------------|---------------|---------|---------|--------|--------|-------------|
| | | 44 | IP.226.13 | 10.249.226.2... | 255.255.254.1 | 255.255.254.1 | 0.0.0.0 | 0.0.0.0 | false | true | 25-01-2018 |

6.11. Sim Apn Management

Clicking on the Sim Apn Management function the Manage Sim Apn form is open on the right.



ADD SIM APN

selecting the **Add Sim Apn associations** link the Add Sim Apn form is shown, it's possible to Add a new Sim Apn relation in the system using the Add form that is visible clicking on the **+ Add Sim Apn associations** link.

An Add Sim Apn associations form filter is shown on the right and it needs to select a Company and clicking on the **Click to Add Sim Apn association** link

Add Sim Apn Associations

Company
Select a company

+ Add Sim Apn Associations

Add Sim Apn Associations

Company
Select a company

+ Add Sim Apn Associations

SIM
serialnumber, ip address

Click to see results

Add Sim Apn Association

Serial Number
9999

Gsm Number
34699988569

Ip Address
192.126.19.24

Communication type
GSM

Apn

Userid

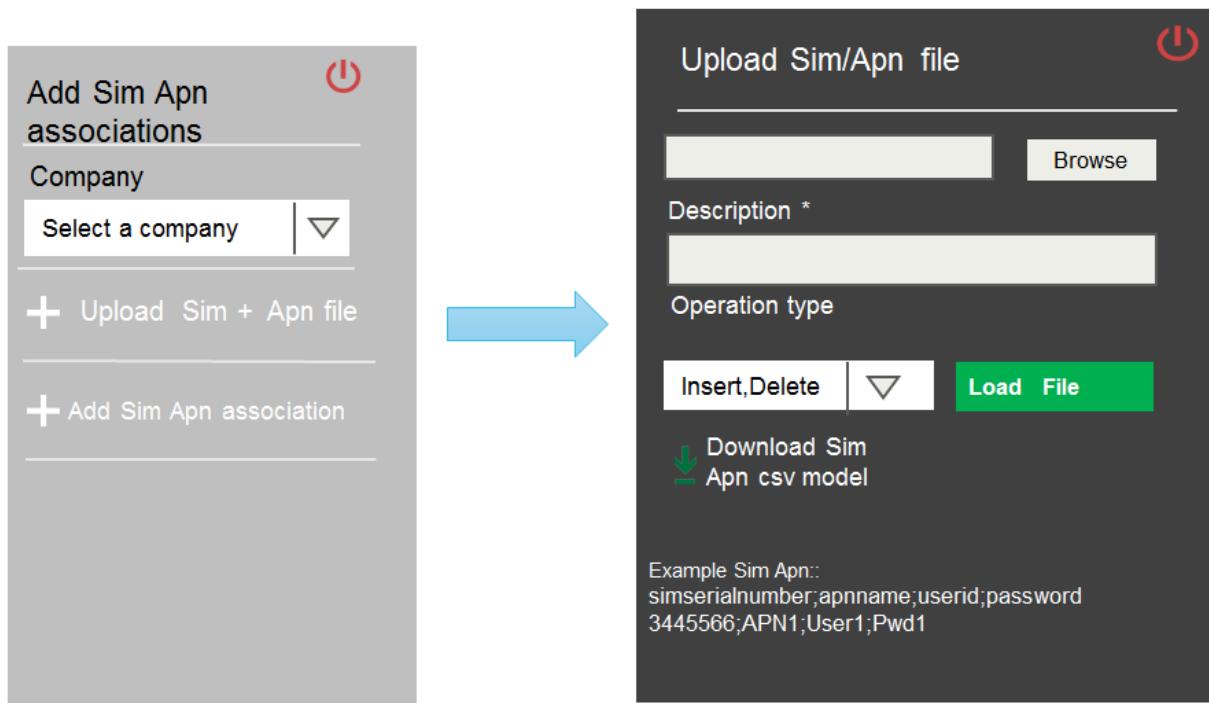
Password

Add

It's possible to fill the form, the field with * are mandatory, clicking then on the Add button the new Sim Apn relation is inserted into the system.

MASSIVE LOADING

It's possible to load a massive number of Sims Apn relations using a loading file.

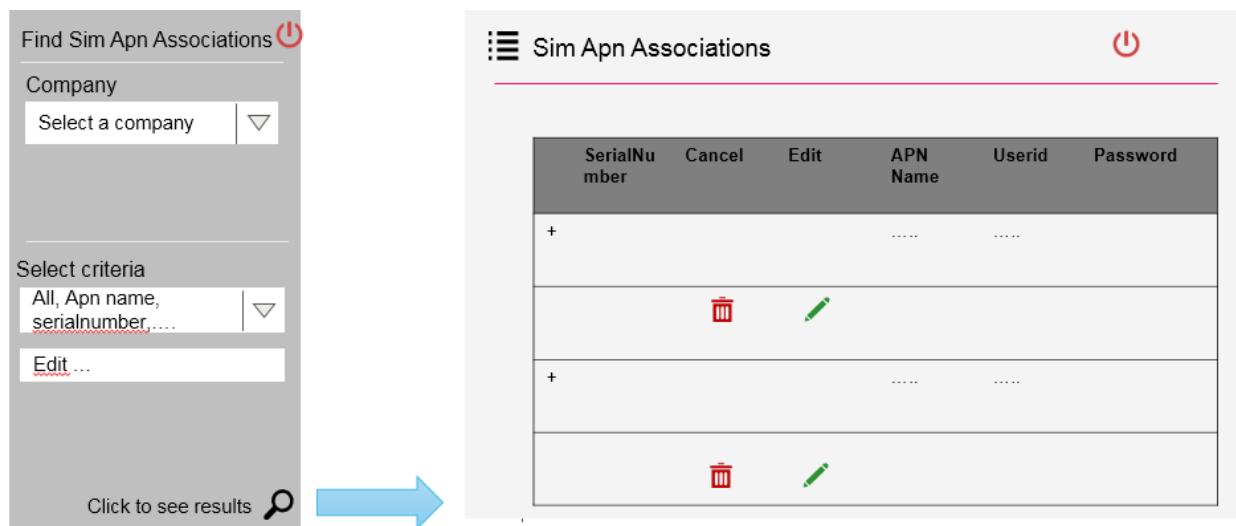


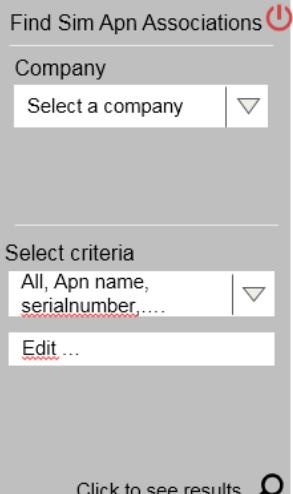
Clicking on the Download csv model icon it's possible to download a file template, then it's possible to fill it and to load it using the Browse button and clicking on the Load File button. For details on this function see the chapter 4.1 - Main Provisioning features- Massive file loading

The serialnumber +APN name fields are the key of the file, they have to be previous inserted in the Db

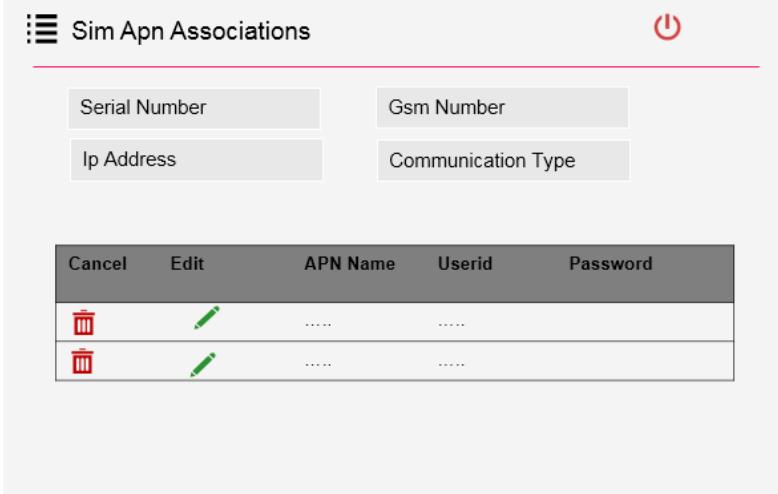
EDIT OR REMOVE SIM APN RELATIONS

It's possible to Edit or Remove a relation filling the Find filter for viewing the desired relation list. It's possible to see All the Company Sim Apn relations otherwise to select a punctual Sim APN relation using select criteria combo box filters;





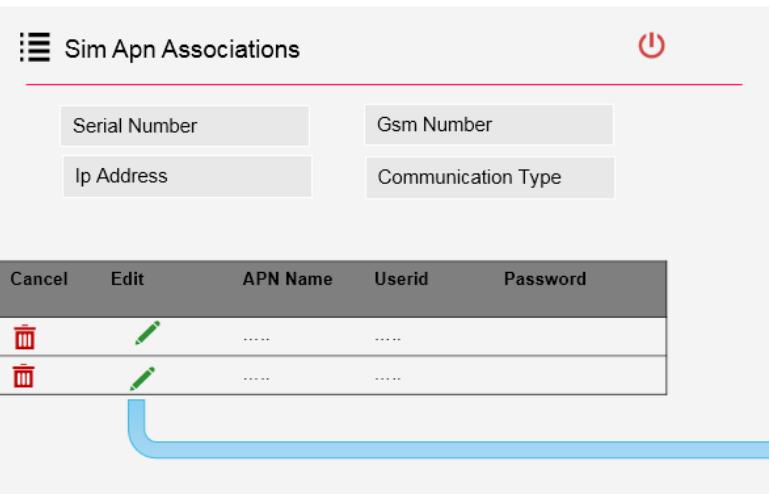
The screenshot shows the 'Find Sim Apn Associations' page. It includes a 'Company' dropdown, a 'Select criteria' dropdown containing 'All, Apn name, serialnumber....', and a 'Click to see results' button.



The screenshot shows the 'Sim Apn Associations' page with a results grid. The columns are 'Cancel', 'Edit', 'APN Name', 'Userid', and 'Password'. There are two rows, each with a red trash icon and a green edit icon.

Clicking then on **Click to see results** the Sims Apn Data appears on the grid;

- It's possible to delete the Sims clicking on the icon, a confirm message is shown.
- It's possible to update a Sim record clicking on the icon.



The screenshot shows the 'Sim Apn Associations' page with a results grid. A blue arrow points from the right side of the grid towards the 'Edit Apn Association' dialog.



The screenshot shows the 'Edit Apn Association' dialog. It has fields for 'Name' (highlighted in grey), 'Userid' (white), and 'Password' (white). A 'Save' button is at the bottom.

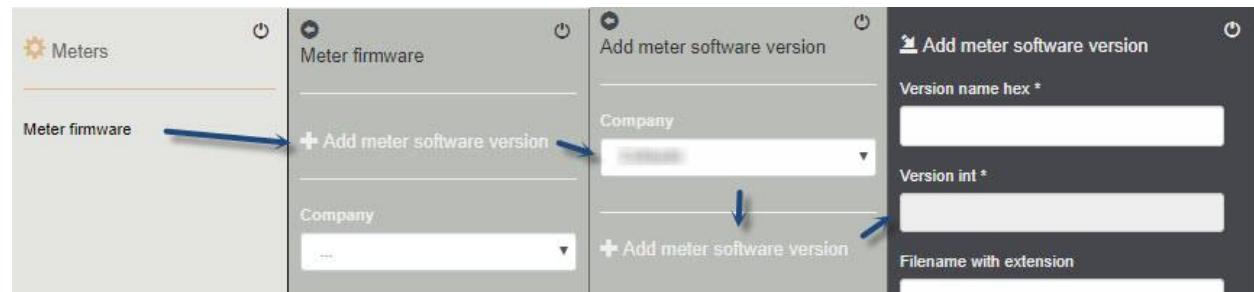
Sim Apn associate to an installed concentrator: In the grid when a Sim Apn is associated to a Concentrator in installed state it's not possible to Delete or to Update the Sim Apn, the Update and Delete icons are not visible

6.12. Meter Firmware

The feature allows to manage different releases of meter's firmware.

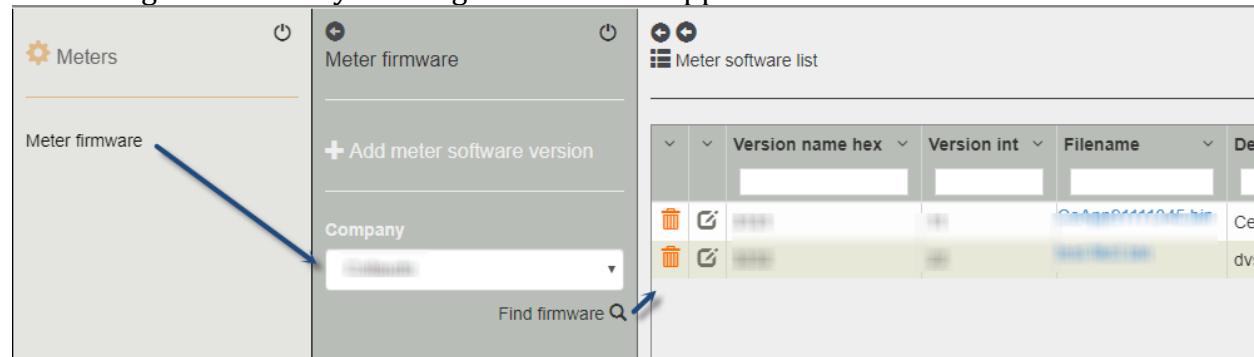
ADD METER SOFTWARE VERSION

The user can add a specific reference to meter's software version by indicating its version (both HEX and INT, the second one read-only and calculated in real-time), complete filename, description, type(s) of meter linked to and a flag in case it is downloadable. In addition, if “is file uploaded” is flagged, the file should been uploaded in storage; the textarea at the end of the frame show the path of firmware.



SEARCH METER SOFTWARE VERSION

In order to find meters' software version list the user can access the same menu item and, while on “Meter firmware” frame, choose desired company before clicking on lens button: a grid containing list of already-existing firmware will appear



EDIT OR REMOVE METER SOFTWARE VERSION

Details about meter firmware can be modified on ePlus as well as a meter software version can be completely deleted from system. To do so the user is required to access “meter firmware list” page and then proceed with the desired operation

The screenshot shows the 'Meter firmware' management screen. It features a list of meter software versions with columns for 'Version name hex', 'Version int', and 'Filename'. Two rows are highlighted: one with a green background and another with a yellow background. Arrows point from the 'DELETE' and 'MODIFY' buttons in the list to a confirmation dialog and an edit dialog respectively.

Confirmation Dialog:

smmeplus-test-web.westeurope.cloudapp.azure.com dice
Firmware: [REDACTED]
Are you sure to delete it?

Edit Dialog:

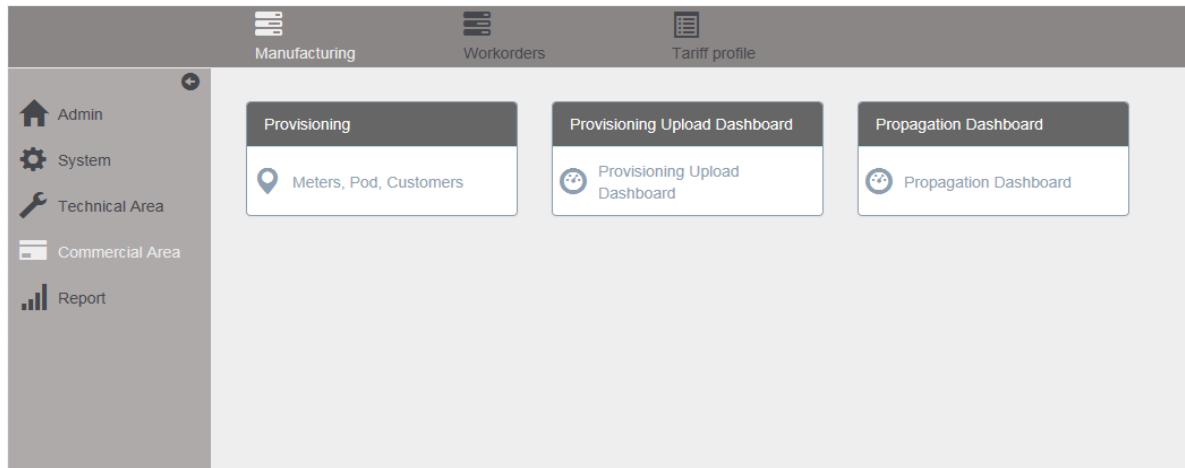
Edit meter software version

| | |
|---------------------------|------|
| Version name hex * | 3131 |
| Version int * | 11 |
| Filename with extension * | |

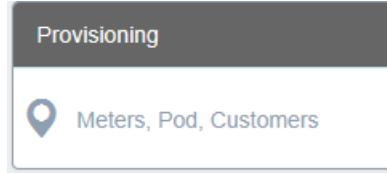
Deletion shows a confirmation popup, while modification shows the same frame seen on firmware addition (with fields already filled in).

7. Commercial area

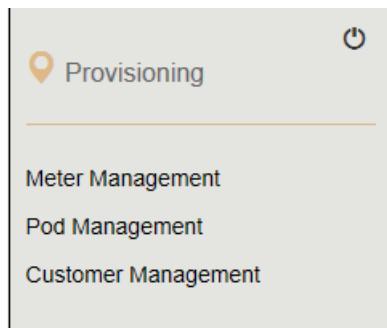
When the user login in into the system the Widgets form dashboard is shown.
Selecting the Commercial Area voice on the Main Menu and the Manufacturing voice on the Secondary Menu the Provisioning Widget are shown:



PROVISIONING WIDGET

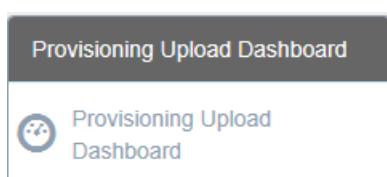


Selecting the Provisioning (Meters, Pods, Customers) widget these menu voices are shown:

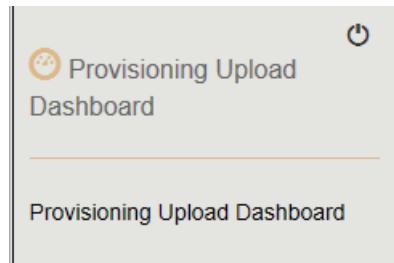


These menu functions are described in the next sections.

PROVISIONING UPLOAD DASHBOARD WIDGET

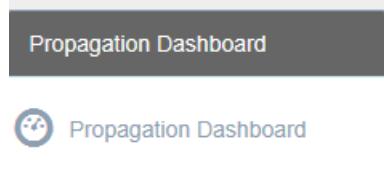


Selecting the Provisioning Upload Dashboard widget these menu voices are shown:

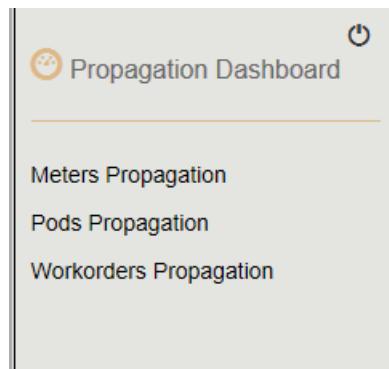


This function is described in 6.1

PROPAGATION DASHBOARD WIDGET

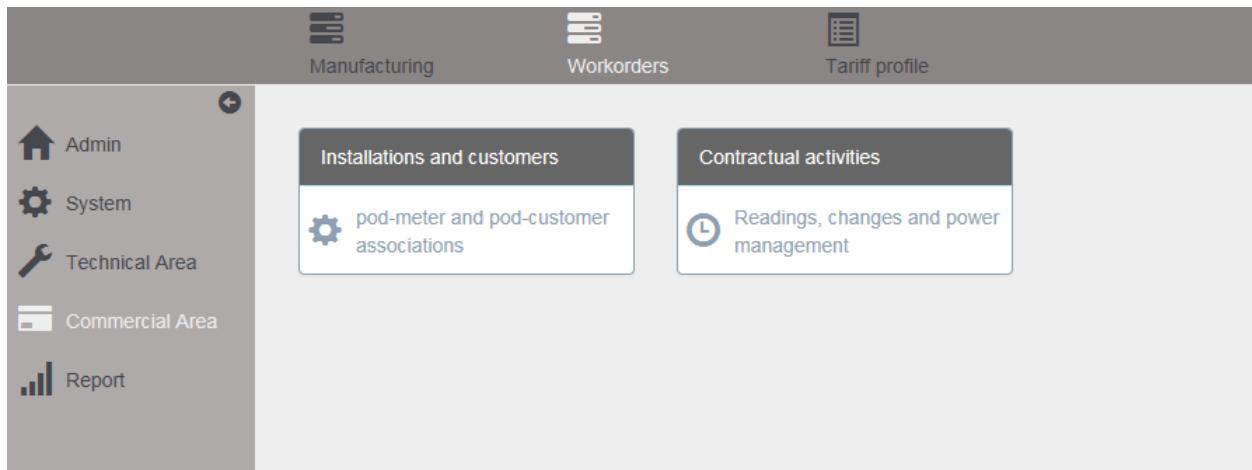


Selecting the Propagation Dashboard widget these menu voices are shown:

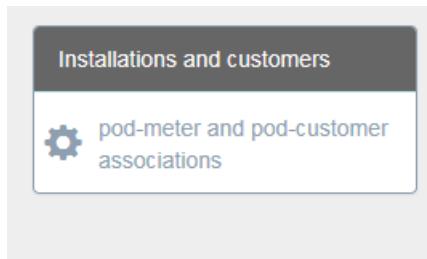


These menu functions are described in the next sections.

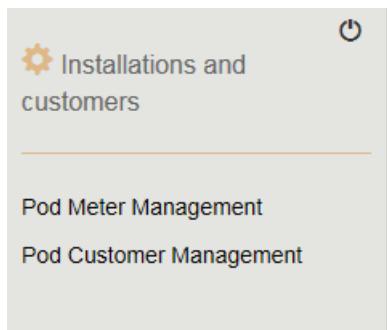
Selecting the Commercial voice on the Main Menu and the Workorders voice on the Secondary Menu the Installations and customers and the Contractual activities Widgets are shown:



INSTALLATIONS AND CUSTOMERS WIDGET



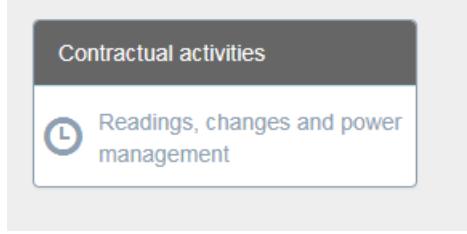
Selecting the Installations and customers widget these menu voices are shown:



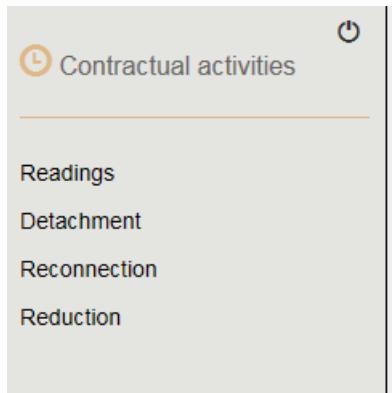
These menu functions are described in the next sections.

CONTRACTUAL ACTIVITIES WIDGET

Selecting the Commercial voice on the Main Menu and the Workorders voice on the Secondary Menu the Contractual activities widget is shown



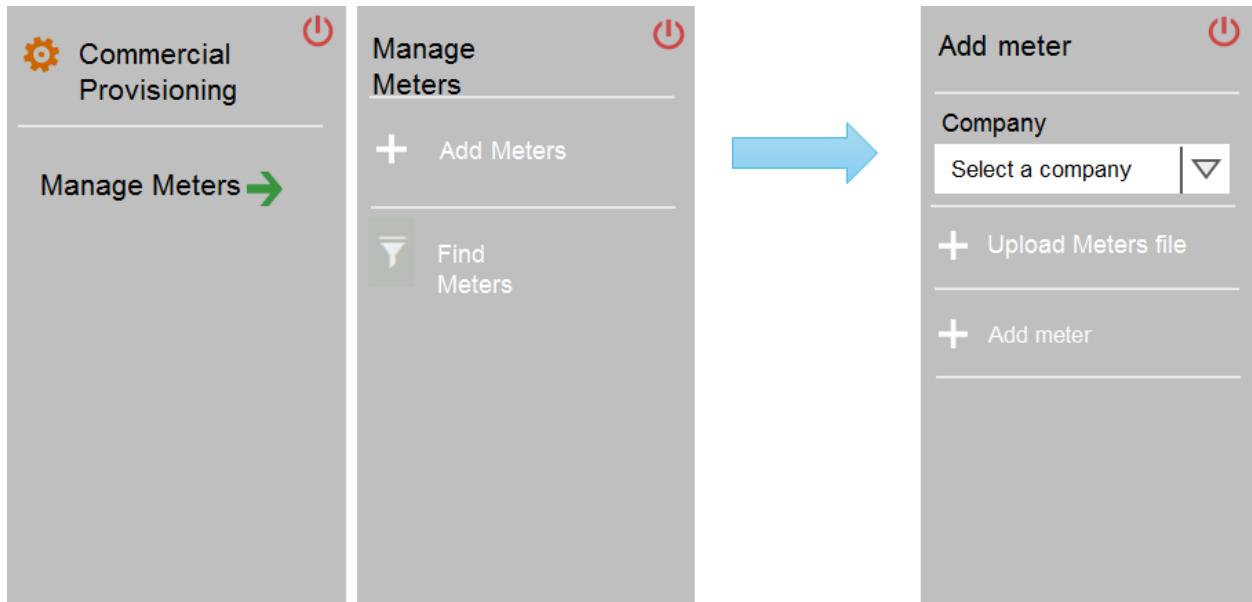
Selecting the Contractual activities widget these menu voices are shown



These menu functions are described in the next sections.

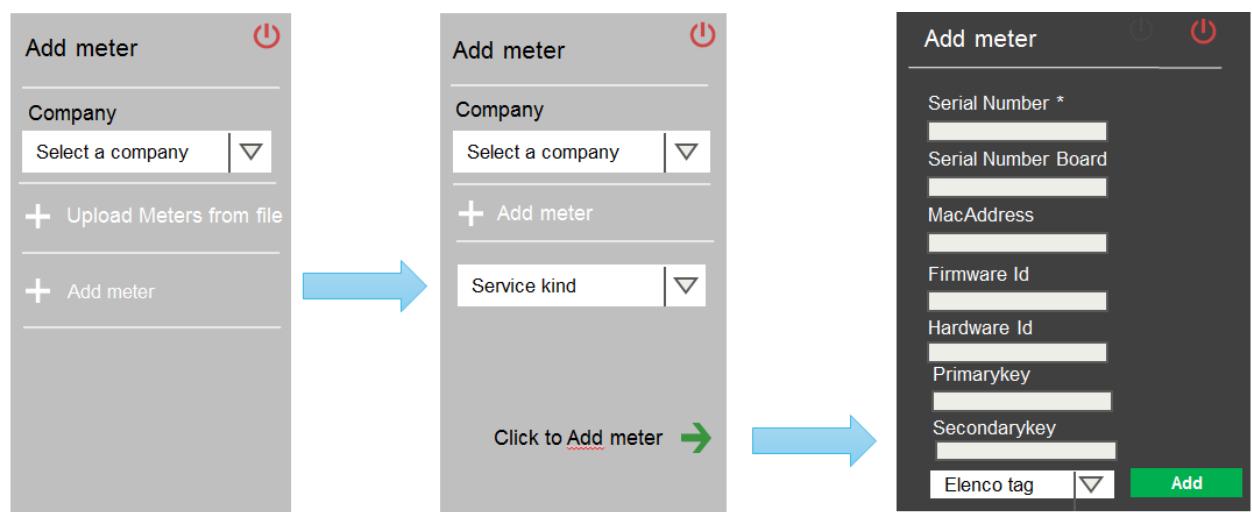
7.1. Meter Management

With this function it's possible to insert the Meter objects into the manufacturing table. Clicking on the Meter Management function the Manage Meter form is open on the right.



ADD METER

selecting the Add Meter link the Add Meter form is shown, it's possible to Add a new Meter in the system using the Add form that is visible clicking on the **+ Add Meter** link.
An Add meter form filter is shown on the right, it needs to select a Company, a Service kind and clicking on the **Click to Add Meter** link



It's possible to fill the form, the field with * are mandatory.

The Serial Number, the Serial Number Board and the Mac Address have to be filled with a valid format if they are filled with a wrong value their label is circled with a red line and a correct value is required.

The Mac Address has to be filled with an alphanumeric value having length equal to 12 alphanumeric chars, the Primary and Secondary key have to be in hexadecimal format and their length has to be 32 chars.

A special field 'Tag' is selectable in the form where it's possible to Tag a meter using a default set of tags; the tags are useful for searching punctual meters.

Clicking then on the **Add** button the new Meter is inserted into the system.

MASSIVE LOADING

It's possible to load a massive number of Meters using a loading file.

The diagram illustrates the process of uploading a file. On the left, the 'Add meter' screen shows fields for 'Company' (with a dropdown menu 'Select a company') and two buttons: '+ Upload meters file' and '+ Add meter'. A large blue arrow points from this screen to the right. On the right, the 'Upload Meters file' screen displays fields for 'Description *' (with a 'Browse' button), 'Operation type' (with a dropdown menu 'Insert' and a 'Load File' button), and a 'Download csv model' link. Below these fields is an 'Example:' section containing a CSV template:

```

serialnumber;serialnumber_board;macaddress;firmwareid;hardwareid;servicekind;tag;primarykey;secondarykey
UAASRWEW2422223211:UAASRWEW2422223211:112233445566:firmid23456:hardid3888:1:MONOFAS
E:1A34B67890CFFFDE1234567890FFFFCC:1A34B
67890CFFFDE1234567890FFFC1

```

Clicking on the Download csv model icon it's possible to download a file template, then it's possible to fill it and to load it using the Browse button and clicking on the Load File button.

There are some constraints on the fields file:

| Field | Field length | Field type |
|--------------|-----------------------|--------------|
| serialnumber | 18 (not < or > of 18) | alphanumeric |

| | | |
|--------------------|-----------------------|--------------|
| serialnumber_board | 18 (not < or > of 18) | alphanumeric |
| macaddress | 12 (not < or > of 12) | alphanumeric |
| primarykey | 32 (not < or > of 32) | hexadecimal |
| secondarykey | 32 (not < or > of 32) | hexadecimal |

The serialnumber field is the key of the file

EDIT OR REMOVE METERS

It's possible to Edit or Remove a Meter filling the Find filter for viewing the desired meters list.

The image shows a transition between two screens. On the left, the 'Find Meters' screen displays filters for Company, Service kind, and Select criteria (Tag, serialnumber, macaddress). A blue arrow points to the right, leading to the 'Meters Data' screen. The 'Meters Data' screen shows a grid with columns: Cancel, Edit, Tag, Id, Serial number, Serial number board, Macaddress, Firmware id, Hardware id, and Insert Date. Each row in the grid contains a red delete icon and a green edit icon.

It's possible to see All the Company Meters otherwise to select a punctual Meter using select criteria combo box filters;

Clicking then on **Click to see results** the Meters Data appears on the grid;

- It's possible to delete the Meters clicking on the icon, a confirm message is shown.
- It's possible to update a Meter record clicking on the icon.

The image shows a transition between the 'Meters Data' grid and the 'Edit meter' dialog. A blue arrow points from the 'Meters Data' grid to the 'Edit meter' dialog. The 'Edit meter' dialog contains fields for Serial Number*, Serial Number Board, MacAddress, Firmware Id, Hardware Id, and Elenco tag. At the bottom right is a green 'Edit' button.

The Serial Number is not updatable because it is the record key.
It's possible to Delete or Edit the Meters not busy.

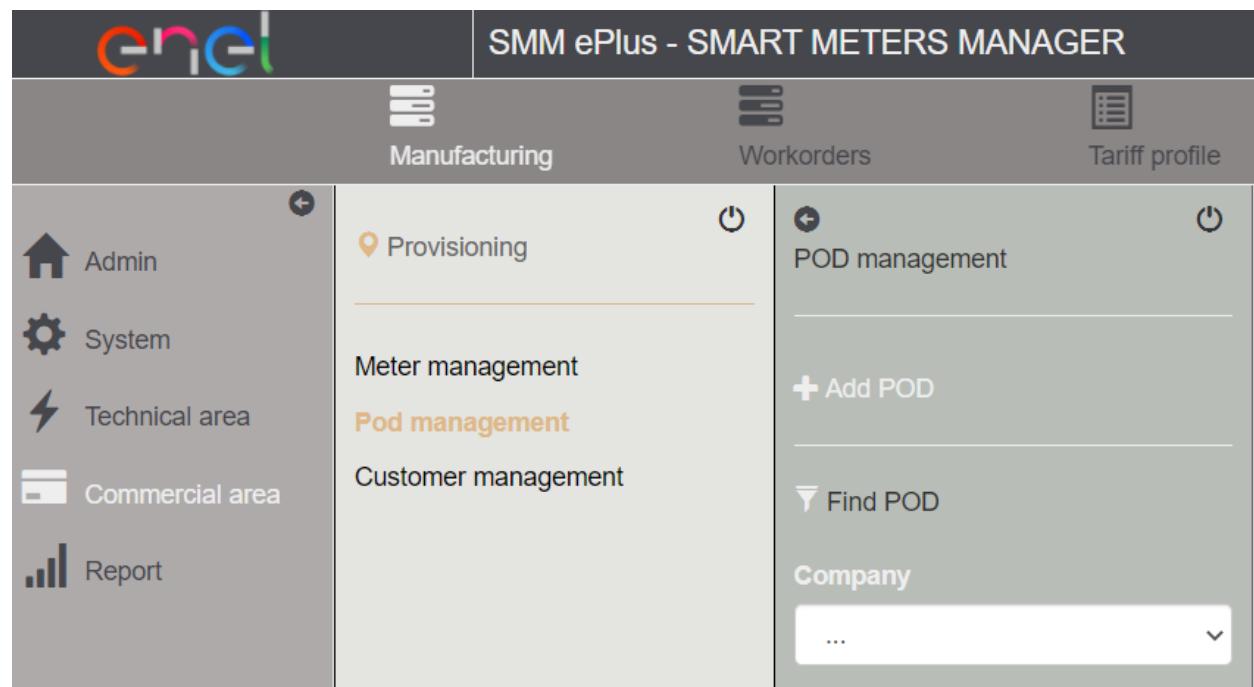
It's possible to download the Meter manufacturing report in the Report/Technical Reports widget (9.1)

METERS PROPAGATION

When a Meter object is inserted/modified or deleted using the web interface or the massive loading then the meter object is created both in the Commercial Area and in the Technical Area, sometimes could be some propagation errors during this operation , this problem is visible in the **Propagation state field** on the grid. It needs to relaunch manually the process that is failed using the Meters propagation function (see 7.13 debajo de)

7.2. Pod Management

With this function it's possible to insert Pod objects into the manufacturing table. Clicking on the Pod Management function the Manage Pod form is open on the right.



ADD POD

selecting the Add Pod link the Add Pod form is shown, it's possible to Add a new Pod in the system using the Add form that is visible clicking on the **+ Add pods** link.

An Add pod form filter is shown on the right, it needs to select a Company, populate all the region tree combo box and clicking on the **Click to Add Pod** link

To insert a POD get to the last region level (Città) using combo box on the left panel

POD name * ⓘ

Address *

Is balance

between 35.11174 and 47.60001

Latitude *

between 4.96520 and 20.66741

Longitude *

Altitude

Add tags

Select ▾

Add

It's possible to fill the form, the field with * are mandatory.

The Latitude and Longitude fields have to be filled with a valid format if they are filled with a wrong value their label is circled with a red line and a correct value is required.

A special field 'tag' is selectable in the form where it's possible to Tag a Pod using a default set of tags; the tags are useful for searching punctual pods.

Please note that “Is balance” flag aims to distinguish between macro-meters (installed in cabins) and meter installed customers’ sites. By checking that field the meter will be set as macro-meter.

Clicking then on the **Add** button the new Pod is inserted into the system.

MASSIVE LOADING

It's possible to load a massive number of Pods using a loading file.

Provisioning

Add POD

Company: Collaudo

+ Upload POD file

Insert POD from csv file

Choose File: No file chosen

Description *

Operation type: Insert

load file

Download csv model

Example:

```
name;address;city;latitude;longitude;
altitude;tag;isbalance
```

```
pod999000;Via Rubattino 54;Milan;45.4;9.2;
25;tag1;true
```

Clicking on the Download csv model icon it's possible to download a file template, then it's possible to fill it and to load it using the Browse button and clicking on the Load File button.

There are some constraints on the fields file:

- The pod Name field is the key of the file and it is not updatable

EDIT OR REMOVE PODS

It's possible to Edit or Remove a Pod filling the Find filter for viewing the desired pods list.

The screenshot shows two windows side-by-side. On the left is the 'Find pods' search interface, which includes fields for 'Company' (with a dropdown menu 'Select a company'), 'City' (with a dropdown menu 'Select a city'), and 'Select criteria' (with a dropdown menu 'Tag, name, address ...'). Below these are buttons for 'Edit ...' and 'Click to see results' with a magnifying glass icon. A blue arrow points from this window to the right one. On the right is the 'Pods data' grid, titled 'Pods data'. The grid has columns: Cancel, Edit, Tag, Id, Pod Name, Address, Latitude, Longitude, Altitude, and Insert Date. Each row contains a red trash can icon and a green edit/pencil icon.

It's possible to see All the Company Pods otherwise to select a punctual Pod using select criteria combo box filters;
Clicking then on **Click to see results** the Pods Data appears on the grid;

- It's possible to delete the Pods clicking on the icon, a confirm message is shown.
- It's possible to update a Pod record clicking on the .

The screenshot shows the 'Pods data' grid on the left and the 'Edit pod' form on the right. The 'Edit pod' form has fields for 'Pod Name*' (disabled), 'Address*', 'Latitude*', 'Longitude*', 'Altitude', and 'Elenco tag' (dropdown menu). A large blue arrow points from the 'Edit' button in the 'Edit pod' form back to the 'Edit' column in the 'Pods data' grid.

The Pod Name is not updatable because it is the record key.
It's possible to Delete or Edit the Pods not busy.

It's possible to download the Pod manufacturing report in the Report/Commercial Reports widget (9.2)

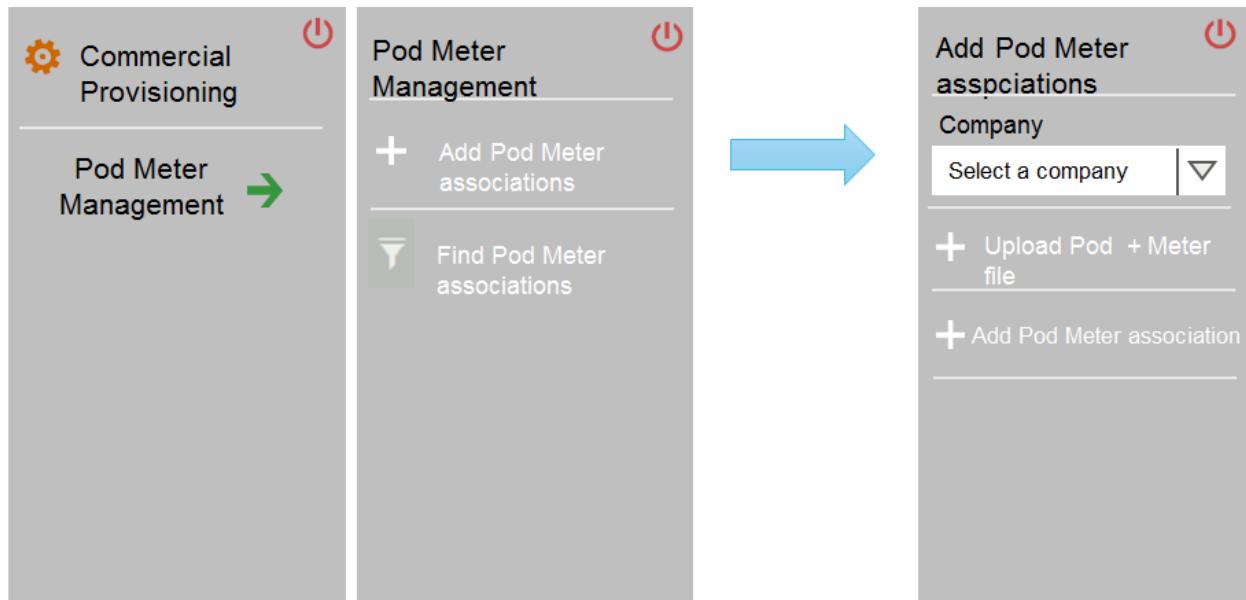
PODS PROPAGATION

When a Pod object is inserted/modified or deleted using the web interface or the massive loading then the meter object is created both in the Commerciale Area and in the Technical Area, sometimes could be some propagation errors during this operation , this problem is

visible in the **Propagation state field** on the grid. It needs to relaunch manually the process that is failed using the Pods propagation function (see 7.14 debajo de)

7.3. Pod Meter Management (Meter installation)

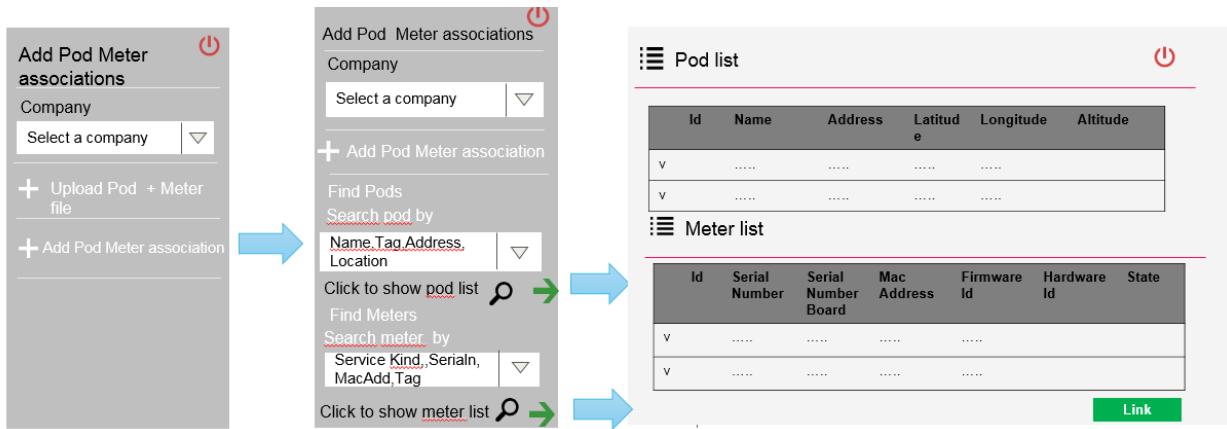
With this function it's possible to link the Meter with the Pod object and install it. Clicking on the Pod Meter Management function the Pod Meter associations form is open on the right.



ADD POD METER

selecting the Add Pod Meter associations link the Add Pod Meter associations form is shown, it's possible to Install a new Meter in the system using the Add Pod Meter associations form that is visible clicking on the **+ Add Pod Meter associations** link.

An Add Pod Meter associations form filter is shown on the right, it needs to select a Company, and clicking on the **Click to Add Pod Meter association** link



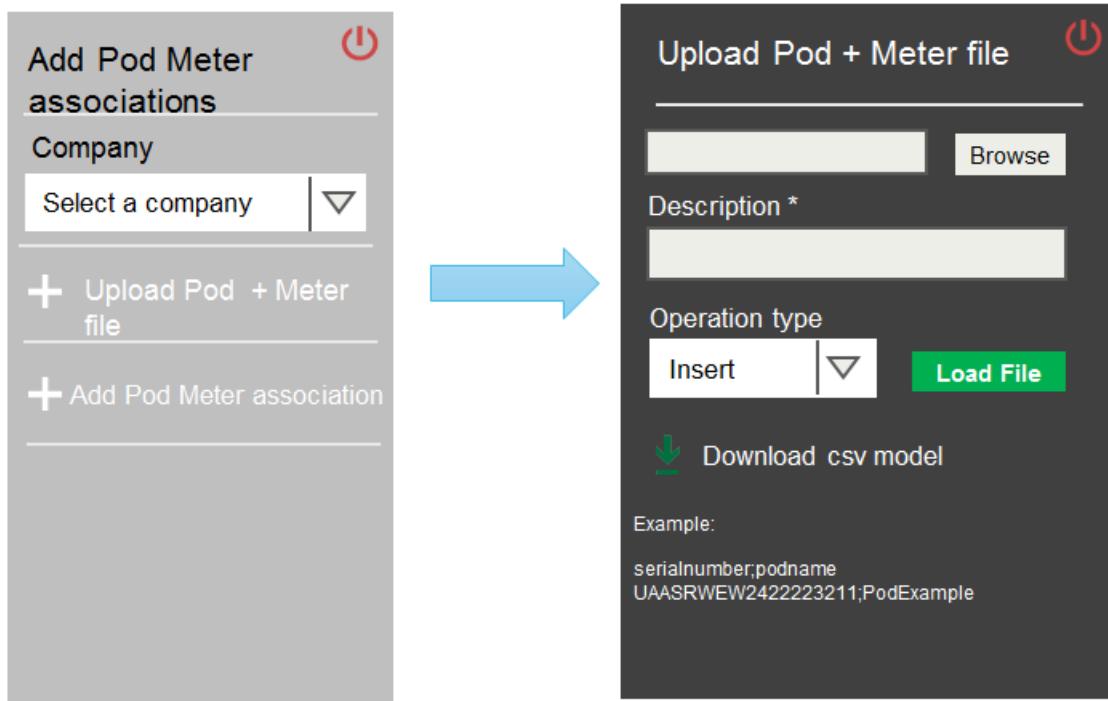
It's possible to find the Pod to associate selecting it in punctual mode searching by Name, Tag Address or by Location inserting all the region until the last region tree node, clicking on 'Click to show pod list' the single Pod or the Pod list is shown on the right.

It's possible to find the Meter to associate selecting it in punctual mode searching by Serial Number, Service Kind, MacAddress or Tag, clicking then on the 'Click to show meter list' the single Meter or the Meter list is shown on the right.

In the Pod and Meter list grids are shown only the objects that are not already installed.
It's possible to select a single Meter and a single Pod, clicking then on the Link button an installed object is created.

MASSIVE LOADING

It's possible to load a massive number of Pod Meter associations using a loading file.



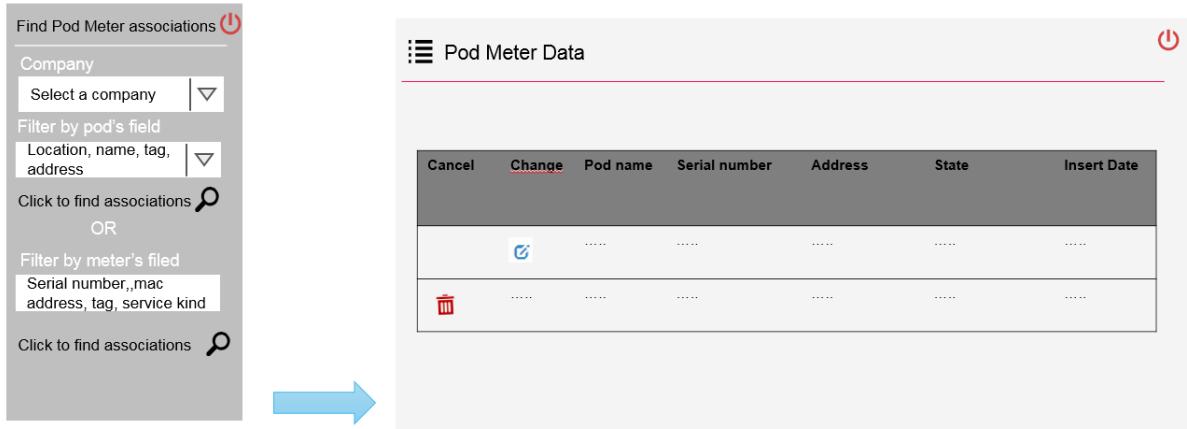
Clicking on the Download csv model icon it's possible to download a file template, then it's possible to fill it and to load it using the Browse button and clicking on the Load File button.

There are some constraints on the fields file:

- The serialnumber and the podname fields are the key of the file, they have to be already inserted in the system using the related Provisioning functions.

SHOW REMOVE OR CHANGE POD METER RELATIONS

It's possible to see Remove or change a Meter Pod relation using the Find filter for viewing the desired Pod Meter relation list.



It's possible to see All the Company Pod Meter relations otherwise to select a punctual Pod Meter relation using the select criteria combo box filters;

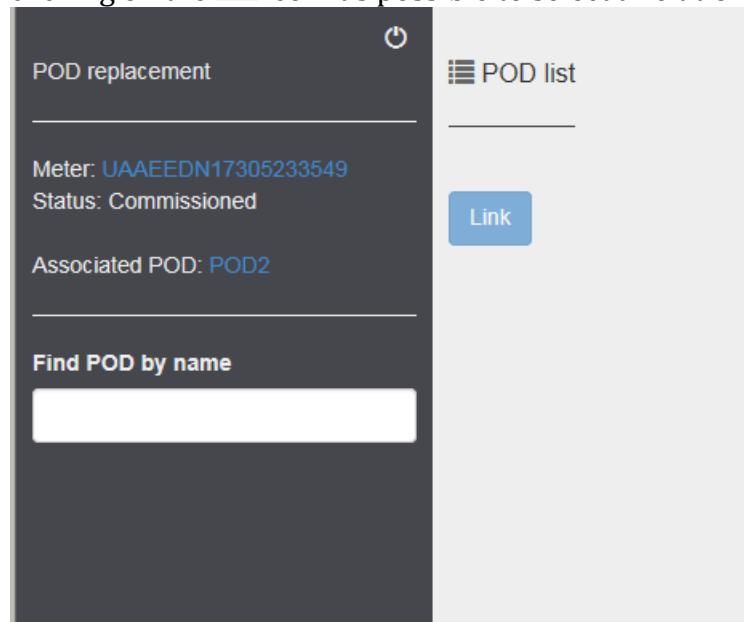
Clicking then on **Click to see results** the Pods Meters Data appears on the grid;

- It's possible to delete the relation clicking on the icon, a confirm message is shown, the relation is deletable when the meter is not commissioned
- It's possible to change the Pod associated to a Commissioned meter

The relation is erasable only if the association Pod Meter is not busy.

CHANGE THE POD ASSOCIATED TO A COMMISSIONED METER

clicking on the icon it's possible to select a relation and to change the pod, for example:



It's possible to search a Pod by name, only the Pod that are non associated to other meters can be associated :

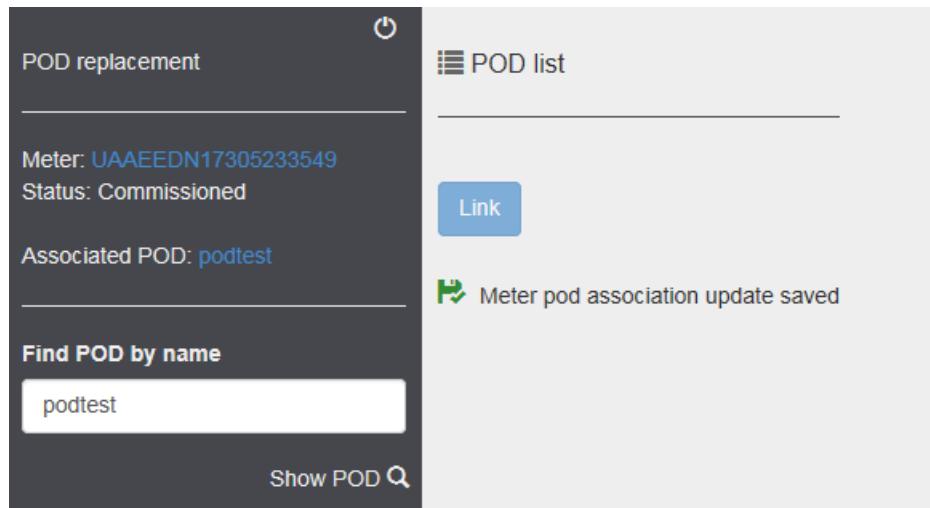
The screenshot shows two main panels. On the left, the 'POD replacement' screen displays a meter with the ID UAAEEDN17305233549, a status of 'Commissioned', and an 'Associated POD' of 'POD2'. It includes a search bar for 'Find POD by name' containing 'podtest' and a 'Link' button. On the right, the 'POD list' screen shows a grid with columns for Name, Address, Latitude, Longitude, and Altitude. One row is selected, showing 'podtest' in all columns. A message at the bottom states 'Total Items: 1'.

| | Name | Address | Latitude | Longitude | Altitude |
|---|---------|---------|----------|-----------|----------|
| ✓ | podtest | podtest | -32 | -70 | 4 |

Total Items: 1

Link

Selecting the 'podtest' in the grid and then the Link button the relation is modified:



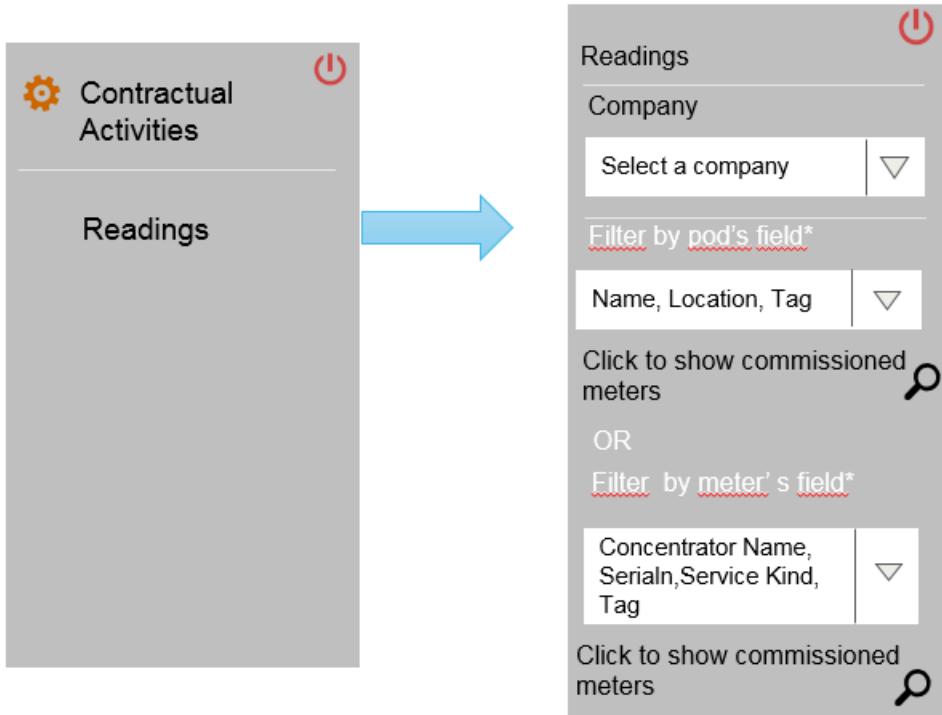
POD METER PROPAGATION

When a Pod Meter object is inserted/modified or deleted using the web interface or the massive loading then the meter object is created both in the Commercial Area and in the Technical Area, sometimes could be some propagation errors during this operation , this problem is visible in the **Propagation state field** on the grid. It needs to relaunch manually the process that failed using the Work Orders propagation function (see 7.15 debajo de)

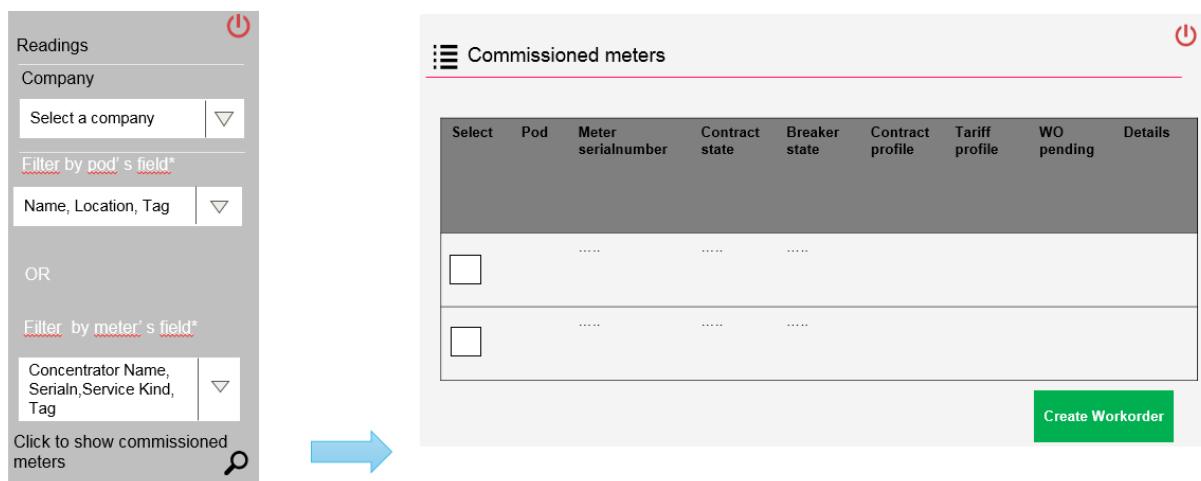
It's possible to see and download the Work Orders report in the Report/Monitoring/Work widget (0)

7.4. Readings

With this function it's possible to generate some Reading workorder for commissioned meters.



selecting the Readings function link the Readings filter form is shown, it's possible to filter the commissioned meters by pod's field or by meter's field, clicking on the Click to show commissioned meters the commissioned meters list is shown.



It's possible to select some meters and to create readings workorders. For the meters not selectable the details field is filled with the problem detail. The Workorders state is visible in the Report section.

For example:

The screenshot shows the software's main menu bar with four main categories: Manufacturing, Field, Monitoring, and System. On the left, a sidebar lists navigation options: Admin, System, Technical Area, Commercial Area, and Report. The main content area is titled 'Works' and displays a dropdown menu for 'Company' set to 'Enel Inghilterra'. Below this, a list of work order types is shown: Pending Works, Completed Works, Commercial Pending Workorder, Commercial Completed Workorder, and Technical Completed Workorder.

In these section is possible monitoring the Work orders state and discover if there are some execution problems.

7.5. Detachment

With this function it's possible to generate some Detachment workorders for commissioned meters. The Detach meter function allows to detach the meters when the customer doesn't pay the invoices.

Contractual Activities

Detachment

Detachment

Company
Select a company

Filter by pod's field*

Name, Location, Tag

OR

Filter by meter's field*

Concentrator Name, Serialn, Service Kind, Tag

Click to show commissioned meters

selecting the Detachment function link the Detachment filter form is shown, it's possible to filter the commissioned meters by pod's field or by meter's field, clicking on the Click to show commissioned meters the commissioned meters list is shown.

Detachment

Company
Select a company

Find by pod's field*

Name, Location, Tag

OR

Find by meter's field*

Concentrator Name, Serialn, Service Kind, Tag

Click to show commissioned meters

Commissioned meters

| Select | Pod | Meter serialnumber | Contract state | Breaker state | Contract profile | Tariff profile | WO pending | Details |
|--------------------------|-------|--------------------|----------------|---------------|------------------|----------------|------------|---------|
| <input type="checkbox"/> | | | | | | | | |
| <input type="checkbox"/> | | | | | | | | |

Create Workorder

It's possible to select some meters and to create detach workorders. For the meters not selectable the details field is filled with the problem detail. The Workorders state is visible in the Report section.

For example:

The screenshot shows the 'Works' module in the e-distribuzione system. The left sidebar includes links for Admin, System, Technical Area, Commercial Area, and Report. The main content area displays a list of work categories under the 'Works' heading, with a dropdown menu set to 'Enel Inghilterra'. The categories listed are: Pending Works, Completed Works, Commercial Pending Workorder, Commercial Completed Workorder, and Technical Completed Workorder.

In these section is possible monitoring the Work orders state and discover if there are some execution problems.

7.6. Reconnect

With this function it's possible to generate some Reconnect workorders for commissioned meters. The Reconnect meter function allows to reconnect the meters when the customer is no longer morose.

Reconnection

Contractual Activities

Reconnection

Reconnection

Company

Select a company

Filter by pod's field*

Name, Location, Tag

OR

Filter by meter's field*

Concentrator Name, Serialn, Service Kind, Tag

Click to show commissioned meters

🔍

selecting the Reconnection function link the Reconnection filter form is shown, it's possible to filter the commissioned meters by pod's field or by meter's field, clicking on the Click to show commissioned meters the commissioned meters list is shown.

Reconnection

Company

Select a company

Filter by pod's field*

Name, Location, Tag

OR

Filter by meter's field*

Concentrator Name, Serialn, Service Kind, Tag

Click to show commissioned meters

🔍

Commissioned meters

| Select | Pod | Meter serialnumber | Contract state | Breaker state | Contract profile | Tariff profile | WO pending | Details |
|--------------------------|------|--------------------|----------------|---------------|------------------|----------------|------------|---------|
| <input type="checkbox"/> | | | | | | | | |
| <input type="checkbox"/> | | | | | | | | |

Create Workorder

It's possible to select some meters and to create reconnect workorders. For the meters not selectable the details field is filled with the problem detail. The Workorders state is visible in the Report section.

For example:

The screenshot shows the 'Works' module in the e-distribuzione software. The top navigation bar has tabs for Manufacturing, Field, Monitoring, and System. On the left, there's a sidebar with links for Admin, System, Technical Area, Commercial Area, and Report. The main content area is titled 'Works' and shows a dropdown menu set to 'Enel Inghilterra'. Below the dropdown are five categories: 'Pending Works', 'Completed Works', 'Commercial Pending Workorder', 'Commercial Completed Workorder', and 'Technical Completed Workorder'.

In these section is possible monitoring the Work orders state and discover if there are some execution problems.

7.7. Reduction

With this function it's possible to generate some Reduction workorders for commissioned meters. The Reduction meter function allows to reduct the meter contract when there are some invoices problem with the customer.

Reduction

Contractual Activities

Reduction

Company

Select a company

Filter by pod's field

Name, Location, Tag

OR

filter by meter's field *

Concentrator Name, Serialn, Service Kind, Tag

Click to show commissioned meters

selecting the Reduction function link the Reduction filter form is shown, it's possible to filter the commissioned meters by pod's field or by meter's field, clicking on the Click to show commissioned meters the commissioned meters list is shown. From the grid is possible to set the k coefficient for reduction, it's selected by default the kcoef set in the System Parameter but the user can change it by the Select list.

| Select | Pod name | Serial number | Contract state | Concentrator | Breaker state | Contract profile | Tariff profile | WO pending | Details |
|--------------------------|----------|---------------|----------------|--------------|---------------|------------------|----------------|------------|---------|
| <input type="checkbox"/> | | | | | | | | | |
| <input type="checkbox"/> | | | | | | | | | |

Create Workorder

It's possible to select some meters and to create reduction workorders. For the meters not selectable the details field is filled with the problem detail. The Workorders state is visible in the Report section.

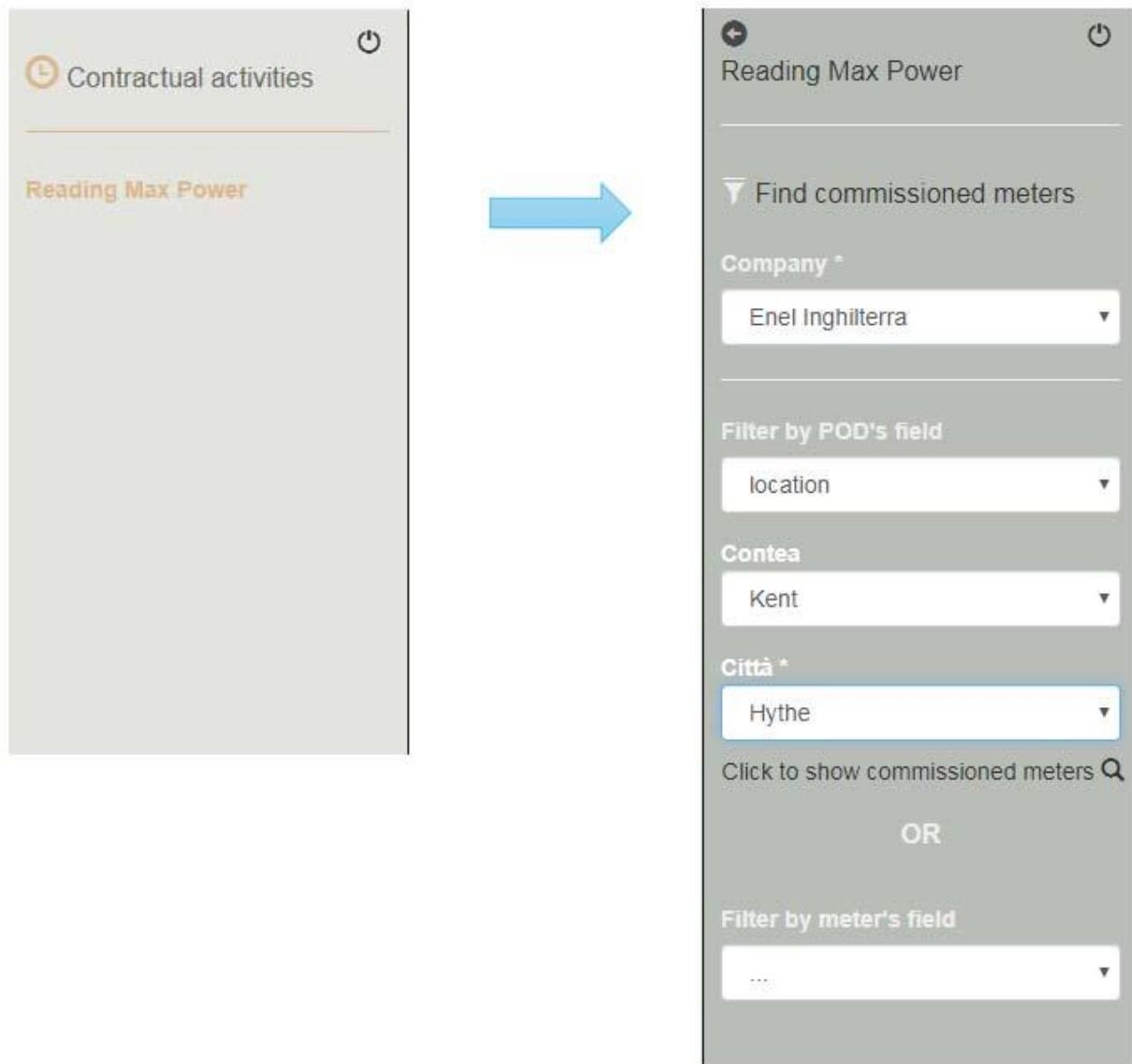
For example:

The screenshot shows the e-distribuzione software interface. At the top, there are four main navigation tabs: Manufacturing (with a bar chart icon), Field (with a location pin icon), Monitoring (with a bar chart icon), and System (with a gear icon). On the left, a vertical sidebar lists several menu items: Admin (house icon), System (gear icon), Technical Area (key icon), Commercial Area (document icon), and Report (bar chart icon). The main content area is titled "Works" and contains a sub-section "Company" with a dropdown menu set to "Enel Inghilterra". Below this, there is a list of workorder states: Pending Works, Completed Works, Commercial Pending Workorder, Commercial Completed Workorder, and Technical Completed Workorder. Each item in the list has a circular icon with a checkmark or a refresh symbol next to it.

In these section is possible monitoring the Work orders state and discover if there are some execution problems.

7.8. Reading max power

With this function it's possible to generate some max power reading workorder for commissioned meters.



Selecting the 'Readings max power' function link the relative filter form is shown, it's possible to filter the commissioned meters by pod's field or by meter's field, clicking on the 'Click to show commissioned meters' the commissioned meters list is shown.

| POD name | Serial number | Contract state | Concentrator | Breaker state | Contract profile | Tariff profile | WO pending | Details |
|----------|--------------------|----------------|--------------|-----------------|--------------------------|-----------------------|------------|---------|
| 100509 | UHLCEAZ17310000761 | activated | 13024A | connected (100) | Default contract - CERM3 | Default tariff -CERM3 | false | |
| 101045 | UHLCEAZ17310002799 | activated | 06675C | connected (100) | Default contract - CERM3 | Default tariff -CERM3 | false | |
| 101768 | UHLCEAZ17310003925 | activated | 00685S | connected (100) | Default contract - CERM3 | Default tariff -CERM3 | false | |
| 101802 | UHLCEAZ17310000992 | activated | 00250S | connected (100) | Default contract - CERM3 | Default tariff -CERM3 | false | |
| 1021097 | UHLCEAZ17310004428 | activated | 06675C | connected (100) | Default contract - CERM3 | Default tariff -CERM3 | false | |
| 102400 | UHLCEAZ17310009247 | activated | 01136S | connected (100) | Default contract - CERM3 | Default tariff -CERM3 | false | |
| 1024930 | UHLCEAZ17310004091 | activated | 06011C | connected (100) | Default contract - CERM3 | Default tariff -CERM3 | false | |
| 1024931 | UHLCEAZ17310003994 | activated | 06011C | connected (100) | Default contract - CERM3 | Default tariff -CERM3 | false | |
| 1024932 | UHLCEAZ17310003333 | activated | 06011C | connected (100) | Default contract - CERM3 | Default tariff -CERM3 | false | |

Total Items: 7711
WO pending column indicates if there's a pending commercial activity for the meter.

It's possible to select some meters and to create readings max power workorders. For the meters not selectable the details field is filled with the problem detail. The Workorders state is visible in the Report section.

For example:

| idwo | user | pod | meter | activity type | contract profile | tariff profile |
|--------------------------------|------|-----|-------|---------------|------------------|----------------|
| Commercial workorder completed | | | | | | |

7.9. Credit charge

The feature creates a recharge workorder for selected prepaid meters.

On ePlus the page can be accessed by navigating on Commercial Area → Workorders → Contractual Activities → Credit Charge

While searching, user is required to select company and a filter by pod's field or meter's field; on both filters there's an additional flag to be set in case only commissioned meters need to be shown.

To charge credit the user has to select one meter from results list (no multiple selection available) and then, in the area appeared below the grid, set charge value (unit of measurement: Wh).

The first button generates a remote workorder as long as the second one generates a workorder that can be sent over by using mobile app.

7.10. Contractual change

The feature allows to modify current tariff/contract for a meter.

On ePlus the page can be accessed by navigating on Commercial Area → Workorders → Contractual Activities → Contractual Change

While searching, user is required to select company and a filter by pod's field or meter's field; on both filters there's an additional flag to be set in case only commissioned meters need to be shown.

The screenshot illustrates the workflow for changing a meter's contract. It starts with the 'Contractual activities' screen, which lists various options like Reading, Detachment, Reconnection, Reduction, and Contract change. A blue arrow points from the 'Contract change' option to the 'Contractual change' screen. This screen shows a dropdown for 'Company' (set to 'Colleto') and two filtering options: 'Filter by POD's field' and 'Filter by meter's field'. Both options have a checkbox for 'Only commissioned meters'. A third checkbox, 'Click to show meter list', is also present. A blue arrow points from the 'Click to show meter list' button to the 'Meter list' grid on the right. The 'Meter list' grid displays 25 items, each with columns for POD name, Serial number, State, Contract state, Concentrator, Breaker state, Contract profile, and Tariff profile. Most meters are in a 'Commissioned' state, while some are 'Detached'. The 'Contract state' column shows values like 'Default contract - C09A01' and 'Default tariff - C09'.

To change contract the user has to select one or more meters from results list and then, in the double grid show below, set a new tariff AND a new contract before click to desired button

The screenshot shows two main sections of the software interface:

- Meters and contracts:** A grid view where users can select specific meters and contracts for configuration. The columns include: Meter type, Pod, Serial number, Concentrator .., State, Breaker state, Contract profile, Tariff profile, and WO pending. Two items are selected in this section.
- Tariffs and contracts:** A list of available tariffs and contracts. It shows two selected items: "T0000_7000_T0000_7000_T0000_7000" and "T0000_7000_T0000_7000_T0000".

At the bottom of the interface, there are two blue buttons: "Create workorder" and "Create mobile workorder". A green arrow points from the "Create mobile workorder" button to a callout box containing the text "Contract change workorder sent for mobile". Another green arrow points from the "Create workorder" button to a callout box containing the text "Contract change workorder sent for remote execution".

The first button generates a remote workorder as long as the second one generates a workorder that can be sent over by using mobile app.

7.11. Credit read

The feature creates a workorder to get residual credit for selected prepaid meters.

On ePlus the page can be accessed by navigating on Commercial Area → Workorders → Contractual Activities → Credit Read

While searching, user is required to select company and a filter by pod's field or meter's field; on both filters there's an additional flag to be set in case only commissioned meters need to be shown.

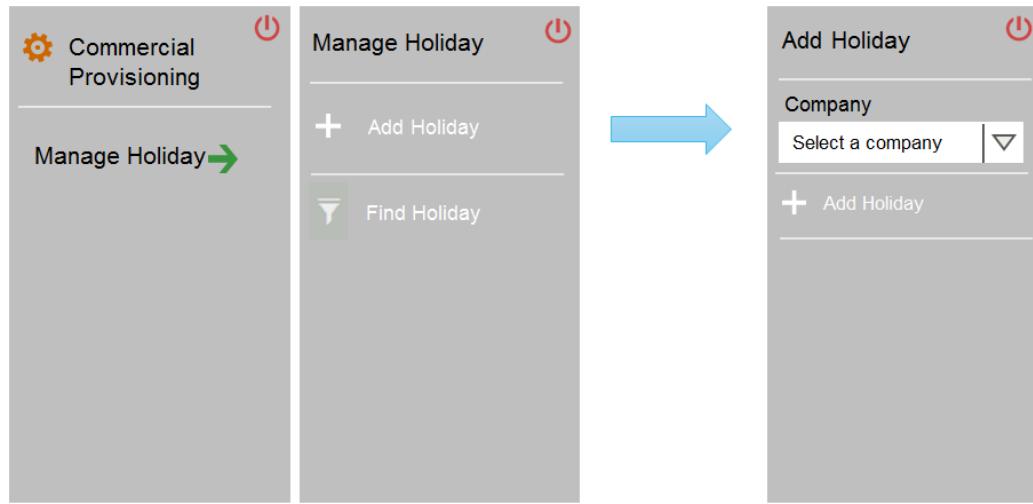
To read credit the user has to select one or more meters from results list and then, in the area appeared below the grid, press desired button

| POD name | Serial number | State | Contract state | Concentrator... | Breaker state | Contract profile | Tariff profile |
|----------|----------------------|--------------|----------------|-----------------|-----------------|-------------------------|---------------------|
| UNOLAS01 | UN000000000000000000 | Commissioned | closed | UNOLAS01 | detached (0) | Default contract - C001 | Default tariff - C0 |
| UNOLAS02 | UN000000000000000000 | Commissioned | closed | UNOLAS02 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS03 | UN000000000000000000 | Commissioned | closed | UNOLAS03 | detached (0) | Default contract - C001 | Default tariff - C0 |
| UNOLAS04 | UN000000000000000000 | Commissioned | closed | UNOLAS04 | detached (0) | Default contract - C001 | Default tariff - C0 |
| UNOLAS05 | UN000000000000000000 | Commissioned | closed | UNOLAS05 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS06 | UN000000000000000000 | Commissioned | closed | UNOLAS06 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS07 | UN000000000000000000 | Commissioned | closed | UNOLAS07 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS08 | UN000000000000000000 | Commissioned | closed | UNOLAS08 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS09 | UN000000000000000000 | Commissioned | closed | UNOLAS09 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS10 | UN000000000000000000 | Commissioned | closed | UNOLAS10 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS11 | UN000000000000000000 | Commissioned | closed | UNOLAS11 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS12 | UN000000000000000000 | Commissioned | closed | UNOLAS12 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS13 | UN000000000000000000 | Commissioned | closed | UNOLAS13 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS14 | UN000000000000000000 | Commissioned | closed | UNOLAS14 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS15 | UN000000000000000000 | Commissioned | closed | UNOLAS15 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS16 | UN000000000000000000 | Commissioned | closed | UNOLAS16 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS17 | UN000000000000000000 | Commissioned | closed | UNOLAS17 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS18 | UN000000000000000000 | Commissioned | closed | UNOLAS18 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS19 | UN000000000000000000 | Commissioned | closed | UNOLAS19 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS20 | UN000000000000000000 | Commissioned | closed | UNOLAS20 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS21 | UN000000000000000000 | Commissioned | closed | UNOLAS21 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS22 | UN000000000000000000 | Commissioned | closed | UNOLAS22 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS23 | UN000000000000000000 | Commissioned | closed | UNOLAS23 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS24 | UN000000000000000000 | Commissioned | closed | UNOLAS24 | connected (100) | Default contract - C001 | Default tariff - C0 |
| UNOLAS25 | UN000000000000000000 | Commissioned | closed | UNOLAS25 | connected (100) | Default contract - C001 | Default tariff - C0 |

The first button generates a remote workorder as long as the second one generates a workorder that can be sent over by using mobile app.

7.12. Holiday

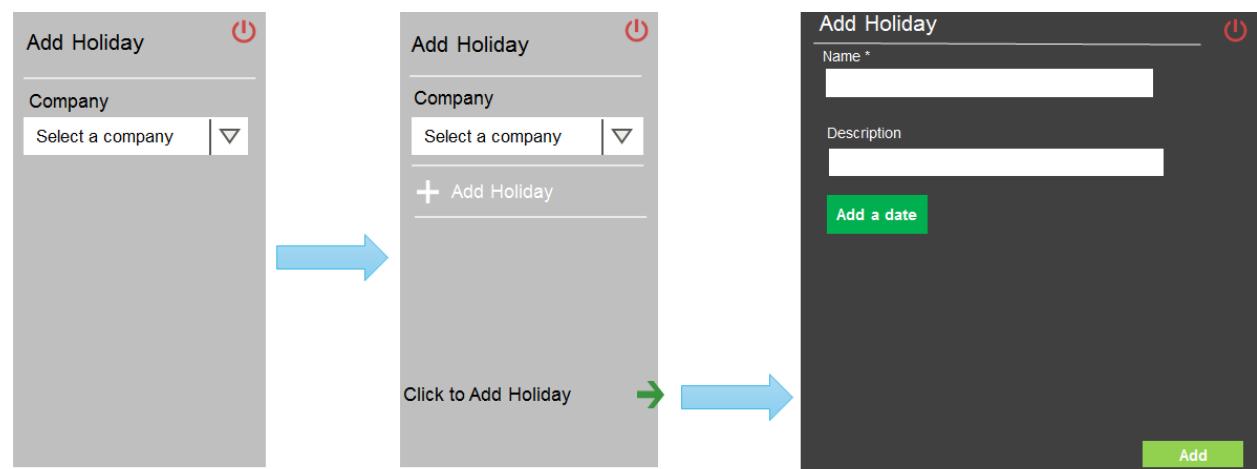
With this function it's possible to set the Holiday calendar useful for calculating the tariff of the energy consume.



ADD HOLIDAY

selecting the Add Holiday link the Add Holiday form is shown, it's possible to Add a new Holiday in the system using the Add Holiday associations form that is visible clicking on the **+ Add Holiday** link.

An Add Holiday form filter is shown on the right, it needs to select a Company and clicking on the **Add Holiday** link.



It's possible to create a new Holiday list clicking on the Add a date for adding new dates to the list:

The diagram illustrates a transition between two forms: 'Add Holiday' and 'Edit Holiday'. A blue arrow points from the 'Add Holiday' form on the left to the 'Edit Holiday' form on the right.

Add Holiday Form (Left):

- Name *: Text input field.
- Description: Text input field.
- Add a date: Button.
- Add: Button.

Edit Holiday Form (Right):

- Name *: Text input field.
- Description: Text input field.
- Holiday date : *: Date input field with a calendar icon.
- Remove: Button.
- Add a date: Button.
- Add: Button.

SHOW EDIT OR REMOVE DATES ON THE LIST

It's possible to see all the holiday lists and manage them adding or removing dates or delete the list

The diagram illustrates a transition from a search interface to a data list view. A blue arrow points from the 'Find Holiday' form on the left to the 'Holiday Data' list on the right.

Find Holiday Form (Left):

- Company: Text input field with placeholder 'Select a company'.
- Click to see results: Text.
- Search icon: Magnifying glass icon.

Holiday Data List (Right):

| Cancel | Edit | Id | Name | Description | Holiday List | Insert Date |
|--------|--------|-----|------|-------------|--------------|-------------|
| trash | pencil | ... | ... | ... | ... | ... |
| trash | pencil | ... | ... | ... | ... | ... |

It's possible to see All the Company Holiday lists selecting a Company and clicking on the Click to see results;

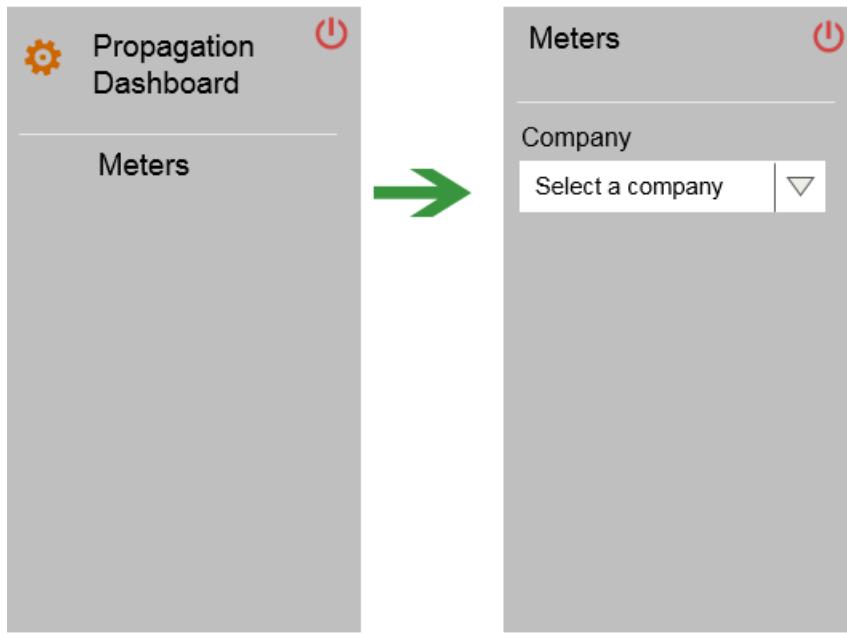
When the Holiday list appears:

- It's possible to delete the relation clicking on the trash icon, a confirm message is shown.
- It's possible to update the list clicking on the pencil icon, a form like the Add form is shown.

The relation is erasable or updatable only if the holiday is not busy.

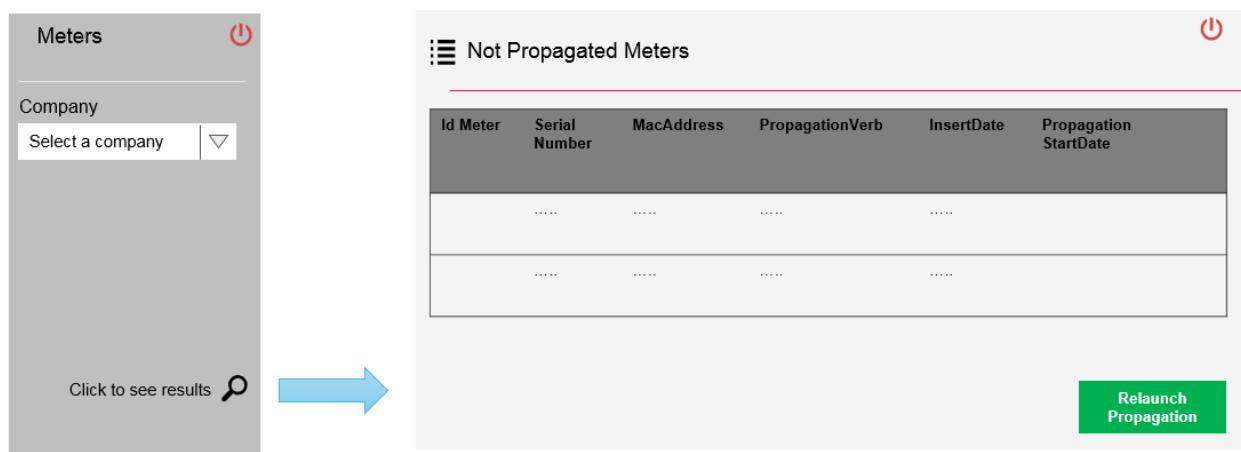
7.13. Meters Propagation

With this function it's possible monitoring the propagation of objects from Commercial Area to Technical area.



With this function it's possible to detect if there are some problems during the propagation of Insert, Modify or Delete operations on the Meter objects during a web interface operation or a massive load.

It needs to select a company from the Meters filter form clicking then on the Click to see results button a Not propagated meters list is shown.

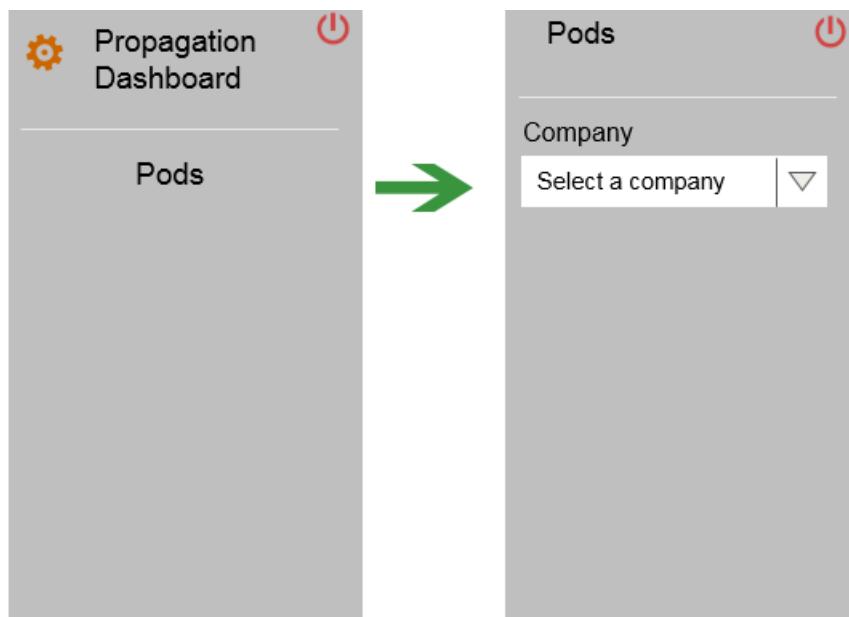


The Relaunch Propagation button is visible only if there are in the system some Creation, Modify or Delete tasks on the Meters object that are failed during the propagation from Commercial area to Technical area, clicking on the Relaunch button the Propagation operations are relaunched again.

The “Relaunch Propagation” button is disabled if there is almost a record having PropagationVerb state equal to ‘insert propagation in progress’ or equal to ‘delete propagation in progress’ or equal to ‘update propagation in progress’ and having difference from Current Date UTC Propagation and Start date UTC Propagation less than 5 minutes.

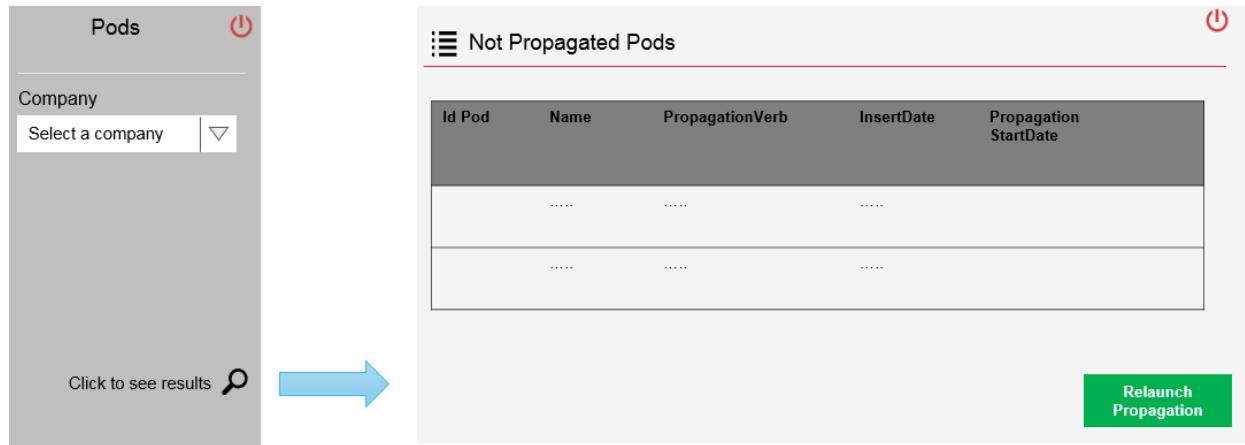
7.14. Pods Propagation

With this function it's possible monitoring the propagation of objects from Commercial Area to Technical area.



With this function it's possible to detect if there are some problems during the propagation of Insert, Modify or Delete operations on the Pod objects during a web interface operation or a massive load.

It needs to select a company from the Pods filter form, clicking then on the Click to see results button a Not propagated pods list is shown.

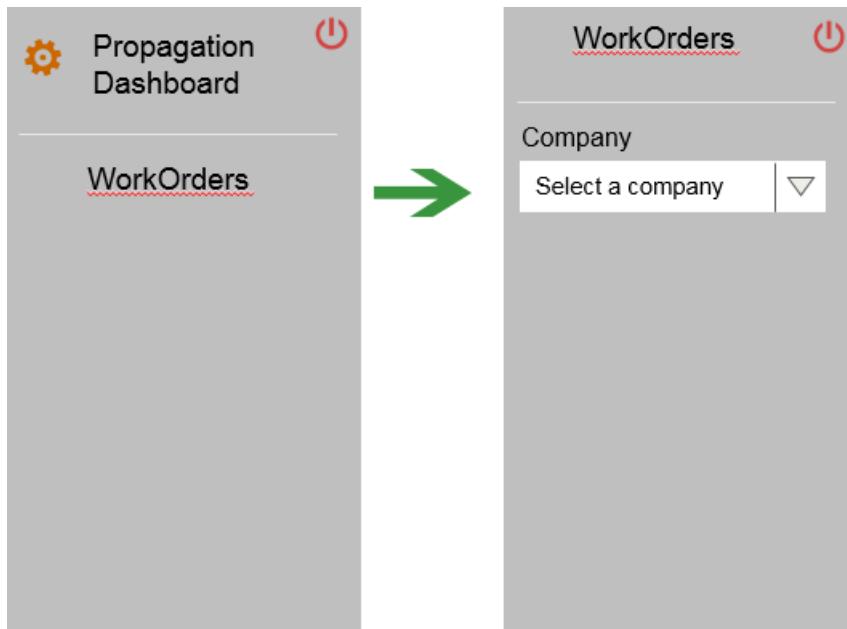


The Relaunch Propagation button is visible only if there are in the system some Creation, Modify or Delete tasks on the Pods object that are failed during the propagation from Commercial area to Technical area, clicking on the Relaunch button the Propagation operations are relaunched again.

The “Relaunch Propagation” button is disabled if there is almost a record having PropagationVerb state equal to ‘insert propagation in progress’ or equal to ‘delete propagation in progress’ or equal to ‘update propagation in progress’ and having difference from Current Date UTC Propagation and Start date UTC Propagation less than 5 minutes.

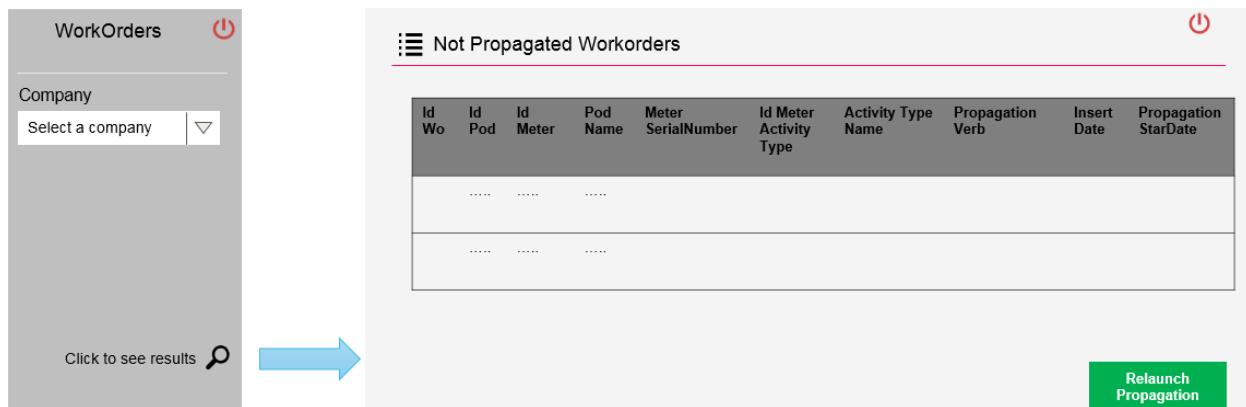
7.15. Work Orders Propagation

With this function it's possible monitoring the propagation of objects from Commercial Area to Technical area.



With this function it's possible to detect if there are some problems during the propagation of Insert, Modify or Delete operations on the Pod objects during a web interface operation or a massive load.

It needs to select a company from the Pods filter form, clicking then on the Click to see results button a Not propagated pods list is shown.

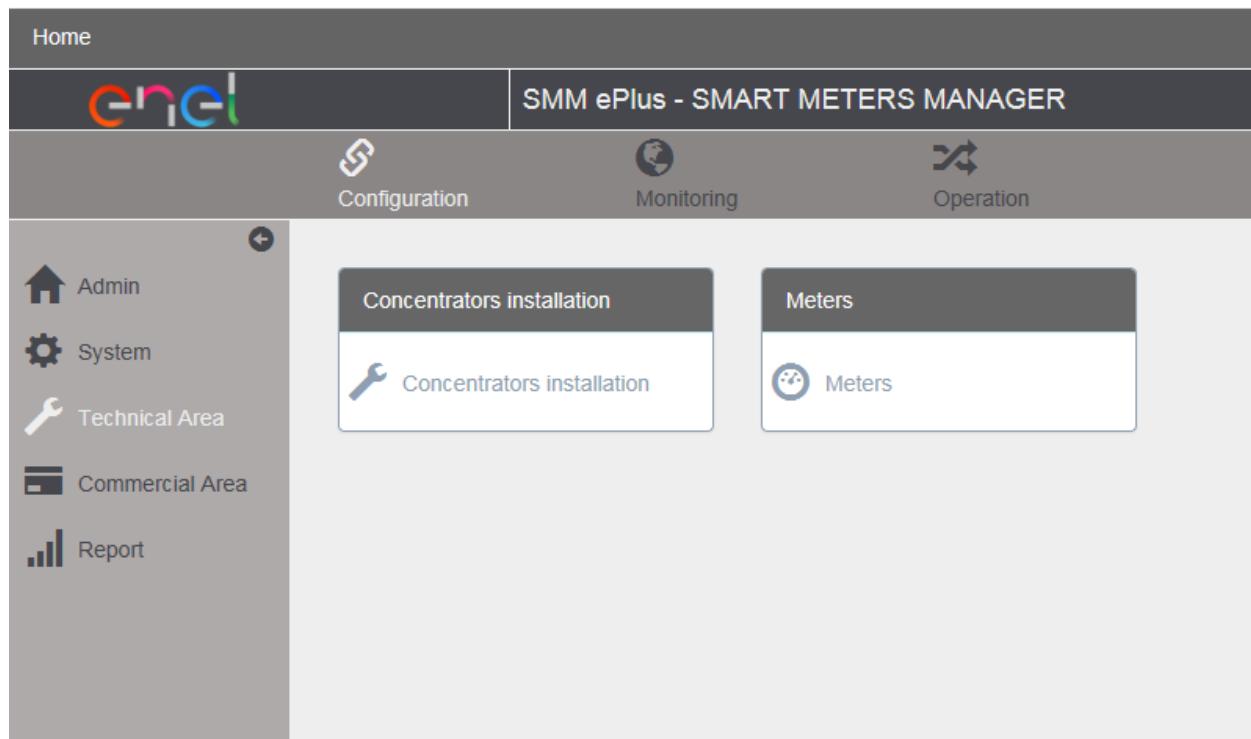


The Relaunch Propagation button is visible only if there are in the system some Creation, Modify or Delete tasks on the Workorders object that are failed during the propagation from Commercial area to Technical area, clicking on the Relaunch button the Propagation operations are relaunched again.

The “Relaunch Propagation” button is disabled if there is almost a record having PropagationVerb state equal to ‘insert propagation in progress’ or equal to ‘delete propagation in progress’ or equal to ‘update propagation in progress’ and having difference from Current Date UTC Propagation and Start date UTC Propagation less than 5 minutes.

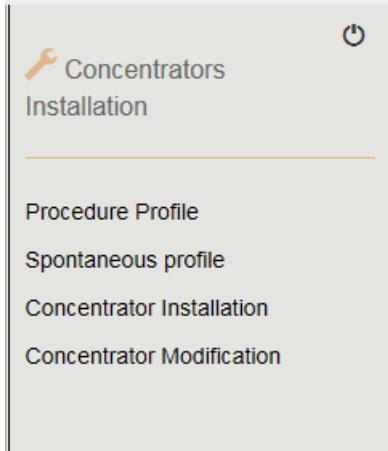
8. Technical area

When the user login in into the system the Widgets form dashboard is shown (see Figure 01). Selecting the Technical Area voice on the Main Menu and the Configuration voice on the Secondary Menu the Concentrators Installation Widget and the Meters Widget are shown:

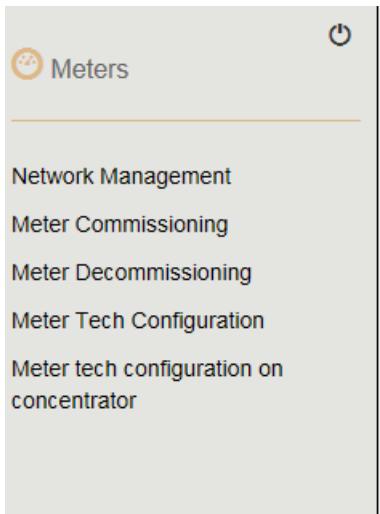


The Concentrators Installation Widget contains the following menu items:

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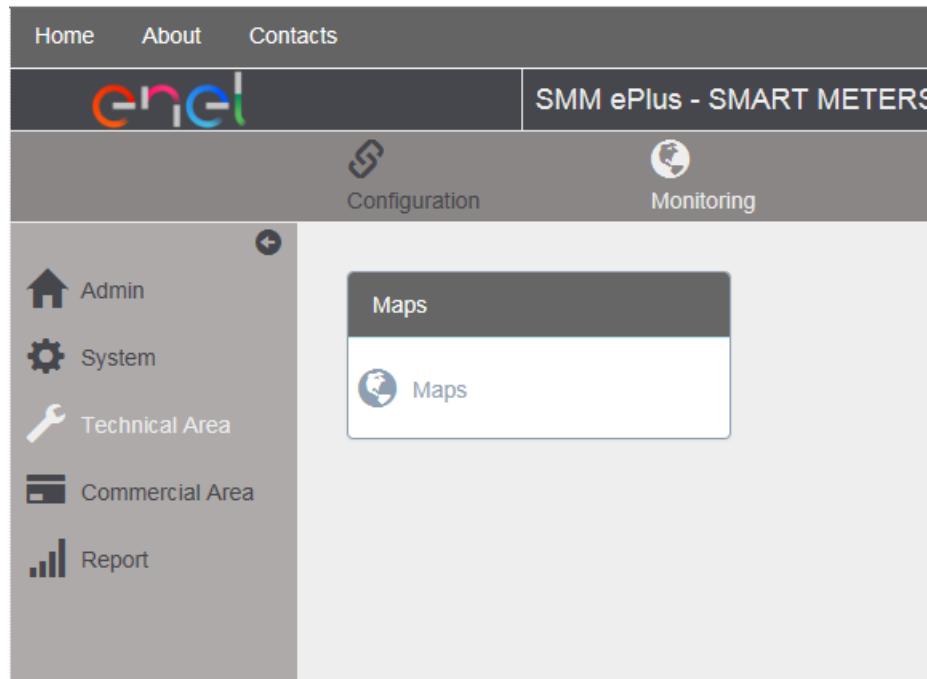


The Meters Widget contains the following menu items:

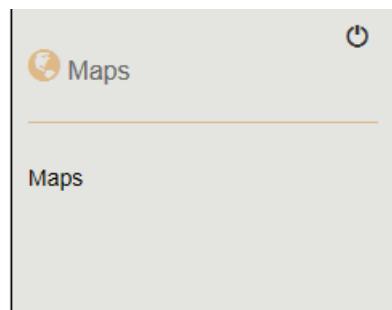


MAPS WIDGET

e-distribuzione

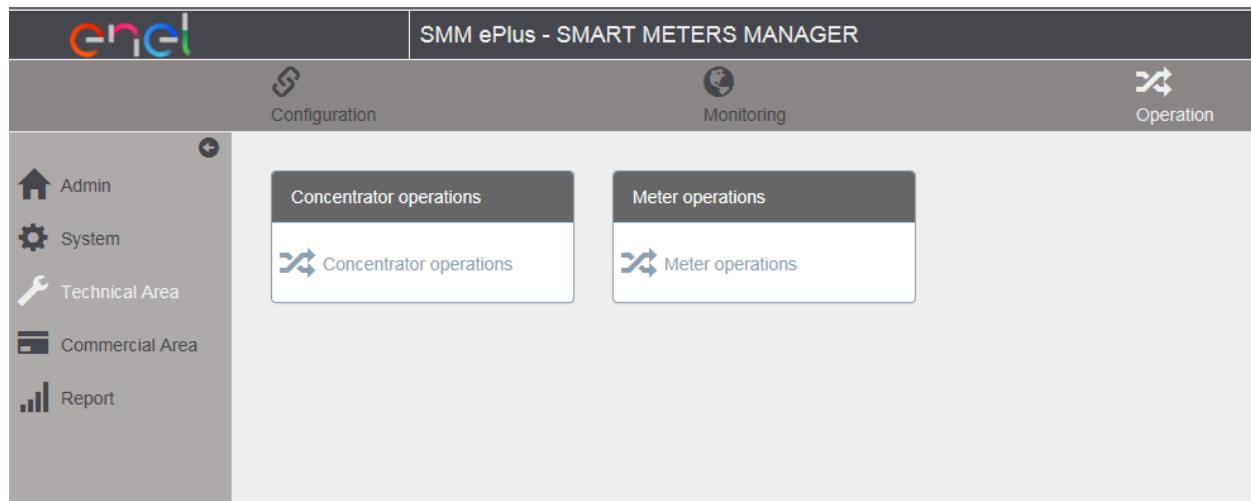


Selecting the Maps widget under Monitoring menu these menu voices are shown:

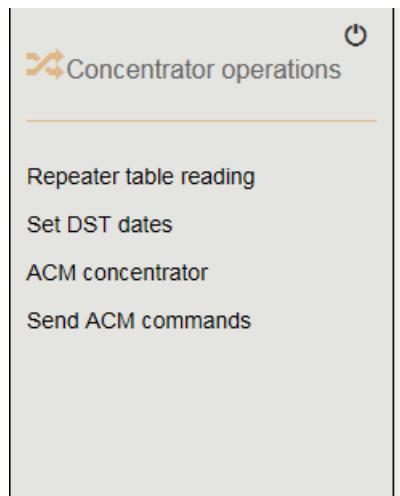


These menu functions are described in the next sections.

OPERATION WIDGET

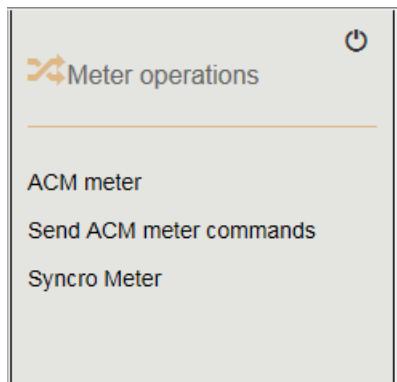


Selecting the Concentrator operations widget under Operation menu these menu voices are shown:



These menu functions are described in the next sections.

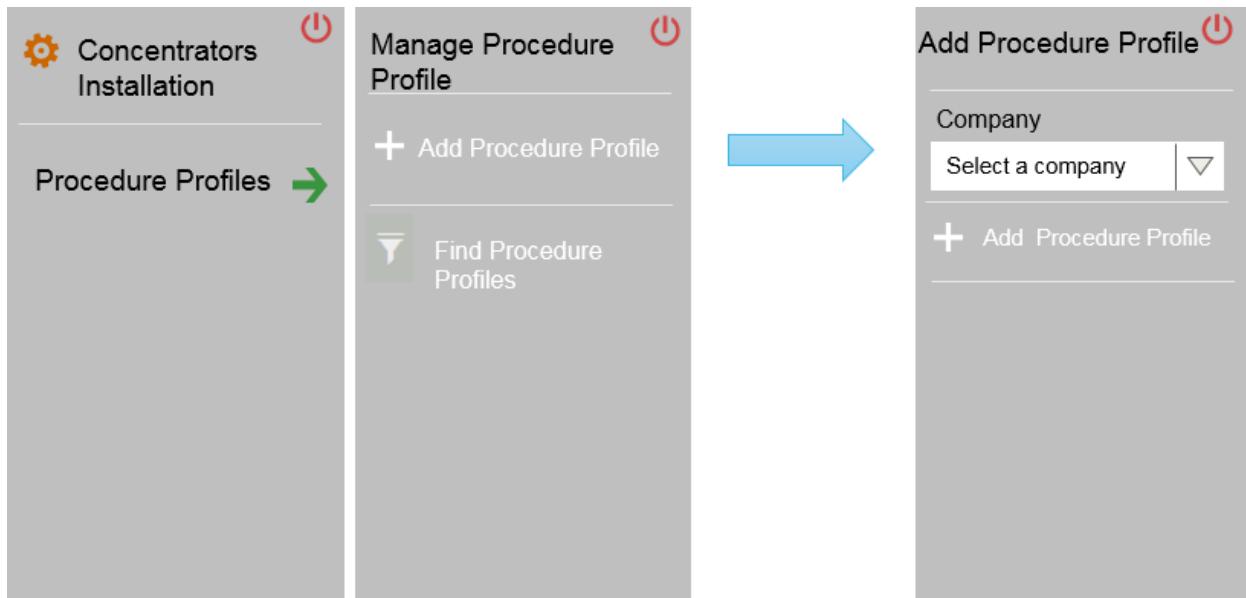
Selecting the Meter operations widget under Operation menu these menu voices are shown:



These menu functions are described in the next sections.

8.1. Procedure Profile

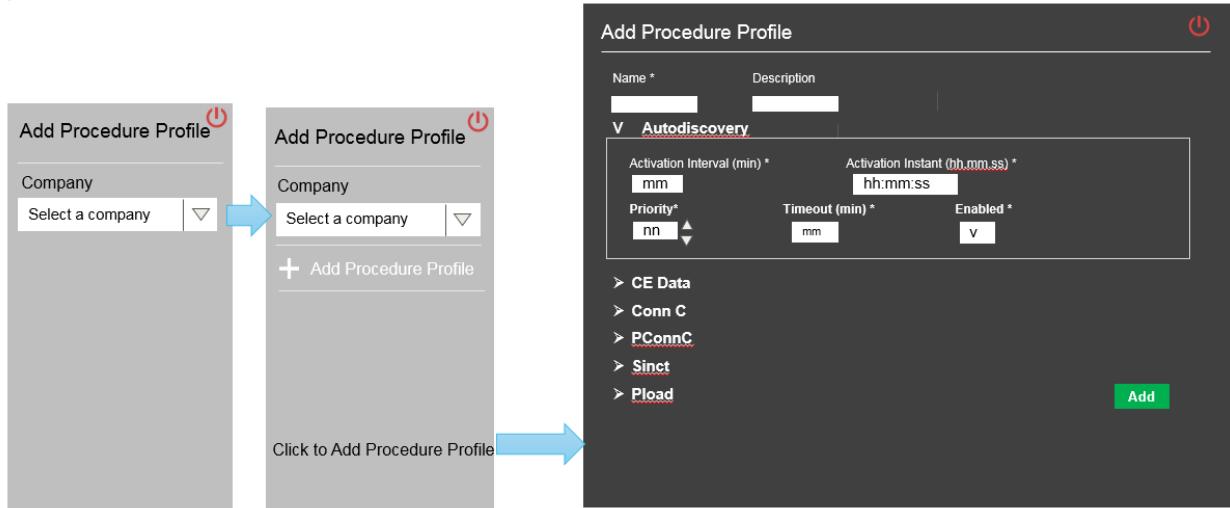
With this function it's possible to insert the procedure profile to configure the procedures that are used by Concentrator installation/modification.



ADD PROCEDURE PROFILE

Selecting the Add Procedure Profile link the Add Procedure Profile form is shown, it's possible to Add a new Procedure Profile in the system using the Add form that is visible clicking on the **+ Add Procedure Profile** link.

An Add Procedure Profile form filter is shown on the right, it needs to select a Company, and clicking then on the **Click to Add Procedure Profile** link



It's possible to fill the form, the field with * are mandatory.

There are some constraints on the fields file:

| Field | Field length | Field type |
|-------------------------------|-------------------------------------|--------------|
| Name | Max lenght 50 | alphanumeric |
| Description | Max lenght 100 | alphanumeric |
| Activation Interval (min) | 0 or values between 1 and 1092 | numeric |
| Activation Instant (hh:mm:ss) | Values range: 00:00:00 and 23:59:59 | data |
| Priority | Values between 1 and 5 | numeric |
| Timeout (min) | 0 or values between 720 and 1440 | numeric |
| Enabled | True/False | |

Activation interval is the value of the period (in minutes) over which the concentrator procedure is executed. For example, a value 10 means that every ten minutes the system executes the procedure.

Activation instant is the first instant in the day in which the concentrator procedure is activated.

Priority is a value detailing the priority level of the procedure. In the case in which a high priority procedure is activated while a low priority procedure is still running, the low priority procedure execution is stopped and the high priority one is started.

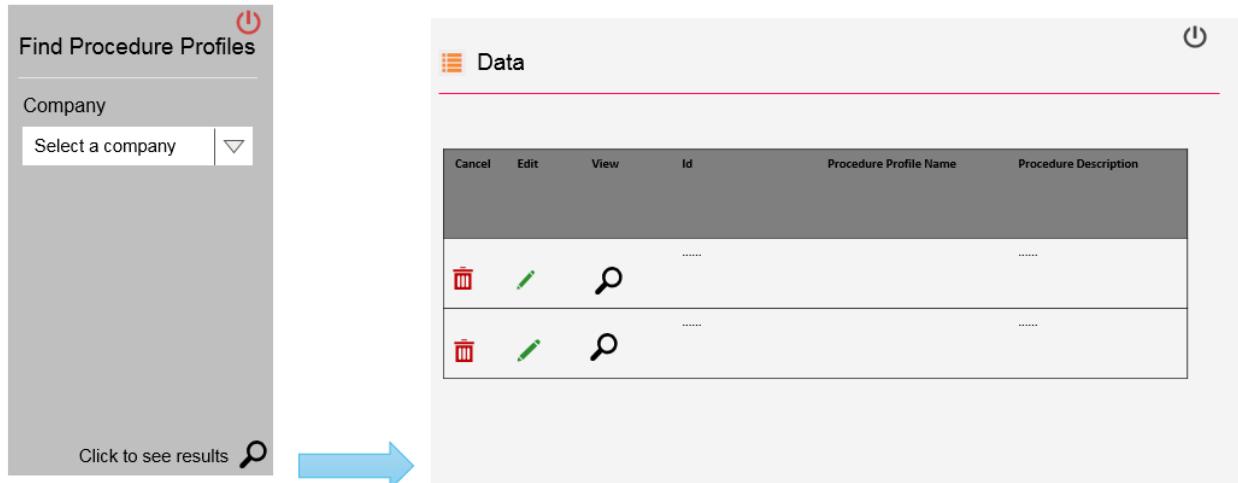
Timeout is the timeout between the activation instant and the real activation of the procedure. It is normally set to 0.

If the fields are filled with a wrong value their label is circled with a red line and a correct value is required.

Clicking then on the **Add** button the new Procedure Profile is inserted into the system.

EDIT OR REMOVE PROCEDURE PROFILES

It's possible to Edit or Remove a Procedure Profile filling the Find filter for viewing the desired procedure profile list.



It's possible to see All the Procedures Profile selecting a Company.

Clicking then on **Click to see results** the Procedure Profile Data grid appears on the grid;

- It's possible to delete the Procedure Profile clicking on the icon, a confirm message is shown.
- It's possible to update a Procedure Profile record clicking on the icon.

Edit Procedure Profile

| | |
|---|----------------|
| Name * | Description |
| Autodiscovery | |
| Activation Interval (min) * Activation Instant (hh:mm:ss) * | |
| mm | hh:mm:ss |
| Priority* | Timeout (min)* |
| nn | mm |
| Enabled * | |
| <input checked="" type="checkbox"/> V | |

CE Data
Conn C
PConnC
Sinct
Pload

Data

| Cancel | Edit | View | Id | Procedure Profile Name | Procedure Description |
|--------|-------|-------|-------|------------------------|-----------------------|
| | | | | Autodiscovery | |
| | | | | Autodiscovery | |

The Name is not updatable because it is the record key.

It's possible to Delete or Edit the Procedure Profile not busy (not associated to installed Concentrators), if the Procedure Profile is busy it is possible to view it clicking on the lens button.

View Procedure Profile

| | |
|---|----------------|
| Name * | Description |
| Autodiscovery | |
| Activation Interval (min) * Activation Instant (hh:mm:ss) * | |
| mm | hh:mm:ss |
| Priority* | Timeout (min)* |
| nn | mm |
| Enabled * | |
| <input checked="" type="checkbox"/> V | |

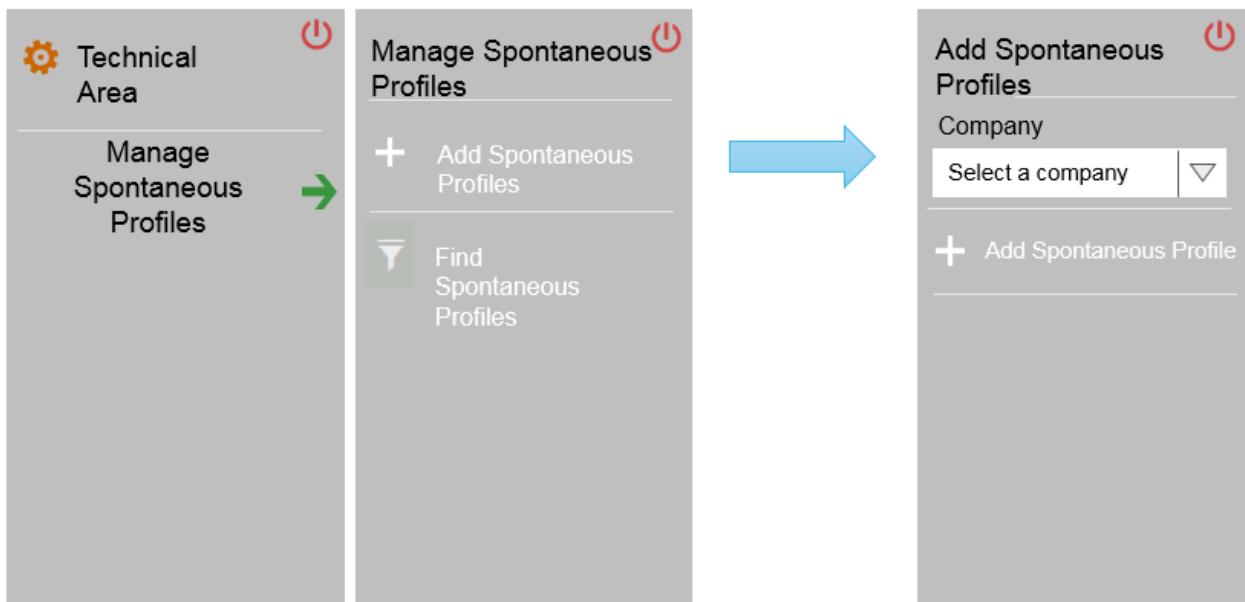
CE Data
Conn C
PConnC
Sinct
Pload

Data

| Cancel | Edit | View | Id | Procedure Profile Name | Procedure Description |
|--------|-------|-------|-------|------------------------|-----------------------|
| | | | | Autodiscovery | |
| | | | | Autodiscovery | |

8.2. Concentrators' Spontaneous Profile

With this function it's possible to insert the spontaneous profile that are used by Concentrator installation.



ADD SPONTANEOUS PROFILE

Selecting the Add Procedure Profile link the Add Spontaneous Profile form is shown, it's possible to Add a new Spontaneous Profile in the system using the Add form that is visible clicking on the **+ Add Spontaneous Profiles** link.

An Add Spontaneous Profile form filter is shown on the right, it needs to select a Company, and clicking then on the **Click to Add Spontaneous Profile** link the Add Spontaneous Profile form is shown.

The screenshot shows the software's main menu on the left with options like Admin, System, Technical area, Commercial area, and Report. The 'Technical area' is selected. In the center, under 'Concentrators installation', there are sub-options: Procedure profile, Spontaneous profile, Concentrator installation, Concentrator modification, and Concentrator removal. A specific dialog box titled 'Add concentrator spontaneous' is open on the right. It contains fields for 'Name *' (with a red circle around the asterisk), 'Spontaneous messages IP address' (containing '10.0.1.36'), and checkboxes for 'Wakeup enabled', 'Last Gasp concentrator enabled', and 'Last Gasp meter enabled'. There are also notes about enabling features for firmware/hardware support. A blue 'Add' button is at the bottom right.

It's possible to fill the form, the field with * are mandatory.

There are some constraints on the fields file:

| Field | Field length | Field type |
|--------------------------------|---------------|--------------|
| Name | Max lenght 50 | alphanumeric |
| Spont IP Address | nn.nn.nn.nn | Ip address |
| Wakeup* enabled | true/false | bool |
| Last Gasp concentrator enabled | true/false | bool |
| Last Gasp meter enabled | true/false | bool |

Used port: 58692

If the fields are filled with a wrong value their label is circled with a red line and a correct value is required.

Clicking then on the **Add** button the new Spontaneous Profile is inserted into the system.

Last Gasp settings are necessary in case there's the need to track power off/on on concentrators.

*If the WakeUp feature is enabled, the concentrator periodically sends keep-alive messages to the system in order to keep the gprs connection alive.

If the concentrator can't reach the system (ip address not reachable, port not opened) the concentrator becomes unreachable until next wake up message succeeds.

EDIT OR REMOVE SPONTANEOUS PROFILES

It's possible to remove or edit (respectively first and second column on circled are below) a Spontaneous Profile filling the Find filter for viewing the desired spontaneous profile list.

| | Name | Wakeup enabled .. | Ip address .. | Wakeup port .. | Wakeup period min .. | Date | .. |
|--|-----------|-------------------|---------------|----------------|----------------------|------------|----|
| | Profile 1 | Enabled | 192.168.1.100 | 5000 | 300 | 2023-01-01 | |
| | Profile 2 | Enabled | 192.168.1.100 | 5000 | 300 | 2023-01-01 | |
| | Profile 3 | Enabled | 192.168.1.100 | 5000 | 300 | 2023-01-01 | |
| | Profile 4 | Enabled | 192.168.1.100 | 5000 | 300 | 2023-01-01 | |
| | Profile 5 | Enabled | 192.168.1.100 | 5000 | 300 | 2023-01-01 | |
| | Profile 6 | Enabled | 192.168.1.100 | 5000 | 300 | 2023-01-01 | |
| | Profile 7 | Enabled | 192.168.1.100 | 5000 | 300 | 2023-01-01 | |
| | Profile 8 | Enabled | 192.168.1.100 | 5000 | 300 | 2023-01-01 | |
| | Profile 9 | Enabled | 192.168.1.100 | 5000 | 300 | 2023-01-01 | |

It's possible to see All the Spontaneous Profile selecting a Company.

Clicking then on **Click to see results** the Spontaneous Profile Data grid appears on the grid;

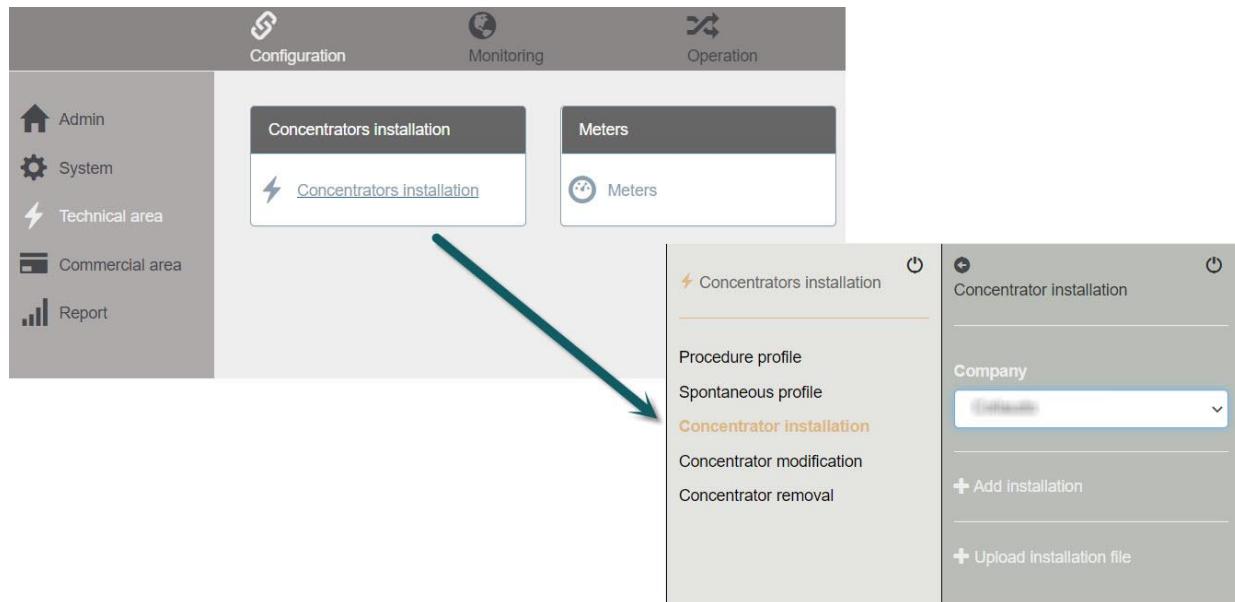
- It's possible to delete the Spontaneous Profile clicking on the icon, a confirm message is shown.
- It's possible to update a Spontaneous Profile record clicking on the icon.

The Name is not updatable because it is the record key.

It's possible to Delete or Edit the Procedure Profile not busy (not associated to installed Concentrators).

8.3. Concentrator Installation

With this function it's possible to install a Concentrator.



ADD CONCENTRATOR INSTALLATION

Selecting the Add Installation link the Add Installation form is shown, it's possible to Add a new Installation in the system using the Add form that is visible clicking on the **+ Add Installation** link.

An Add Installation form filter is shown on the right, it needs to select a Company, and clicking then on the **Add Installation** link the Add Installation form is shown.

The screenshot shows the 'Add Concentrator installation' dialog box. It consists of five tabs:

- Select concentrator:** Shows a list of concentrators with columns for Serial number, Type, and Manufacturer. Total items: 35.
- Select spontaneous profile:** Shows a list of spontaneous profiles with columns for Name, Wake up enabled, Wakeup IP, and Wakeup period min. Total items: 3.
- Select procedure profile:** Shows a list of procedure profiles with columns for Name and Description. Total items: 4.
- Select substation:** Shows a list of substations with columns for Name and Description. Total items: 13.
- Select module:** Shows a list of modules with columns for Serial number, Type, and Manufacturer. Total items: 3.

It's possible to fill the form, the field with * are mandatory.

The Concentrator Installation name is filled automatically by Substation Name + Transformer Name, it's possible also to insert it manually.

There are some constraints on the fields file:

| Field | Field length | Field type |
|----------------------------------|--|--------------|
| Name | It's Composed automatically by Substation name + Transformer name OR it could be a free name | alphanumeric |
| Procedure Profile, Spont Profile | A single instance of one of these objects can be selected in many Concentrator Installation | |
| Substation + Transformer | A single instance can be selected just For one Concentrator Installation | |
| Module, Sim, Ethernet | A single instance of one of these objects can be selected just For one Concentrator Installation | |

Clicking then on the **Add** button the new Concentrator Installation is inserted into the system, the Installation and Initialization works are generated, see the Works execution flow in the Report section (9 Report).

The Detail field shows the notify message 'Initialization in progress'.

When you generate an initialization activity, you can't modify the related concentrator until the automatic retries haven't been executed (see the form below).

| Installed Concentrators | | | | | | | | |
|-------------------------------------|---------------------|------------------|-------------------|---------------|---------------|-----------|-----------------|----------------------------|
| | Name | Serialnumber | Communication t.. | Ethernet Ip | Sim Card Ip | Procedure | State | Details |
| <input checked="" type="checkbox"/> | SubItalyVa1 | 14CEC50611000114 | Router | 255.255.254.0 | | prova2 | Not initialized | Initialization in progress |
| <input checked="" type="checkbox"/> | SubItalyCu2dd | 14CEC50511000112 | GPRS | | 10.117.10.20 | prova2 | Not initialized | Initialization in progress |
| <input checked="" type="checkbox"/> | SubItalyMi2TD_50... | 14CEC50611000115 | GSM | | 192.122.19.27 | prova2 | Not initialized | Initialization in progress |

For example in this Completed Works report section (see 0 Report section) the Initialization works are idwork 17963 and 17064.

activity type ConcentratorInitialization concentrator NULL View Report

14 4 1 of 2 ? > < Find | Next

Completed Works

| idwork | concentrator | activity_type | startdate_utc | enddate_utc | workorder | result | error description |
|--------|------------------|----------------------------|----------------------|----------------------|-----------|--------|---|
| 17992 | Subestacion2TD_2 | ConcentratorInitialization | 8/10/2018 5:20:02 PM | 8/10/2018 5:23:03 PM | - | ✗ | Concentrator is unreachable |
| 17981 | Subestacion2TD_2 | ConcentratorInitialization | 8/10/2018 4:46:58 PM | 8/10/2018 4:50:02 PM | - | ✗ | Concentrator is unreachable |
| 17975 | Subestacion2TD_2 | ConcentratorInitialization | 8/10/2018 4:13:02 PM | 8/10/2018 4:16:57 PM | - | ✗ | Concentrator is unreachable |
| 17972 | Subestacion2TD_2 | ConcentratorInitialization | 8/10/2018 3:39:35 PM | 8/10/2018 3:43:02 PM | - | ✗ | Concentrator is unreachable |
| 17966 | Subestacion2TD_2 | ConcentratorInitialization | 8/10/2018 3:06:11 PM | 8/10/2018 3:09:35 PM | - | ✗ | Concentrator is unreachable |
| 17963 | Subestacion2TD_2 | ConcentratorInitialization | 8/10/2018 2:32:56 PM | 8/10/2018 2:36:11 PM | - | ✗ | Concentrator is unreachable |
| 17092 | Subestacion2TD_2 | ConcentratorInitialization | 8/6/2018 10:36:39 PM | 8/6/2018 10:39:35 PM | - | ✗ | Concentrator is unreachable |
| 17087 | Subestacion2TD_2 | ConcentratorInitialization | 8/6/2018 10:03:41 PM | 8/6/2018 10:06:39 PM | - | ✗ | Concentrator is unreachable |
| 17080 | Subestacion2TD_2 | ConcentratorInitialization | 8/6/2018 9:30:41 PM | 8/6/2018 9:33:41 PM | - | ✗ | Concentrator is unreachable |
| 17076 | Subestacion2TD_2 | ConcentratorInitialization | 8/6/2018 8:57:46 PM | 8/6/2018 9:00:41 PM | - | ✗ | Concentrator is unreachable |
| 17068 | Subestacion2TD_2 | ConcentratorInitialization | 8/6/2018 8:24:46 PM | 8/6/2018 8:27:46 PM | - | ✗ | Concentrator is unreachable |
| 17064 | Subestacion2TD_2 | ConcentratorInitialization | 8/6/2018 7:51:47 PM | 8/6/2018 7:54:46 PM | - | ✗ | Concentrator is unreachable |
| 17001 | Subestacion1TD_1 | ConcentratorInitialization | 8/6/2018 3:07:50 PM | 8/6/2018 3:16:50 PM | - | ✗ | Wrong concentrator. Serial# 31364345433530363130303 |
| 16988 | Subestacion1TD_1 | ConcentratorInitialization | 8/6/2018 2:34:50 PM | 8/6/2018 2:37:50 PM | - | ✗ | Concentrator is unreachable |
| 16986 | Subestacion1TD_1 | ConcentratorInitialization | 8/6/2018 2:01:52 PM | 8/6/2018 2:04:50 PM | - | ✗ | Concentrator is unreachable |
| 16285 | Subestacion2TD_2 | ConcentratorInitialization | 8/3/2018 4:14:14 PM | 8/3/2018 4:15:12 PM | - | ✓ | |

In Concentrator Activities Settings report, you can see that for “Concentrator initialization” activities, 5 retries are done with an interval of 30 minutes:

activitytypename NULL View Report

14 4 1 of 1 > < Find | Next

Concentrator Activities Settings

| concentrator activity | interval seconds | priority | max retry count | max execution hours |
|-------------------------------|------------------|----------|-----------------|---------------------|
| Commissioning | 1800 | 2 | 0 | 0 |
| VerifyCommissioning | 1800 | 2 | 0 | 0 |
| Decommissioning | 1800 | 2 | 0 | 0 |
| ConcentratorInitialization | 1800 | 2 | 5 | 12 |
| ConcentratorConfiguration | 1800 | 2 | 5 | 12 |
| Conn-c | 1800 | 2 | 5 | 12 |
| VerifyConn-c | 1800 | 2 | 5 | 12 |
| PConn-c | 1800 | 2 | 5 | 12 |
| VerifyPConn-c | 1800 | 2 | 5 | 12 |
| AutodiagnosticConcentrator | 1800 | 2 | 5 | 12 |
| MeterTechConfig | 1800 | 2 | 5 | 12 |
| MeterTechConfigOnConcentrator | 1800 | 2 | 5 | 12 |
| ConcentratorBufferDwld | 1800 | 2 | 5 | 12 |
| ConcentratorSyncro | 1800 | 2 | 5 | 12 |
| MeterReading | 1800 | 1 | 3 | 3 |
| MeterContractConfiguration | 1800 | 1 | 3 | 3 |
| MeterDetachment | 1800 | 1 | 3 | 3 |
| MeterReconnection | 1800 | 1 | 3 | 3 |
| CEData | 21600 | 3 | - | - |
| N2Upload | 21600 | 3 | - | - |
| DailyClosure | 21600 | 3 | - | - |
| Autodiscovery | 21600 | 3 | - | - |

interval seconds:
seconds between retries if the execution fails for concentrator reachability issues

priority: smaller is higher

max retry count: maximum number of retries.
0 means no limit to retries

max execution hours: maximum time for the execution of the activity. No matter the number of retries done. 0 means no time limit.

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You can find this report in Report/System :

The screenshot shows the SMM ePlus - SMART METERS MANAGER application. At the top, there are navigation links for Home, About, and Contacts. Below that is a header with the ENEL logo and the title 'SMM ePlus - SMART METERS MANAGER'. The main interface has several tabs: Manufacturing, Field, Monitoring, and system. On the left, a sidebar lists Admin, System, Technical Area, Commercial Area, and Report. The central area shows a 'System' section with a dropdown menu for 'Company' set to 'Enel Distribucion Chile UAT'. Below this is a 'Concentrator Activity Settings' section. A search bar at the top right contains the placeholder 'activitytypename' with a dropdown menu showing 'NULL'.

When the automatic retries are completed the concentrator installation will be updatable:

The screenshot shows the 'Concentrator modification' screen. On the left, there's a sidebar with 'Find installations' and a company selection for 'Enel Distribucion Chile UAT'. Below that is a button 'Click to see results' with a magnifying glass icon. The main area is titled 'Installed Concentrators' and contains a table with the following data:

| Name | Serial... | Communicati... | Ethernet Ip | Sim Card Ip | Proced... | State |
|---------------------|-----------|----------------|-------------|---------------|-----------|-------------|
| Subestacion1TD_1 | 18CEC5... | GPRS | | 10.117.64.100 | perfil1 | Initialized |
| Subestacion2TD_2 | 18CEC5... | GPRS | | 10.117.64.200 | perfil1 | Initialized |
| Sub_MACD_01td1 | 17CEC5... | GPRS | | 10.117.11.167 | perfil1 | Not initial |
| Sub_TST_sinTRAFTD_1 | 17CEC5... | GPRS | | 10.115.2.123 | perfil1 | Not initial |
| Sub_MACD_02td2 | 17CEC5... | GPRS | | 10.115.1.123 | perfil1 | Not initial |

Total Items: 5

UPLOAD INSTALLATION FILE

The screenshot shows two panels of the SMM ePlus web interface. The left panel is titled 'Concentrator installation' and contains a 'Company' dropdown set to 'Collaudo', a '+ Add installation' button, and a '+ Upload installation file' button. The right panel is titled 'Insert installation from file' and includes a 'Scegli file' button (which is currently empty, showing 'Nessun file selezionato'), a 'Description *' input field, an 'Operation type' dropdown set to 'Insert', a 'load file' button, and sections for 'Download csv model' (with a CSV header example) and 'SIM Example' (with a SIM header example). A large teal arrow points from the 'Upload installation file' button in the left panel to the 'load file' button in the right panel.

Concentrator installation

Company
Collaudo

+ Add installation

+ Upload installation file

Insert installation from file

Scegli file Nessun file selezionato

Description *

Operation type
Insert load file

Download csv model

ConcentratorName;ConcentratorSerialNumber;
SpontaneousProfile;ProcedureProfile;
SubstationName;TransformerName;
ModuleSerialNumber;SimSerialNumber;
EthernetName

SIM Example: TD-27997;14CEC50511000112;
Wake_up_SMMWeb_COM;
profile_concentrator_cedata;
TD-27997;TD-5464;2491423;
8956028100025670275;

Ethernet Example: TD-27997;14CEC50511000112;
Wake_up_SMMWeb_COM;
profile_concentrator_cedata;
TD-27997;TD-5464;2491499;;ethernet01

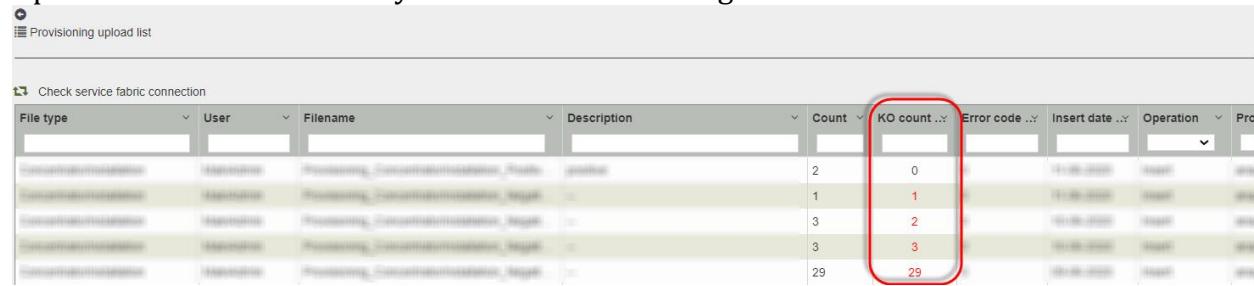
Similarly to “Add Installation”, “Upload installation file” allows to add concentrators installations on system.

To do so, it's necessary to fill in a .csv file with expected header at first row and one or more additional rows with data, by respecting formats and constraints also valid for single addition from system.

A csv model already including headers can be downloaded from the same page on SMM ePlus, by clicking on green icon.

Please note fields SimSerialNumber and EthernetName are alternative one another, and they depends on inserted module type (GSM and GPRS require SimSerialNumber, router requires EthernetName).

When finished, it's possible to see new installations on "Concentrator in field" report; to check some errors on provisioning the best way is to access to Commercial Area → Provisioning Upload Dashboard and verify "KO count" column in grid



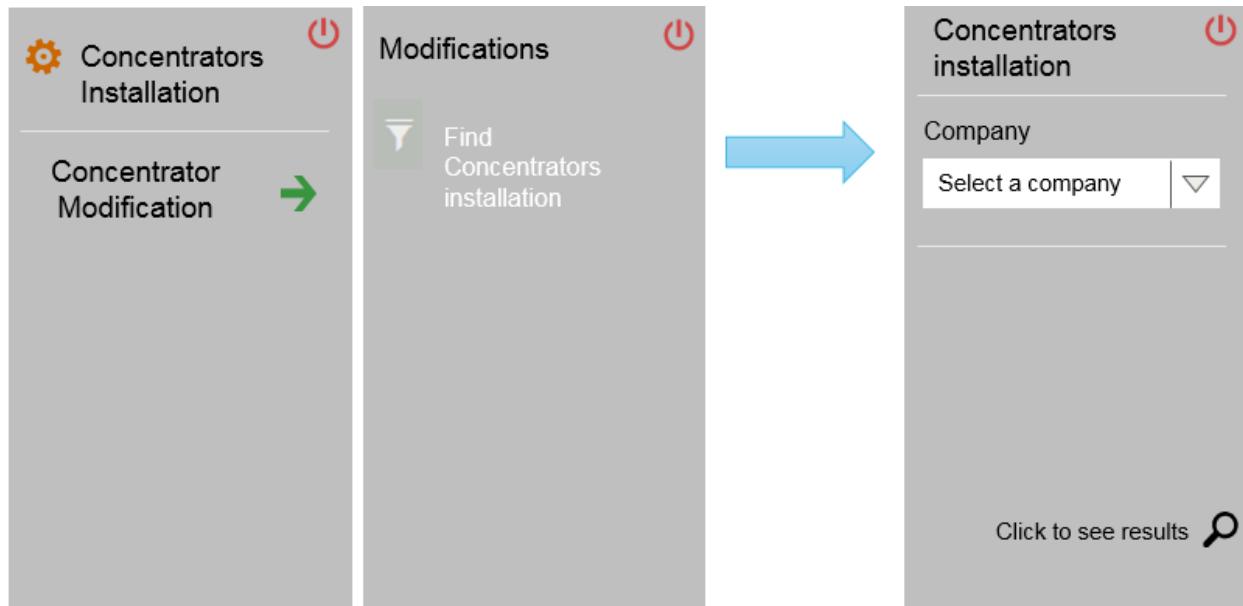
The screenshot shows a table titled "Provisioning upload list" with a red box highlighting the "KO count" column. The table has columns: File type, User, Filename, Description, Count, KO count, Error code, Insert date, Operation, and Progress. The "KO count" column contains values 0, 1, 2, 3, and 29.

| File type | User | Filename | Description | Count | KO count | Error code | Insert date | Operation | Progress |
|-----------|------|----------|-------------|-------|----------|------------|-------------|-----------|----------|
| | | | | 2 | 0 | | | | |
| | | | | 1 | 1 | | | | |
| | | | | 3 | 2 | | | | |
| | | | | 3 | 3 | | | | |
| | | | | 29 | 29 | | | | |

In case KO column is different than 0, the number contains an hyperlink: on click a new .csv containing details of error is generated; the user is required to download it and open it to figure out why data has been discarded.

8.4. Modification of Concentrator Installations

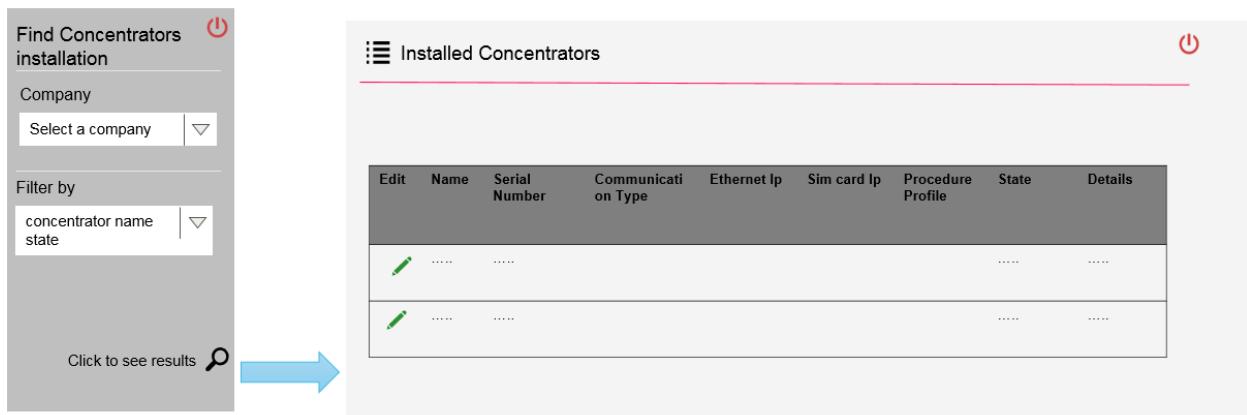
With this function it's possible to modify a Concentrator Installation.



MODIFY CONCENTRATOR INSTALLATION

Selecting the Find Concentrators installation link the Concentrators Installation form is shown, it's possible to see All the Concentrators installation visible selecting the Company and clicking then on the **Click to see results** link.

A Concentrator Modify Installation form filter is shown on the right.



It's possible to filter the Concentrators installation and Modify them if they aren't busy.

- If State field =0 → "the Concentrator is Not Initialized"
- If State field =1 → "the Concentrator is Initialized"
- If the Details field='Initialization in progress' it means that a new Installation has been created and the initialization task is running, It's not possible to change the Installation until the Initialize task is end
- If the Details field='Modification in progress' it means that a new Installation has been created, the concentrator state is 'initialize' and a Modify task is running on it, it's not possible to change the Installation until the Modify task is end.

When the Concentrator Installation modification is finished it's possible to see the report in :

Report/Field/Concentrators in field

8.5. Concentrator replacement and removal

SMM ePlus allows to replace or remove a concentrator in field, also unlinking connected meters.

The feature can be accessed on Technical Area → Configuration → Concentrator installation → Concentrator removal

The screenshot shows the SMM ePlus - SMART METERS MANAGER application. The main menu includes Home, Admin, System, Technical area (which is selected), Commercial area, and Report. The sub-menu for Technical area has options for Configuration, Monitoring, and Operation. The Configuration tab is active, showing a 'Concentrator removal' section. Below it is a 'Concentrator list' table with columns: Idsimcard, Idethernet, Name, Transformer, Substation, Serial number, Ipaddress, State, and Is configuring. A search bar at the bottom left allows users to 'Click to see results'.

When a concentrator is selected two buttons appear, giving the user the chance to remove concentrator or replace it with new device.

This screenshot shows the same interface as above, but with a single concentrator selected in the list. A red circle highlights the selection icon (a checkmark) next to the first item in the list. At the bottom of the page, there is a message 'Total items: 2 (Selected items: 1)' and two blue buttons: 'Remove concentrator' and 'Replace concentrator'.

CONCENTRATOR REPLACEMENT

When "Replace concentrator" button is selected, a new page is shown with an introductory text and details of concentrator the user is about to replace.

In this page it's possible to replace an initialized concentrator. It's necessary to insert a new concentrator name and to select the new serialnumber of the new installed concentrator. It's possible to change the associated modem, sim and/or ethernet. After the confirmation, the configuration of the new concentrator will start automatically. Meters associated to a replaced concentrator will be released and set as not commissioned.

| Name | Serial number | Ip address | Module serialnumber | Commissioned meters |
|------------|---------------|------------|---------------------|---------------------|
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |

New concentrator name * ⓘ
Name must be different from any other existing concentrator

Select concentrator
It's necessary to select the new serialnumber

There's the need to provide a new concentrator's name and new serial number; optionally, also module and sim card/ethernet can be modified.

As a result, meters associated to old concentrators are freed up, the concentrator is set as removed and the new concentrator is initialized.

CONCENTRATOR REMOVAL

When “Remove concentrator” button is selected the user can see details of current concentrator and a button to confirm operation

In this page it's possible to remove an initialized concentrator. The associated meters will be released and set as not commissioned.

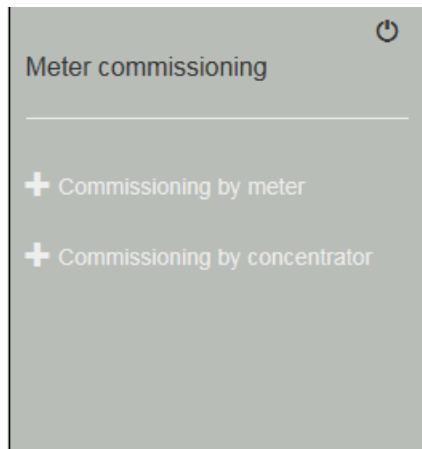
| Name | Serial number | Ip address | Module serialnumber | Commissioned meters |
|------------|---------------|------------|---------------------|---------------------|
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |

Remove concentrator

As a result, associated meter are unlinked and the concentrator is set to status ‘removed’.

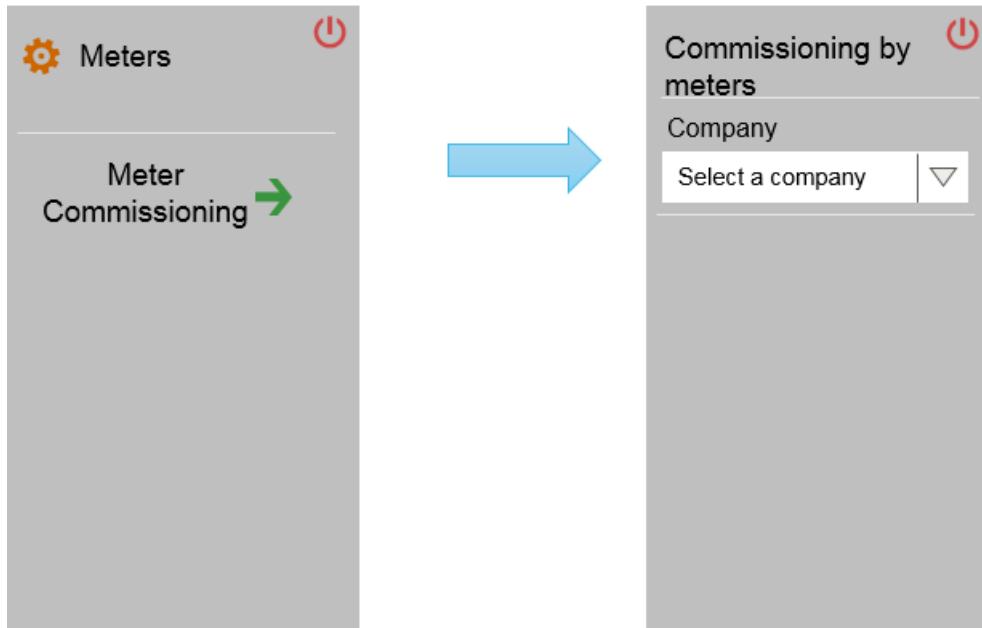
8.6. Meter Commissioning

With this function it's possible to commissioning the Meters selecting the 'Commissioning by meter' link or the 'Commissioning by concentrator' link:



ADD COMMISSIONING BY METERS

Selecting the 'Commissioning by meter' link a Commissioning by meter filter form is shown:



Selecting a company in the combo box a Concentrator filter is shown, it's possible to exclude or to include the commissioned meters and select only the meters that are unreachable.

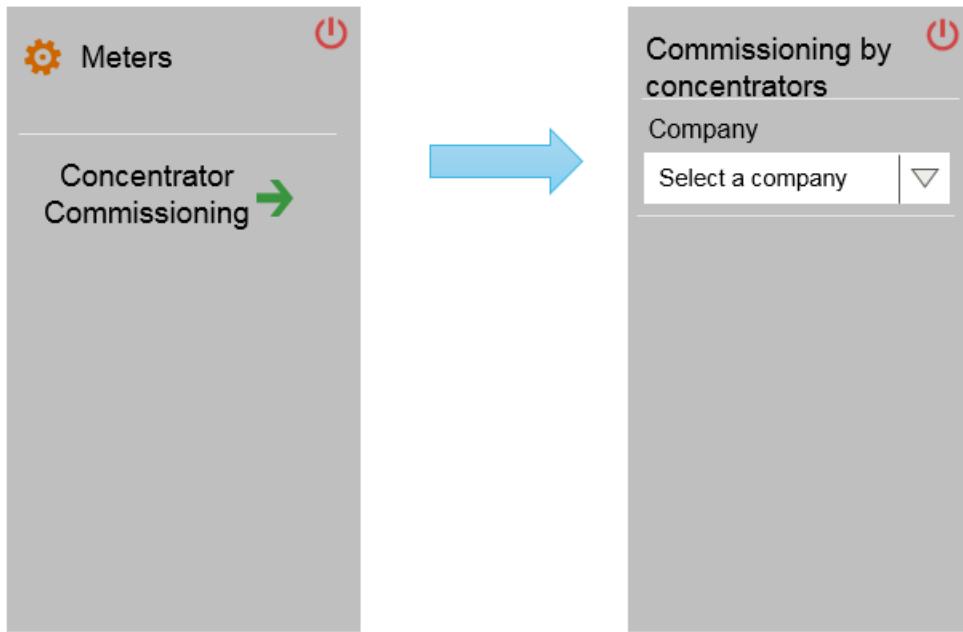
Filling the Commissioning by meters form filter and clicking then on the Find Meters button the Generate commissioning for Concentrator xxx grid is shown.

Selecting the meters to commissioning and clicking then on the Generate Commissioning button a Commissioning Work order is created for any selected meters.

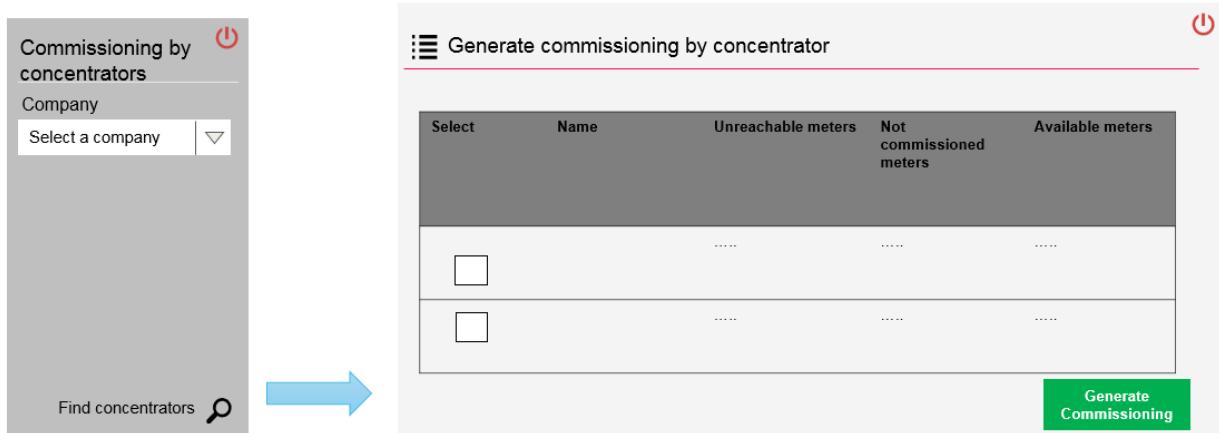
If the Commissioning Work Order execution run correctly the related Meter becomes not selectable for a further commissioning and the Meter State in the grid becomes 'commissioned'.

ADD COMMISSIONING BY CONCENTRATORS

Selecting the 'Commissioning by concentrator' link a Commissioning by concentrator filter form is shown:



Selecting a company in the combo box and selecting on the Find concentrator button a Generate commissioning by concentrator grid is shown.



The means of the columns grid is the following:

Unreachable meters → the count of commissioned but not reachable meters

Not commissioned meters → the count of not commissioned meters

Available meters → the count of not commissioned meters that are available for a new commissioning

For detecting why a meter is not available for commissioning it needs to go into **Report** menu and selecting the “Meters in field” report in the Technical Reports widget :

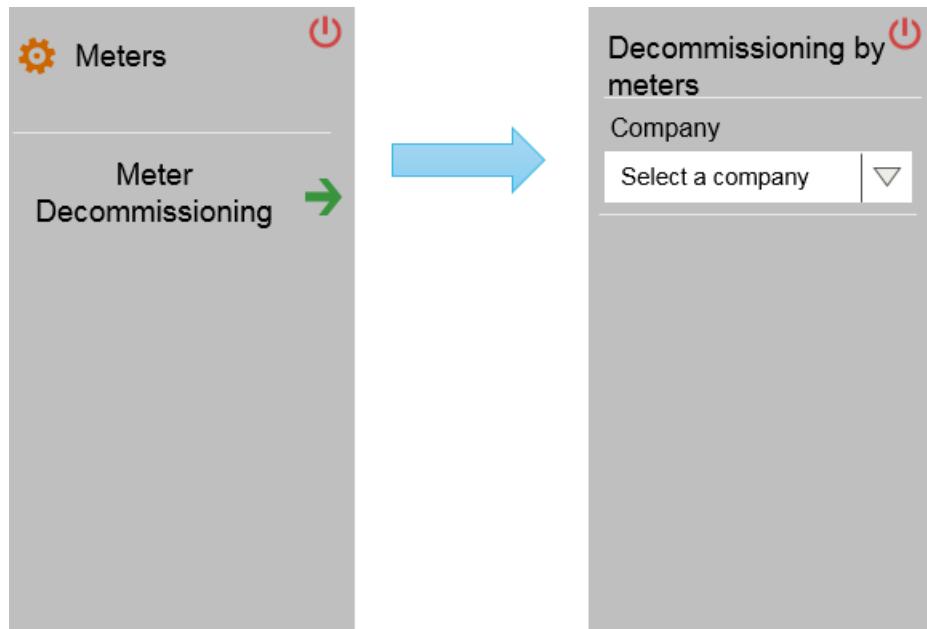


filtering them for Concentrator name or Meter serial number the process state associated to the meter is shown.

Selecting into the grid the Concentrators and clicking then on the **Generate Commissioning** button the Available meters are detected and the commissioning process is run on them.

8.7. Meter Decommissioning

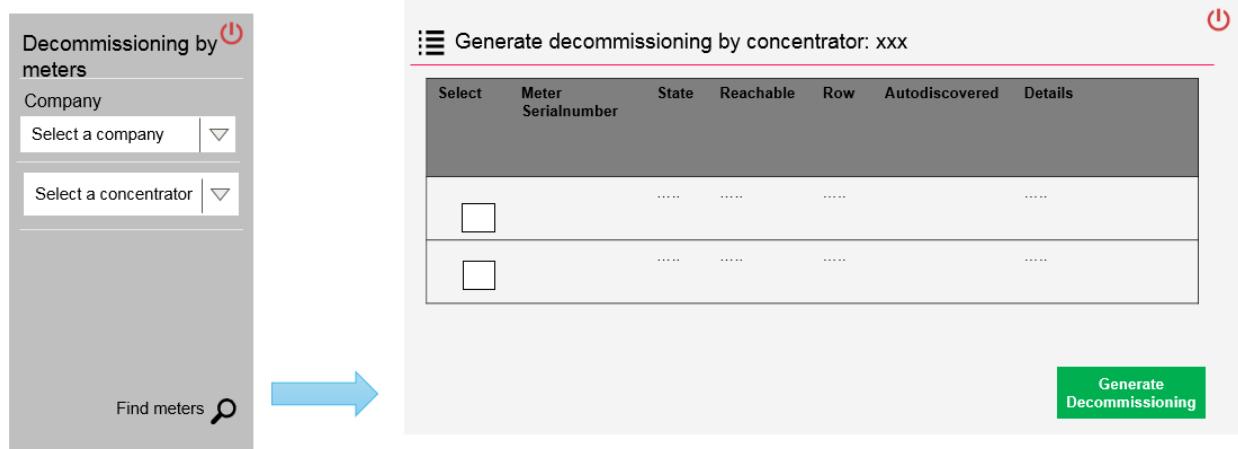
With this function it's possible to decommissioning some meters.



With this function it's possible to decommissioning the Meters selecting the 'Meter Decommissioning' link.

DECOMMISSIONING METERS

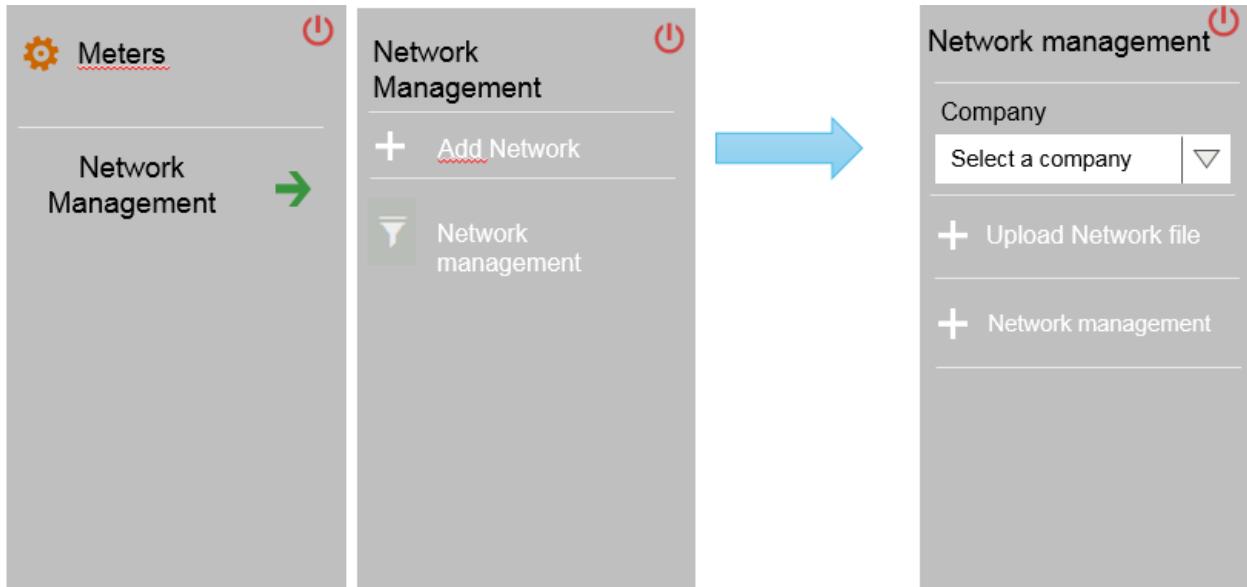
In the Decommissioning by meters form selecting a company a Select a concentrator combo box is shown . Selecting a concentrator and clicking on the Find meters button a Generate decommissioning by concentrator:xx grid is shown.



Selecting the meters and clicking then on the Generate Decommissioning button the decommissioning work orders are generated.

8.8. Network Management

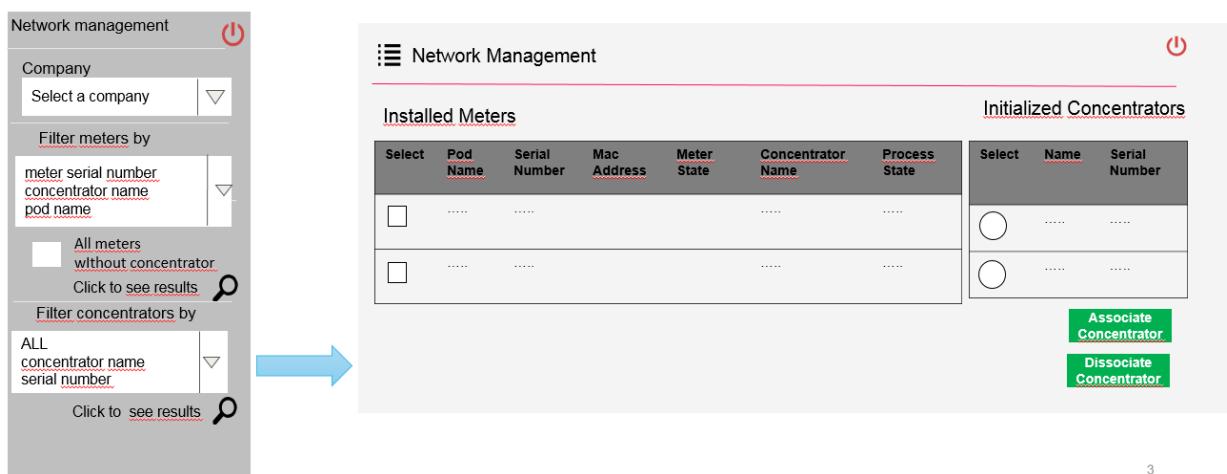
With this function it's possible to associate manually some meters to a concentrator.



With this function it's possible to associate one or some meters to a concentrator.

ADD OR REMOVE NETWORK MANAGEMENT LINK

selecting the Network management link the Network management form is shown, it's possible to associate one or more meters to an initialized concentrator .



3

It's possible to filter the meters to associate to a Concentrator filtering by Meter serial number, Concentrator name or Pod name, it's also possible to filter All the meters not associated to a concentrator, it's possible to filter All the initialized concentrators or filtering them by Concentrator name or Serial number. Selecting then the meters on the left and a concentrator on the right and clicking on Associate Concentrator button the meters are associated to the

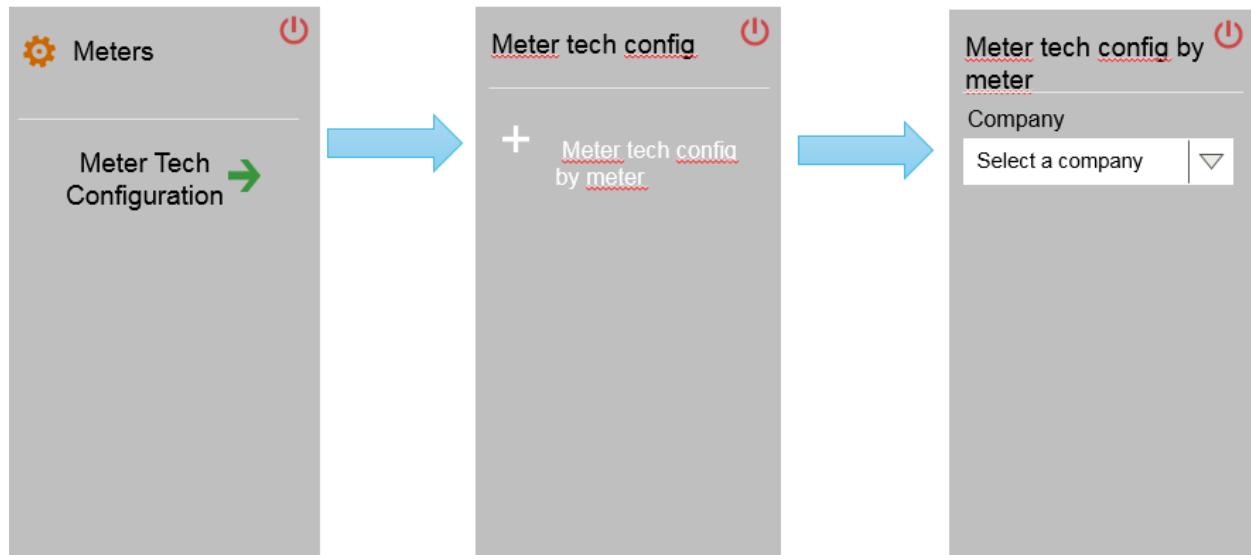
Concentrator. When the meters are associated to a concentrator it's possible to Commissioning them.

Filtering the meters by Concentrator name it's possible to see all the meters associated to the Concentrator and disassociate them clicking on the Dissociate Concentrator button.

When a meter is in Commissioning status or in to Commissioning running status the meter pod relation is not deletable (Commercial area/work orders/ Pod Meter).

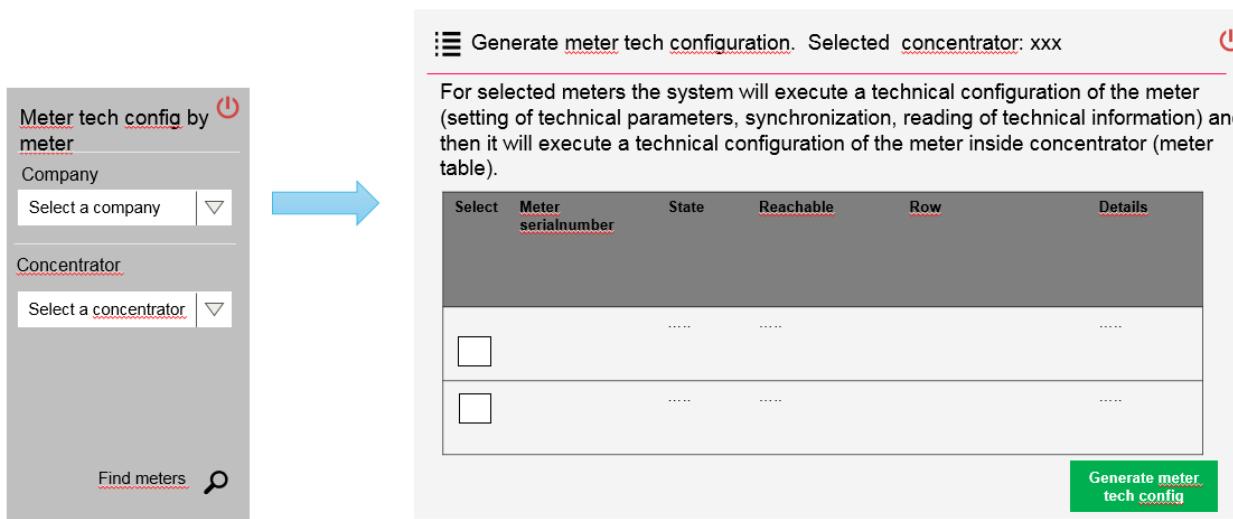
8.9. Meter Tech Configuration

With this function it's possible to configure the meters. For the selected meters the system will execute a technical configuration of the meter (setting of technical parameters, synchronization, reading of technical information) and then it will execute a technical configuration of the meter inside concentrator (meter table).



ADD TECH CONFIGURATION BY METER

Selecting a concentrator by the form and clicking on the Find meters button a meters list is shown

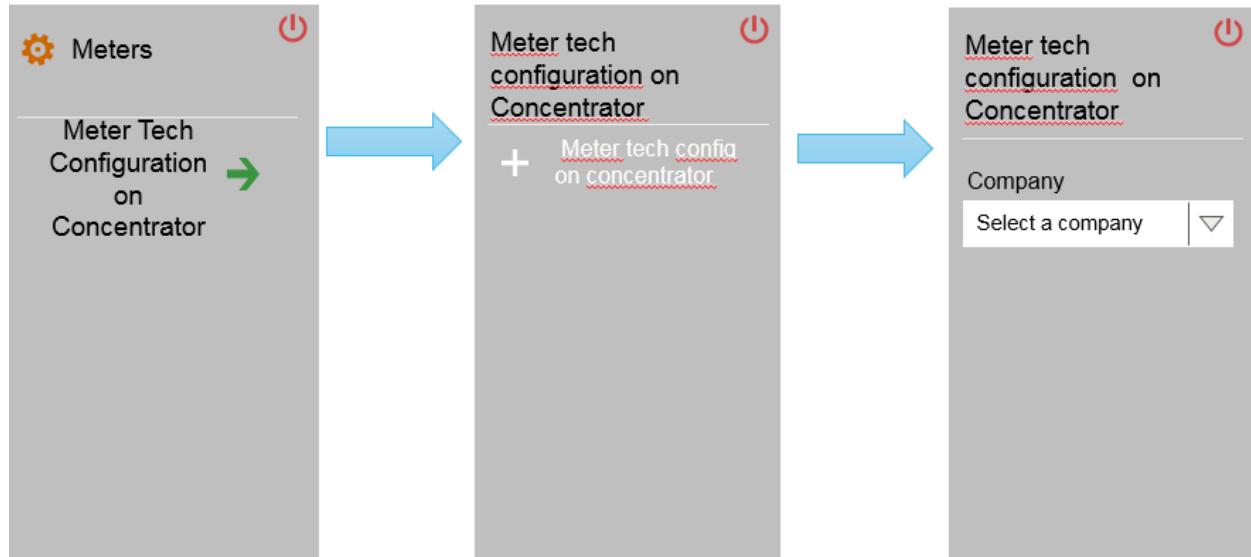


It's possible to filter the meters and clicking then on the Generate meter tech config button a tech configuration Work Order is generated for any selected meter.

When a configuration Work Order is in execution the related meter is not selectable until the work order execution will end.

8.10. Meter Tech Configuration on Concentrator

With this function it's possible to configure the meters. For the selected meters the system will execute a technical configuration of the meter inside concentrator (meter table).



ADD TECH CONFIGURATION ON CONCENTRATOR

Selecting a concentrator by the form and clicking on the Find meters button a meters list is shown

The screenshot shows a table titled 'Generate meter technical configuration on concentrator: 00102S'. The table has columns for Serial number, State, Reachable, Row, Energy fastupload profile, Energy daily closure profile, and Details. The 'Details' column contains entries like 'to configure on meter' or 'to configure on concentrator'.

| | Serial number | State | Reachable | Row | Energy fastupload profile | Energy daily closure profile | Details |
|-----------------|--------------------|--------------|-----------|-----|---------------------------|------------------------------|------------------------------|
| ✓ | UHLCEAZ1731000092 | Commissioned | true | 105 | | | to configure on meter |
| ✓ | UHLCEAZ17310000222 | Commissioned | true | 80 | | | to configure on meter |
| ✓ | UHLCEAZ17310000295 | Commissioned | true | 87 | | | to configure on concentrator |
| ✓ | UHLCEAZ17310000477 | Commissioned | true | 62 | | | to configure on concentrator |
| ✓ | UHLCEAZ17310000619 | Commissioned | true | 4 | | | to configure on concentrator |
| ✓ | UHLCEAZ17310000633 | Commissioned | true | 69 | | | to configure on concentrator |
| ✓ | UHLCEAZ17310001327 | Commissioned | true | 19 | | | to configure on concentrator |
| ✓ | UHLCEAZ17310000695 | Commissioned | true | 23 | | | to configure on meter |
| ✓ | UHLCEAZ17310001247 | Commissioned | true | 20 | | | to configure on concentrator |
| Total Items: 54 | | | | | | | |

It's possible to filter the meters and clicking then on the Generate meter tech config button a tech configuration Work Order is generated for any selected meter.

For the selected meters the system will execute a technical configuration of the meter inside concentrator (meter table).

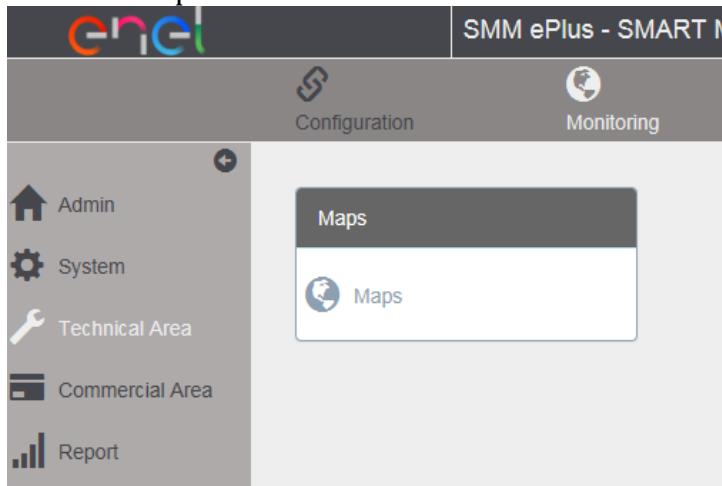
The energies profiles for fastupload and dailyclosure visible in the grid will be configured on concentrator during the execution of the activity.

When a configuration Work Order is in execution the related meter is not selectable until the work order execution will end.

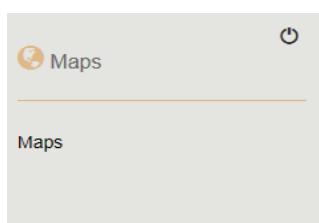
8.11. Maps

With this function it's possible to see in the google map where the Concentrators and the Meters are located.

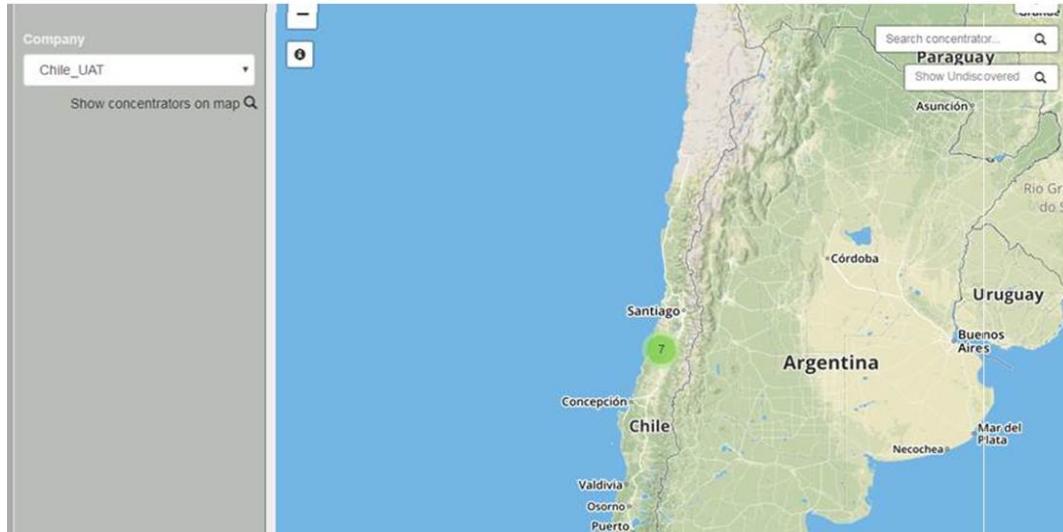
It needs to open the form below:



clicking then on the Maps widget the Maps menu is visible:

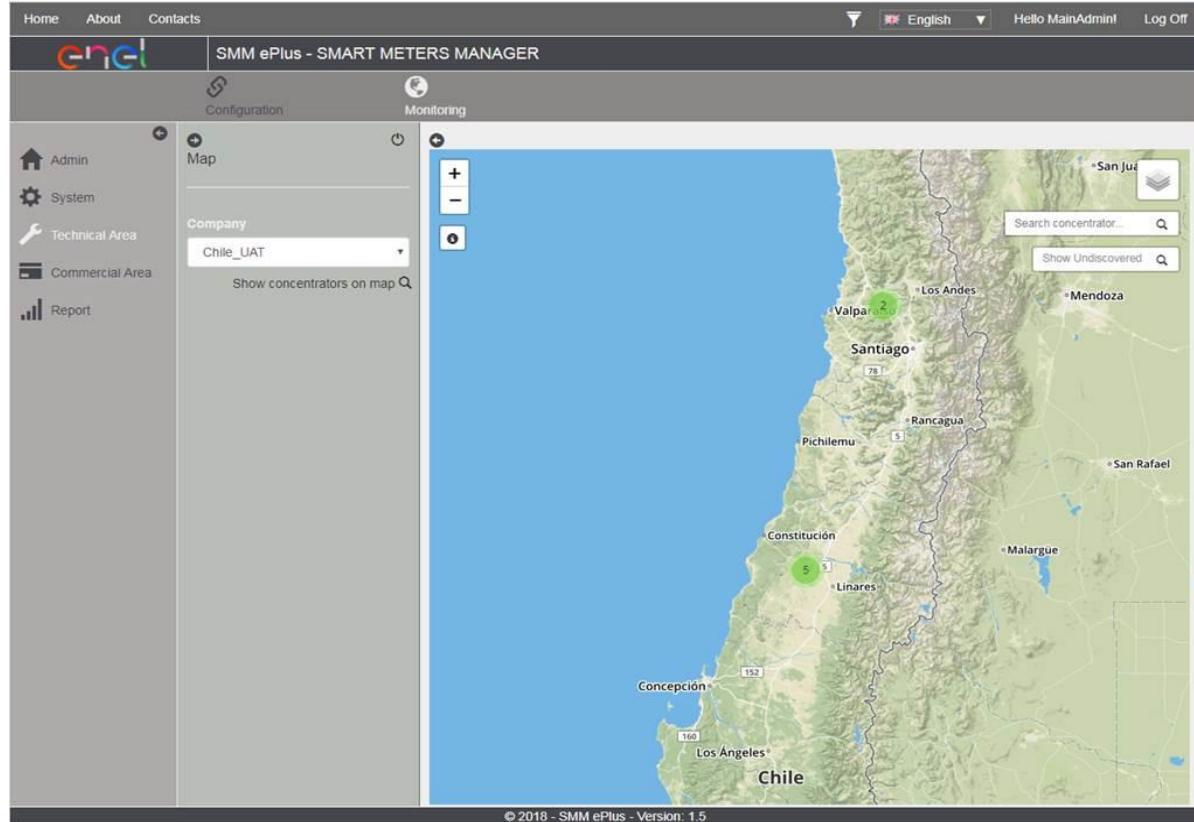


Clicking on the Maps menu voice and selecting then the company it's possible to see where the concentrators are localized in the map:

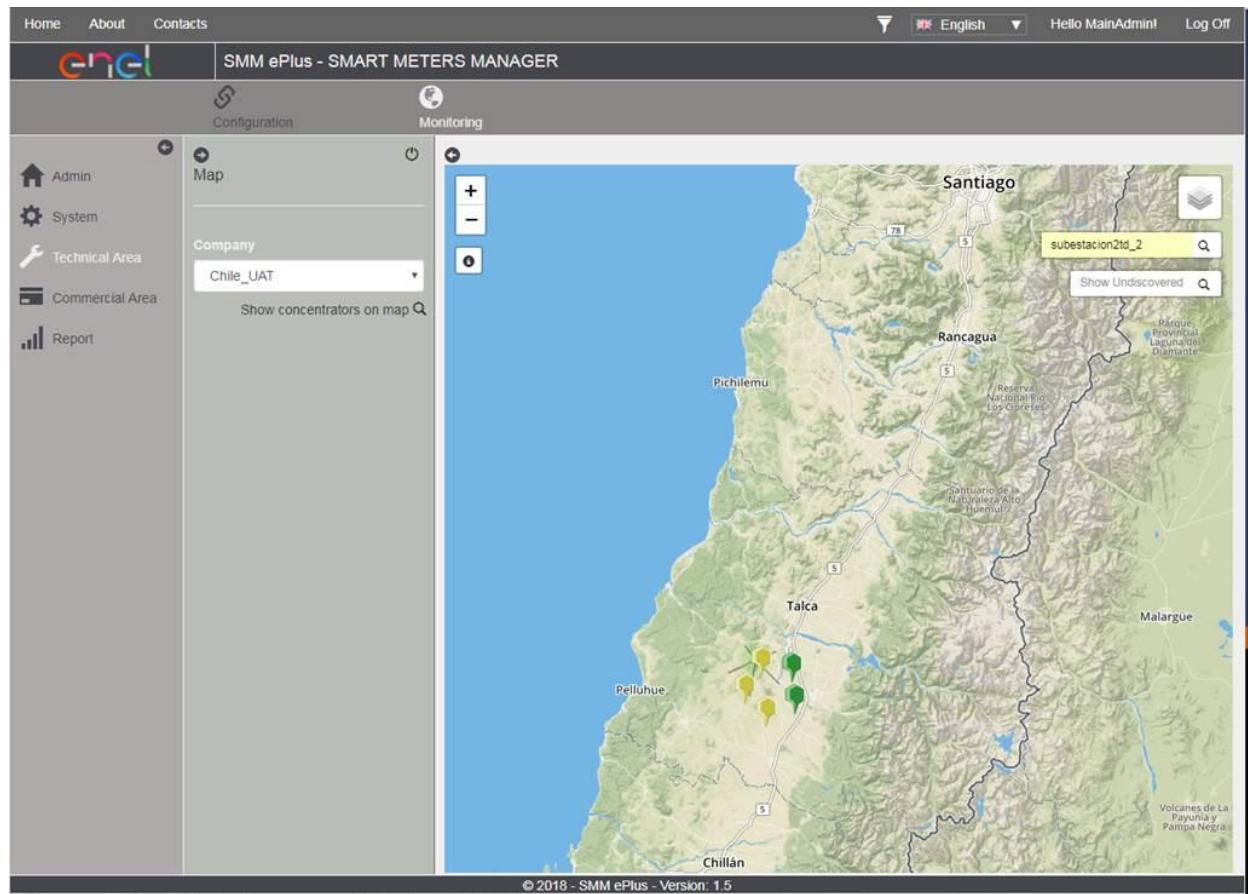


The map shows that there are seven concentrators near Santiago, clicking on the circle under Santiago it's possible to detail where the concentrators are physically located in the map:



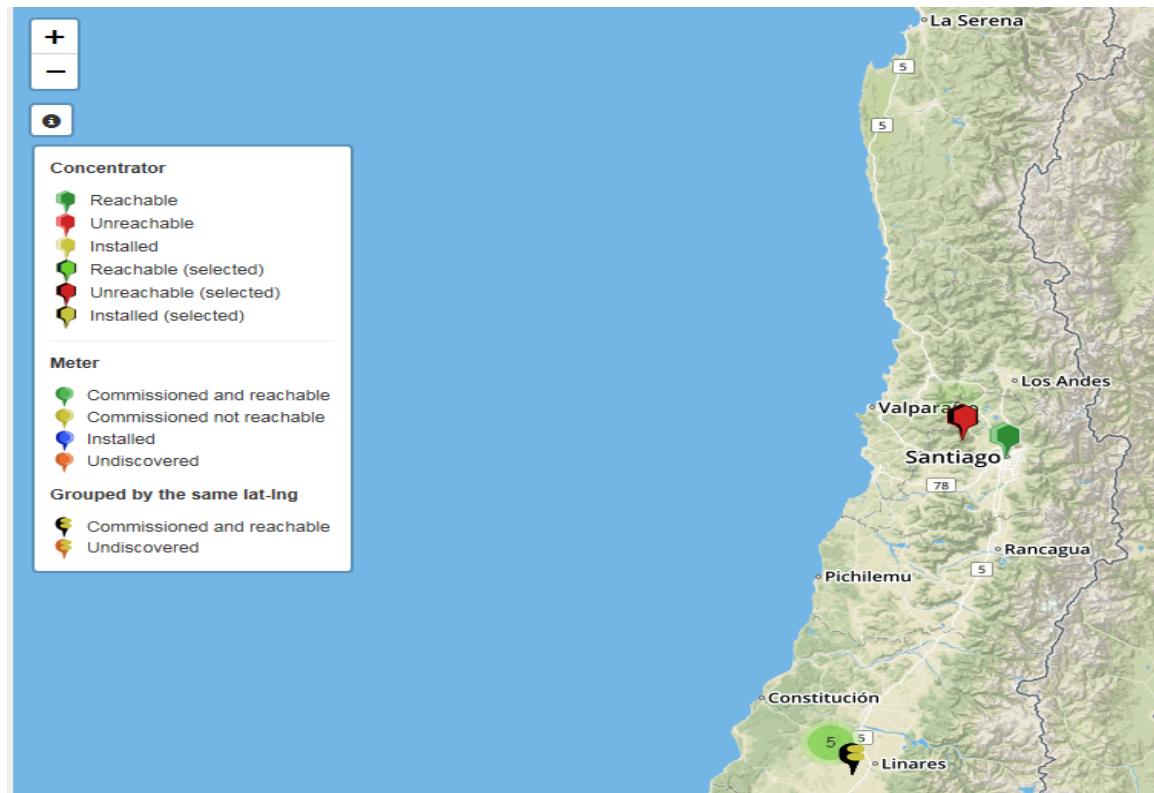


It's possible to click over one of the green circle and split where they are located one by one, for example clicking on the green five circle in the over form a concentrators detail is shown:

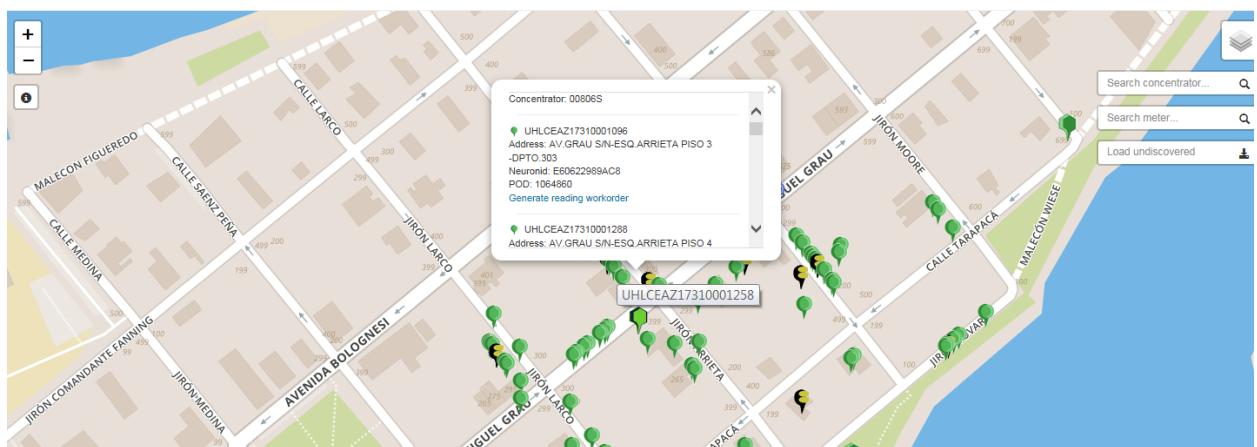


It's also possible for example to see where the meters associated to any concentrator are located in the map, for example in the map below it's possible to click on a concentrator (for example the red concentrator SUB_TEST_X1TD_X1) and to see where it's positioning in the map.

For example clicking on the red concentrator (it means 'unreachable concentrator'), a click event will be executed, when the event will be finished a black and yellow group icon will appear below in the map as you see below:

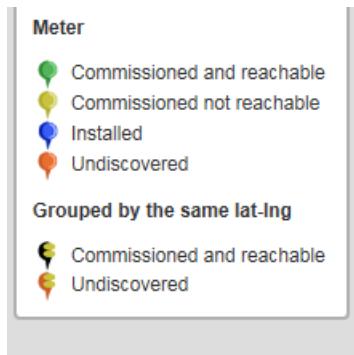


Clicking then on the group icon the meters detail below is shown:

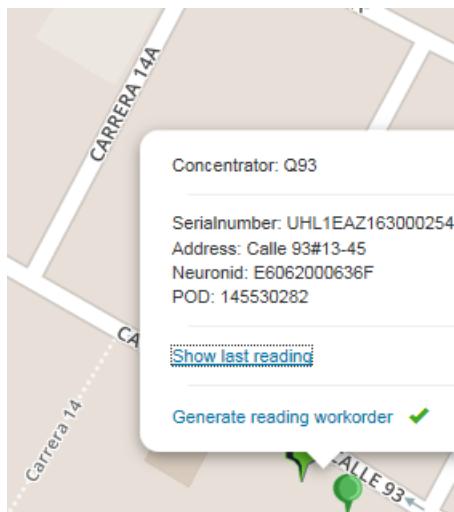


Every meter icon is filled in one of the follow colors, the color depends on the meter state:

e-distribuzione



Some details are shown with any meter and it's also possible to generate a reading work order clicking on the Generate reading workorder link.



A reading workorder is shown in the Report Work Orders section:

The screenshot shows a sidebar menu titled 'Works' under the heading 'Company'. A dropdown menu is open, showing 'Enel Peru' as the selected option. Below the dropdown, there is a list of items, each preceded by a circular icon with a checkmark:

- Pending Works
- Completed Works
- Commercial Pending Workorder
- Commercial Completed Workorder
- Technical Pending Workorder
- Technical Completed Workorder
- Integration WO Dashboard
- Completed Works Scheduled
- Pending Works Scheduled
- Count Scheduled Completed

Clicking on 'Show last reading' it's possible to see the last reading done:

Concentrator: Q93

Serialnumber: UHL1EAZ163000254
Address: Calle 93#13-45
Neuronid: E6062000636F
POD: 145530282

[Hide last reading](#)

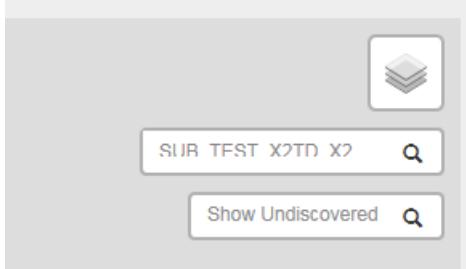
Last reading on: 27-2-2019 10:57
Tot : 20736
T1: 20736
T2: 0
T3: 0
T4: 0
T5: 0
T6: 0

Generate reading workorder ✓

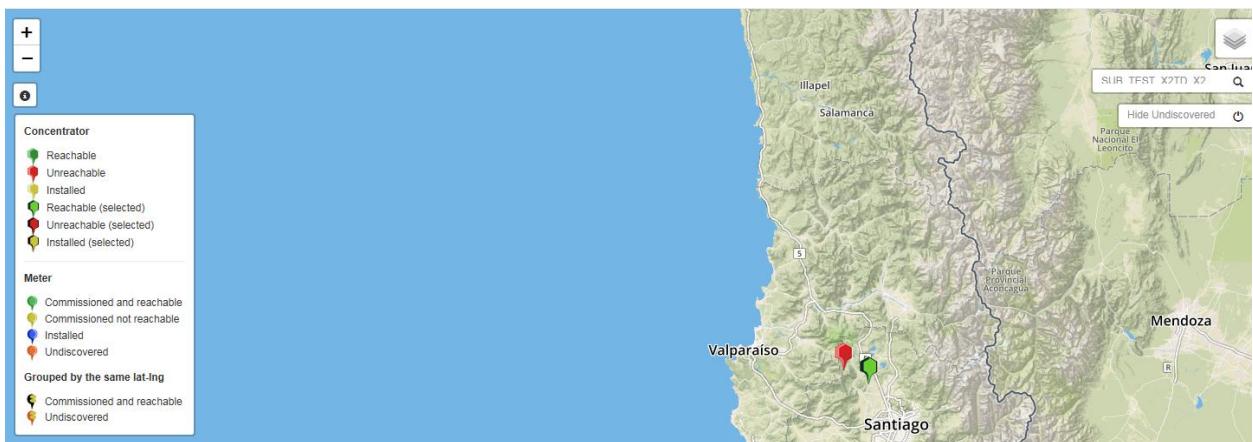
ALLE

CONCENTRATOR SEARCH IN THE MAP

It's possible to search a single concentrator in the map using the filter form:



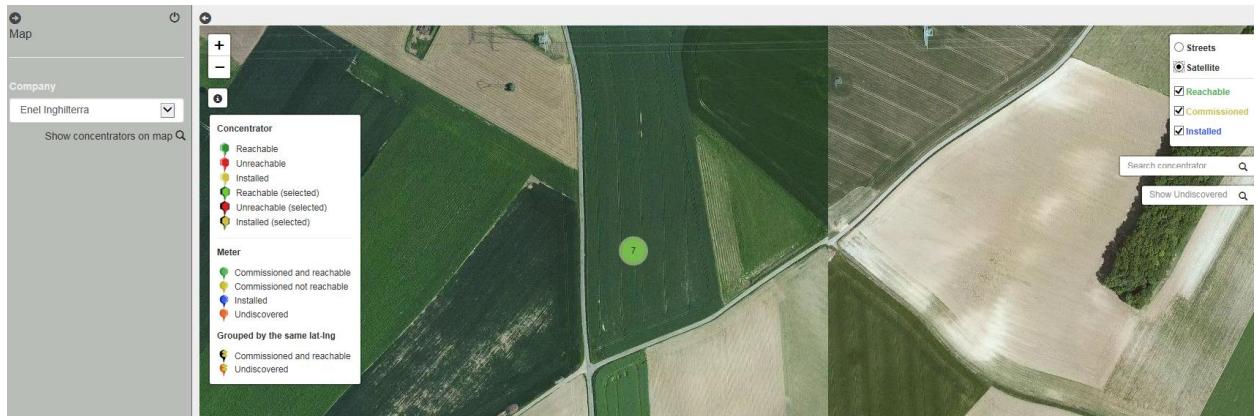
Filling it with the concentrator name and clicking then on the search button the concentrator in the map is shown, it's circled with a black colour:



CONCENTRATOR AND METER LOCATION DETAIL IN THE MAP

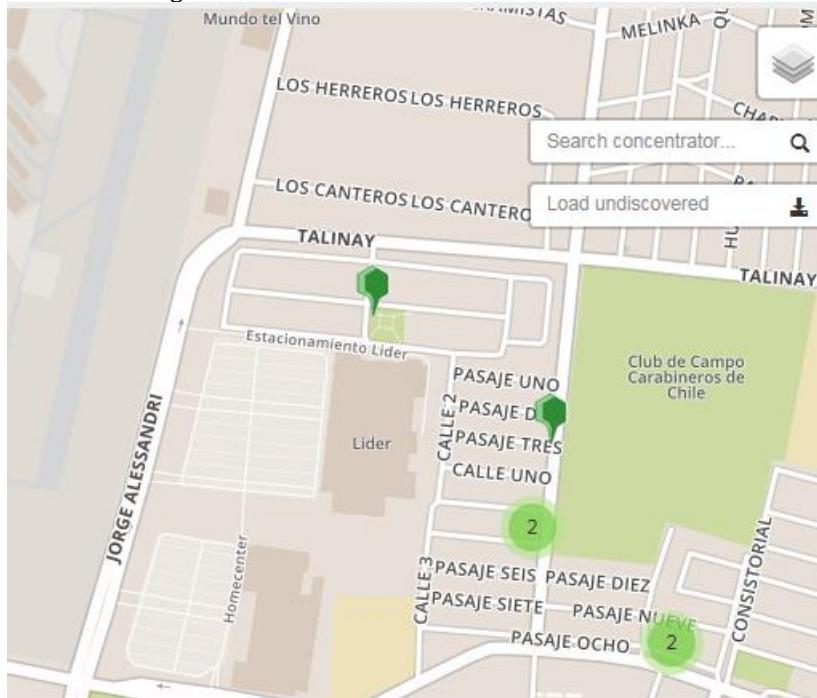
It's possible to see where the concentrators and the meters are located in the map, it needs to select them and zoom the map, for example:

Zooming the map it shows the name of the street where concentrators and meters are located; it's possible to change the displayed view selecting the 'Satellite' mode:

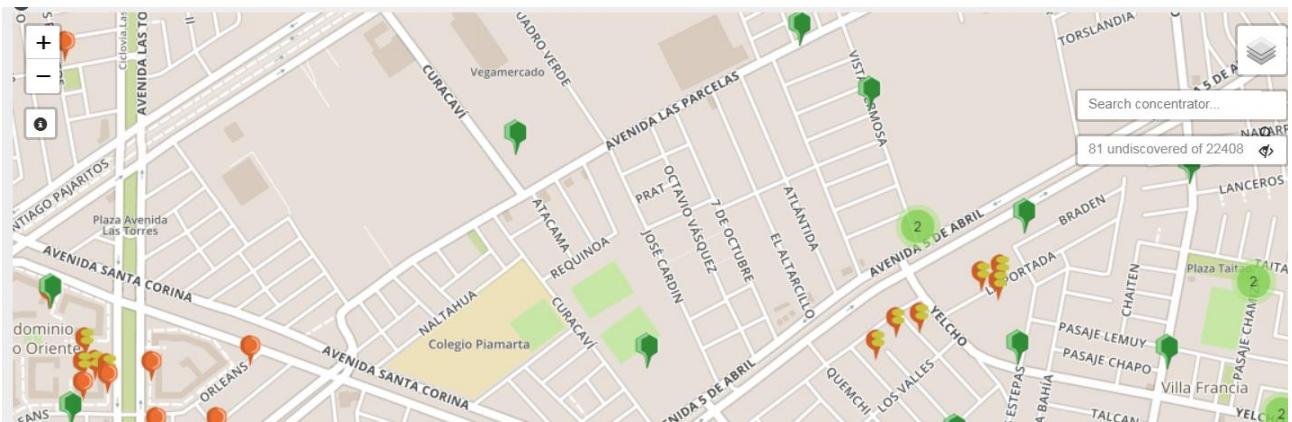


SEARCHING UNDISCOVERED METERS IN THE MAP

In the Map area the function 'load undiscovered' has been added, this function is visible after having zoomed some area containing undiscovered meters:



Clicking on the Load Undiscovered button the undiscovered meters are shown in the red colour and the detailed number of undiscovered meters will appear:

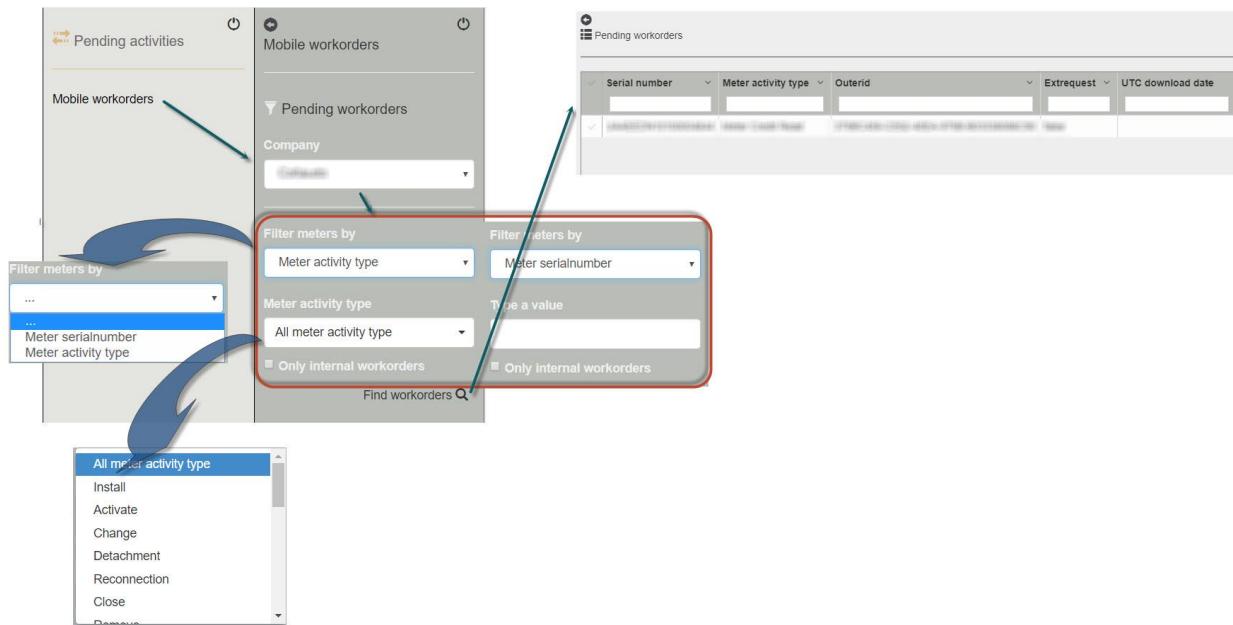


8.12. Pending Activities

This section, included in Technical Area and having a specific widget, shows the list of pending activities of a specific type and allow the cancellation of one or more of them. Actually only Mobile Workorders area has been implemented. “Pending Activities” can be accessed on ePlus homepage → Technical Area → Monitoring → Pending Activities

MOBILE WORKORDERS

While selecting “Pending Activity”, a submenu “Mobile workorders” appears: the user is required to select company and a filter by meter serialnumber/meter activity type. Filter criteria can also be set to “...” and, when executed, the system will perform a search on company only.

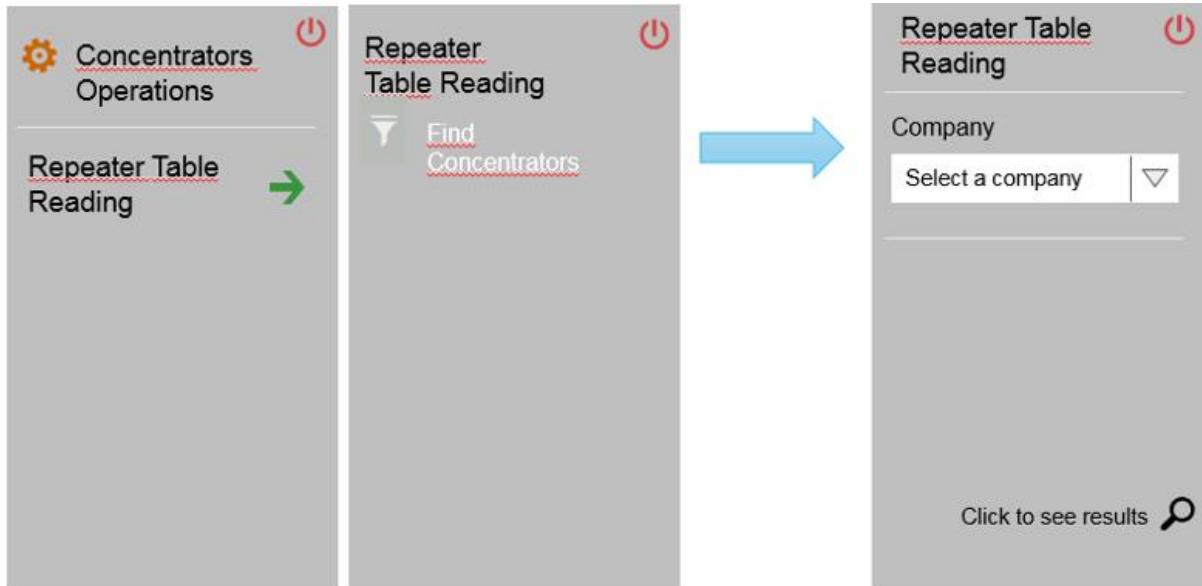


A grid with results appears while clicking on lens icon, and items in list can be selected (single or multiple selection) in order to cancel desired workorder(s).

| Pending workorders | | | | | |
|------------------------------------|---------------|---------------------|---------|------------|-------------------|
| ✓ | Serial number | Meter activity type | Outerid | Extrequest | UTC download date |
| ✓ | | | | | |
| Total items: 1 (Selected items: 1) | | | | | |
| Abort workorder | | | | | |

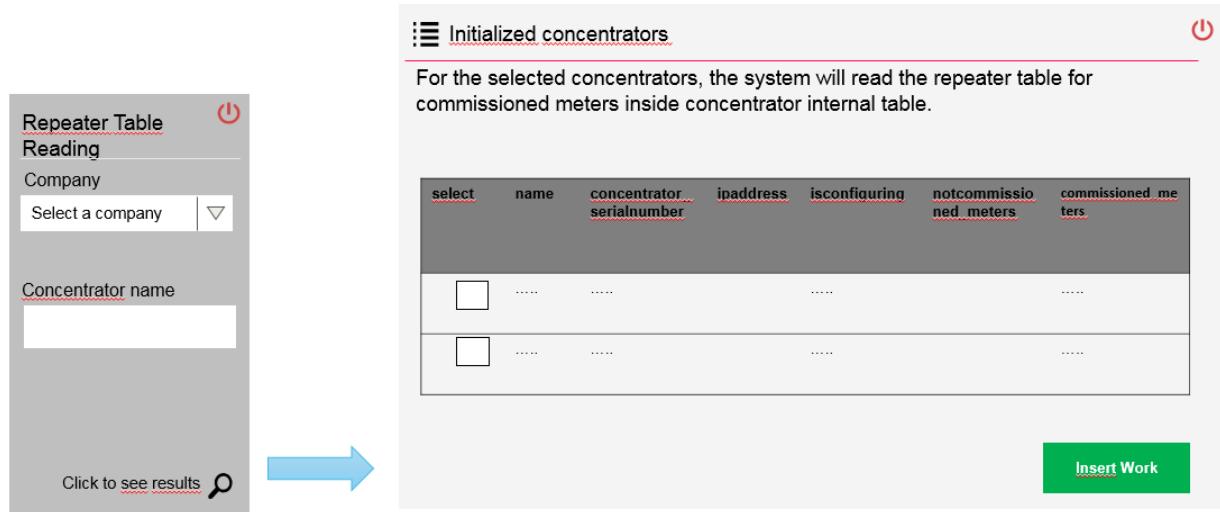
8.13. Repeater Table Reading

With this function it's possible to read the Repeater Table for all the selected concentrators.



REPEATER TABLE READING

Selecting a concentrator by the form and clicking on the Click to see results an Initialized concentrators list is shown



It's possible to filter the concentrators and clicking then on the Insert Work button a Repeater Table Reading Work Order is generated for any selected concentrator.

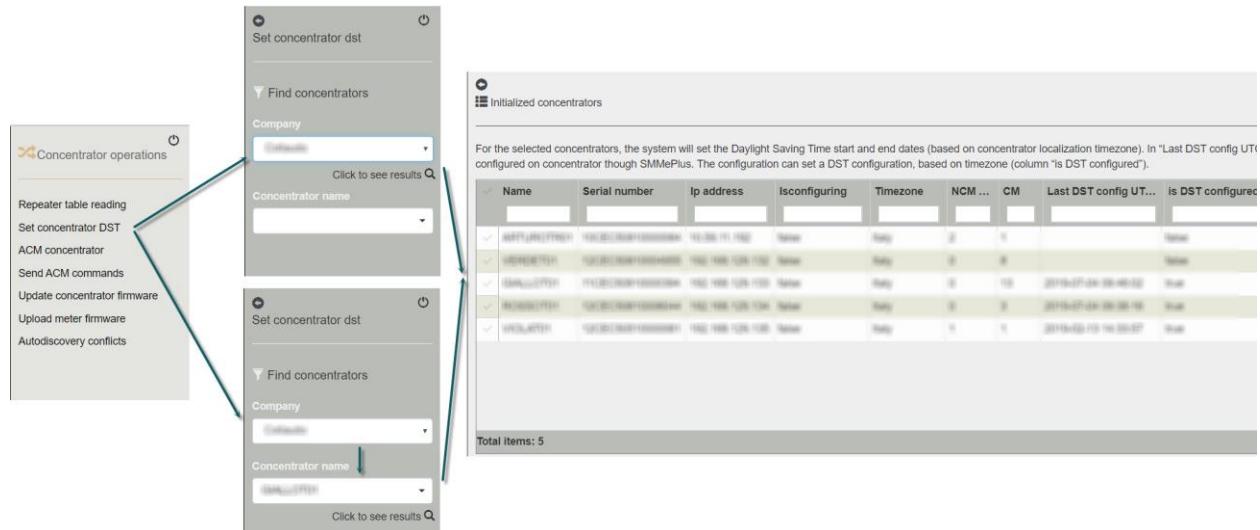
When a Repeater Table Reading Work Order is in execution the related meter is not selectable until the work order execution will end.

The Work Order is listed in the Report Monitoring/ Works section.

8.14. Set Concentrator DST (formerly Set DST dates)

With this function it's possible to set the DST dates for selected concentrators. The feature can be accessed on Technical Area → Operation → Concentrator Operations.

When landed on desired page, user is able to proceed with concentrators' search: it can be performed by company and, if necessary, by single concentrator too; by clicking on lens icon the search is executed and results are shown in a specific grid.



At that moment, one or more concentrators can be selected to be given DST; once one concentrator is marked at least, a "Insert work" button appears and it can be clicked to proceed with the operation.

Initialized concentrators

For the selected concentrators, the system will set the Daylight Saving Time start and end dates (based on concentrator localization timezone). In "Last DST config UTC" column you see last time that DST has been configured on concentrator through SMMePlus. The configuration can set a DST configuration, based on timezone (column "is DST configured").

| Name | Serial number | Ip address | Isconfiguring | Timezone | NCM ... | CM | Last DST config UTC | is DST configured ... |
|------------------|------------------|----------------|---------------|------------------|---------|----|---------------------|-----------------------|
| | | | | | | | | |
| Subestacion1TD_1 | 18CEC50610056725 | 10.116.114.225 | false | Chile - Santiago | 0 | 0 | 2019-03-27 00:00:00 | false |
| Subestacion2TD_2 | 18CEC50610056726 | 10.117.80.11 | false | Chile - Santiago | 5 | 13 | 2019-05-08 17:51:43 | true |
| SUB_TEST_X1TD_X1 | 18CEC50610060902 | 10.117.64.125 | false | Chile - Santiago | 1 | 6 | 2019-03-27 00:00:00 | false |
| SUB_TEST_X2TD_X2 | 18CEC50610060956 | 10.1.2.3 | false | Chile - Santiago | 0 | 0 | 2019-03-27 00:00:00 | false |

Total items: 5 (Selected items: 1)

[Insert work](#)

DST dates on selected concentrators have been set

When the DST date is configured on the concentrator, the "is DST configured" parameter become 'true':

Initialized concentrators

For the selected concentrators, the system will set the Daylight Saving Time start and end dates (based on concentrator localization timezone). In "Last DST config UTC" column you see last time that DST has been configured on concentrator through SMMePlus. The configuration can set a DST configuration, based on timezone (column "is DST configured").

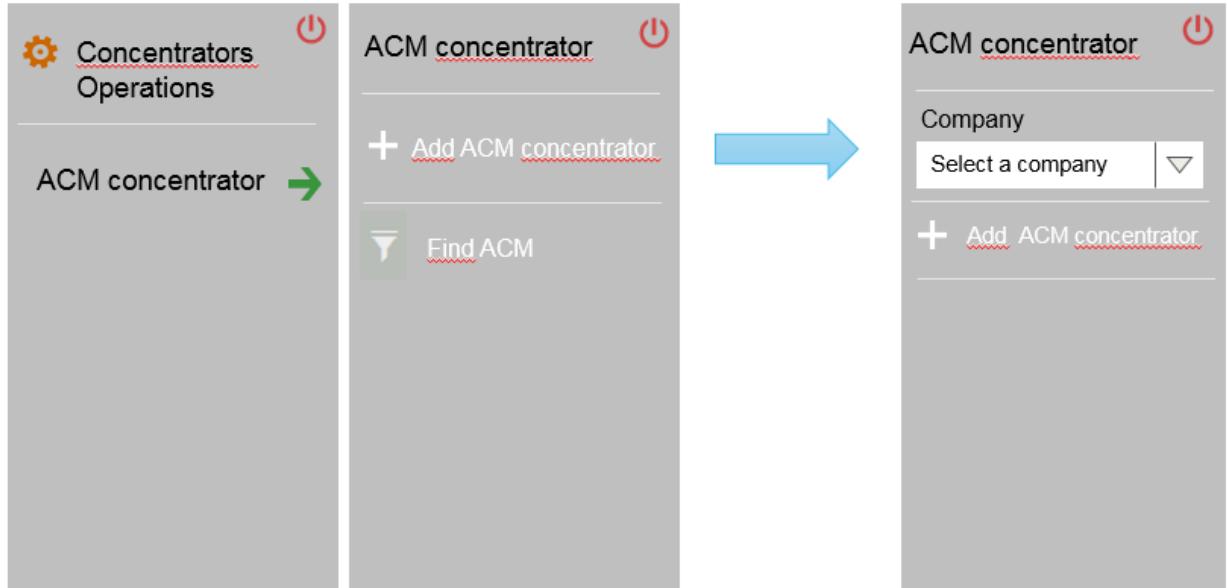
| Name | Serial number | Ip address | Isconfiguring | Timezone | NCM ... | CM | Last DST config UTC | is DST configured | DST start | DST end |
|------------------|------------------|----------------|---------------|------------------|---------|----|---------------------|-------------------|---------------------|---------------------|
| Subestacion1TD_1 | 18CEC50610056725 | 10.116.114.225 | false | Chile - Santiago | 0 | 0 | 2019-03-27 00:00:00 | false | | |
| Subestacion2TD_2 | 18CEC50610056726 | 10.117.80.11 | false | Chile - Santiago | 5 | 13 | 2019-05-08 17:51:43 | true | 2019-09-08 00:00:00 | 2020-04-05 00:00:00 |
| SUB_TEST_X1TD_X1 | 18CEC50610060902 | 10.117.64.125 | false | Chile - Santiago | 1 | 6 | 2019-03-27 00:00:00 | false | | |
| SUB_TEST_X2TD_X2 | 18CEC50610060956 | 10.1.2.3 | false | Chile - Santiago | 0 | 0 | 2019-03-27 00:00:00 | false | | |

Total items: 4

8.15. ACM Concentrator

e-distribuzione

With this function it's possible to create the ACM for concentrators, the ACM are command to send to concentrators for doing some activities .



Selecting a Company in the form and clicking then on the Add ACM concentrator it's possible to insert new ACM:

The screenshot shows the "Add ACM concentrator" form:

- Name ***: Input field
- Description ***: Input field
- Concentrator Type**: Radio button group with a dropdown menu
- File Input**: A file input field with a "Browse" button
- Show dh list**: A green button
- Download csv model**: A link with a CSV icon
- Example:**

```
description;step;dh;dhparser
START_ACTIVITY;1;06{datalenght}{transid}
-0A01020506;
^([A-Fa-f0-9]{30})([A-Fa-f0-9]{6})([A-Fa-f0-9]{6})
([A-Fa-f0-9]{4})([A-Fa-f0-9]{4})
```

At the bottom left, the date "28/03/2019" is visible.

A Command is composed by a **Name** a Description and a concentrator Type and it has

A list of detailed **sub commands** that could be upload using the Upload DH message.csv button.

Clicking on the Download file template button a template command file is downloaded, using this file it's possible to upload the sub commands list.

The ACM command file is written by the Support group, when you need a file command you have to ask it to the Second level support group.

Following there are some .csv command examples,
DH commands could be composed by numerical, alphanumerical, { } and -.

Example 1

This is the list of sub commands to load for a READ TEMPORAL PARAMS Command:

| | | | |
|------------------|------|--------------|--|
| description | step | dh | dhparser |
| | | | ^[A-Fa-f0-9]{30}{[A-Fa-f0-9]{6}}{[A-Fa-f0-9]{6}}{[A-Fa-f0-9]{4}}{[A-Fa-f0-9]{4}} |
| Working ts - dst | 1 | 060A01020506 | Fa-f0-9]{4}) |

Example 2

This is the list of sub commands to load for a WRITE_ATT Command:

| | | | |
|-----------------|------|------------------------------|-----------------|
| description | step | dh | dhparser |
| STOP_ACTIVITY | 1 | | 112000100010103 |
| WRITE_DFOL_DIOL | 2 | 04010001060E080F05020003003C | |
| START_ACTIVITY | 3 | | 112000100010104 |

The DH field has to be in an hexadecimal format

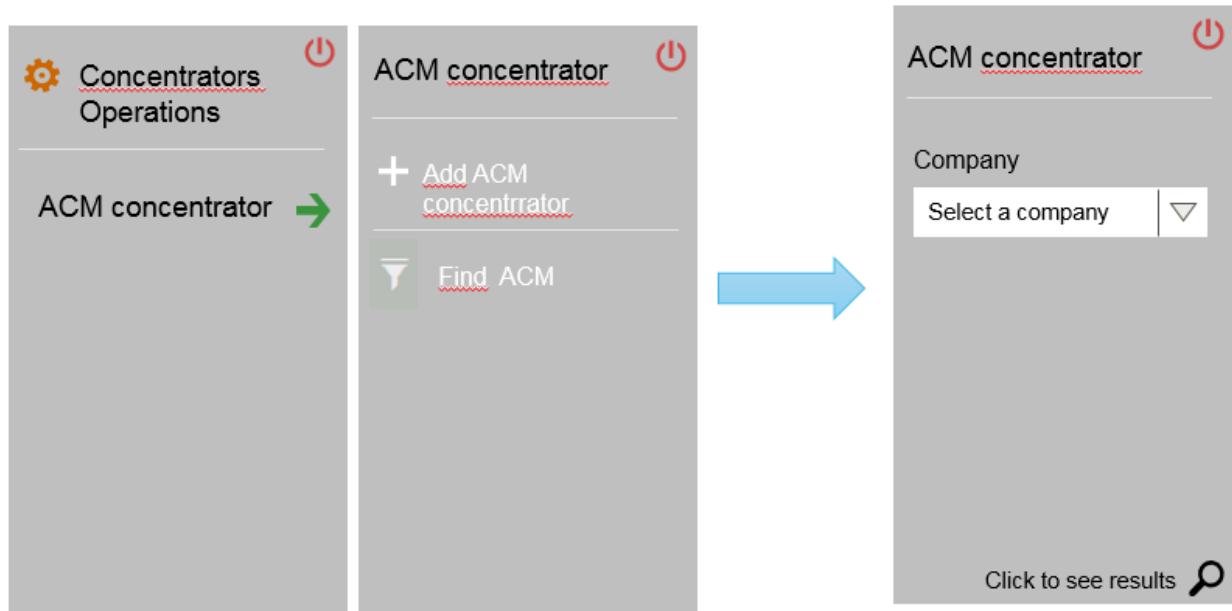
Example 3

It's possible to create a replace command using this

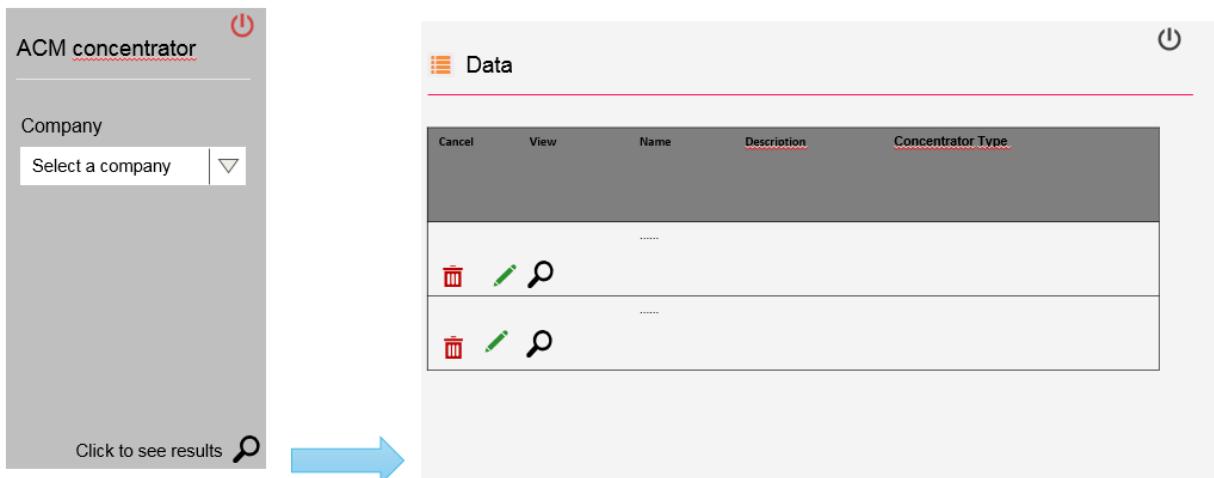
| description | step | dh | dhparser |
|----------------|------|------------------------------------|---|
| Working ts - d | | 06{datalenght}{transid}-0A01020506 | ^[A-Fa-f0-9]{30}{[A-Fa-f0-9]{6}}{[A-Fa-f0-9]{6}}{[A-Fa-f0-9]{4}}{[A-Fa-f0-9]{4})} |

ACM COMMANDS LIST

e-distribuzione



Clicking on the Click to see results link it's possible to see the ACM concentrator commands list

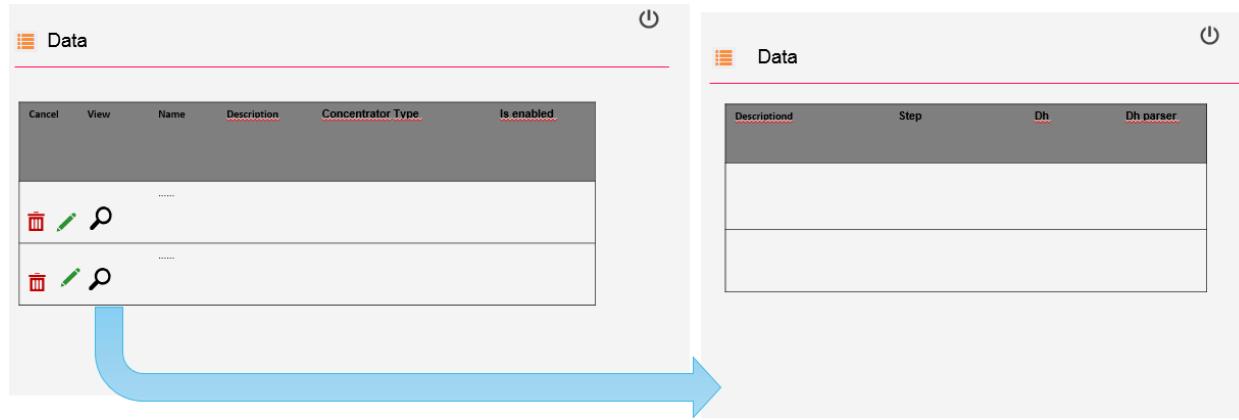


It's possible to select a Company and clicking then on Click to see results link it's possible to see the Concentrator ACM list commands.

It's possible to delete a command clicking on the delete icon.

It's possible to edit the main command (Name, Description, Command type) clicking on the  icon.

It's possible to show the list commands clicking on the  icon.



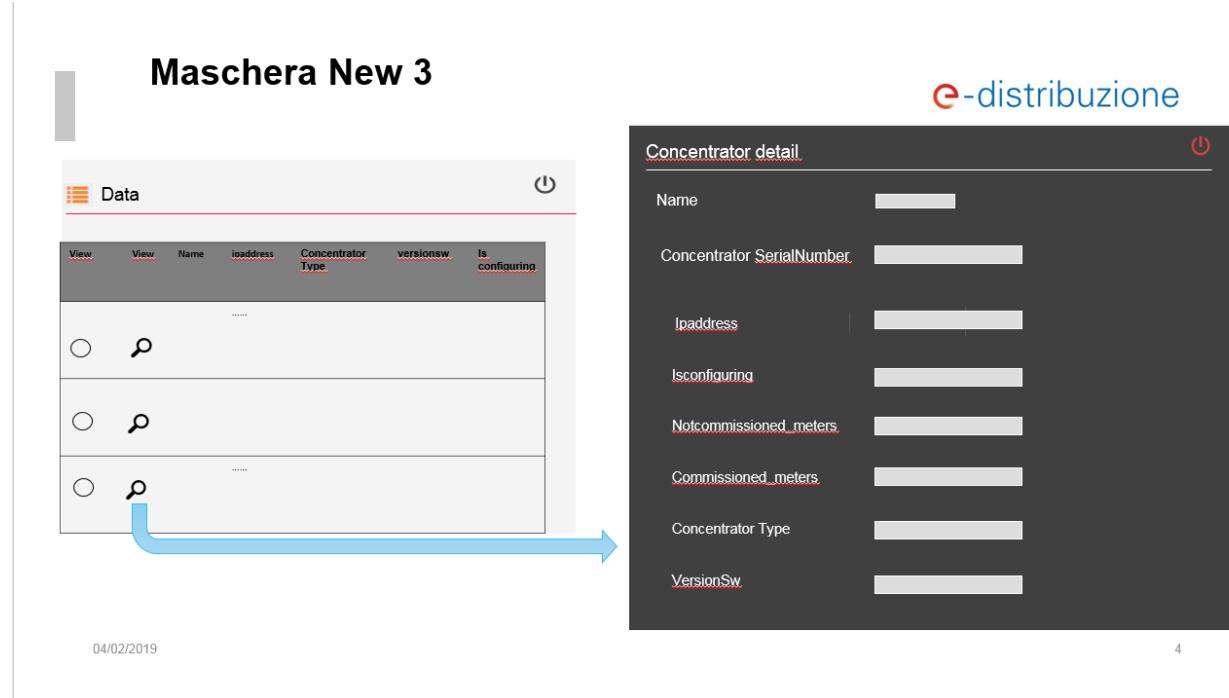
8.16. Send ACM Commands to concentrators

With this function it's possible to send the ACM commands to a Concentrator. It's possible to filter the concentrators by Company, Concentrator Name and Sw version:

The screenshot shows two main panels. The left panel is titled 'Send ACM commands' and includes fields for 'Company' (with a dropdown menu 'Select a company') and 'Filter by' (with a dropdown menu 'Concentrator Name, SW Version'). Below these is a note 'Click to show Initialized Concentrators' and a magnifying glass icon. The right panel is titled 'Data' and shows two tables. The first table, 'Initialized Concentrators', has columns: View, Name, I/O address, Concentrator Type, Versions, and Is configuring. It lists three concentrators, each with a circular icon and a magnifying glass icon. The second table, 'ACM Commands', has columns: Select, Name, Description, and Concentrator type. It lists three ACM commands, each with a circular icon. At the bottom right is a green button labeled 'Run ACM Command'. The date '01/02/2019' is visible at the bottom left.

Clicking then on Click to show Initialized Concentrators a concentrator list is visible and also an ACM commands list. Selecting a concentrator on the left then an ACM commands list having concentrator type equal to the Initialized Concentrators is visible on the right , it's possible to select the ACM Commands to send to the concentrator and clicking then on the Run ACM Command. The Work Orders are listed in the Report Monitoring/ Works section.

Clicking on the  a Concentrator detail is shown on the right with details about it:



The screenshot illustrates the user interface for managing concentrators. On the left, a grid titled "Maschera New 3" displays concentrator data. The columns include "View", "View", "Name", "Ioadress", "Concentrator Type", "versionSw", and "Is configuring". A blue arrow points from the third row of this grid to the right, where a detailed view of a selected concentrator is shown. The detailed view is titled "Concentrator detail" and includes fields for "Name", "Concentrator SerialNumber", "Ipadress", "Isconfiguring", "Notcommissioned_meters", "Commissioned_meters", "Concentrator Type", and "VersionSw". The "Name" field is currently empty.

8.17. Update concentrator firmware

On ePlus there's a chance of associate a concentrator to a specific firmware version. To do so, access the page “Update concentrator firmware” located in Technical Area → Operation → Concentrator Operations.

User is required to filter by company and concentrator's name/version (or choose “all” to list all of the concentrators).

Results are shown in a grid, each row contains details + flag column for selected/deselected items + lens button to expose more concentrators' details.

At the moment when the user selects one or more concentrators, a new grid with available firmware versions appears next to the first one

The screenshot shows two main windows. On the left, the 'Concentrator operations' window has a sidebar with options like 'Repeater table reading', 'Set concentrator DST', 'ACM concentrator', 'Send ACM commands', 'Update concentrator firmware', 'Upload meter firmware', and 'Autodiscovery conflicts'. A blue arrow points from the 'Update concentrator firmware' button to a dropdown menu in the 'Filter concentrators by' section. This dropdown menu has 'All' selected. Below it is a 'Find concentrators' search bar. On the right, the 'Initialized concentrators' window lists concentrators with columns for Name, Ipaddress, Concentrator type, Software version, Isconfiguring, and Is updating sw. One row is highlighted in yellow. The 'Software versions' window on the far right lists three items: aa.tgz, LVCApp20190416.tgz, and LVCApp20190416.tgz.

To create association between concentrator - only the ones with “is updating sw” column = false are eligible - and a firmware version it’s necessary to select a concentrator firmware version and then click “Update concentrator software version” button:

This screenshot shows the 'Initialized concentrators' and 'Software versions' windows again. In the concentrator list, the second row is selected. In the software versions list, the first item, 'aa.tgz', is selected. At the bottom of the concentrator window, there is a blue button labeled 'Update concentrator software version'.

8.18. Upload meter firmware

NOT YET RELEASED

The feature is being implemented to upload a meter firmware version, selected by user, to one or more specific concentrator and then to a set (or subset) of specific meters related to selected concentrator(s).

It consists in two phases:

- The first phase, the upload on concentrator's file system, is described below;
- The second phase, passing firmware from concentrator to meters, has not yet been implemented

On ePlus the page can be accessed by navigating on Technical Area → Operation → Concentrator Operations → Upload meter firmware

It is necessary to select a company and click on lens icon, after that two grids appear on screen: the one on the left contains a list of initialized concentrators, the one on the right lists all available firmware versions:

The screenshot shows the 'e-distribuzione' interface with the 'Operation' tab selected. In the top navigation bar, there are three icons: Configuration, Monitoring, and Operation. Under 'Operation', there is a sub-menu with 'Concentrator Operations' and 'Upload meter firmware'. The main content area has two grids. On the left, the 'Initialized concentrators' grid lists five concentrators with names: 'INITIALIZED1', 'INITIALIZED2', 'INITIALIZED3', 'INITIALIZED4', and 'INITIALIZED5'. The second and fourth concentrators are highlighted in yellow. Below the grid, it says 'Total items: 5'. On the right, the 'Meter software list' grid lists two software versions: 'V1.00' and 'V2.00'. Both are highlighted in yellow. Below the grid, it says 'Total items: 2 (Selected items: 1)'. At the bottom left, there is a blue button labeled 'Upload meter firmware'.

By that time, the user can select one or more concentrator from the first grid and a specific firmware release on the second grid; in that moment a button with label “Upload meter firmware” appears and needs to be pressed in order to generate the workorder

This screenshot shows the same interface as above, but with specific items selected. In the 'Initialized concentrators' grid, the second and fourth concentrators ('INITIALIZED2' and 'INITIALIZED4') have a checkmark next to them, indicating they are selected. In the 'Meter software list' grid, the 'V1.00' entry has a checkmark next to it, indicating it is selected. At the bottom left, the 'Upload meter firmware' button is now green and has a checkmark icon, with the text 'Upload meter fw success' displayed below it. A green arrow points from the button to the success message.

8.19. Autodiscovery conflicts

A specific section on “Concentrator operations” area, called “Autodiscovery conflicts”, lists autodiscovery errors for a specific concentrator or filtering by error type.

SEARCH AUTODISCOVERY CONFLICTS

After company selection, search can be alternatively performed filtering by concentrator name or error type.

| Discovered concentrator | Associated concentrator | Serial number | Macaddress | Commquality | Local discovery date | UTC insert date |
|-------------------------|-------------------------|-----------------|------------|-------------|----------------------|-----------------|
| NETT110011111111 | | 000011100000279 | 000 | 2016-11-29 | 2016-11-29 | |
| NETT110011111111 | | 000011100000220 | 000 | 2016-11-29 | 2016-11-29 | |
| NETT110011111111 | | 000011100000277 | 000 | 2016-11-29 | 2016-11-29 | |
| NETT110011111111 | | 000011100000221 | 000 | 2016-11-29 | 2016-11-29 | |
| NETT110011111111 | | 000011100000222 | 000 | 2016-11-29 | 2016-11-29 | |
| NETT110011111111 | | 000011100000231 | 100 | 2016-06-27 | 2016-11-29 | |
| NETT110011111111 | | 000011100000232 | 100 | 2016-06-27 | 2016-11-29 | |

DELETE CONFLICTS

Autodiscovery conflicts can be deleted by selecting one or more of them and by pressing related command with label “Delete autodiscovered conflicts”

Meter list

| Discovered concentrator | Associated concentrator | Serial number | Macaddress | Commquality | Local discovery date | UTC insert date |
|-------------------------|-------------------------|---------------|--------------|-------------|----------------------|-----------------|
| ARTUROTR01 | | | 8604160002FA | 255 | 2019-10-29 | 2019-10-29 |
| ARTUROTR01 | | | 8E0818000229 | 255 | 2019-10-29 | 2019-10-29 |
| ARTUROTR01 | | | C6951C989787 | 255 | 2019-10-29 | 2019-10-29 |
| ARTUROTR01 | | | 400000149682 | 255 | 2019-10-29 | 2019-10-29 |
| ARTUROTR01 | | | 86061C2BAE51 | 130 | 2019-08-27 | 2019-10-29 |
| ARTUROTR01 | | | 860214013A0D | 130 | 2019-09-20 | 2019-10-29 |

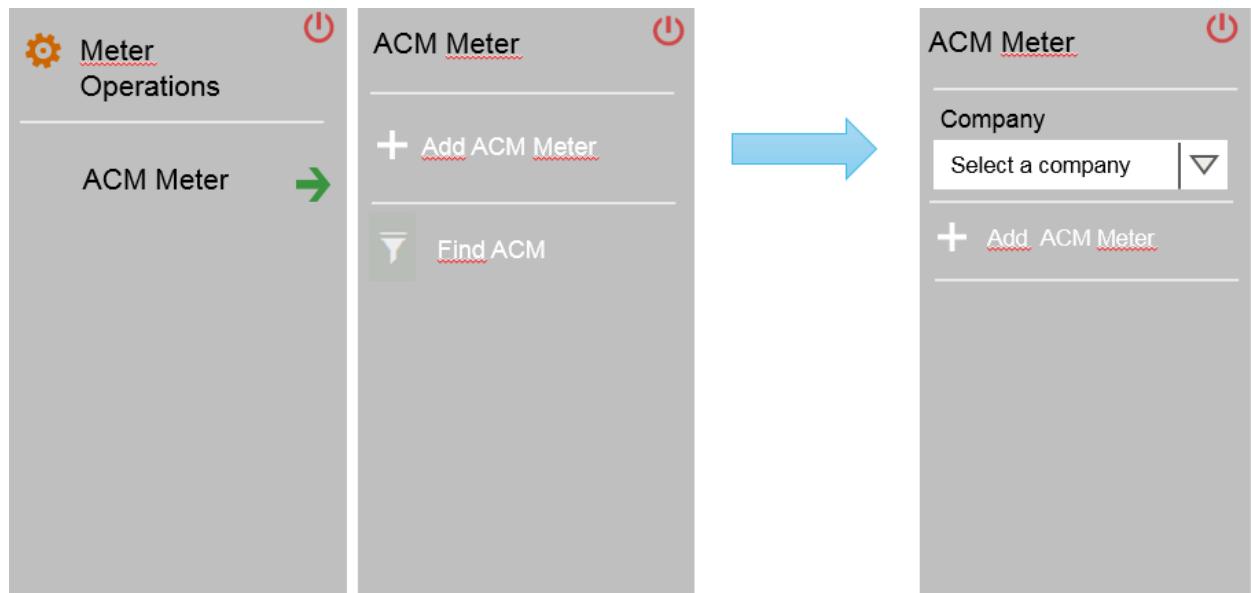
Total items: 6 (Selected items: 1)

Delete autodiscovered conflicts

Autodiscovered conflicts deleted

8.20. ACM Meter

With this function it's possible to create the ACM for meters, the ACM are command to send to meters for doing some activities .



Selecting a Company in the form and clicking then on the Add ACM Meter it's possible to insert a new ACM:

The screenshot shows two windows side-by-side. On the left is a list view titled 'ACM Meter' with a red power icon. It has a dropdown menu 'Company' with 'Select a company' and a button '+ Add ACM Meter'. A blue arrow points from this window to the right window. The right window is titled 'Add ACM meter' and contains fields for 'Name *' (with a red asterisk), 'Description *' (with a red asterisk), 'Meter Type' (radio button selected), a file input field with a 'Browse' button, and a green 'Show dh list' button. Below these fields is a link 'Download csv model' with a green circle icon. At the bottom, there is an example of a command template:

```

Example:
description;step;dh;dhpars
START_ACTIVITY;1;06{datalenght}{transid}
-0A01020506;
^([A-Fa-f0-9]{30})([A-Fa-f0-9]{6})([A-Fa-f0-9]{6})([A-Fa-f0-9]{4})([A-
([A-Fa-f0-9]{4}))([A-Fa-f0-9]{4}))

```

At the bottom left of the right window, the date '28/03/2019' is visible.

A Command is composed by a **Name** a Description and a meter Type and it has A list of detailed **sub commands** that could be upload using the Upload DH message.csv button.

Clicking on the Download .csv file template button a template command file is downloaded, using this file it's possible to upload the sub commands list.

The ACM command file is written by the Support group, when you need a file command you have to ask it to the Second level support group.

Following there are some **.csv** command examples,
DH commands could be composed by numerical, alphanumerical, { } and -.

Example 1

This is the list of sub commands to load for a READ TEMPORAL PARAMS Command:

| | | | |
|------------------|------|--------------|--|
| description | step | dh | dhpars |
| Working ts - dst | 1 | 060A01020506 | ^([A-Fa-f0-9]{30})([A-Fa-f0-9]{6})([A-Fa-f0-9]{6})([A-Fa-f0-9]{4})([A-([A-Fa-f0-9]{4}))([A-Fa-f0-9]{4})) |

Example 2

This is the list of sub commands to load for a WRITE_ATT Command:

| description | step | dh | dhparser |
|-----------------|------|------------------------------|-----------------|
| STOP_ACTIVITY | 1 | | 112000100010103 |
| WRITE_DFOL_DIOL | 2 | 04010001060E080F05020003003C | |
| START_ACTIVITY | 3 | | 112000100010104 |

The DH field has to be in an hexadecimal format

Example 3

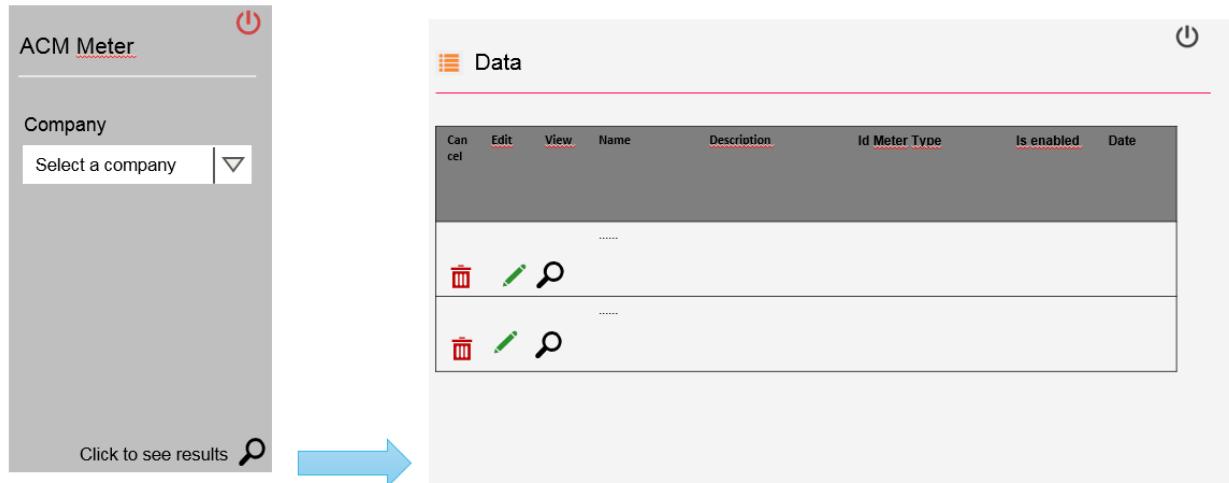
It's possible to create a replace command using this

| description | step | dh | dhparser |
|----------------|------|------------------------------------|--|
| Working ts - d | | 06{datalenght}{transid}-0A01020506 | ^([A-Fa-f0-9]{30})([A-Fa-f0-9]{6})([A-Fa-f0-9]{6})([A-Fa-f0-9]{4})([A-Fa-f0-9]{4}) |

ACM COMMANDS LIST

The screenshot shows two main windows. On the left, the 'ACM Meter' window has a 'Company' dropdown menu with the placeholder 'Select a company'. Below it is a button labeled 'Click to see results' with a magnifying glass icon. On the right, a 'Data' window displays a table with columns: Cancel, Edit, View, Name, Description, Id Meter Type, Is enabled, and Date. There are two rows in the table, each with edit and search icons.

Clicking on the Click to see results link it's possible to see the ACM meter commands list

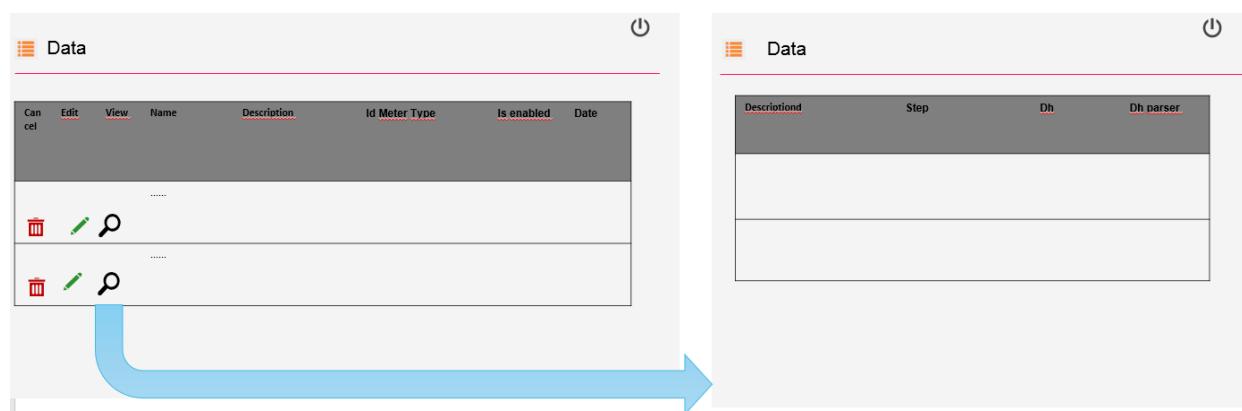


It's possible to select a Company and clicking then on Click to see results link it's possible to see the Meter ACM list commands.

It's possible to delete a command clicking on the delete icon.

It's possible to edit the main command (Name, Description, Command type) clicking on the icon.

It's possible to show the list commands clicking on the icon.



8.21. Send ACM Commands to meters

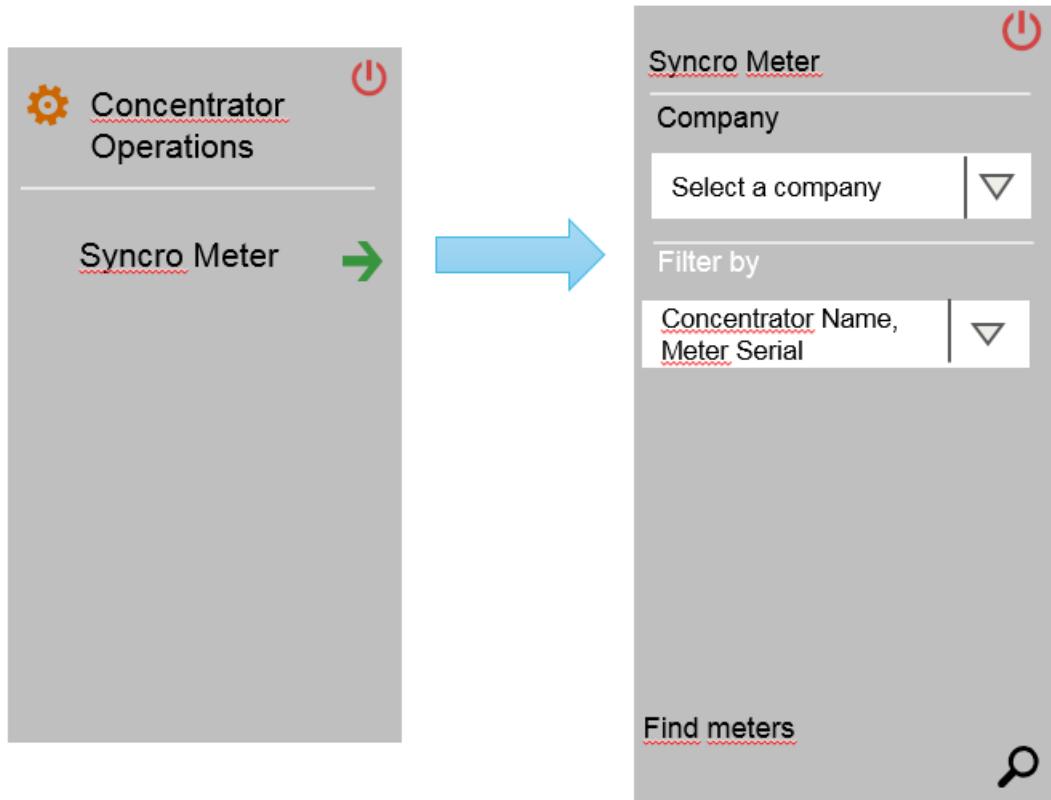
With this function it's possible to send the ACM commands to the selected Meters. It's possible to filter the meters by Company, Concentrator Name and Meter serial number:

The screenshot shows the 'Send ACM commands' feature in the e-distribuzione software. On the left, there are two dropdown menus: 'Company' and 'Filter by'. Under 'Filter by', the 'Meter serialnumber' dropdown is set to 'Concentrator'. Below these is a note: 'Click to show Initialized Meters'. In the center, a table titled 'ACM meters' lists several entries. On the right, another table titled 'ACM Commands' lists two items. At the bottom right is a green button labeled 'Run ACM Command'.

Clicking then on Click to show Initialized Meters a meter list is visible and also an ACM commands list. Selecting a meter on the left then an ACM commands list having meter type equal to the selected meter is visible on the right ,it's possible to select the ACM Commands to send to the meter and clicking then on the Run ACM Command. The Work Orders are listed in the Report Monitoring/ Works section.

8.22. Syncro Meter

With this function it's possible to send a Syncro command to a set of meters ,using the Syncro command the meters are syncronized and their status word is reset:



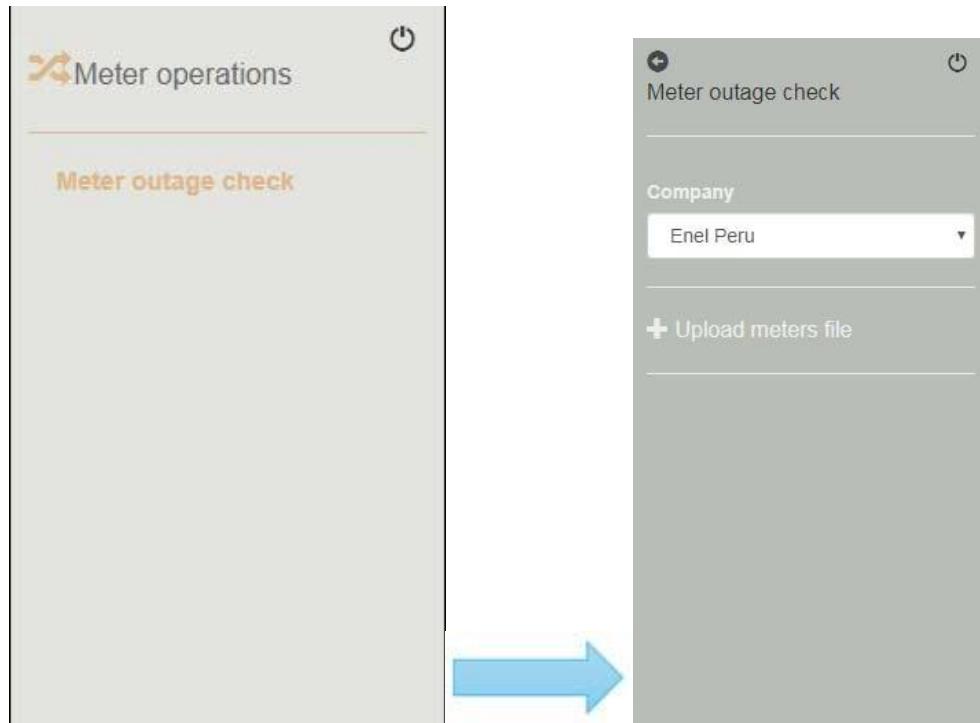
Selecting a Concentrator or a Meter Serial and clicking then on the Find meters lens All the installed meters associated to a Concentrator or a single installed meter is shown:

The screenshot shows two panels. The left panel is titled 'Syncro Meter' and contains fields for 'Company' (with a dropdown menu 'Select a company') and 'Filter by' (with a dropdown menu 'Concentrator Name, Meter Serial'). A blue arrow points from the 'Find meters' button in this panel to the right panel. The right panel is titled 'Data Select meters to sync.' It features a table with columns: Concentrator Name, Meter Serialnumber, Name, Versionapp1, IsReachable, and Details. There are four rows in the table, each with a small ellipsis icon. At the bottom right of the right panel is a green button labeled 'Run meter sync'.

It's possible to select a set of meters and clicking then on 'Run meter sync' command their status word is reset.

8.23. Meter outage check

This function creates an activity to check the reachability of some specific meters of a company. The list must be loaded to the system through a csv file that includes the pod name and the serial number for each meter.



Below you can see the panel for loading the list. Clicking on the green button you download the model to populate the meter list. An example is already present to help you.

When the uploading is complete, the message “Upload completed X items saved” will appear.

The screenshot shows the 'SMM ePlus - SMART METERS MANAGER' interface. On the left, there's a sidebar with icons for Admin, System, Technical Area, Commercial Area, and Report. The main content area has tabs for Configuration, Monitoring, and Operation. Under the Operation tab, there's a section for 'Meter operations' which includes 'ACM meter' and 'Syncro meter'. Below that is a specific section for 'Meter outage check' with a 'Company' dropdown set to 'Chile'. There's a button to 'Upload meters file'. To the right, there's a form titled 'Insert meters from file' with a 'Sfoglia...' button, a 'Description' field, an 'Operation type' dropdown set to 'Insert', and a 'load file' button. A message says 'Upload completed 8 items saved'. At the bottom, there's a link to 'Download csv model' and an example entry: 'podname;serialnumber 116940;UAAEEDN11200129694'.

The result and the status of the csv process is visible in Provisioning Dashboard

| File type | User | Filename | Description | Count | KO count | Error code | Insert date | Operation |
|------------------|-----------|--|--------------|-------|----------|------------|-------------|-----------|
| MeterOutageCheck | MainAd... | meteroutagecheck_tempalte2 - Copia.csv | test2_19-04 | 8 | 1 | 0 | 19-04-2019 | Insert |
| MeterOutageCheck | MainAd... | meteroutagecheck_tempalte2.csv | test_error | 8 | 4 | 0 | 19-04-2019 | Insert |
| MeterOutageCheck | MainAd... | meteroutagecheck_tempalte2.csv | test1 | 8 | 1 | 0 | 19-04-2019 | Insert |
| MeterOutageCheck | MainAd... | meteroutagecheck_tempalte2.csv | test 19-04 1 | 8 | 1 | 0 | 19-04-2019 | Insert |

Results are also visible in the technical pending workorder and the technical completed workorder that you can find in the Works and Workorder widget under the monitoring section of the report menu.

In “Provisioning – Workorder” report each group of meters to check can be identified in “description” column, that refers to the description of the uploaded csv.

from [insertdate] 4/19/2019 to [insertdate] 4/19/2019

1 4 1 of 1 Find | Next View

Provisioning - Workorder

Offset minutes from UTC: 120

| file type | description | insertdate local | idworkorder | meter | usagepoint | concentrator | is error | error description | enddate local |
|------------------|-------------|-----------------------|-------------|--------------------|------------|--------------|----------|--|-----------------------|
| MeterOutageCheck | test2_19-04 | 4/19/2019 11:22:20 AM | 8225 | UAAEEDN10100027220 | VIOLA0007 | VIOLATO1 | ✓ | | 4/19/2019 11:22:48 AM |
| MeterOutageCheck | test2_19-04 | 4/19/2019 11:22:20 AM | 8226 | UAAEEDN11200129695 | ROSSO0003 | ROSSOT01 | ✓ | | 4/19/2019 11:22:56 AM |
| MeterOutageCheck | test2_19-04 | 4/19/2019 11:22:20 AM | 8227 | UCAUEDN12400000364 | VERDE0009 | ROSSOT01 | ✓ | | 4/19/2019 11:22:56 AM |
| MeterOutageCheck | test2_19-04 | 4/19/2019 11:22:20 AM | 8228 | UAAEEDN11300000743 | GIALLO005 | ROSSOT01 | ✗ | [READ_METER_DATA_V2_10] [TB_ACK_15] NODE NOT REACHABLE | 4/19/2019 11:22:58 AM |
| MeterOutageCheck | test2_19-04 | 4/19/2019 11:22:20 AM | 8229 | UAAEEDN11200129688 | GIALLO006 | GIALLOT01 | ✓ | | 4/19/2019 11:22:58 AM |
| MeterOutageCheck | test2_19-04 | 4/19/2019 11:22:20 AM | 8230 | UAAEEDN14201700008 | podtest | GIALLOT01 | ✓ | | 4/19/2019 11:22:58 AM |
| MeterOutageCheck | test2_19-04 | 4/19/2019 11:22:20 AM | 8231 | UAAEEDN10100027236 | GIALLO002 | GIALLOT01 | ✓ | | 4/19/2019 11:22:58 AM |
| MeterOutageCheck | test_error | 4/19/2019 11:15:20 AM | 8221 | UAAEEDN10100027220 | VIOLA0007 | VIOLATO1 | ✓ | | 4/19/2019 11:15:46 AM |
| MeterOutageCheck | test_error | 4/19/2019 11:15:20 AM | 8224 | UAAEEDN10100027236 | GIALLO002 | GIALLOT01 | ✓ | | 4/19/2019 11:15:48 AM |
| MeterOutageCheck | test_error | 4/19/2019 11:15:20 AM | 8222 | UAAEEDN11200129695 | ROSSO0003 | ROSSOT01 | ✓ | | 4/19/2019 11:15:50 AM |
| MeterOutageCheck | test_error | 4/19/2019 11:15:20 AM | 8223 | UAAEEDN11300000743 | GIALLO005 | ROSSOT01 | ✗ | [READ_METER_DATA_V2_10] [TB_ACK_15] NODE NOT REACHABLE | 4/19/2019 11:15:51 AM |

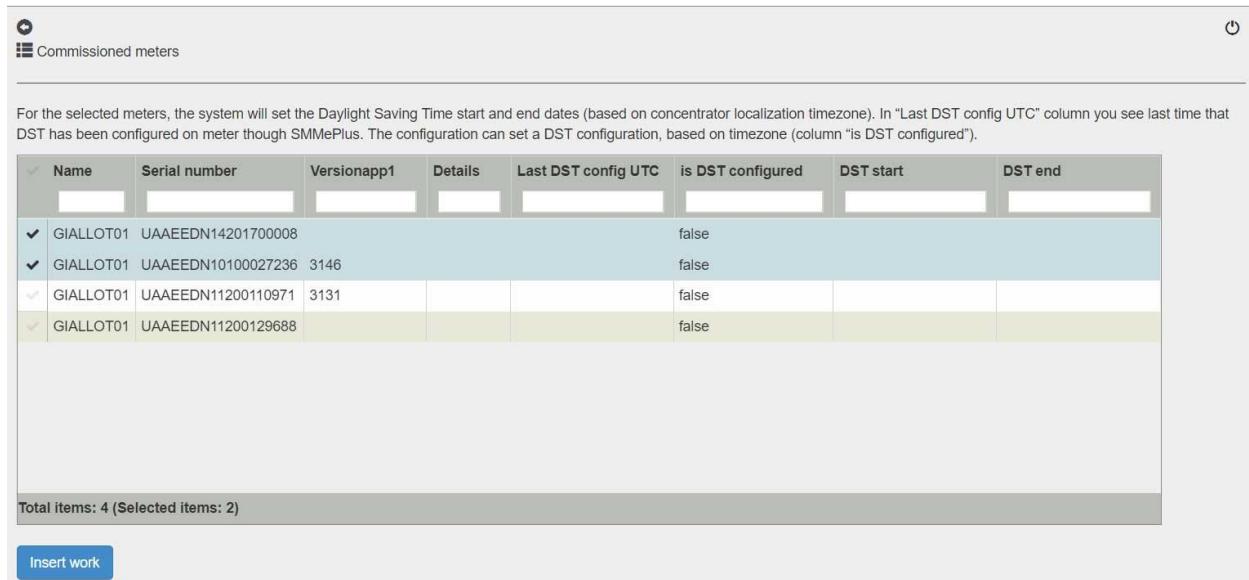
8.24. Set meter DST

With this function it's possible to set the DST dates for all the selected meters. You can get a single meter by its serialnumber or the list commissioned to a concentrator.

The screenshot shows the 'DST dates' search interface. It includes a back arrow, a power button icon, and the title 'DST dates'. Below this is a section labeled 'Find concentrators' with a downward arrow icon. A 'Company' section shows a dropdown menu set to 'Collaudo'. A 'Filter meters by' section has a dropdown menu set to 'Meter serialnumber'. A 'Type a value' input field contains the text 'UAAEEDN10100027236'. At the bottom is a 'Find meters' button with a magnifying glass icon.

The screenshot shows the 'DST dates' search interface with more detailed filtering. It includes a back arrow, a power button icon, and the title 'DST dates'. Below this is a section labeled 'Find concentrators' with a downward arrow icon. A 'Company' section shows a dropdown menu set to 'Collaudo'. A 'Filter meters by' section has a dropdown menu set to 'Concentrator'. A 'Concentrator' section shows a dropdown menu set to 'GIALLOT01'. At the bottom is a 'Find meters' button with a magnifying glass icon. A blue arrow points from the first screenshot to this one, indicating the progression of the search process.

or



The screenshot shows a table with columns: Name, Serial number, Versionapp1, Details, Last DST config UTC, is DST configured, DST start, and DST end. There are four rows of data, each with a checkmark in the first column. The last three rows have a light green background, while the first row has a white background.

| | Name | Serial number | Versionapp1 | Details | Last DST config UTC | is DST configured | DST start | DST end |
|---|-----------|--------------------|-------------|---------|---------------------|-------------------|-----------|---------|
| ✓ | GIALLOT01 | UAAEEDN1420170008 | | | | false | | |
| ✓ | GIALLOT01 | UAAEEDN10100027236 | 3146 | | | false | | |
| ✓ | GIALLOT01 | UAAEEDN11200110971 | 3131 | | | false | | |
| ✓ | GIALLOT01 | UAAEEDN11200129688 | | | | false | | |

Total items: 4 (Selected items: 2)

[Insert work](#)

It's possible to select the meters for setting the DST dates with the local timezone. After selecting the meters the Insert Work button will appear to generate the DST works, the DST date will be set using the local timezone configured in the timezone form (see chapter 4. Settings area/Timezone).

When the DST date is configured on the meter the 'is dst configured' parameter became equal true.

The Work Orders are listed in the Report Monitoring/ Works section.

8.25. Meter autodiagnostic

With this function it's possible to select the meters on which the system will reset and read the status word. You can get a single meter by its serialnumber or the list commissioned to a concentrator.

The figure consists of three screenshots of a web-based application for 'Meter auto diagnostic'. Each screenshot shows a header with a power icon and the title 'Meter auto diagnostic'. Below the header are sections for 'Company' (set to 'Collaudo') and 'Upload meters file'. The third section is 'Filter meters by', which includes a dropdown menu and a search bar labeled 'Find meters'.

- Screenshot 1:** Shows the 'Filter meters by' dropdown open, displaying '...', '...', 'Meter serialnumber', and 'Concentrator'. The 'Meter serialnumber' option is highlighted with a blue selection bar.
- Screenshot 2:** Shows the 'Filter meters by' dropdown open, displaying 'Concentrator' and a list of concentrators: 'ROSSOT01'. A blue arrow points from the first screenshot to this one.
- Screenshot 3:** Shows the 'Filter meters by' dropdown open, displaying 'Concentrator' and a list of concentrators: 'ROSSOT01'. A blue arrow points from the second screenshot to this one.

OR

This screenshot shows a table titled 'Select meters for autodiagnostic'. The table has columns: Concentrator Name, Meter Serialnumber, Name, Versionapp1, Isreachable, and Details. There are five rows of data, each with a checkmark icon and a dropdown arrow. The last row is highlighted with a yellow background.

| Concentrator Name | Meter Serialnumber | Name | Versionapp1 | Isreachable | Details |
|-------------------|--------------------|-------|-------------|-------------|---------|
| ROSSOT01 | UAAEEDN11300000743 | CERM1 | | false | |
| ROSSOT01 | UAAEEDN11200129682 | CERM1 | 3131 | true | |
| ROSSOT01 | UAAEEDN11200129695 | CERM1 | 3131 | true | |
| ROSSOT01 | UAAEEDN11200129683 | CERM1 | 3131 | true | |
| ROSSOT01 | UCAUEDN12400000364 | CERT1 | | true | |

Total items: 5 (Selected items: 3)

Run meter autodiagnostic

After selecting the meters the *Run meter autodiagnostic* button will appear to generate the meter autodiagnostic work.

8.26. Update Meter Firmware

NOT YET RELEASED

8.27. Prepay Configuration

Prepay configuration is a feature that actually converts a postpaid meter to a prepaid one and sets all necessary parameters while executing a related workorder.

To access page the user is required to navigate on Technical Area → Operation → Meter Operations → Prepay configuration

There's a filter mechanism by company and concentrator's name and/or meter serialnumber; a flag "only commissioned meters" hides uncommissioned ones from results list:

The screenshot shows the 'Prepay configuration' page. On the left, there is a search form with fields for 'Company' (dropdown), 'concentrator' (dropdown), and 'Serial number' (text input). A checkbox 'Only commissioned meters' is checked. Below the form is a 'Find meters' button with a magnifying glass icon. On the right, a message says 'Selected concentrator: VIOLAT01'. Below it, a note states: 'For selected meters the system will create a technical workorder that will configure prepayment parameters on meters. Selecting "Generate mobile activity" button, the activity will be available for execution from ePlus mobile application'. A table grid displays meter details: Concentrator Name, Serial number, Reachable, Meter type, Versionapp1, Details, and Is prepaid configured. One row is visible with values: VIOLAT01, 12345678901234567890, Yes, TypeA, 1.0, and Yes. At the bottom of the grid, it says 'Total items: 1'.

When one or more meters are selected on results grid two buttons appears just below

Generate remote activity

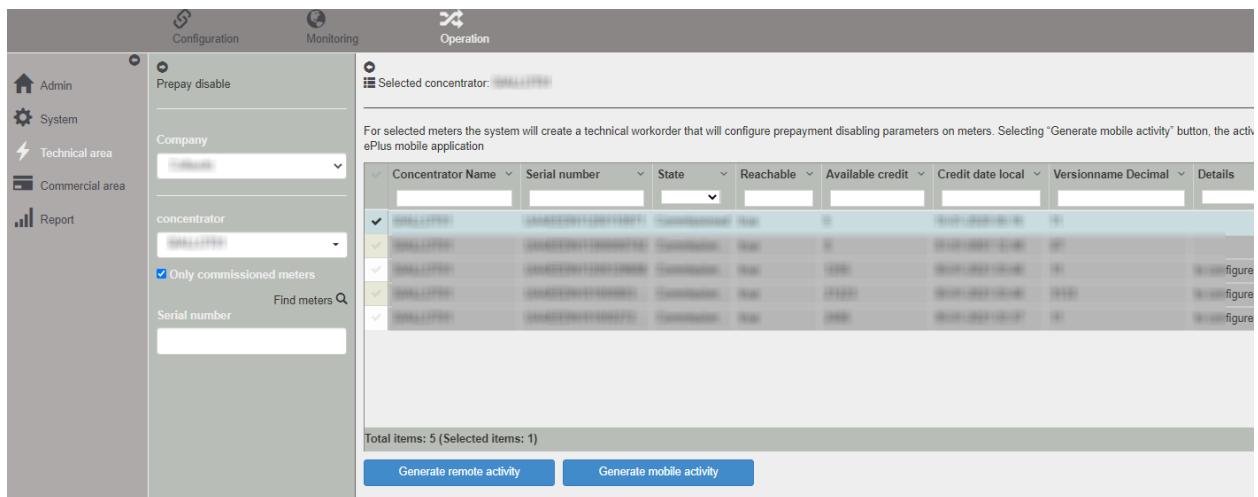
Generate mobile activity

The first button generates a remote workorder as long as the second one generate a workorder that can be sent over by using mobile app.

8.28. Prepay Disable

A prepaid meter can be set back to a postpaid plan with this feature.

To access page the user is required to navigate on Technical Area → Operation → Meter Operations → Prepay disable



As per screenshot, when one or more meters are selected on results grid two buttons appears just below

Generate remote activity

Generate mobile activity

The first button generates a remote workorder as long as the second one generate a workorder that can be sent over by using mobile app.

8.29. Reset “UC SET”

This functionality simply resets the "UC SET" field to restore the recording of the daily closing readings.

SMM ePlus user is required to select one or more meters from dedicated page and then proceed by pressing Reset “UC Set” button in order to create a new work that can be seen on report:

SMM ePlus - SMART METERS MANAGER

Configuration Monitoring Operation

Reset "UC SET"

Select meters to reset

For the selected meters the system will execute the reset of the "UC SET" field to restore the registration of daily closure readings.

| Concentrator Name | Meter Serialnumber | Meter type | Versionapp1 | Isreachable | Details |
|-------------------|--------------------|------------|-------------|-------------|---------|
| XXXXXXXXXX | XXXXXXXXXXXXXX | XXXXXX | XXXXXX | XXXXXX | |
| XXXXXXXXXX | XXXXXXXXXXXXXX | XXXXXX | XXXXXX | XXXXXX | |
| XXXXXXXXXX | XXXXXXXXXXXXXX | XXXXXX | XXXXXX | XXXXXX | |
| XXXXXXXXXX | XXXXXXXXXXXXXX | XXXXXX | XXXXXX | XXXXXX | |
| XXXXXXXXXX | XXXXXXXXXXXXXX | XXXXXX | XXXXXX | XXXXXX | |
| XXXXXXXXXX | XXXXXXXXXXXXXX | XXXXXX | XXXXXX | XXXXXX | |
| XXXXXXXXXX | XXXXXXXXXXXXXX | XXXXXX | XXXXXX | XXXXXX | |
| XXXXXXXXXX | XXXXXXXXXXXXXX | XXXXXX | XXXXXX | XXXXXX | |

Total items: 8

8.30. Voltage interruption

The feature, executed on one or more meters at a time, generates a “Meter Voltage Interruption” activity to get the list of voltage interruptions

Configuration Monitoring Operation

Meter operations

Voltage interruption

Company

Upload meters file

Filter meters by

Concentrator

Find meters Q

When selected, the user only has to flag desired meter(s) and proceed with operation

Select the meters you want a voltage interruption check

For the selected meters the system will collect voltage interruptions

| Concentrator Name | Meter Serialnumber | Meter type | Versionapp1 | Isreachable | Details |
|-------------------|--------------------|------------|-------------|-------------|------------------------|
| Concentrator 1 | Meter 1 | Type A | 1.0.0 | Reachable | |
| Concentrator 2 | Meter 2 | Type B | 1.0.0 | Reachable | |
| Concentrator 3 | Meter 3 | Type C | 1.0.0 | Reachable | |
| Concentrator 4 | Meter 4 | Type D | 1.0.0 | Reachable | |
| Concentrator 5 | Meter 5 | Type E | 1.0.0 | Reachable | Configure Interruption |
| Concentrator 6 | Meter 6 | Type F | 1.0.0 | Reachable | Configure Interruption |
| Concentrator 7 | Meter 7 | Type G | 1.0.0 | Reachable | Configure Interruption |
| Concentrator 8 | Meter 8 | Type H | 1.0.0 | Reachable | Configure Interruption |

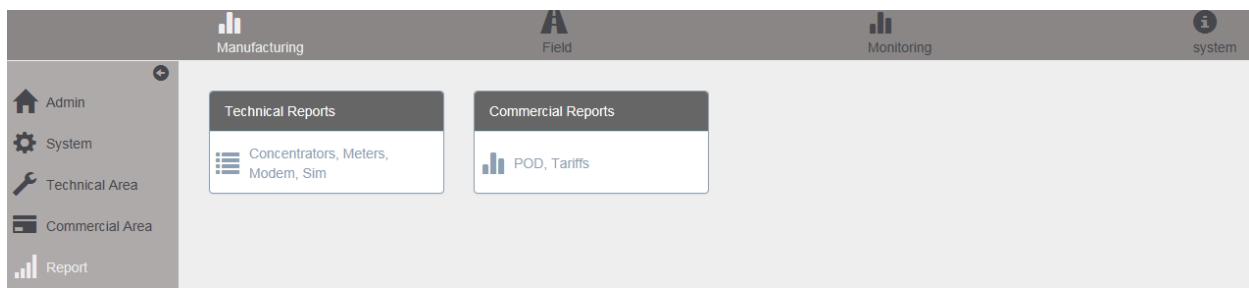
Total items: 8 (Selected items: 2)

[Get voltage interruption](#)

The results of the workorders can be seen on Technical completed workorder report, while details about interruptions are present on Meter voltage interruption report (Monitoring → Reading).

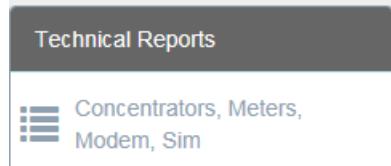
9. Report

When the user login in into the system the Widgets form dashboard is shown.
 Selecting the Report Area voice on the Main Menu and the Manufacturing voice on the Secondary Menu the Technical Reports Widget and the Commercial Reports Widget are shown:

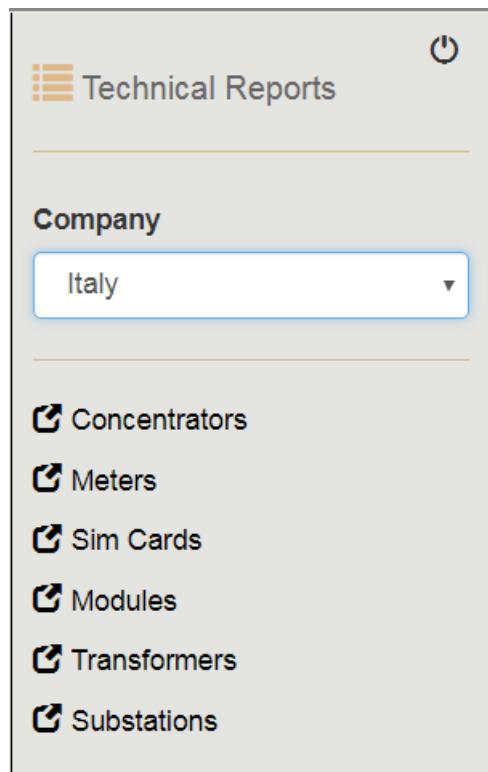


e-distribuzione

TECHNICAL REPORTS WIDGET



The Technical Report Widget contains the following menu items:



COMMERCIAL REPORTS WIDGET

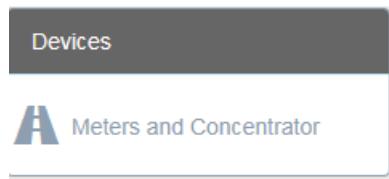


The Commercial Report Widget contains the following menu items:

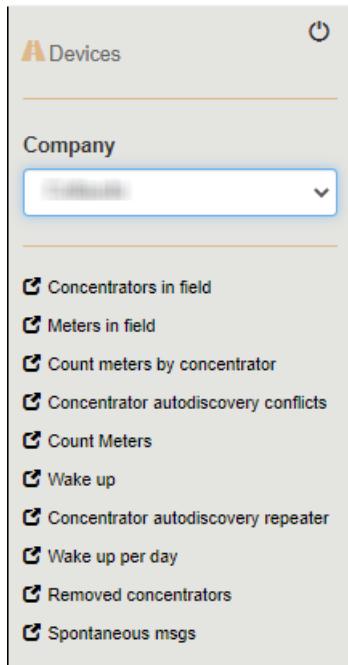


These menu functions are described in the next sections.

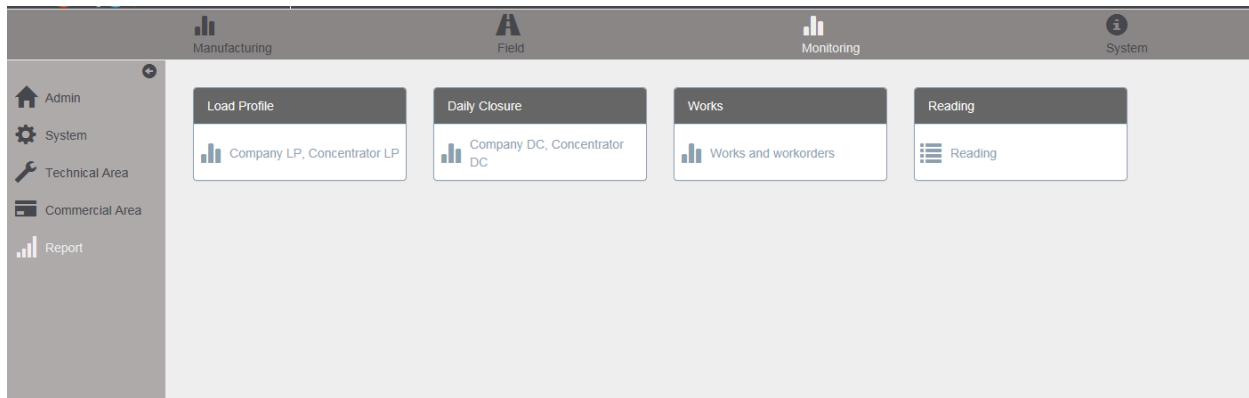
Selecting the Report voice on the Main Menu and the Field voice on the Secondary Menu these widgets are shown:



The Devices widget contains the following menu items:



Selecting the Report voice on the Main Menu and the Monitoring voice on the Secondary Menu these widgets are shown:

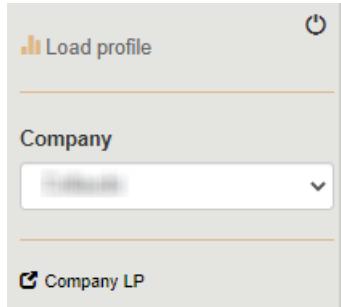


LOAD PROFILE REPORTS WIDGET

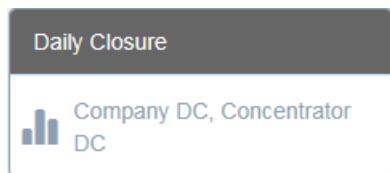


The Load Profile Reports Widget contains the following menu items:

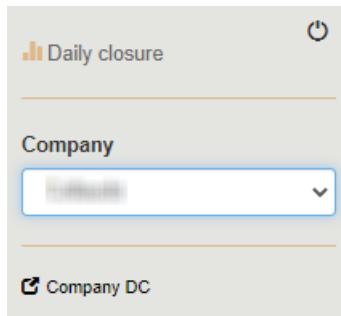
e-distribuzione



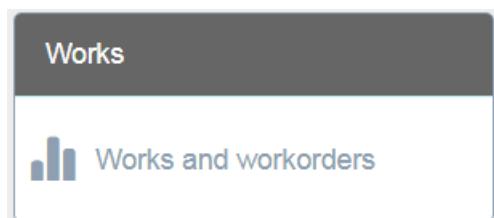
DAILY CLOSURE WIDGET



The Daily Closure Widget contains the following menu items:



WORK REPORTS WIDGET

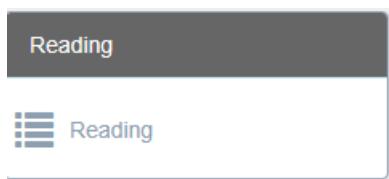


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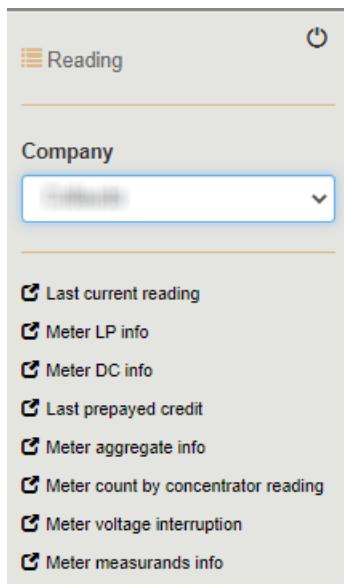
The Works Widget contains the following menu items:

These menu functions are described in the next sections.

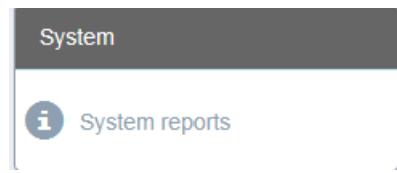
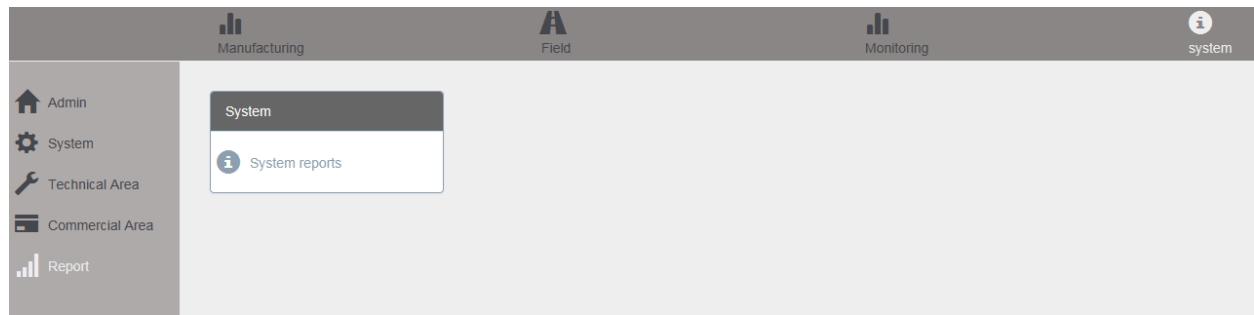
READINGS WIDGET



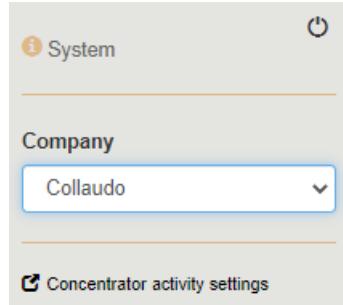
The Reading Widget contains the following menu items:



SYSTEM WIDGET



The System Widget contains the following menu items:



These menu functions are described in the next sections.

9.1. Technical Reports

It needs to select a Company in the filter below:

The screenshot shows a sidebar titled "Technical Reports" with a power icon at the top right. Below the title, there is a section labeled "Company" with a dropdown menu set to "Italy". To the right of the dropdown is a vertical list of report types, each preceded by a small icon:

- Concentrators**
- Meters**
- Sim Cards**
- Modules**
- Transformers**
- Substations**

Concentrators report

Selecting the **Concentrators** report and the NULL flag is possible to list all the concentrators inserted in the manufacturing area with their Type, Manufacturer type, Serialnumber, Adlvc:

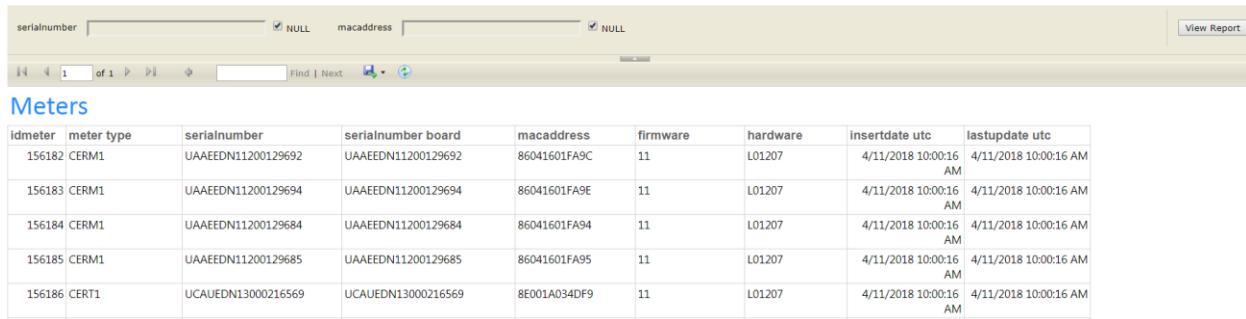
The screenshot shows a table titled "Concentrators" with the following data:

| idconcentrator | concentrator type | manufacturer | serialnumber | adlvc | insertdate utc | lastupdate utc |
|----------------|-------------------|--------------|------------------|--------------|----------------------|----------------------|
| 33 | CERCO1 | Kaifa | 11CEC50810000394 | 02000000000 | 9/25/2017 9:27:53 AM | 9/25/2017 9:27:53 AM |
| 51 | CERCO1 | Ducati | 14CEC50510001095 | 111111111112 | 10/3/2017 8:21:40 AM | 10/3/2017 8:21:40 AM |
| 127 | CERCO1 | Kaifa | 11CEC50810000555 | 020000007000 | 9/25/2017 9:27:53 AM | 9/25/2017 9:27:53 AM |
| 128 | CERCO1 | Kaifa | 11CEC50810000556 | 02000000008 | 9/25/2017 9:27:53 AM | 9/25/2017 9:27:53 AM |
| 1489 | CERCO1 | Kaifa | 10CEC50810000064 | 829614000040 | 4/6/2018 8:54:19 AM | 4/6/2018 8:54:19 AM |

It's possible to filter a punctual Concentrator inserting a serialnumber in the filter.

Meters report

Selecting the **Meters** report and the NULL flag is possible to list all the meters inserted in the manufacturing area:

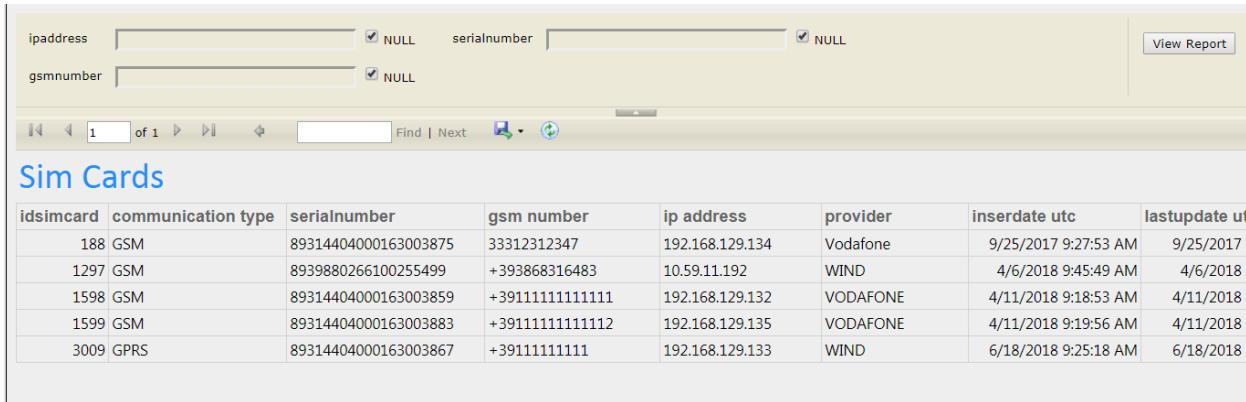


| idmeter | meter type | serialnumber | serialnumber board | macaddress | firmware | hardware | insertdate utc | lastupdate utc |
|---------|------------|--------------------|--------------------|--------------|----------|----------|-----------------------|-----------------------|
| 156182 | CERM1 | UAAEEDN11200129692 | UAAEEDN11200129692 | 86041601FA9C | 11 | L01207 | 4/11/2018 10:00:16 AM | 4/11/2018 10:00:16 AM |
| 156183 | CERM1 | UAAEEDN11200129694 | UAAEEDN11200129694 | 86041601FA9E | 11 | L01207 | 4/11/2018 10:00:16 AM | 4/11/2018 10:00:16 AM |
| 156184 | CERM1 | UAAEEDN11200129684 | UAAEEDN11200129684 | 86041601FA94 | 11 | L01207 | 4/11/2018 10:00:16 AM | 4/11/2018 10:00:16 AM |
| 156185 | CERM1 | UAAEEDN11200129685 | UAAEEDN11200129685 | 86041601FA95 | 11 | L01207 | 4/11/2018 10:00:16 AM | 4/11/2018 10:00:16 AM |
| 156186 | CERT1 | UCAUEDN13000216569 | UCAUEDN13000216569 | 8E001A03DF9 | 11 | L01207 | 4/11/2018 10:00:16 AM | 4/11/2018 10:00:16 AM |

It's possible to filter a punctual Meter inserting a serialnumber or a macaddress in the filter.

Sim Cards report

Selecting the **Sim Cards** report and the NULL flag is possible to list all the possible sims cards inserted in the manufacturing area:



| idsimcard | communication type | serialnumber | gsm number | ip address | provider | inserdate utc | lastupdate ut |
|-----------|--------------------|----------------------|-----------------|-----------------|----------|----------------------|----------------------|
| 188 | GSM | 89314404000163003875 | 33312312347 | 192.168.129.134 | Vodafone | 9/25/2017 9:27:53 AM | 9/25/2017 9:27:53 AM |
| 1297 | GSM | 8939880266100255499 | +393868316483 | 10.59.11.192 | WIND | 4/6/2018 9:45:49 AM | 4/6/2018 9:45:49 AM |
| 1598 | GSM | 89314404000163003859 | +39111111111111 | 192.168.129.132 | VODAFONE | 4/11/2018 9:18:53 AM | 4/11/2018 9:18:53 AM |
| 1599 | GSM | 89314404000163003883 | +39111111111112 | 192.168.129.135 | VODAFONE | 4/11/2018 9:19:56 AM | 4/11/2018 9:19:56 AM |
| 3009 | GPRS | 89314404000163003867 | +391111111111 | 192.168.129.133 | WIND | 6/18/2018 9:25:18 AM | 6/18/2018 9:25:18 AM |

It's possible to filter a punctual Sim card inserting an ipaddress, serialnumber or a gsmnumber in the filter:

| idsimcard | communication type | serialnumber | gsm number | ip address | provider | inserdate utc | lastupdate utc |
|-----------|--------------------|---------------------|---------------|--------------|----------|---------------------|----------------|
| 1297 | GSM | 8939880266100255499 | +393868316483 | 10.59.11.192 | WIND | 4/6/2018 9:45:49 AM | 4/6/2018 9: |

Modules report

Selecting the **Modules** report and the NULL flag is possible to list all the possible modules inserted in the manufacturing area:

| idmodule | communication type | serialnumber | imei | model | inserdate utc | lastupdate utc |
|----------|--------------------|----------------|-----------------|-----------|----------------------|----------------------|
| 20 | GSM | 00112233445566 | 00112233445566 | Model1 | 9/25/2017 9:27:53 AM | 9/25/2017 9:27:53 AM |
| 28 | GSM | 00112233445588 | 00112233445588 | Model1 | 9/25/2017 9:27:53 AM | 9/25/2017 9:27:53 AM |
| 1076 | GSM | 254627 | 122365689736718 | AP SYSTEM | 4/6/2018 9:44:11 AM | 4/6/2018 9:44:11 AM |
| 1077 | GSM | 112233445577 | 112233445571111 | AP SYSTEM | 4/11/2018 9:20:58 AM | 4/11/2018 9:20:58 AM |
| 1078 | GSM | 112233445599 | 112233445599111 | AP SYSTEM | 4/11/2018 9:21:17 AM | 4/11/2018 9:21:17 AM |
| 1084 | GPRS | 2339372 | 353943042105845 | AP STSME | 6/18/2018 9:24:14 AM | 6/18/2018 9:24:14 AM |

It's possible to filter a punctual Module inserting a serialnumber in the filter:

| idmodule | communication type | serialnumber | imei | model | inserdate utc | lastupdate utc |
|----------|--------------------|----------------|----------------|--------|----------------------|----------------------|
| 20 | GSM | 00112233445566 | 00112233445566 | Model1 | 9/25/2017 9:27:53 AM | 9/25/2017 9:27:53 AM |

Transformers report

Selecting the **Transformers** report and the NULL flag is possible to list all the possible transformers inserted in the manufacturing area:

substation name | View Report

1 of 1 Find | Next

Transformers

| idtransformer | name | substation | description | inserdate utc | lastupdate utc |
|---------------|---------------|---------------|-----------------------------|-----------------------|-----------------------|
| 3 | test federica | test federica | test | 9/19/2017 12:00:00 AM | 9/18/2017 12:00:00 AM |
| 11 | T01 | Substation-01 | T01 | 9/25/2017 9:27:53 AM | 9/25/2017 9:27:53 AM |
| 1063 | TR01 | ARTURO | TRASFORMATORE CABINA ARTURO | 4/6/2018 8:56:10 AM | 4/6/2018 8:56:10 AM |
| 1064 | T01 | VIOLA | | 4/11/2018 9:34:08 AM | 4/11/2018 9:34:08 AM |
| 1065 | T01 | VERDE | | 4/11/2018 9:34:15 AM | 4/11/2018 9:34:15 AM |
| 2567 | T01 | GIALLO | Trasformatore cabina GIALLO | 4/18/2018 9:48:04 AM | 4/18/2018 9:48:04 AM |

It's possible to filter a punctual Transformer inserting a substation name in the filter.

Substations report

Selecting the **Substations** report and the NULL flag is possible to list all the possible substations inserted in the manufacturing area:

name | View Report

1 of 1 Find | Next

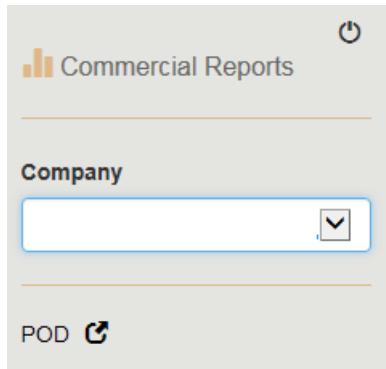
Substations

| idsubstation | name | description | address | region tree | inserdate utc | lastupdate utc |
|--------------|---------------|-----------------------------|------------------|-------------|----------------------|-----------------|
| 1170 | ARTURO | CABINA CONCENTRATORE ARTURO | Via Rubattino 54 | Milano | 4/6/2018 8:55:47 AM | 4/6/2018 8:55: |
| 2779 | GIALLO | Cabina II Piano | Via Rubattino 54 | Milano | 4/18/2018 9:47:04 AM | 4/18/2018 9:47: |
| 37 | Substation-01 | Substation-01 | Via Roma | Milano | 9/25/2017 9:27:53 AM | 9/25/2017 9:27: |
| 21 | test federica | test | viale Padova, 3 | Milano | 9/14/2017 9:52:31 AM | 9/15/2017 8:47: |
| 1172 | VERDE | Cabina II piano Palazzina A | Via Rubattino 4 | Milano | 4/11/2018 9:33:28 AM | 4/11/2018 9:33: |
| 1171 | VIOLA | Cabina II piano Palazzina A | Via Rubattino 54 | Milano | 4/11/2018 9:32:40 AM | 4/11/2018 9:32: |

It's possible to filter a punctual Substation inserting a substation name in the filter.

9.2. Commercial Reports

It needs to select a Company in the filter below:



Selecting the **Pod** report is possible to list the Pod that are present in the Commercial Area:

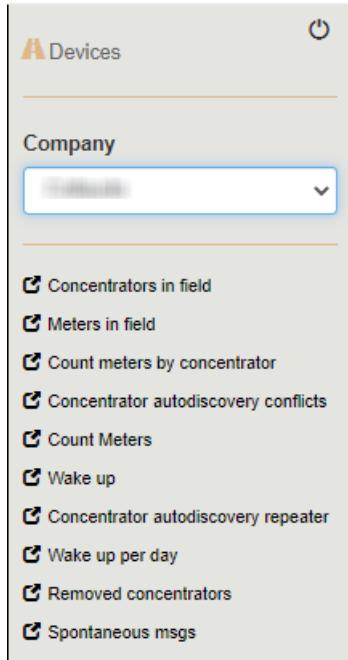
| Usage Points | | | | | | |
|--------------|----------------|------------------|---------|-----------------------|-----------------------|--|
| idusagepoint | name | address | region | insertdate utc | lastupdate utc | |
| 1 | Usagepoint F1 | Via Roma | Milano | 9/26/2017 10:56:53 AM | 9/26/2017 10:56:53 AM | |
| 2 | Usagepoint F2 | Via Roma | Milano | 9/26/2017 10:56:53 AM | 9/26/2017 10:56:53 AM | |
| 3 | Usagepoint F3 | Via Roma | Milano | 9/26/2017 10:56:53 AM | 9/26/2017 10:56:53 AM | |
| 100120 | IT001E00111432 | Via Roma | Milano | 2/28/2018 12:56:36 PM | 2/28/2018 12:56:36 PM | |
| 100121 | IT001E00111433 | Via Roma | Milano | 2/28/2018 12:56:54 PM | 2/28/2018 12:56:54 PM | |
| 100122 | POD0001 | Address test | Bristol | 3/27/2018 12:00:00 AM | 3/27/2018 12:00:00 AM | |
| 100123 | POD0002 | Address test | Bristol | 3/27/2018 12:00:00 AM | 3/27/2018 12:00:00 AM | |
| 100124 | POD0003 | Address test | Bristol | 3/27/2018 12:00:00 AM | 3/27/2018 12:00:00 AM | |
| 100125 | POD0004 | Address test | Bristol | 3/27/2018 12:00:00 AM | 3/27/2018 12:00:00 AM | |
| 100126 | ART0001 | Via Rubattino 54 | Milano | 4/6/2018 9:41:33 AM | 4/6/2018 9:41:33 AM | |

Selecting the **Associations** report it is possible to filter the Pod Meter association list, present in the Commercial Area, by tariff type, pod or serialnumber:

| Meter - POD associations | | | | | | |
|--------------------------|--------------------|------------------|--------------|-----------------------|--------------|--|
| pod | serialnumber | address | state | tariff | breakerstate | |
| VIOLA0001 | UAAEEDN10100027566 | Via Rubattino 54 | Commissioned | Default tariff -CERM1 | 100 | |
| VIOLA0007 | UAAEEDN10100027220 | Via Rubattino 54 | Commissioned | Default tariff -CERM1 | 100 | |
| VIOLA0008 | UAAEEDN10100004844 | Via Rubattino 54 | Commissioned | Default tariff -CERM1 | 0 | |
| VIOLA0014 | UAAEEDN10100027282 | Via Rubattino 54 | Installed | Default tariff -CERM1 | 100 | |
| VIOLA0015 | UAAEEDN10100027382 | Via Rubattino 54 | Commissioned | Default tariff -CERM1 | 0 | |
| VIOLA0016 | UAAEEDN11100000000 | Via Rubattino 54 | Insert | Default tariff -CERM1 | 0 | |
| VIOLA0017 | UAAEEDN19100000026 | Via Rubattino 54 | Installed | Default tariff -CERM1 | 0 | |
| VIOLA0020 | UAAEEDN10100027267 | Via Rubattino 54 | Commissioned | Default tariff -CERM1 | 0 | |
| VERDE0002 | UAAEEDN11200129684 | Via Rubattino 54 | Commissioned | Default tariff -CERM1 | 100 | |

9.3. Devices Reports

It needs to select a Company in the filter below:



Concentrators in field report

Selecting the **Concentrators in field** report is possible to list all the Concentrators installed, there are some details about their state and if they are in Stop Activity:

| serialnumber | name | ipaddress | View Report |
|------------------|--------|------------------|---------------|
| serialnumber | name | ipaddress | |
| ARTUROT01 | CERC01 | 10CEC50810000064 | ARTURO |
| VERDET01 | CERC01 | 12CEC50610004955 | VERDE |
| GIALLOT01 | CERC01 | 11CEC50810000094 | GIALLO |
| ROSSOT01 | CERC01 | 12CEC50610006044 | ROSSO |
| VIOLAT01 | CERC01 | 12CEC50510000001 | VIOLA |
| Substation-01T01 | CERC01 | 14CEC50511000123 | Substation-01 |

Concentrators in field

| name | type | serialnumber | substation | transformer | timezone | comm type | module | ip address | procedure profile | spont profile | state | configuration | stop activity | nrm | is |
|------------------|--------|------------------|---------------|-------------|------------------|-----------|----------------|-----------------|---------------------|-----------------|-------------|---------------|---------------|-------|----|
| ARTUROT01 | CERC01 | 10CEC50810000064 | ARTURO | | Italy | GSM | 254627 | 10.59.11.192 | Profile1 | Spontaneous1 | Initialized | Completed | False | 36 Fa | |
| VERDET01 | CERC01 | 12CEC50610004955 | VERDE | | Italy | GSM | 112233445577 | 192.168.129.132 | Profile1 | Spontaneous1 | Initialized | Running | False | 0 Tr | |
| GIALLOT01 | CERC01 | 11CEC50810000094 | GIALLO | | Italy | GPRS | 2399372 | 1.1.1 | PROCEDURE_PROFILE_1 | Spontaneous1 | Initialized | Completed | False | 45 Fa | |
| ROSSOT01 | CERC01 | 12CEC50610006044 | ROSSO | | Italy | GSM | 00112233445566 | 192.168.129.134 | PROCEDURE_PROFILE_2 | PROFILE_SPONT_1 | Initialized | Completed | False | 1 Tr | |
| VIOLAT01 | CERC01 | 12CEC50510000001 | VIOLA | T01 | Chile - Santiago | GSM | 00112233445588 | 192.168.129.135 | PROCEDURE_PROFILE_3 | PROFILE_SPONT_1 | Initialized | Completed | False | 4 Tr | |
| Substation-01T01 | CERC01 | 14CEC50511000123 | Substation-01 | T01 | Chile - Santiago | GSM | 112233445599 | 123.145.23.34 | PROCEDURE_PROFILE_1 | Spontaneous1 | Installed | Installed | False | 6 Tr | |

It's possible to filter a punctual Concentrator inserting a serial number or a name or an ipaddress in the filter:

serialnumber NULL name NULL
 ipaddress NULL

1 of 1 Find | Next

| name | type | serialnumber | substation | transformer | comm type | module |
|------------|--------|-----------------|------------|-------------|-----------|--------|
| ARTUROTR01 | CERCO1 | 10CEC5081000064 | ARTURO | | GSM | 254627 |

Meters in field report

Selecting the **Meters in field** report is possible to list all the Meters installed, it needs to select a Concentrator or a Meter in the filter and click on the View Report button:

filter by value

| concentrator name | serialnumber | usagepoint | macaddress | serialnumber | type | state | process state | nrm | is reachable | row | phase | version app1 | version sw fx | pload | dailyclosure | energy dc profile | tip | rpt pri |
|-------------------|--------------|--------------|--------------------|--------------|--------------|-------|---------------|-----|--------------|-----------|-------|--------------|---------------|-------|--------------|-----------------------------|--------------|---------|
| TD-9190 | 2912359 | 860424491DB3 | UAEEEDN18204791731 | CERM1 | Installed | | | | 0 False | | | | | | | | 60 0:0:0:0:0 | |
| TD-9190 | 2912391 | 860624086F3C | UAEEEDN18700749372 | CERM1 | Commissioned | | | | 0 True | 1 Phase R | | 3131 | | True | True | DailyClosure Energy Profile | | |
| TD-9190 | 2912420 | 860424493BBD | UAEEEDN18204799421 | CERM1 | Commissioned | | | | 0 True | 2 Phase R | | 3131 | | True | True | DailyClosure Energy Profile | 60 0:0:0:0:0 | |

Count Meters by Concentrators report

Selecting the **Count Meters by Concentrators** report is possible to list the number of meters assigned to any installed concentrator listing them by their state, the report has been enriched with information about daily closure collection.

concentrator NULL

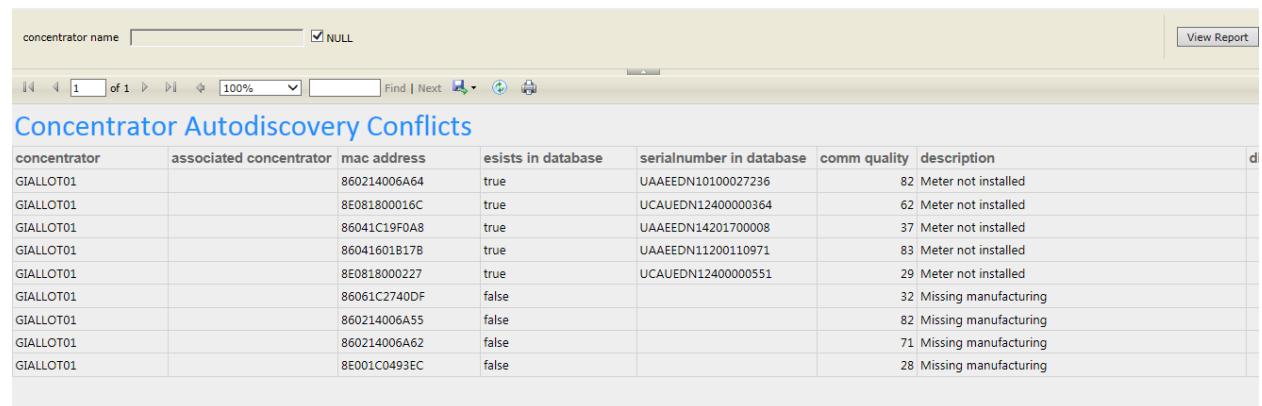
| concentrator | commissioned | not commissioned | autodiscovered | unreachable | pload collection | dailyclosure collection | DC collected D | DC collected D-1 | DC collected D-2 | DC collected D-3 | DC collected < D-3 |
|--------------|--------------|------------------|----------------|-------------|------------------|-------------------------|----------------|------------------|------------------|------------------|--------------------|
| TD-2441 | 56 | 2 | 52 | 0 | 56 | 56 | 52 | 0 | 0 | 0 | 4 |
| TD-5092 | 175 | 15 | 76 | 0 | 175 | 175 | 174 | 1 | 0 | 0 | 0 |
| TD-4166 | 175 | 8 | 7 | 0 | 175 | 175 | 152 | 10 | 1 | 1 | 11 |
| TD-55748 | 68 | 2 | 6 | 0 | 68 | 65 | 43 | 10 | 5 | 1 | 5 |

It's possible to filter a punctual concentrator in field inserting a concentrator in the filter. For example if today is 24/01/2019 :

DC Collected D : number of meters last DC collected = last midnight (24/01/2019 00:00:00)
 DC Collected D-1: number of meters last DC collected = yesterday midnight (23/01/2019 00:00:00)
 DC Collected D-2 : number of meters last DC collected = 2 day ago midnight (22/01/2019 00:00:00)
 DC Collected D-3 : number of meters last DC collected = 3 day ago midnight (21/01/2019 00:00:00)
 DC Collected < D-3 : number of meters last DC collected = 3 or more days ago

Concentrator Autodiscovery Conflicts report

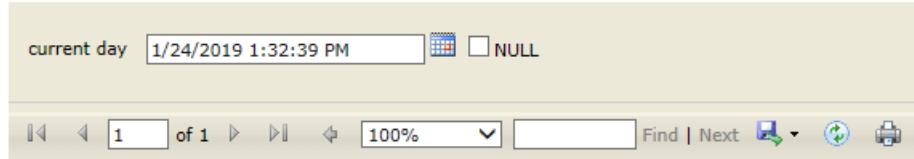
Selecting the **Concentrator Autodiscovery Conflicts** report is possible to list the conflicts detected about the Concentrator Meters relations:



| concentrator | associated concentrator | mac address | exists in database | serialnumber in database | comm quality | description |
|--------------|-------------------------|--------------|--------------------|--------------------------|--------------|-----------------------|
| GIALLOT01 | | 860214006A64 | true | UAAEEDN10100027236 | 82 | Meter not installed |
| GIALLOT01 | | 8E081800016C | true | UCAUEDN12400000364 | 62 | Meter not installed |
| GIALLOT01 | | 86041C19F0A8 | true | UAAEEDN14201700008 | 37 | Meter not installed |
| GIALLOT01 | | 86041601B17B | true | UAAEEDN11200110971 | 83 | Meter not installed |
| GIALLOT01 | | 8E0818000227 | true | UCAUEDN12400000551 | 29 | Meter not installed |
| GIALLOT01 | | 86061C2740DF | false | | 32 | Missing manufacturing |
| GIALLOT01 | | 860214006A55 | false | | 82 | Missing manufacturing |
| GIALLOT01 | | 860214006A62 | false | | 71 | Missing manufacturing |
| GIALLOT01 | | 8E001C0493EC | false | | 28 | Missing manufacturing |

Count meters report

Selecting the **Count Meters** report is possible to list the counts of Installed meters detecting how much meters are commissioned, pload collecting and dailyclosure collecting:



Aggregated data per company

Concentrators

| | |
|---------------------------|------|
| installed concentrators | 2451 |
| initialized concentrators | 2426 |

Meters

| | |
|--|--------|
| installed meters | 302120 |
| commissioned meters | 260140 |
| commissioned meters with LP collection | 259794 |
| commissioned meters with DC collection | 251252 |
| commissioned meters with fw 10 | 6980 |
| commissioned meters with fw 11 | 242498 |

Daily Closure collection

Execution time UTC: 1/24/2019 12:07:16 PM

| | | |
|------------|-----------------|--------|
| 23/01/2019 | 234012 / 251677 | 92.98% |
| 22/01/2019 | 236521 / 251368 | 94.09% |
| 21/01/2019 | 237594 / 250978 | 94.67% |
| 20/01/2019 | 238290 / 250572 | 95.10% |
| 19/01/2019 | 238613 / 250439 | 95.28% |

Load profile collection

Execution time UTC: 1/24/2019 11:57:16 AM

| | | | |
|------------|------------|-----------------|--------|
| 23/01/2019 | partial lp | 115293 / 260059 | 44.33% |
| | | | |

Concentrator Autodiscovery Repeater

"Concentrator Autodiscovery Repeater" report contains the result of the scheduled Autodiscovery Repeater procedure that runs only on concentrators having fw 22. Reads the contents of the concentrator's Autodiscovery Repeater table which contains all the meters that have been discovered by the concentrator. It is a read-only table that is never deleted from the concentrator and is used to find out which counters could be commissioned by that concentrator.

[Concentrator Autodiscovery Repeater Table](#)

| | concentrator | row | macaddress | connection phase | communication phase | path level | details | associated conce |
|---------|--------------|-----|------------|------------------|---------------------|------------|-------------------------|------------------|
| details | | | | Phase R | Phase R | | 0 Missing manufacturing | |
| details | | | | Phase R | Phase R | | 0 Missing manufacturing | |
| details | | | | Phase R | Phase R | | 0 Missing manufacturing | |
| details | | | | Phase R | Phase R | | 0 Missing manufacturing | |
| details | | | | Phase R | Phase R | | 0 Missing manufacturing | |
| details | | | | Phase R | Phase R | | 0 Missing manufacturing | |
| details | | | | Phase R | Phase R | | 0 Missing manufacturing | |
| details | | | | Phase R | Phase R | | 0 Missing manufacturing | |
| details | | | | Phase R | Phase R | | 0 Missing manufacturing | |
| details | | | | Phase R | Phase R | | 0 Missing manufacturing | |
| details | | | | Phase R | Phase R | | 0 Missing manufacturing | |
| details | | | | Phase R | Phase R | | 0 Missing manufacturing | |
| details | | | | Phase R | Phase R | | 0 Missing manufacturing | |
| details | | | | Phase R | Phase R | | 0 Missing manufacturing | |
| details | | | | Phase R | Phase R | | 0 Missing manufacturing | |
| details | | | | Phase R | Phase R | | 0 Missing manufacturing | |
| details | | | | Phase R | Phase R | | 0 Missing manufacturing | |

Wake up

This report shows first, last and total number of wakeup messages sent for each concentrator

[Wake up messages](#)

| concentrator name | ipaddress | port | first wake up date utc | last wake up date utc | last wake up date local | wake up count |
|-------------------|-----------|-------|------------------------|-----------------------|-------------------------|---------------|
| | | 58692 | 8/30/2019 7:20:11 AM | 9/24/2020 10:18:46 AM | 9/24/2020 7:18:46 AM | 5686 |
| | | 58692 | 8/23/2019 10:11:54 AM | 3/13/2020 12:49:32 PM | 3/13/2020 9:49:32 AM | 2944 |
| | | 58692 | 8/23/2019 10:10:49 AM | 9/24/2020 9:22:35 AM | 9/24/2020 6:22:35 AM | 5778 |
| | | 58692 | 8/22/2019 1:21:51 PM | 9/24/2020 9:58:02 AM | 9/24/2020 6:58:02 AM | 5742 |
| | | 58692 | 8/22/2019 1:14:16 PM | 9/24/2020 9:25:20 AM | 9/24/2020 6:25:20 AM | 5997 |
| | | 58692 | 8/22/2019 1:22:44 PM | 9/24/2020 9:59:59 AM | 9/24/2020 6:59:59 AM | 5953 |
| | | 58692 | 8/22/2019 1:12:22 PM | 9/24/2020 8:51:30 AM | 9/24/2020 5:51:30 AM | 5763 |
| | | 58692 | 8/22/2019 1:13:49 PM | 9/24/2020 10:18:11 AM | 9/24/2020 7:18:11 AM | 5845 |
| | | 58692 | 8/22/2019 1:14:28 PM | 9/24/2020 8:50:45 AM | 9/24/2020 5:50:45 AM | 5863 |
| | | 58692 | 8/22/2019 1:13:38 PM | 9/24/2020 8:42:31 AM | 9/24/2020 5:42:31 AM | 5980 |
| | | 58692 | 8/22/2019 1:17:24 PM | 9/24/2020 8:53:00 AM | 9/24/2020 5:53:00 AM | 5773 |
| | | 58692 | 8/23/2019 10:09:50 AM | 9/24/2020 3:04:14 AM | 9/24/2020 12:04:14 AM | 5878 |
| | | 58692 | 8/23/2019 10:08:48 AM | 9/24/2020 10:08:43 AM | 9/24/2020 7:08:43 AM | 5822 |
| | | 58692 | 8/23/2019 10:07:44 AM | 9/24/2020 9:27:29 AM | 9/24/2020 6:27:29 AM | 5845 |
| | | 58692 | 8/23/2019 10:06:43 AM | 9/24/2020 9:00:18 AM | 9/24/2020 6:00:18 AM | 5861 |

Wake up per day

In this report, next to total number of wake up messages, the count of daily message is shows for current day

| Wake up messages per day | | | | |
|--------------------------|-----------|-----------------------|-----------------|-----------------|
| concentrator name | ipaddress | date | daily msg count | total msg count |
| | | 9/23/2020 12:00:00 AM | 14 | 5678 |
| | | 9/23/2020 12:00:00 AM | 15 | 5771 |
| | | 9/23/2020 12:00:00 AM | 14 | 5734 |
| | | 9/23/2020 12:00:00 AM | 15 | 5990 |
| | | 9/23/2020 12:00:00 AM | 14 | 5945 |
| | | 9/23/2020 12:00:00 AM | 14 | 5756 |
| | | 9/23/2020 12:00:00 AM | 15 | 5837 |
| | | 9/23/2020 12:00:00 AM | 17 | 5856 |
| | | 9/23/2020 12:00:00 AM | 15 | 5973 |
| | | 9/23/2020 12:00:00 AM | 14 | 5765 |
| | | 9/23/2020 12:00:00 AM | 15 | 5874 |
| | | 9/23/2020 12:00:00 AM | 14 | 5814 |
| | | 9/23/2020 12:00:00 AM | 15 | 5838 |
| | | 9/23/2020 12:00:00 AM | 15 | 5854 |

Removed Concentrators

The report includes the list of concentrators previously removed from field

| Concentrators removed from field | | | | | | | |
|----------------------------------|--------------|------------|------------|-------|-----------------------|----------------------|--------------|
| name | serialnumber | substation | ip address | state | state change date utc | removal date utc | insert date |
| | | | | | 1/8/2020 8:14:28 AM | 7/9/2020 5:40:07 PM | 11/24/2018 |
| | | | | | 7/23/2020 9:26:13 AM | 8/28/2020 3:25:39 PM | 11/24/2018 |
| | | | | | 7/24/2020 10:16:57 AM | 8/18/2020 4:25:08 PM | 11/24/2018 |
| | | | | | 1/3/2020 3:08:24 AM | 8/15/2020 2:50:13 AM | 11/24/2018 |
| | | | | | 1/6/2020 2:31:02 AM | 7/21/2020 1:04:52 PM | 11/28/2018 1 |
| | | | | | 1/6/2020 3:19:57 AM | 9/21/2020 4:24:53 PM | 11/28/2018 1 |
| | | | | | 1/7/2020 3:13:18 AM | 7/29/2020 5:24:57 PM | 1/14/2019 |
| | | | | | 7/24/2020 10:33:21 AM | 8/22/2020 2:20:03 AM | 5/29/2019 |
| | | | | | 1/16/2020 10:02:02 AM | 9/7/2020 2:34:48 PM | 6/5/2019 |
| | | | | | 6/1/2020 9:06:22 PM | 7/29/2020 4:11:00 PM | 6/23/2019 1 |
| | | | | | 7/24/2020 8:13:55 AM | 8/18/2020 4:25:47 PM | 7/30/2019 |
| | | | | | 1/25/2020 1:10:59 AM | 7/29/2020 5:11:23 PM | 8/13/2019 1 |
| | | | | | 7/24/2020 10:29:46 AM | 8/18/2020 4:26:42 PM | 8/13/2019 1 |
| | | | | | 3/6/2020 8:49:37 AM | 7/29/2020 4:41:31 PM | 3/3/2020 |

Spontaneous msgs

It shows the list of spontaneous messages generated, with details of event/message type

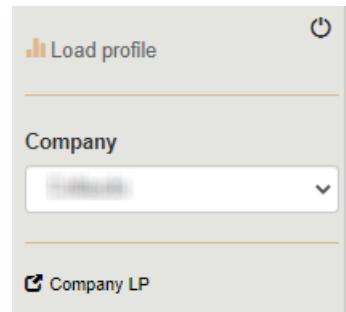


The screenshot shows a database query interface with two search fields: 'name' and 'ipaddress', both set to 'NULL'. Below the search bar is a navigation toolbar with icons for back, forward, and search. The main area displays a table titled 'Spontaneous concentrator messages' with the following data:

| concentrator name | ipaddress | spontmessagetype | port | last date local | last update utc | last update local | message |
|-------------------|------------|------------------|-------|---------------------|---------------------|---------------------|--------------------------------|
| [REDACTED] | [REDACTED] | LVC_POWER_OFF | 58700 | 9/9/2020 6:28:12 AM | 9/9/2020 6:28:12 AM | 9/9/2020 8:28:12 AM | 504876867753486549484854484952 |
| [REDACTED] | [REDACTED] | LVC_POWER_ON | 58700 | 9/9/2020 6:25:12 AM | 9/9/2020 6:25:12 AM | 9/9/2020 8:25:12 AM | 504876867753486549484854484952 |

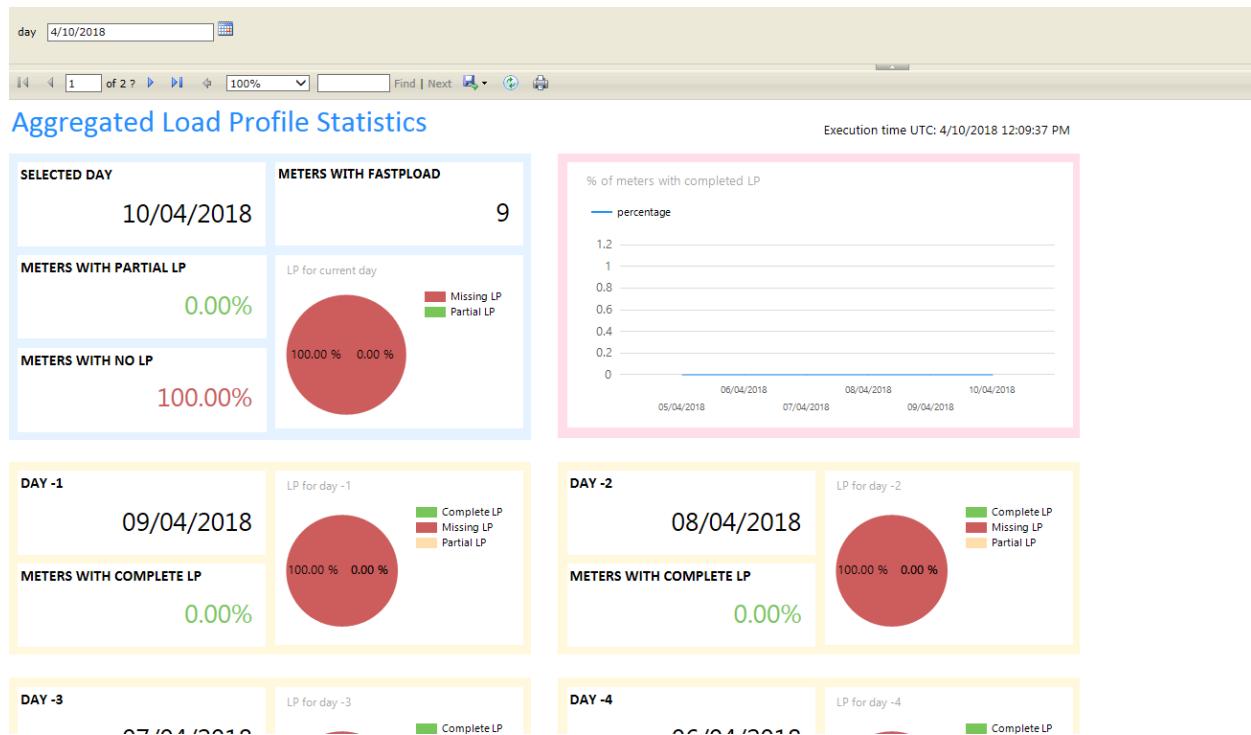
9.4. Load Profile Reports

It needs to select a Company in the filter below:



Company LP report

Selecting the **Company LP** report is possible to list the Aggregate Load Profile Statistics for the Company:



9.5. Daily Closure Reports

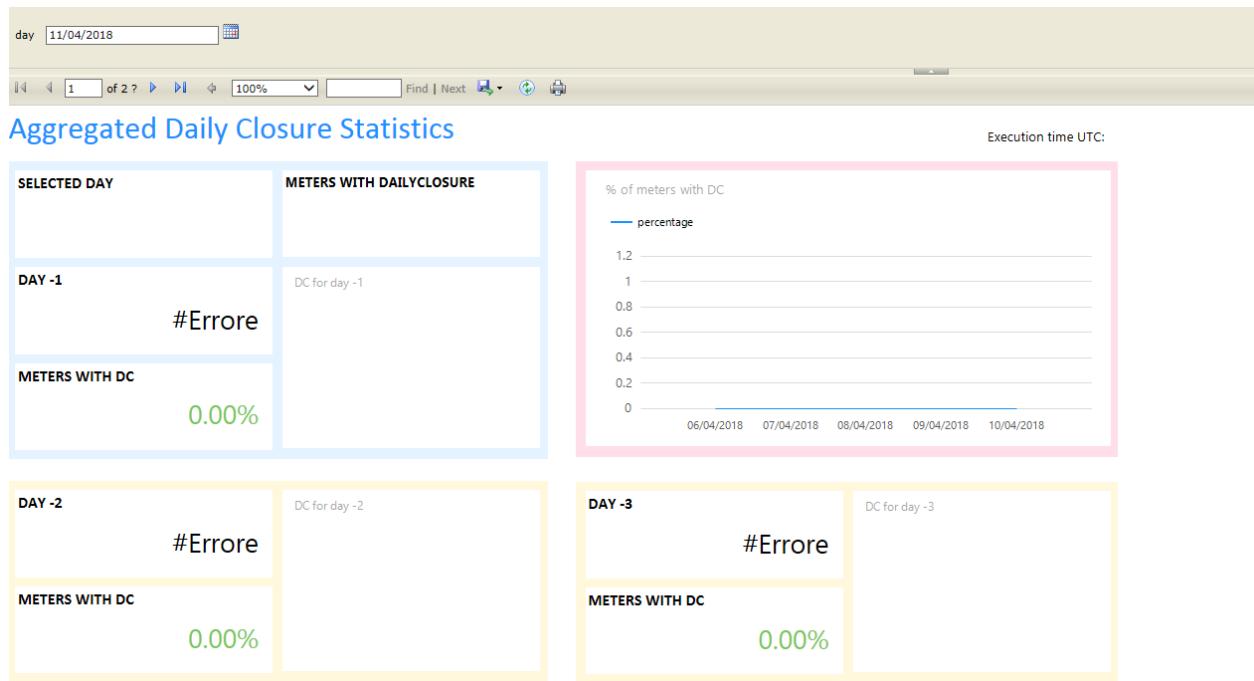
It needs to select a Company in the filter below:

Daily Closure

Company

Company DC

Selecting the **Company DC** report is possible to list the Daily Closure statistics for the Company:



9.6. Work Reports

It needs to select a Company in the filter below:



In these reports delta between utc and local time in minutes + columns with local time's converted values have been added, for example:

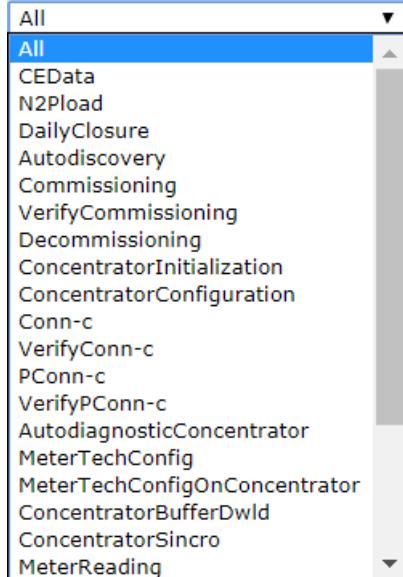
| Chile_UAT | | Offset minutes from UTC: -180 | | | | |
|--------------------------------|---------------|-------------------------------|----------------------|----------------------|----------------------|-------------------------------|
| | Activity type | startdate utc | enddate utc | startdate local | enddate local | workorder |
| ⌚ Pending Works | Concentrator | 2/27/2019 4:40:51 PM | 2/27/2019 4:43:54 PM | 2/27/2019 1:40:51 PM | 2/27/2019 1:43:54 PM | |
| ⌚ Completed Works | Water Reading | 2/27/2019 4:33:57 PM | 2/27/2019 4:37:44 PM | 2/27/2019 1:33:57 PM | 2/27/2019 1:37:44 PM | see workorder |
| ⌚ Commercial Pending Workorder | Concentrator | 2/27/2019 4:07:48 PM | 2/27/2019 4:10:51 PM | 2/27/2019 1:07:48 PM | 2/27/2019 1:10:51 PM | |

Pending Works report

Selecting the **Pending Works** report is possible to list the Pending Works list detail for the Company, for example:

| idwork | concentrator | activity type | insertdate utc | startdate utc | insertdate local | startdate local | current retry | state |
|--------|--------------|-----------------|----------------------|----------------------|----------------------|----------------------|---------------|-------|
| 1 | 1 | Commissioning | 2023-08-15T10:00:00Z | 2023-08-15T10:00:00Z | 2023-08-15T10:00:00Z | 2023-08-15T10:00:00Z | 0 | Ready |
| 2 | 2 | Decommissioning | 2023-08-15T10:00:00Z | 2023-08-15T10:00:00Z | 2023-08-15T10:00:00Z | 2023-08-15T10:00:00Z | 0 | Ready |
| 3 | 3 | Commissioning | 2023-08-15T10:00:00Z | 2023-08-15T10:00:00Z | 2023-08-15T10:00:00Z | 2023-08-15T10:00:00Z | 0 | Ready |

It's possible to filter by an activity type:



These are values for state of Pending Works.

First state can be **Ready** or **Waiting**:

- Ready → the work will be executed immediately
- Waiting [Locked by other activities] → the work is locked by another work

The activities that lock each other are commissioning/verify commissioning/decommissioning.

When the work is **Ready**, it will be taken by WorkManager service that will send it to JobsManager service for execution. We have two states:

- Executing [Collected by WorkManager]
- Executing [Sent to Job Manager]

Errors in the process are represented by these states:

- Error [Error in sending to Job Manager]
- Error [JobID already exists]
- Error [Worker Service not found]

These are values for state of meters:

- Not installed
- Installed (pod-meter association)
- Commissioned (meter-concentrator association and commissioning procedure successfully completed)

These are values for state of concentrators:

- Installed (concentrator entity created)
- Initialized (concentrator initialization activity is successfully completed)

For example when a “concentrator installation” entity is created in Concentrator Installation section then an initialization process is automatically created.



Completed Works report

Selecting the **Completed Works** report is possible to list the Completed Works list detail for the Company, for example:

It's possible to see the workorder detail selecting the link 'see workorder'

Commercial Pending Workorder report

Selecting the **Commercial Pending Workorder** report is possible to list the Commercial Workorder list of works that are in a state pending because are in an execution state or because they had some problems , for example:

Commercial Completed Workorder report

Selecting the **Commercial Completed Workorder** report is possible to display the Commercial Completed Works list detail for the Company:

Commercial workorder completed

| idwo | pod | meter | activity type | contract profile | tariff profile | breaker state | contract state | enddate utc | enddate local | is mobile | error description | is error |
|---------------|--------------------|---------|---------------|------------------|----------------|---------------|----------------|-----------------------|-----------------------|-----------|---------------------------------|----------|
| 650 ROSSO0003 | UAAEEDN11200129695 | Reading | | | | | | 2/22/2019 2:59:39 PM | 2/22/2019 3:59:39 PM | False | | ✓ |
| 649 ROSSO0002 | UAAEEDN11200129683 | Reading | | | | | | 2/22/2019 2:59:38 PM | 2/22/2019 3:59:38 PM | False | | ✓ |
| 647 ROSSO0002 | UAAEEDN11200129688 | Reading | | | | | | 2/22/2019 2:47:14 PM | 2/22/2019 3:47:14 PM | False | | ✓ |
| 648 GIALLO002 | UAAEEDN10100027236 | Reading | | | | | | 2/22/2019 2:43:11 PM | 2/22/2019 3:43:11 PM | False | | ✓ |
| 644 GIALLO001 | UAAEEDN10100027238 | Reading | | | | | | 2/22/2019 2:37:05 PM | 2/22/2019 3:37:05 PM | False | | ✓ |
| 645 ROSSO0003 | UAAEEDN11200129695 | Reading | | | | | | 2/22/2019 2:16:35 PM | 2/22/2019 3:16:35 PM | False | | ✓ |
| 646 ROSSO0002 | UAAEEDN11200129683 | Reading | | | | | | 2/22/2019 1:54:18 PM | 2/22/2019 2:54:18 PM | False | | ✓ |
| 643 ROSSO0003 | UAAEEDN11200129695 | Reading | | | | | | 2/22/2019 11:48:58 AM | 2/22/2019 12:48:58 PM | False | | ✗ |
| 640 VERDE0003 | UAAEEDN11200129692 | Remove | | | | | | 2/22/2019 8:37:55 AM | 2/22/2019 9:37:55 AM | False | FAILED[5.4]Error removing meter | ✗ |

Technical Pending Workorder report

Selecting the **Technical Pending Workorder** report is possible to list the Technical Workorders that are waiting to be executed by the system for the Company:

Technical workorder pending

| idworkorder | idwork | pod | meter | activity type |
|-------------|--------|-----------|---------------|---|
| 4117 | 554953 | VIOLA0007 | UAAEEDN101000 | All Install Activate Change Detachment Reconnection Close Remove Reading ReadLight Commissioning VerifyCommissioning MeterTechConfig Decommissioning MeterTechConfigOnConcentrator ReadingLight ReadingMaxPower |

It's possible to filter by activity type.

Technical Completed Workorder report

Selecting the **Technical Completed Workorder** report is possible to list the Technical Workorders executed by the system for the Company, it's possible filter by activity type:

The screenshot shows a software interface for managing work orders. On the left, there's a sidebar with navigation links: Pending Works, Completed Works, Commercial Pending Workorder, Commercial Completed Workorder, Technical Pending Workorder, Technical Completed Workorder, and Completed Works Scheduled. The main area displays a report titled "Technical workorder completed" with columns for idwork, concentrator, pod, meter, activity type, startdate utc, enddate utc, startdate local, enddate local, contract profile, and tariff profile. The report shows three entries, each with a different activity type (Reading, Reading, Reading) and specific timestamp details.

Completed Scheduled Works report

Scheduled activities run by concentrators can be seen in this reports.

This screenshot shows the "Completed Scheduled Works" report. It includes a search bar at the top with fields for concentrator, activity type (set to All), and date range from [enddate] to [enddate]. A dropdown menu for activity type is open, showing options like All, CEData, N2Pload, DailyClosure, AutoDiscovery, AutoDiscovery Repeater, and N2PMeas. The main table below has columns for idwork, concentrator, activity type, startdate utc, enddate utc, startdate local, enddate local, result, and error description. The results show multiple entries for each concentrator, with the "result" column indicating successful completion (green checkmark).

Pending Scheduled Works report

Scheduled activities still pending to be executed or with execution in progress are shown inside this report

ACM Concentrator completed report

This report shows command DH commands executed on concentrator

ACM Concentrator completed

Offset minutes from UTC: 60

| idwork | acm | concentrator | enddate utc | view details |
|------------|-----------|----------------|----------------------|------------------------------|
| 1234567890 | ACM-12345 | Concentrator A | 2023-10-15T12:00:00Z | view details |

ACM Concentrator completed details

Offset minutes from UTC: 60

| acm | concentrator | enddate utc | enddate local |
|-----|--------------|---------------|---------------|
| nº | command | response type | response |
| | | | |

Provisioning workorder report

It shows the list of provisionings:

Provisioning - Workorder

| file type | description | insertdate local | idworkorder | meter | usagepoint | concentrator | is error | description |
|---------------------|-------------|------------------|-------------|-------|------------|--------------|----------|-------------|
| VoltageInterruption | | | | | | | ■ | |
| MeterOutageCheck | | | | | | | ■ | |
| MeterOutageCheck | | | | | | | ■ | |

ACM Meter completed

This report shows command DH commands executed on meter, for example:

ACM Meter completed

| idworkorder | acm | meter | enddate utc | view details |
|-------------|-----|-------|-------------|--------------|
| | | | | |



ACM Meter completed details

| acm | meter | enddate utc | enddate local |
|-----|---------|---------------|---------------|
| | | | |
| n° | command | response type | response |
| | | | |

Count scheduled completed

It exposes number of succeeded and failed work for a concentrator on date

Count completed scheduled works on

| concentrator | activity type | count success | count failed |
|--------------|---------------|---------------|--------------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

WO mobile pending

It shows mobile workorder that are currently pending (set on ePlus and ready to be run)

through smartphone

Mobile workorder pending

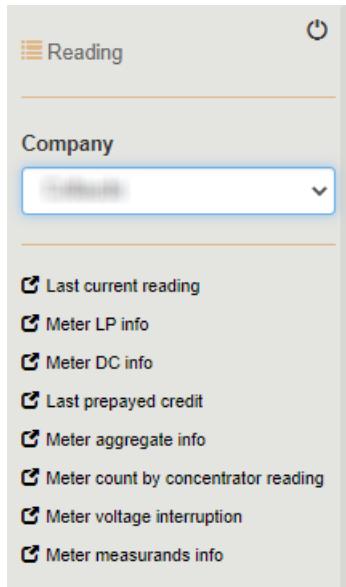
WO mobile completed

Similarly to the previous one, in this report are listed mobile workorder (completed, in this case).

Mobile workorder completed

9.7. Readings Reports

It needs to select a Company in the filter below:



Last current reading report

Selecting the Last current reading report it's possible to see the last current period reading collected for each meter.

| Last current reading for meters | | | | | | | | | | | | | | Offset minutes from UTC: -180 | |
|---------------------------------|------------|--------------|--------------------|--------------|--------------|---------------|-----|-----|----|----|----|----|-----|-------------------------------|--|
| concentrator | usagepoint | macaddress | serialnumber | version app1 | state | process state | t1 | t2 | t3 | t4 | t5 | t6 | tot | reading date | |
| Subestacion2TD_2 POD10 | | 8606224FDB96 | UAAEEDN17305233558 | | Commissioned | | 82 | 0 | 0 | 0 | 0 | 0 | 82 | 3/15/2019 1:00 | |
| Subestacion2TD_2 POD1 | | 8606224FDBBC | UAAEEDN17305233596 | 3130 | Installed | | | | | | | | | | |
| Subestacion2TD_2 POD2 | | 8606224FDB8D | UAAEEDN17305233549 | | Commissioned | | 82 | 22 | 0 | 0 | 0 | 0 | 104 | 3/6/2019 12:00 | |
| Subestacion2TD_2 POD3 | | 8606224FDAEC | UAAEEDN17305233388 | | Commissioned | | 82 | 0 | 0 | 0 | 0 | 0 | 82 | 3/6/2019 12:00 | |
| Subestacion2TD_2 POD4 | | 8606224FDB9B | UAAEEDN17305233563 | | Installed | | | | | | | | | | |
| Subestacion2TD_2 POD5 | | 8606224FDB0A | UAAEEDN17305233418 | | Installed | | | | | | | | | | |
| Subestacion2TD_2 POD6 | | 8606224FDB37 | UAAEEDN17305233463 | | Commissioned | | | | | | | | | | |
| Subestacion2TD_2 POD7 | | 8606224FDB8A | UAAEEDN17305233546 | | Commissioned | | 82 | 0 | 0 | 0 | 0 | 0 | 82 | 2/27/2019 1:00 | |
| Subestacion2TD_2 POD8 | | 8606224FDB8F | UAAEEDN17305233551 | | Commissioned | | 103 | 145 | 0 | 0 | 0 | 0 | 248 | 2/27/2019 1:00 | |

Meter LP Info

Load profile information per meter

Meter DC Info

Daily Closure information per meter

Daily closure info per meter

| concentrator | mac address | serialnumber | versionapp1 | table type | energy type | last closure date | local | errordesc | is unreachable | is error | last update utc |
|--------------|--------------|--------------------|-------------|------------|-------------------------|-------------------|-------------|-----------|----------------|----------|-----------------------|
| ROSSOT01 | 86041601FA92 | UAAEEDN11200129682 | 3131 | 0002 | Active Forward Energy | 10/28/2020 | 12:00:00 AM | | False | False | 10/28/2020 6:05:20 PM |
| ROSSOT01 | 86041601FA92 | UAAEEDN11200129682 | 3131 | 0004 | Reactive Forward Energy | 4/1/2020 | 12:00:00 AM | | False | False | 12/16/2019 8:21:19 AM |
| ROSSOT01 | 86041601FA92 | UAAEEDN11200129682 | 3131 | 0008 | Active Reverse Energy | 10/28/2020 | 12:00:00 AM | | False | False | 10/28/2020 6:05:20 PM |

Last Prepaid Credit

It contains useful information about remaining credit and last charge date

| Last prepayed credit reading for meters | | | | | | | | | | Offset minutes from UTC: 60 | | |
|---|------------|--------------|--------------------|---------|------|--------------|---------------|------------------|---------------------------|-----------------------------|-----------------------|--------------------|
| concentrator | usagepoint | macaddress | serialnumber | version | app1 | state | process state | available credit | available currency credit | last trans id | local date | last credit charge |
| ROSSOTO1 | POD027 | 86041601FA92 | UAAEEDN11200129682 | 3131 | | Commissioned | | 150 | 150 | 45 | 12/31/2020 9:54:16 AM | 1/22/20. |

Meter Aggregate info

Aggregated info per meter

Meter Count by concentrator reading report

Meters count for concentrator, even including reading statistics in period blocks

Count Meters For Concentrator with readings statistics

| concentrator | commissioned | not commissioned | last R <= 3 days | last R 4-7 days | last R 8-10 days | last R 11-30 days | last R >30 days |
|--------------|--------------|------------------|------------------|-----------------|------------------|-------------------|-----------------|
| ... | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| ... | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ... | 8 | 3 | 3 | 0 | 5 | 0 | 0 |
| ... | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ... | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ... | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ... | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ... | 5 | 1 | 0 | 0 | 4 | 0 | 1 |
| ... | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ... | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ... | 8 | 1 | 0 | 0 | 6 | 0 | 2 |
| ... | 2 | 1 | 0 | 0 | 2 | 0 | 0 |

Last R<=3 days:
number of meters with last collected reading referred to one of last 3 days

Last R 4-7 days:
number of meters with last collected reading referred to 4, 5, 6 or 7 days ago

Last R 8-10 days:
number of meters with last collected reading referred to 8, 9 , 10 days ago

Last R 11-30 days:
number of meters with last collected reading between 11 and 30 days ago

Last R >30 days:
number of meters with last collected reading older than 30 days ago or never collected

Meter Voltage interruption

The Meter Voltage Variation reports exposes last interruptions for meters

| Last interruptions for meters | | | | | | | | | | | | | | |
|-------------------------------|------------|------------|--------------|--------------|-------|---------------|------------------|-------------------|------|-----|-----|------------|-----------|-----------|
| concentrator | usagepoint | macaddress | serialnumber | version app1 | state | process state | meter time local | last update local | THVI | TSI | TLI | NSHV R cur | NAVVR cur | NLOVR cur |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |

There are a lot of registries included in report, with initials/abbreviation. By clicking on "See legend" hyperlink a page with the explanation of each acronym is shown:

The screenshot shows a software interface for managing meter data. On the left, there is a table titled "Last interruptions for meters" with columns for concentrator, usagepoint, macaddress, serialnumber, version appf, state, and period. On the right, there is a table titled "Offset minutes from UTC: 60" with columns for last_update_local, TSI, TU, NAVV_R_cur, NAVV_R_prev, NLOV_R_cur, and NLOV_R_prev. In the center, there is a "See legend" button. A red arrow points from this button to a pop-up window titled "Voltage Interruption Registries". This pop-up contains a list of acronyms and their definitions, such as THVI, TSI, TLI, TWI, NAVV_R_cur, NAVV_R_prev, NLOV_R_cur, NLOV_R_prev, TSHV_R_cur, TSHV_R_prev, TAVV_R_cur, TAVV_R_prev, TLOV_R_cur, TLOV_R_prev, and NAVV_R_cur.

Meter Measurands info

Details of measurands.

Different types of filters can be applied, even included 'only configured measurands'

The report shows only measurands that are currently configured for the collection inside meters.

In case of "False" selection the user is able to see the situation of measurands not collected.

Main report result page is shown as per the following example

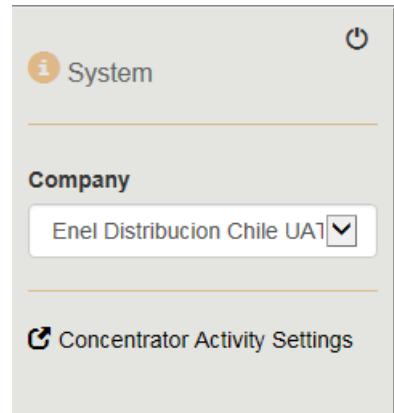
Measurands info per meter

| concentrator | mac address | serialnumber | energy type | tmp | value type | measurand date local | errordesc | is error | lastupdateutc | configured |
|--------------|-------------|--------------|--|--------|---------------|----------------------|------------|----------|---------------|------------|
| XXXXXXXXXX | XXXXXXXXXX | XXXXXXXXXX | Positive active energy E+(t) [01] | 15 min | Maximum | XXXXXXXXXX | XXXXXXXXXX | False | XXXXXXXXXX | XXXXXX |
| XXXXXXXXXX | XXXXXXXXXX | XXXXXXXXXX | Positive active power W+(t) [07] | 15 min | Maximum | XXXXXXXXXX | XXXXXXXXXX | False | XXXXXXXXXX | XXXXXX |
| XXXXXXXXXX | XXXXXXXXXX | XXXXXXXXXX | RMS R-line-phase voltage RMS_V(t) [0D] | 15 min | Average | XXXXXXXXXX | XXXXXXXXXX | False | XXXXXXXXXX | XXXXXX |
| XXXXXXXXXX | XXXXXXXXXX | XXXXXXXXXX | RMS R-line-phase current RMS_I(t) [0E] | 15 min | Average | XXXXXXXXXX | XXXXXXXXXX | False | XXXXXXXXXX | XXXXXX |
| XXXXXXXXXX | XXXXXXXXXX | XXXXXXXXXX | Network fundamental frequency [1D] | 15 min | Average | XXXXXXXXXX | XXXXXXXXXX | False | XXXXXXXXXX | XXXXXX |
| XXXXXXXXXX | XXXXXXXXXX | XXXXXXXXXX | Positive active energy E+(t) [01] | 15 min | Instantaneous | XXXXXXXXXX | XXXXXXXXXX | False | XXXXXXXXXX | XXXXXX |
| XXXXXXXXXX | XXXXXXXXXX | XXXXXXXXXX | Positive active power W+(t) [07] | 15 min | Instantaneous | XXXXXXXXXX | XXXXXXXXXX | False | XXXXXXXXXX | XXXXXX |

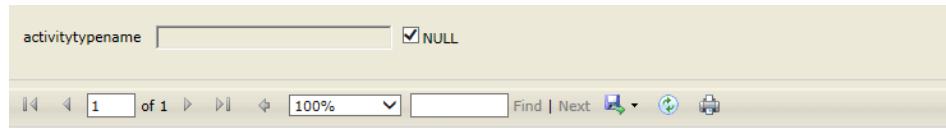
Please note that “meas file not available” error message could appear in report: the meaning is that the system expects a certain types of measurands for the meter type but in this case, on concentrator, the file is not present with those data

9.8. System reports

It needs to select a Company in the filter below:



Selecting the Concentrator Activity Settings report is possible to list the Concentrator Activity Settings for the Company:



Concentrator Activities Settings

| concentrator activity | interval seconds | priority | max retry count | max execution hours |
|-------------------------------|------------------|----------|-----------------|---------------------|
| Commissioning | 1800 | 2 | 0 | 0 |
| VerifyCommissioning | 1800 | 2 | 0 | 0 |
| Decommissioning | 1800 | 2 | 0 | 0 |
| ConcentratorInitialization | 1800 | 2 | 5 | 12 |
| ConcentratorConfiguration | 1800 | 2 | 5 | 12 |
| Conn-c | 1800 | 2 | 5 | 12 |
| VerifyConn-c | 1800 | 2 | 5 | 12 |
| PConn-c | 1800 | 2 | 5 | 12 |
| VerifyPConn-c | 1800 | 2 | 5 | 12 |
| AutodiagnosticConcentrator | 1800 | 2 | 5 | 12 |
| MeterTechConfig | 1800 | 2 | 5 | 12 |
| MeterTechConfigOnConcentrator | 1800 | 2 | 5 | 12 |
| ConcentratorBufferDwld | 1800 | 2 | 5 | 12 |
| ConcentratorSincro | 1800 | 2 | 5 | 12 |
| MeterReading | 1800 | 1 | 3 | 3 |
| MeterContractConfiguration | 1800 | 1 | 3 | 3 |
| MeterDetachment | 1800 | 1 | 3 | 3 |
| MeterReconnection | 1800 | 1 | 3 | 3 |
| CEData | 21600 | 3 | - | - |
| N2Pload | 21600 | 3 | - | - |
| DailyClosure | 21600 | 3 | - | - |
| Autodiscovery | 21600 | 3 | - | - |

In Concentrator Activities Settings, you can see that for Concentrator Initialization activity 5 retries are done with an interval of 30 minutes:

activitytypename: NULL

[View Report](#)

14 4 1 of 1 Find | Next

Concentrator Activities Settings

| concentrator activity | interval seconds | priority | max retry count | max execution hours |
|-------------------------------|------------------|----------|-----------------|---------------------|
| Commissioning | 1800 | 2 | 0 | 0 |
| VerifyCommissioning | 1800 | 2 | 0 | 0 |
| Decommissioning | 1800 | 2 | 0 | 0 |
| ConcentratorInitialization | 1800 | 2 | 5 | 12 |
| ConcentratorConfiguration | 1800 | 2 | 5 | 12 |
| Conn-c | 1800 | 2 | 5 | 12 |
| VerifyConn-c | 1800 | 2 | 5 | 12 |
| PConn-c | 1800 | 2 | 5 | 12 |
| VerifyPConn-c | 1800 | 2 | 5 | 12 |
| AutodiagnosticsConcentrator | 1800 | 2 | 5 | 12 |
| MeterTechConfig | 1800 | 2 | 5 | 12 |
| MeterTechConfigOnConcentrator | 1800 | 2 | 5 | 12 |
| ConcentratorBufferDwld | 1800 | 2 | 5 | 12 |
| ConcentratorSincro | 1800 | 2 | 5 | 12 |
| MeterReading | 1800 | 1 | 3 | 3 |
| MeterContractConfiguration | 1800 | 1 | 3 | 3 |
| MeterDetachment | 1800 | 1 | 3 | 3 |
| MeterReconnection | 1800 | 1 | 3 | 3 |
| CEData | 21600 | 3 | - | - |
| N2Pload | 21600 | 3 | - | - |
| DailyClosure | 21600 | 3 | - | - |
| Autodiscovery | 21600 | 3 | - | - |

interval seconds:
seconds between retries if the execution fails for concentrator reachability issues

priority: smaller is higher

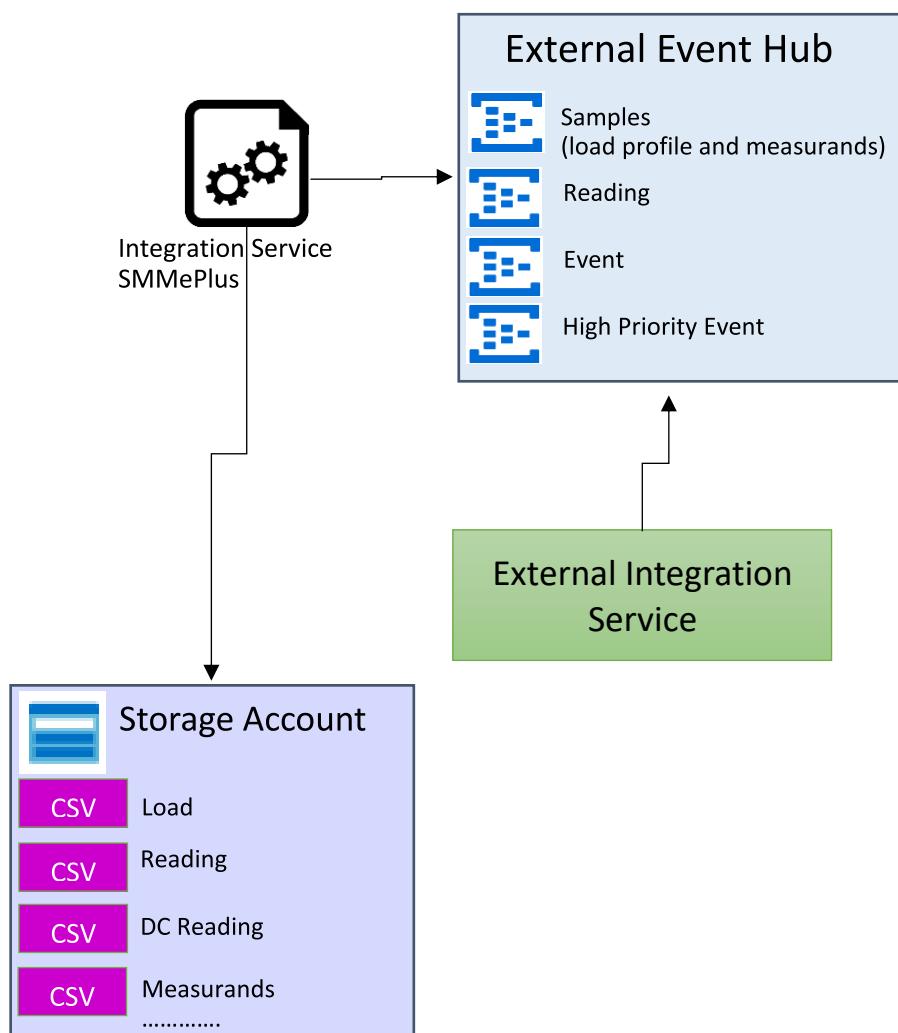
max retry count: maximum number of retries.
0 means no limit to retries

max execution hours: maximum time for the execution of the activity. No matter the number of retries done. 0 means no time limit.

10. Technical and procedural deepenings

10.1. SMMePlus Integration Service

SMMePlus Integration Service is the component in charge of making collected registries available for business processes.



SMMePlus Integration Service pushes collected data (readings, load profile samples, measurands samples, alarms, events) on an Azure Event Hub stream that can be accessed used a private key.

The Integration service of the client “listens” to this stream in order to download new information as soon as they’re available.

In addition to this real time process, every day a csv file containing measurands registries is produced and saved on an Azure File Storage.

The file contains all registries collected the day before. If the N2PMeas process recovers data of previous days you will find them in the csv file of the day the process runs.

The format of the file is the following

```
serialnumber;pod;value;state;cimcode;sampledate
UAAEEDN10100080395;POD001;532;0;0.0.2.6.16.1.37.0.0.0.0.0.0.0.0.63.0;2020-12-21 01:15:00.000
UAAEEDN10100080395;POD001;314;0;0.0.2.6.16.1.37.0.0.0.0.0.0.0.0.0.63.0;2020-12-21 01:15:00.000
UAAEEDN10100080395;POD001;2820;0;0.0.2.6.16.1.37.0.0.0.0.0.0.0.0.0.63.0;2020-12-21 01:15:00.000
UAAEEDN10100080395;POD001;7;0;0.0.2.6.16.1.37.0.0.0.0.0.0.0.0.0.63.0;2020-12-21 01:15:00.000
UAAEEDN10100080395;POD001;640;0;0.0.2.6.16.1.37.0.0.0.0.0.0.0.0.0.63.0;2020-12-21 01:15:00.000
UAAEEDN10100080395;POD001;16512;4;0.0.2.6.16.1.37.0.0.0.0.0.0.0.0.0.63.0;2020-12-21 01:15:00.000
```

10.2. Informations' collection

All the information collected by the system are shared with local integration system that is in charge of the storage. Each information is exported with the identification of the device, the timestamp and an attribute indicating the kind of information.

The exported information are:

- Pushed on cloud queues that can be consumed
- Appended on daily csv files

The share of information is described in **SMMePlus - Architecture v4.0** document in section **2.5. SMMePlus Integration Service application**.

The kind of information collected by the system are:

- Events
 - o Massive events are exported
- Readings
 - o Statistic information are saved in internal database
 - o Last current period reading for active energy for each meter is saved
 - o Massive readings are exported

e-distribuzione

- Load profiles
 - o Statistic information are saved in internal database
 - o Massive load profiles are exported
- Alarms
 - o Massive alarms are exported
- Voltage variation
 - o Massive voltage variation are exported
- Voltage interruption
 - o Last interruption values per each meter are saved internally
 - o Massive voltage interruption are exported
- Measurands
 - o Statistic information are saved in internal database
 - o Massive measurands are exported

EVENTS

Please find below an example of .csv file generated once per day by the system
The same information are pushed on cloud queues.



LPE_2020-12-21_3.cs v



HPE_2020-12-22.csv

LPE file contains Low Priority Events (reachability, commissioning)
HPE file contains High Priority Events (results of workorder)

READINGS

Below you can find an example of .csv file generated daily by the system.
The same information are pushed on cloud queues.



R_2020-12-21_3.csv v



PP_2020-12-21_3.csv



MP_2020-12-21_3.cs



DC_2020-12-21_3.cs v

R file contains current period readings.

DC file contains previous period readings (used for billing).

MP file contains maximum power on demand readings.

PP files contains readings related to prepayment feature.

On the front-end there are several reports showing statistic information and last collected information.

Last current reading for meters

| concentrator | usagepoint | macaddress | serialnumber | versionapp1 | state | process state | t1 | t2 | t3 | t4 | t5 | t6 | tot | reading date local | last update local |
|-----------------|------------|--------------|--------------------|-------------|--------------|---------------|----|----|----|----|----|----|-----|------------------------|------------------------|
| TD-Pandemia-LAB | 112255 | 860E240E995A | UAAEEDN18700956762 | 3131 | Commissioned | | 19 | 0 | 0 | 0 | 0 | 0 | 19 | 12/22/2020 10:51:12 AM | 12/22/2020 10:57:32 AM |

Daily closure info per meter

| concentrator | mac address | serialnumber | versionapp1 | table type | energy type | last closure date local | errordesc | is unreachable | is error | last update utc |
|-----------------|--------------|--------------------|-------------|------------|-------------------------|-------------------------|-----------|----------------|----------|-----------------------|
| TD-Pandemia-LAB | 860E240E995A | UAAEEDN18700956762 | 3131 | 0002 | Active Forward Energy | 12/16/2020 12:00:00 AM | | False | False | 12/17/2020 5:11:02 AM |
| TD-Pandemia-LAB | 860E240E995A | UAAEEDN18700956762 | 3131 | 0004 | Reactive Forward Energy | 12/16/2020 12:00:00 AM | | False | False | 12/17/2020 5:11:02 AM |

Last prepayed credit reading for meters

| concentrator | usagepoint | macaddress | serialnumber | version app1 | state | process state | available credit | available currency credit | last trans id | local date | last update local |
|-----------------|------------|--------------|--------------------|--------------|--------------|---------------|------------------|---------------------------|---------------|------------------------|------------------------|
| TD-Pandemia-LAB | 112255 | 860E240E995A | UAAEEDN18700956762 | 3131 | Commissioned | | 0 | 0 | 0 | 12/22/2020 10:51:45 AM | 12/22/2020 10:57:32 AM |

Aggregated info per meter

| concentrator | concentrator sn | conc nrm | mac address | serialnumber | row | versionapp1 | commissioned | nrm | last dc active local | last dc reactive local | last dc active export local | last lp active local | last current reading s |
|-----------------|------------------|----------|--------------|--------------------|-----|-------------|--------------|-----|------------------------|------------------------|-----------------------------|-----------------------|------------------------|
| TD-Pandemia-LAB | 19CEC50610069794 | 7 | 860E240E995A | UAAEEDN18700956762 | 4 | 3131 | True | 0 | 12/16/2020 12:00:00 AM | 12/16/2020 12:00:00 AM | | 12/16/2020 8:00:00 PM | 12/22/2020 |

LOAD PROFILES

Even the following .csv file is generated daily by the system.
The same information are pushed on cloud queues.



S_2020-12-16_3.csv

On the front-end there is a specific report showing statistic information about load profile collection.

Load profile info per meter

| concentrator | mac address | serialnumber | table type | energy type | plload date local | tip | errordesc | is unreachable | is error | last update utc |
|-----------------|--------------|--------------------|------------|------------------------------------|-----------------------|-----|-----------|----------------|----------|-----------------------|
| TD-Pandemia-LAB | 860E240E995A | UAAEEDN18700956762 | 02 | Active Forward Energy | 12/16/2020 8:00:00 PM | 15 | | False | False | 12/17/2020 1:42:29 AM |
| TD-Pandemia-LAB | 860E240E995A | UAAEEDN18700956762 | 04 | Reactive Forward Energy | | 15 | | False | False | 12/10/2020 1:59:01 AM |
| TD-Pandemia-LAB | 860E240E995A | UAAEEDN18700956762 | 08 | Active Reverse Energy | | 15 | | False | False | 12/10/2020 1:59:01 AM |
| TD-Pandemia-LAB | 860E240E995A | UAAEEDN18700956762 | 10 | Reactive Reverse Inductive Energy | | 15 | | False | False | 12/10/2020 1:59:01 AM |
| TD-Pandemia-LAB | 860E240E995A | UAAEEDN18700956762 | 20 | Reactive Forward Capacitive Energy | | 15 | | False | False | 12/10/2020 1:59:01 AM |
| TD-Pandemia-LAB | 860E240E995A | UAAEEDN18700956762 | 40 | Reactive Reverse Capacitive Energy | | 15 | | False | False | 12/10/2020 1:59:01 AM |

ALARMS

This an example of csv file generated daily by the system
 The same information are pushed on cloud queues.

 SWE_2020-12-21_3.csv

VOLTAGE VARIATION

This an example of csv file generated daily by the system
 The same information are pushed on cloud queues.

 VV_2020-12-16_3.csv

On the front-end there is a specific report showing statistic information about load profile collection.

VOLTAGE INTERRUPTION

Every day a specific csv is created containing collected voltage interruptions.
 The same information are pushed on cloud queues.

On the front-end there is a specific report showing last interruption information per each meter.

| Last interruptions for meters | | | | | | | | | | | | | | |
|-------------------------------|-------------|--------------|--------------------|--------------|--------------|---------------|-----------------------|-----------------------|------|-----|-----|------------|-----------|-----------|
| concentrator | usagepoint | macaddress | serialnumber | version app1 | state | process state | meter time local | last update local | THVI | TSI | TLI | NSHV R cur | NAVVR cur | NLOVR cur |
| GIALLOT01 | POD001 | 860214013A08 | UAAEEDN10100080395 | 3133 | Commissioned | To configure | 1/11/2021 9:41:00 AM | 1/11/2021 9:41:21 AM | 40 | 6 | 180 | 0 | 0 | |
| GIALLOT01 | POD018 | 86041601FA98 | UAAEEDN11200129688 | 3131 | Commissioned | To configure | 1/11/2021 9:40:48 AM | 1/11/2021 9:41:21 AM | 40 | 6 | 180 | 0 | 0 | |
| GIALLOT01 | POD035 | 8E0818000227 | UCAUEDN12400000551 | 3038 | Commissioned | | 1/10/2021 10:42:21 PM | 1/10/2021 10:42:51 PM | 35 | 6 | 180 | 0 | 0 | |
| GIALLOT01 | POD006 | 860214006A92 | UAAEEDN10100027282 | 3131 | Commissioned | To configure | 1/10/2021 10:41:58 PM | 1/10/2021 10:42:20 PM | 50 | 1 | 180 | 0 | 0 | |
| GIALLOT01 | POD017 | 8606160002E7 | UAAEEDN11300000743 | 3037 | Commissioned | | 1/9/2021 8:22:23 PM | 1/9/2021 8:22:44 PM | 40 | 6 | 180 | 0 | 0 | |
| GIALLOT01 | POD014 | 8E081800016C | UCAUEDN12400000364 | 5138 | Commissioned | | 1/9/2021 8:21:30 PM | 1/9/2021 8:22:22 PM | 35 | 6 | 180 | 0 | 0 | |
| GIALLOT01 | POD016 | 860214006A64 | UAAEEDN10100027236 | 3146 | Commissioned | | 1/8/2021 9:16:44 AM | 1/8/2021 9:18:11 AM | 50 | 1 | 180 | 0 | 0 | |
| GIALLOT01 | ELETTRA_POD | 86041601B178 | UAAEEDN11200110971 | 3131 | Commissioned | | | | | | | | | |
| GIALLOT01 | POD024 | 8602140015F0 | UAAEEDN10100005616 | 3131 | Installed | | | | | | | | | |
| GIALLOT01 | POD007 | 860214006AF6 | UAAEEDN10100027382 | 3037 | Installed | | | | | | | | | |
| GIALLOT01 | POD004 | 860214006A54 | UAAEEDN10100027220 | | Installed | | | | | | | | | |

MEASURANDS

SMMePlus supports measurands' collection through N2PMeasurand procedure on concentrator, which is available from concentrator's fw 22.

(meter side) When a meter is commissioned, SMMePlus system executes the “Meter Tech Configuration” process; through this process, the meter is synchronized, configured and the firmware version is read.

This process writes in the meter the measurands that have been defined in the measurand profile.

(concentrator side) After the “Meter Tech Configuration” process, the “Meter Tech Configuration on Concentrator” process is executed for each commissioned meter.

This process selects in CE Table of the concentrator the measurands’ registers the concentrator has to collect from the meter.

When “Meter Tech Configuration” and “Meter Tech Configuration on Concentrator” processes are completed, inside “Meter In Field” report is possible to see current configuration.

| sw update utc | pload | dailyclosure | measurands | energy dc profile | energy lp profile | tlp (LP) | cedata profile |
|---------------------|-------|--------------|------------|-------------------------------|--------------------------|----------|-----------------|
| 21/2020 12:37:05 PM | True | False | True | PROFILO DC 1 | All energies | 15 | CEDATA_Active_I |
| /21/2019 9:51:22 AM | True | False | True | DailyClosure Energy Profile 3 | FastPload Energy Profile | 60 | CEDATA_Active_I |
| 21/2020 12:37:57 PM | True | False | True | PROFILO DC 1 | FastPload Energy Profile | 15 | CEDATA_Active_I |

| | measurands profile | meas profile configured in meter | prepayed configu |
|-----------------------------|--------------------|----------------------------------|------------------|
| t_MaxPower_VoltageVariation | TestFD1 | True | False |
| t_MaxPower_VoltageVariation | TestFD1 | False | True |
| t_MaxPower_VoltageVariation | TestFD1 | True | True |

Measurands collection

Measurands of meters are acquired in SMMePlus through N2PMeas scheduled activity.

Activities execution is based on “Concentrator Activities Settings”:

- **interval seconds** are seconds between the execution of activities.
- **priority** is used by the system for choosing which activity has to be executed first (in case of start at the same time)

Concentrator Activities Settings

| concentrator activity | interval seconds | priority | max retry count | max execution hours |
|-----------------------|------------------|----------|-----------------|---------------------|
| N2PMeas | 21600 | 4 | - | - |

In “Completed Scheduled Works” report you can see all executions of scheduled activities.

Completed Scheduled Works

| idwork | concentrator | activity type | startdate utc | enddate utc | startdate local | enddate local | result | error description |
|--------|--------------|---------------|------------------------|------------------------|------------------------|------------------------|--------|-------------------|
| 229797 | GIALLOT01 | N2PMeas | 12/23/2020 4:32:58 AM | 12/23/2020 4:33:32 AM | 12/23/2020 5:32:58 AM | 12/23/2020 5:33:32 AM | ✓ | |
| 229793 | GIALLOT01 | N2PMeas | 12/22/2020 10:30:34 PM | 12/22/2020 10:32:58 PM | 12/22/2020 11:30:34 PM | 12/22/2020 11:32:58 PM | ✓ | |

In “Measurands Info Per meter” report you can see statistic information of Measurands collection.

Measurands info per meter

| concentrator | mac address | serialnumber | table type | energy type | tmp | value type |
|--------------|--------------|--------------------|------------|---|--------|--|
| GIALLOT01 | 86041601B17B | UAAEEDN11200110971 | 0D | RMS R-line-phase voltage RMS_V(t) | 15 min | Average value evaluated in each TM be stored at the end of each TMP pe |
| GIALLOT01 | 86041601B17B | UAAEEDN11200110971 | 0F | Power factor COS_PHI(t) (three phase measurement) | 15 min | Instantaneous value synchronized w |
| GIALLOT01 | 86041601B17B | UAAEEDN11200110971 | 03 | Positive inductive reactive energy R+L(t) | 15 min | Instantaneous value synchronized w |
| GIALLOT01 | 86041601B17B | UAAEEDN11200110971 | 0B | Negative inductive reactive power Q-L(t) | 15 min | Instantaneous value synchronized w |
| GIALLOT01 | 86041601B17B | UAAEEDN11200110971 | 10 | Last quarter of hour mean positive active power LQM_W+(t) | 15 min | Instantaneous value synchronized w |
| GIALLOT01 | 86041601FA98 | UAAEEDN11200129688 | 01 | Positive active energy E+(t) | 15 min | Maximum value evaluated in each Ti |

| value type | measurand date local | errordesc | is error | last update utc |
|---|-----------------------|-----------|----------|-----------------------|
| Average value evaluated in each TMP period (the value has to be stored at the end of each TMP period) | 12/22/2020 1:15:00 AM | | True | 12/23/2020 8:34:08 AM |
| Instantaneous value synchronized with TMP period | 12/22/2020 1:15:00 AM | | False | 12/23/2020 8:34:08 AM |
| Instantaneous value synchronized with TMP period | 12/22/2020 1:15:00 AM | | False | 12/23/2020 8:34:08 AM |
| Instantaneous value synchronized with TMP period | 12/22/2020 1:15:00 AM | | False | 12/23/2020 8:34:08 AM |
| Instantaneous value synchronized with TMP period | 12/22/2020 1:15:00 AM | | False | 12/23/2020 8:34:08 AM |
| Maximum value evaluated in each TMP period (the value has to be stored at the end of each TMP period) | 12/22/2020 1:15:00 AM | | True | 12/23/2020 8:34:08 AM |

In this report it's possible to see when last measurand has been collected per each meter.

CIM Codes

As listed in "SMM ePlus - Requirements - Integration" document, here are the CIM Code related to measurand registers.

| Energy Load Profile | |
|--|---|
| Code | Comments |
| 0.{msr_tod}.{tmp}.1.1.1.12.0.0.0.0.0.0.0.0.0.72.0 | Positive active energy E+(t) (Wh) |
| 0.{msr_tod}.{tmp}.1.19.1.12.0.0.0.0.0.0.0.0.0.72.0 | Negative active energy E-(t) (Wh) |
| 0.{msr_tod}.{tmp}.1.15.1.12.0.0.0.0.0.0.0.0.0.0.73.0 | Positive inductive reactive energy R+L(t) (varh) |
| 0.{msr_tod}.{tmp}.1.16.1.12.0.0.0.0.0.0.0.0.0.73.0 | Positive capacitive reactive energy R+C(t) (varh) |
| 0.{msr_tod}.{tmp}.1.17.1.12.0.0.0.0.0.0.0.0.0.73.0 | Negative inductive reactive energy R-L(t) (varh) |
| 0.{msr_tod}.{tmp}.1.18.1.12.0.0.0.0.0.0.0.0.0.0.73.0 | Negative capacitive reactive energy R-C(t) (varh) |
| 0.{msr_tod}.{tmp}.6.1.1.37.0.0.0.0.0.0.0.0.0.38.0 | Positive active power W+(t) (W or kW) |
| 0.{msr_tod}.{tmp}.6.19.1.37.0.0.0.0.0.0.0.0.0.38.0 | Negative active power W-(t) (W or kW) |
| 0.{msr_tod}.{tmp}.6.15.1.37.0.0.0.0.0.0.0.0.0.0.63.0 | Positive inductive reactive power Q+L(t) (var or kvar) |
| 0.{msr_tod}.{tmp}.6.16.1.37.0.0.0.0.0.0.0.0.0.0.63.0 | Positive capacitive reactive power Q+C(t) (var or kvar) |
| 0.{msr_tod}.{tmp}.6.17.1.37.0.0.0.0.0.0.0.0.0.0.63.0 | Negative inductive reactive power Q-L(t) (var or kvar) |
| 0.{msr_tod}.{tmp}.6.18.1.37.0.0.0.0.0.0.0.0.0.0.63.0 | Negative capacitive reactive power Q-C(t) (var or kvar) |

| | |
|---|--|
| 0.{msr_tod}.{tmp}.6.0.1.54.0.0.0.0.0.0.128.-1.29.0 | RMS R-line-phase voltage RMS_V(t) (1/10 V) |
| 0.{msr_tod}.{tmp}.6.0.1.54.0.0.0.0.0.0.64.-1.29.0 | RMS S-line-phase voltage RMS_V(t) (1/10 V) |
| 0.{msr_tod}.{tmp}.6.0.1.54.0.0.0.0.0.0.32.-1.29.0 | RMS T-line-phase voltage RMS_V(t) (1/10 V) |
| 0.{msr_tod}.{tmp}.6.0.1.4.0.0.0.0.0.0.128.-1.5.0 | RMS R-line-phase current RMS_I(t) (at secondary of CT in case of semi-direct meter) (dA) |
| 0.{msr_tod}.{tmp}.6.0.1.4.0.0.0.0.0.0.0.64.-1.5.0 | RMS S-line-phase current RMS_I(t) (at secondary of CT in case of semi-direct meter) (dA) |
| 0.{msr_tod}.{tmp}.6.0.1.4.0.0.0.0.0.0.0.32.-1.5.0 | RMS T-line-phase current RMS_I(t) (at secondary of CT in case of semi-direct meter) (dA) |
| 0.{msr_tod}.{tmp}.6.0.1.38.0.0.0.0.0.0.224.-2.0.0 | Power factor COS_PHI(t) (three phase measurement) |
| 0.{msr_tod}.{tmp}.6.1.1.37.0.0.0.0.0.0.0.0.38.0 | Last quarter of hour mean positive active power LQM_W+(t) (W ok kW) |
| 0.{msr_tod}.{tmp}.6.19.1.37.0.0.0.0.0.0.0.0.38.0 | Last quarter of hour mean negative active power LQM_W-(t) (W ok kW) |
| 0.{msr_tod}.{tmp}.6.0.1.38.0.0.0.0.0.0.128.-2.0.0 | Power factor COS_PHI(t) for R-line-phase |
| 0.{msr_tod}.{tmp}.6.0.1.38.0.0.0.0.0.0.0.64.-2.0.0 | Power factor COS_PHI(t) for S-line-phase |
| 0.{msr_tod}.{tmp}.6.0.1.38.0.0.0.0.0.0.0.32.-2.0.0 | Power factor COS_PHI(t) for T-line-phase |
| 0.{msr_tod}.{tmp}.6.0.1.5.0.0.0.0.0.0.0.128.0.0.0 | Phase angle for R-line-phase |
| 0.{msr_tod}.{tmp}.6.0.1.5.0.0.0.0.0.0.0.64.0.0.0 | Phase angle for S-line-phase |
| 0.{msr_tod}.{tmp}.6.0.1.5.0.0.0.0.0.0.0.32.0.0.0 | Phase angle for T-line-phase |
| 0.{msr_tod}.{tmp}.6.0.1.5.0.0.0.0.0.0.0.224.0.0.0 | Phase angle for three phase measurement |
| 0.{msr_tod}.{tmp}.6.0.1.15.0.0.0.0.0.0.0.0.-2.33.0 | Network fundamental frequency (cHz) |
| 0.{msr_tod}.{tmp}.6.1.1.4.0.0.0.0.0.0.0.0.-1.5.0 | Neutral current (only for direct meters) phase 2 of the project (dA) |
| 0.{msr_tod}.{tmp}.6.0.1.38.0.0.0.0.0.0.0.129.0.0.0 | Phase angle for R-line-phase and Neutral Current phase 2 of the project |
| 0.{msr_tod}.{tmp}.6.1.1.4.0.0.0.0.0.0.0.0.128.-1.5.0 | RMS R-line-phase current RMS_I(t) Primary Circuit (dA) |
| 0.{msr_tod}.{tmp}.6.1.1.4.0.0.0.0.0.0.0.0.64.-1.5.0 | RMS S-line-phase current RMS_I(t) Primary Circuit (dA) |
| 0.{msr_tod}.{tmp}.6.1.1.4.0.0.0.0.0.0.0.-2.33.0.0.32.-1.5.0 | RMS T-line-phase current RMS_I(t) Primary Circuit (dA) |

The {msr_tod} placeholder is replaced by one of the following values.
 "msr_tod" stands for MEASURANDS TYPE OF DATA

| MEASURANDS TYPE OF DATA | |
|-------------------------|---|
| Code | Comments |
| 0 | Instantaneous value synchronized with TMP period |
| 2 | Average value evaluated in each TMP period (the value has to be stored at the end of each TMP period) |
| 8 | Maximum value evaluated in each TMP period (the value has to be stored at the end of each TMP period) |
| 9 | Minimum value evaluated in each TMP period (the value has to be stored at the end of each TMP period) |

The {tmp} placeholder is replaced by one of the following values.
 "tmp" is the interval period for measurands

| MEASURANDS INTERVAL PERIOD | |
|----------------------------|------------|
| Code | Comments |
| 3 | 1 minute |
| 6 | 5 minutes |
| 1 | 10 minutes |
| 2 | 15 minutes |
| 7 | 1 hour |
| 79 | 2 hours |
| 80 | 4 hours |
| 82 | 12 hours |
| 4 | 24 hours |

10.3. Reachability

Since often meters and concentrators are not reachable for the 100% of the time, the system uses a dedicated counter, called "nrn" in order to manage the reachability of concentrators and meters.

- The counter is incremented every time the device can't be reached
- When the "nrn" exceeded a specific value, the device is declared "not reachable".

For concentrators, the system usually executes:

- 3/4 times per day the Daily Closure collection scheduled activity
- 3/4 times per day the load profile collection scheduled activity
- 2/3 times per day the measurands collection scheduled activity
- 1 time per day the CEData collection scheduled activity
- 1 time per day the Autodiscovery results collection scheduled activity
- 2/3 times per week the Autodiscovery Repeater collection scheduled activity
- On demand activities (configurations, workorders, ..)

Every time the system tries to contact the concentrator and the connection fails, the nrn is incremented.

Every time the system tries to contact the concentrator and the connection succeeds, the nrn is reset to 0.

When the nrn value exceeded the maximum value defined in settings (visible in setting section of the website and usually set as 40), the system changes the “is reachable” flag to FALSE.

This behavior has been implemented because usually concentrators are not reachable every hour of the day. We set a concentrator as unreachable when the connectivity problems persist.

▪ METERS

For meters, the system executes:

- On demand activities (configurations, workorders)
- Collection of information through scheduled activities of concentrators

Every time the system tries to contact the meter and the connection fails, the nrn is incremented.

Every time the system tries to contact the meter and the connection succeeds, the nrn is reset to 0.

In addition, when the system analyzes the result of scheduled activities, the system checks if the data provided by concentrator for that meter has already been collected. If the answer is yes (last time the concentrator has given me the same information) it means that the meter hasn't been reached by the concentrator. So the nrn is incremented also in this case.

When the nrn value exceeded the maximum value defined in settings (visible in setting section of the website and usually set as 40), the system changes the “is reachable” flag to FALSE.

EVENT

When a meter or a concentrator changes their reachability status, the system generates a specific event.

The event contains the identification of the device, the timestamp and the kind of event.

Events are immediately pushed on the could queues and are appended to daily csv.

3.1.0.49 Meter Reachable

3.1.0.85 Meter Unreachable

REPORT

The information about the devices reachability can be see in reports available on the website (real time updated) and on daily csv extractions.

In “Concentrator in field” report it's possible to see concentrator information.

| ity | nrn | is reachable | ins |
|-----|-----|--------------|-----|
| | 441 | False | |
| | 0 | True | |
| | 0 | True | |
| | 0 | True | |
| | 1 | True | |
| | 0 | True | |
| | 0 | True | |
| | 0 | True | |
| | 30 | True | |

In “Meter in field” report it's possible to see meter information.

Meters in field

| concentrator | usagepoint | balance meter | macaddress | serialnumber | type | state | process state | nrn | is reachable | break |
|-----------------|-----------------------|---------------|--------------|--------------------|-------|--------------|---------------|-----|--------------|-------|
| TD-Pandemia-LAB | Lab_Pandemia_TRI_1 | False | A600220001F3 | UGAUEDN1700000499 | CERS3 | Commissioned | | 0 | True | |
| TD-Pandemia-LAB | 112233 | False | 860E240D14C8 | UAAEEDN18700857288 | CERM1 | Commissioned | | 0 | True | |
| TD-Pandemia-LAB | 112255 | False | 860E240E995A | UAAEEDN18700956762 | CERM1 | Commissioned | | 0 | True | |
| TD-Pandemia-LAB | 112257 | False | 860E240E9957 | UAAEEDN18700956759 | CERM1 | Commissioned | | 0 | True | |
| TD-Pandemia-LAB | certpro1 | False | 860E240D14C6 | UAAEEDN18700857286 | CERM1 | Commissioned | | 0 | True | |
| TD-Pandemia-LAB | certpro2 | False | 860E240CAF83 | UAAEEDN18700831363 | CERM1 | Commissioned | | 0 | True | |
| TD-Pandemia-LAB | CH104E133654700955952 | False | 860E240E9630 | UAAEEDN18700955952 | CERM1 | Installed | To commission | 0 | False | |

The same extractions are done every night and are available on the storage.

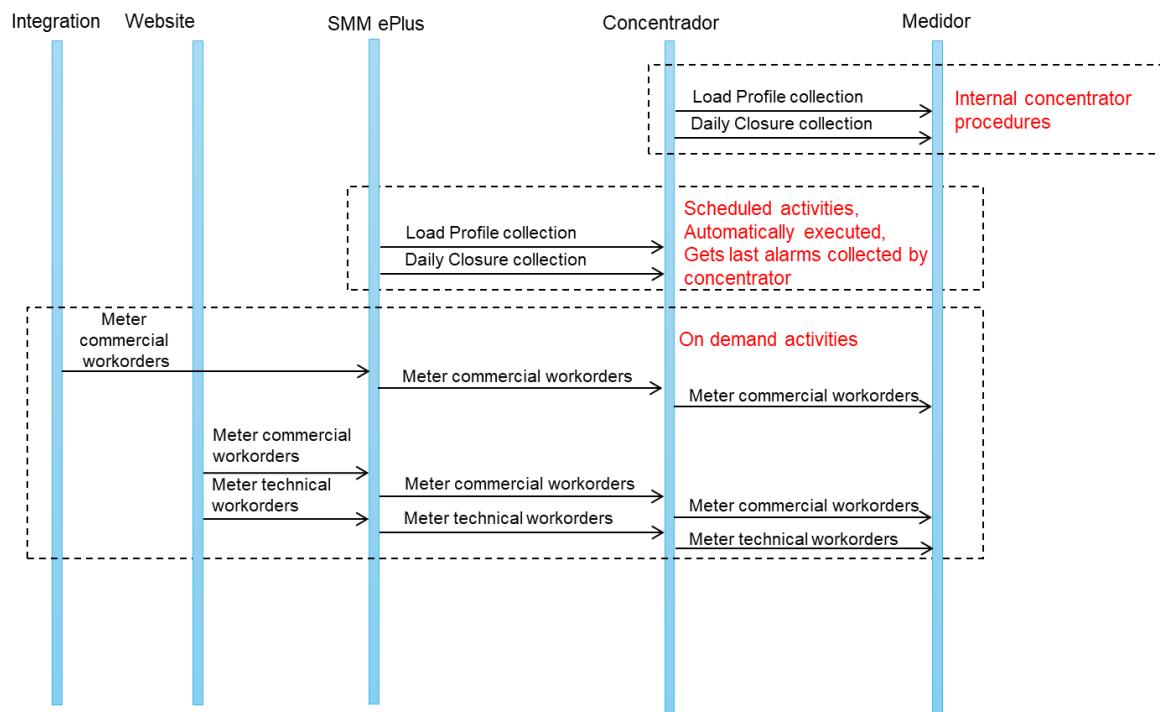
 
 MeterInFieldReport ConcentratorInFiel
 _2020-12-22.csv dReport_2020-12-22

10.4. Alarms

Meters

Meters alarms are collected in several ways, on demand and automatically:

- During every commercial workorder, requested via website or through integration
- During “meter autodiagnostic” technical workorder, available on website
- During load profile and daily closure collection: the system gets the value of meter status words collected by concentrator during last n2pload procedure.



4

Each alarm can generate a specific events, containing the identification of device, the identification of the alarm and the timestamp.

The system provide the possibility to configure the alarms that has to generate the events and alarms that hasn't to generate the events.

This is the list of alarms that can be generated in current version of the system regarding meters.

| | |
|-------------|--|
| 3.36.17.85 | Meter Normal Status Word -> ORD |
| 3.36.17.79 | Meter Normal Status Word -> ONSI |
| 3.18.17.88 | Meter Normal Status Word -> SGR |
| 3.23.1.79 | Meter Normal Status Word -> AFC |
| 3.26.17.43 | Meter Extended Status Word -> INTA |
| 3.12.29.212 | Meter Extended Status Word -> CAPE |
| 3.18.85.85 | Meter Extended Status Word -> DRAM |
| 3.18.42.85 | Meter Extended Status Word -> DEEP |
| 3.18.92.85 | Meter Extended Status Word -> DFLA |
| 3.21.0.85 | Meter Extended Status Word -> DZCR |
| 3.21.67.85 | Meter Extended Status Word -> DMIS |
| 3.15.17.22 | Meter Extended Status Word -> NCO |
| 3.2.22.150 | Meter Extended Status Word -> BAT_LOW |
| 3.12.29.79 | Meter Extended Status Word -> TC_Rem |
| 3.12.32.62 | Meter Extended Status Word -> KP |
| 3.12.60.88 | Meter Extended Status Word -> OLU |
| 3.37.0.85 | Meter Extended Status Word -> WDOG |
| 3.12.202.76 | Meter Normal Status Word -> NPR |
| 3.12.282.76 | Meter Normal Status Word -> NPW |
| 3.12.66.257 | Meter Extended Status Word -> MAGN |
| 3.13.17.85 | Meter Extended Status Word -> DDSP |
| 3.26.0.85 | Meter Normal Status Word -> PUP |
| 3.12.298.62 | Meter Extended Status Word -> UNLOCKED |
| 3.20.81.150 | Meter Prepaid Status Word -> DBT_LMT |
| 3.20.81.286 | Meter Extended Status Word -> WRNTHD |
| 3.26.38.35 | Meter Extended Status Word -> POV |

Concentrators

Every time the system connects to a concentrator, the alarms are collected and saved in database.

It's possible to consult last concentrator status word value in "Concentrator in Field" report available on website.

e-distribuzione

| sw update | status word | last csw update utc | stop activit |
|-------------|-------------|--------------------------|--------------|
| Not running | | | False |
| | | | False |
| | | | False |
| | | | False |
| Not running | 04B01E | 12/5/2019 11:08:07 PM | False |
| Not running | | | False |
| Not running | 00981E | 12/23/2020 7:26:58 AM | False |
| Not running | 08980E | 4/16/2020 10:22:59 AM | False |
| Not running | 08981E | 12/22/2020 8:14:10 PM | False |

The same information is also available in the daily csv “ConcentratorInFieldReport”.

 ConcentratorInFieldReport_2020-12-22

10.5. Features

This is the complete list of features of the system:

- Concentrator technical configuration
- Concentrator syncronization (at the end of each activity)
- Concentrator status word collection (at the end of each activity)
- Concentrator firmware update
- Custom script execution on concentrators
- DST configuration on concentrator
- Concentrator Mutual Authentication configuration
- Concentrator Repeater table reading
- Load profile collection
- Daily Closure collection
- Voltage variation collection
- Voltage interruption collection
- Measurands collection
- Autodiscovery results collection
- Meter technical configuration
- Meter syncronization
- Meter autodiagnostic (reset and read status word)
- Commercial meter workorders:
 - Reading (local and remote)
 - Maximum power reading
 - Detachment (local and remote)
 - Reconnection (local and remote)
 - Reduction (local and remote)
 - Tariff/contract configuration (no possibility to create new tariffs/contracts in the system yet)
- Prepayment management:
 - Prepay configuration / disable (local and remote)
 - Credit charge/reduction workorder (local and remote)
 - Credit read workorder (local and remote)
 - Automatic credit and alarms through CEData
- Custom script execution on meters
- DST configuration on meter
- Meter firmware update (available in 2021)
- Meter status word collection during commercial workorder, daily closure and load profile collection
- Daily report extractions (collected data and alarms)

11. SMM ePlus Mobile features

Using a dedicated smartphone application the technical user can execute commercial Work Orders as Detach, Reconnect, Reduction, Readings directly on the environment.

Before to use the application he has to be grant by an Administrator user for set his smartphone application to be connected with SMMePlus application.

For granting the User account it has been created a dedicated group having the necessary grants for connecting the smartphone application to the SMMePlus environment.

The dedicated group is 'Mobile users group' and the special grant is 'Mobile Works User', this grant is assigned to the group in the Group form:

The screenshot shows the 'Group Management' interface with the 'Edit group' form open for the 'Mobile users group'. The 'Edit roles' section on the right lists various roles, with 'Mobile Works User' checked under the 'Mobile' role.

| Edit group | | Edit companies and servicekinds | Edit roles |
|-----------------------------------|--------------------|---|---|
| Select Group | Mobile users group | Edit companies and servicekinds | Edit roles |
| Name * | Mobile users group | Companies | Mobile |
| Description * | Mobile users group | ► <input checked="" type="checkbox"/> Enel Inghilterra ► <input checked="" type="checkbox"/> Enel ► <input checked="" type="checkbox"/> Endesa ► <input checked="" type="checkbox"/> Irlanda ► <input type="checkbox"/> Company COLLAUDO ► <input type="checkbox"/> company test ► <input type="checkbox"/> company test 2 ► <input checked="" type="checkbox"/> Enel Peru ► <input checked="" type="checkbox"/> Test Automation Company ► <input type="checkbox"/> PROVADAN ► <input type="checkbox"/> No Region Company ► <input type="checkbox"/> espanamax ► <input type="checkbox"/> company temp 1 ► <input type="checkbox"/> island | <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Mobile <input checked="" type="checkbox"/> Mobile Works User <input type="checkbox"/> Provisioning <input type="checkbox"/> Report <input type="checkbox"/> Settings <input type="checkbox"/> Technical |
| Select profile * | Default | Servicekinds | |
| <input type="checkbox"/> is admin | | | |
| <input type="checkbox"/> is lock | | | |

For granting a User to access to the smartphone application it needs to assign to him this dedicated group:

The screenshot shows the 'Edit user' form within a 'User Management' module. The left sidebar has a 'User Management' section. The main form fields include:

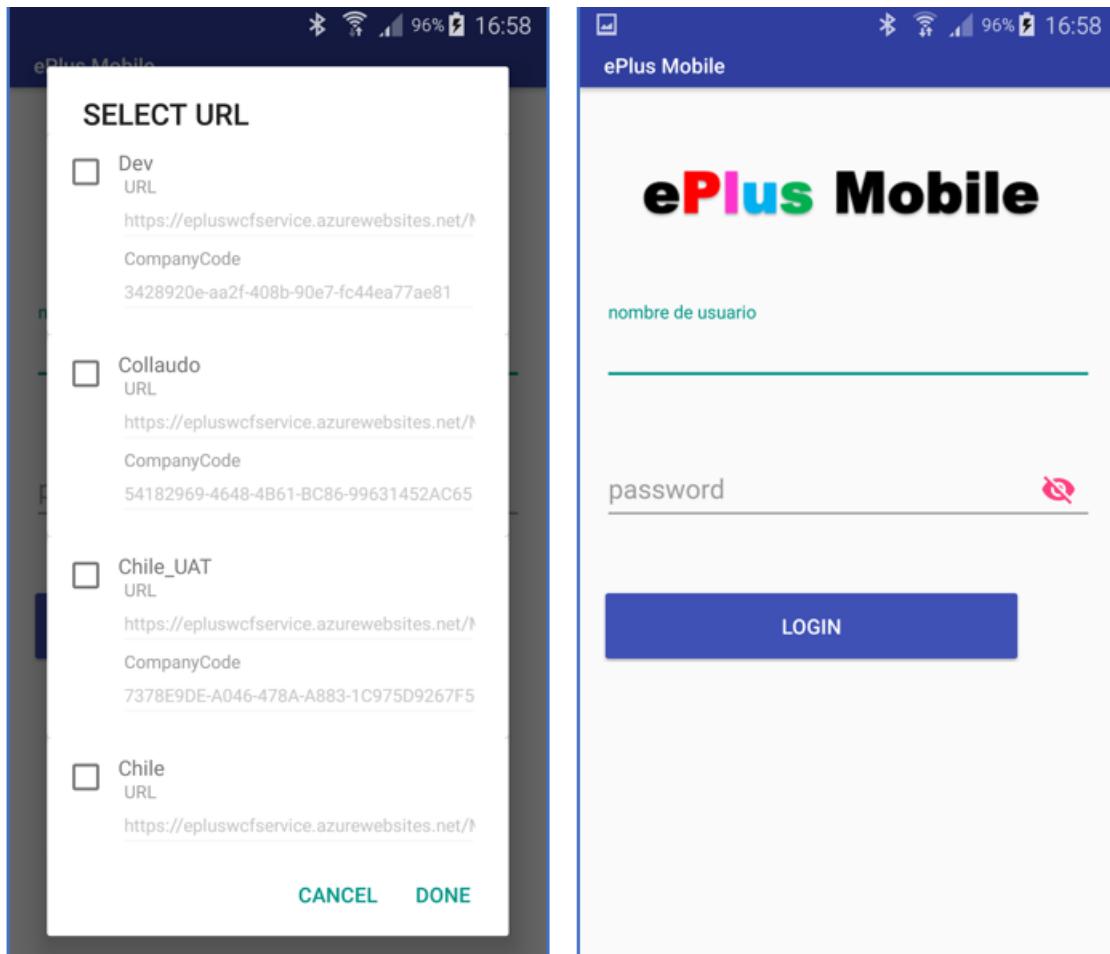
- Name ***: UserSmartphoneApp
- Group**: Mobile users group (selected)
- Is lock**: Unchecked
- Email**: nl@mail.com
- Identification ***: mobile app user
- Culture**: it-IT (selected)
- Add tags**: Select ▾
- Save** button

Clicking on the Save button the role is assigned to the User.

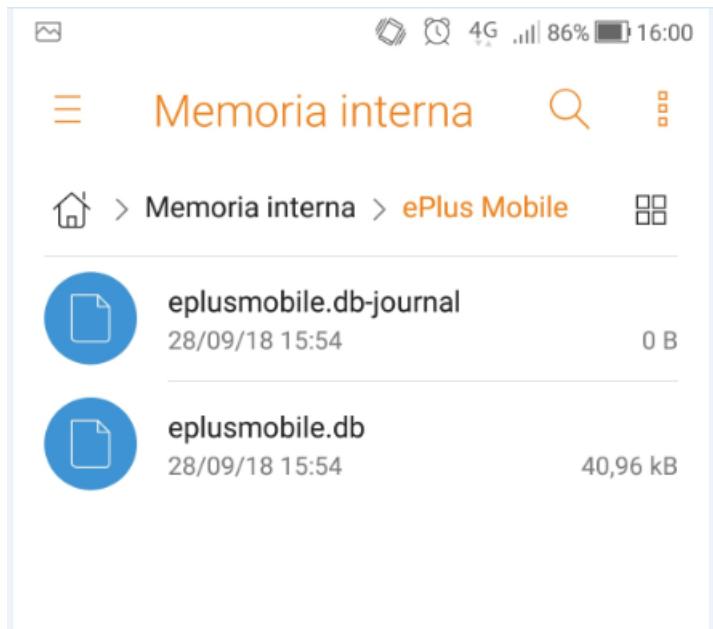
INSTALL AND CONFIGURE THE APP

For installing the ePlus mobile app it needs a smartphone with the Android OS. The .apk file has to be downloaded and executed directly on the smartphone, it will provide to install the application.

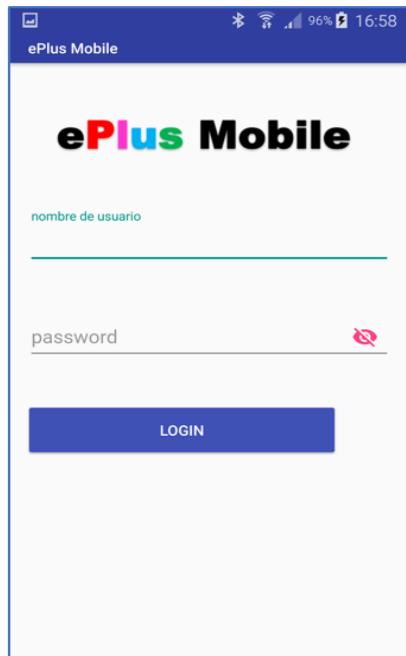
When the App is executed for the first time a Configuration form is shown.



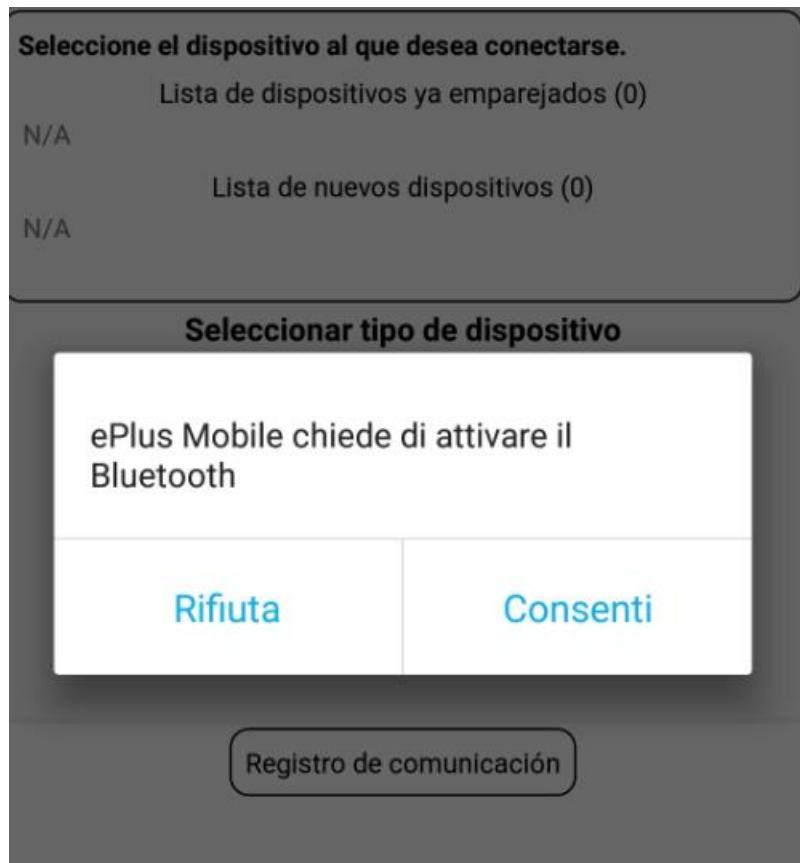
It needs to select the right environment and click on the DONE button, the ePlus Mobile account form is shown. It's also possible to insert a customized environment. When an environment is selected it's possible to change it removing before the App database, this is an example for the Asus Smartphone, it needs to delete the eplusmobile.db-journal and the eplusmobile.db directories (see the figure below).



EPLUS MOBILE LOGIN FORM

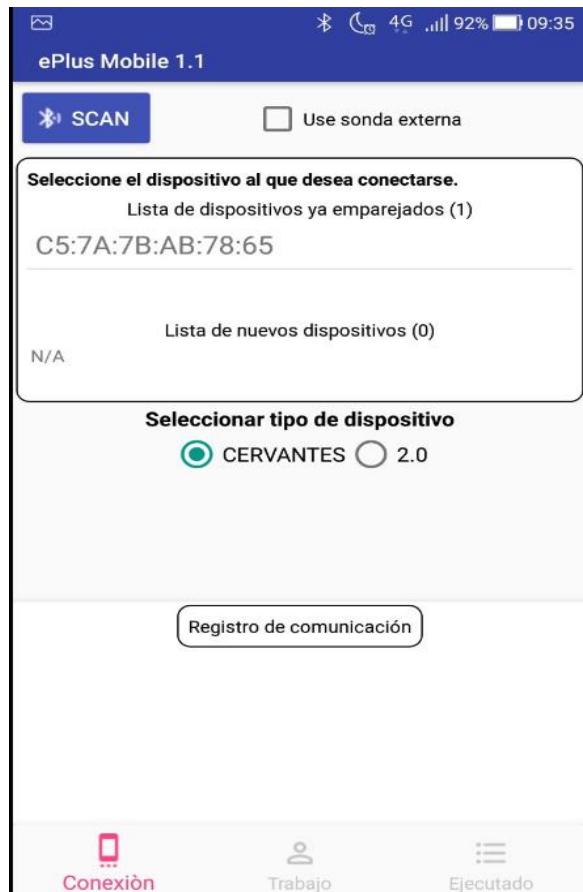


On the Account form it needs to enter the User Account that was registered and select the login button, clicking on the red icon the User and Password are remained by the system. When login button is clicked if the account information are right a pop up is shown :



It needs to activate the Bluetooth for communicate with the equipments.
After having turned on the Bluetooth an Eplus Mobile Connection form useful for detecting the enabled birds is shown

EPLUS MOBILE SCAN FUNCTION



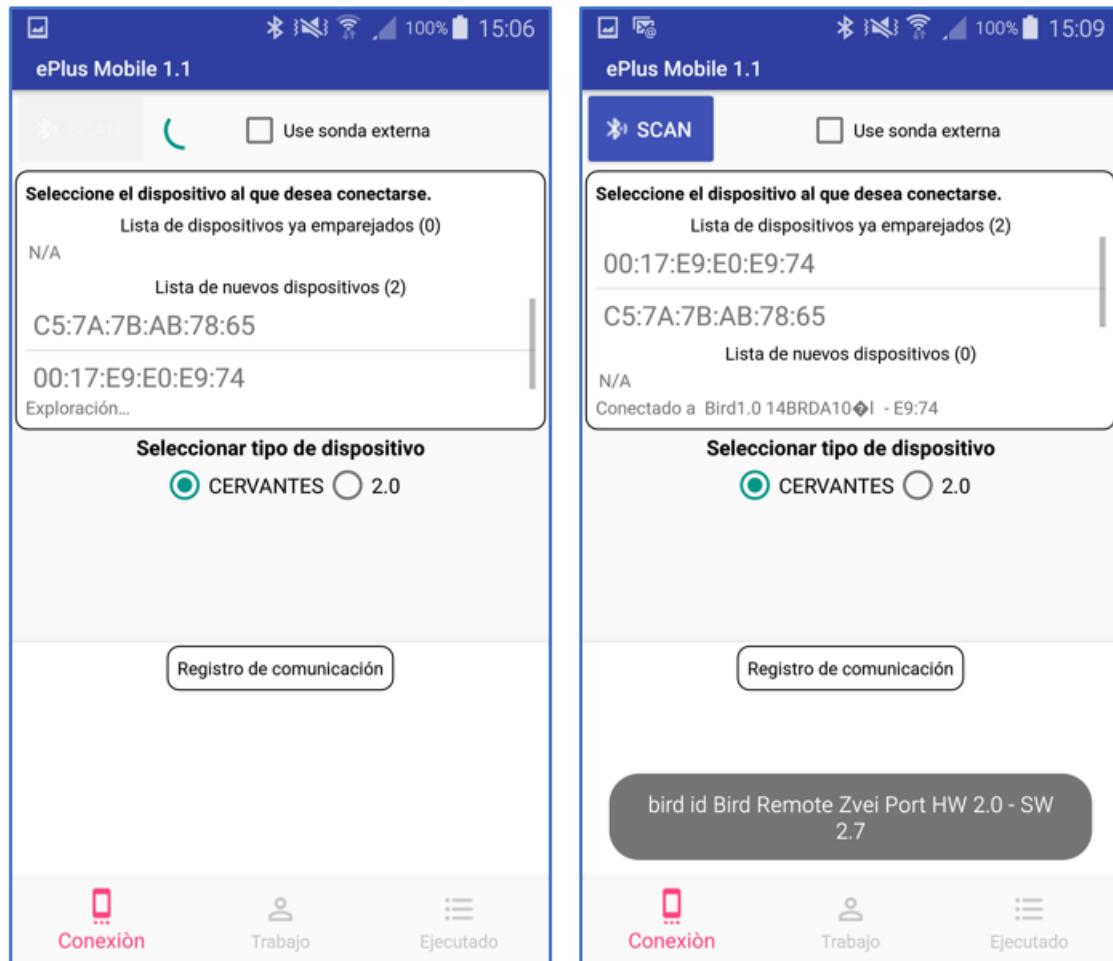
If you do not have BIRD matched paired with the mobile phone turned on the BIRD (Red left light)

If you do not have BIRD paired with the phone, make a scan of available BIRDs with the "SCAN" prompt, and wait 10 seconds. At the end of the scan the app will show the available BIRDs

If you already have the BIRD paired, select directly the BIRD you want to connect to by clicking on the ID.

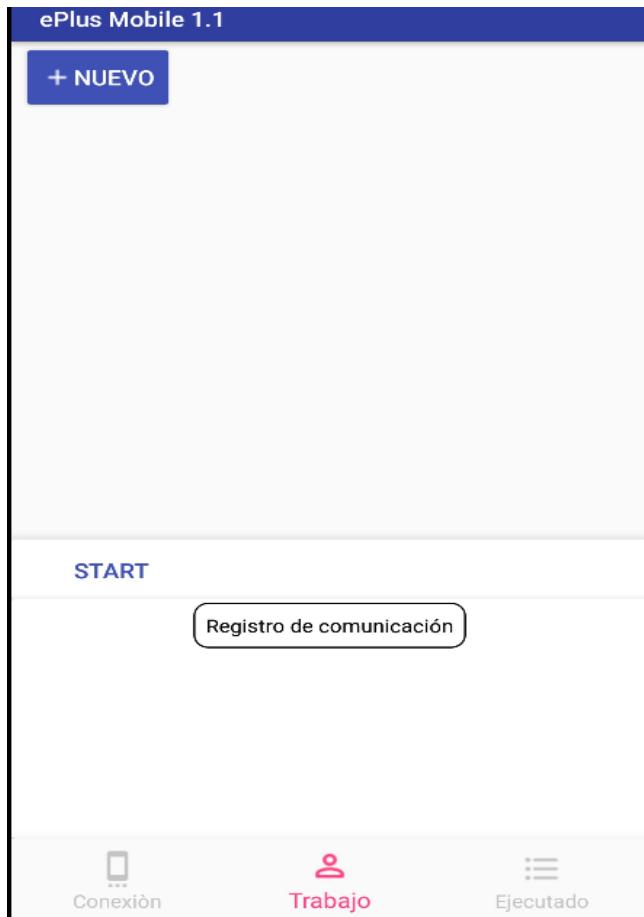
Select if an external sonda is used instead of the BIRD.

By default the meter that works is «Cervantes».

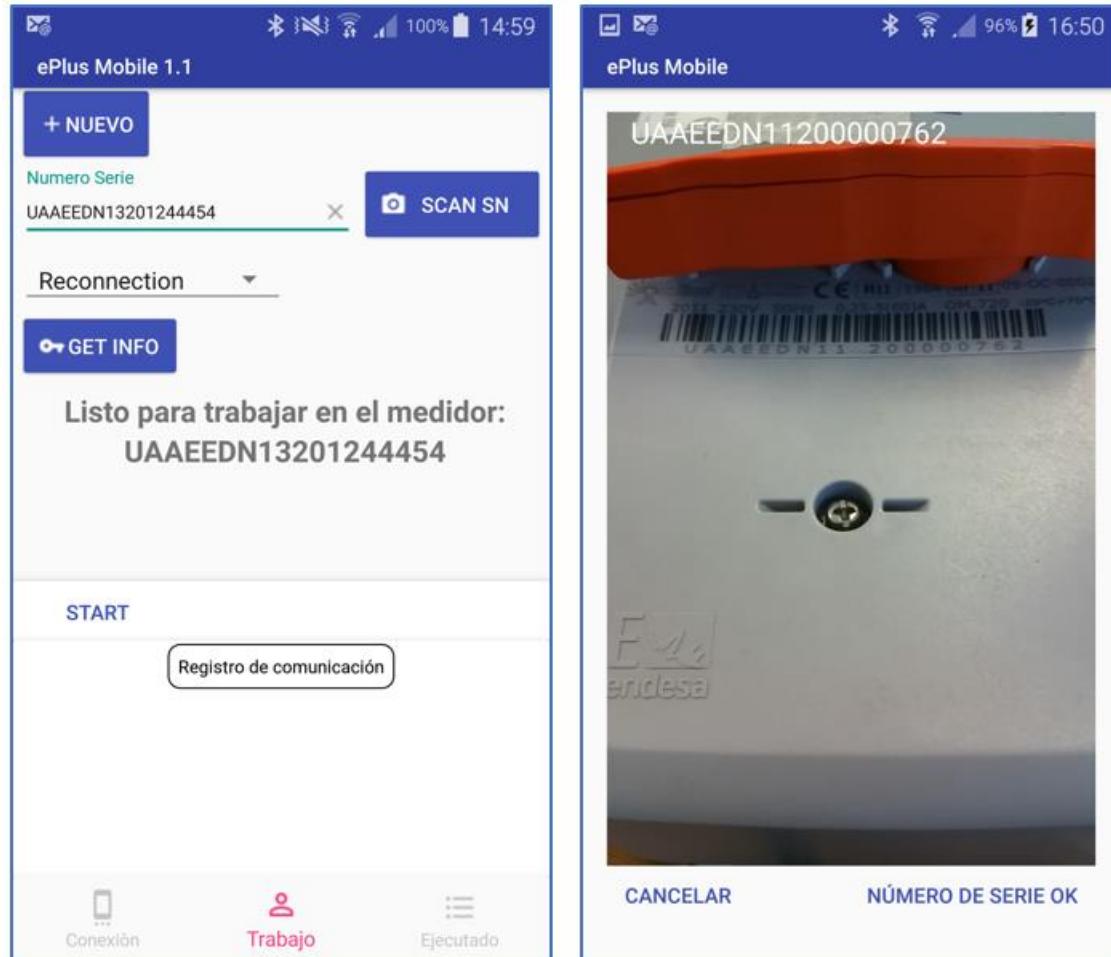


EPLUS MOBILE NEW WORK ORDER FUNCTION

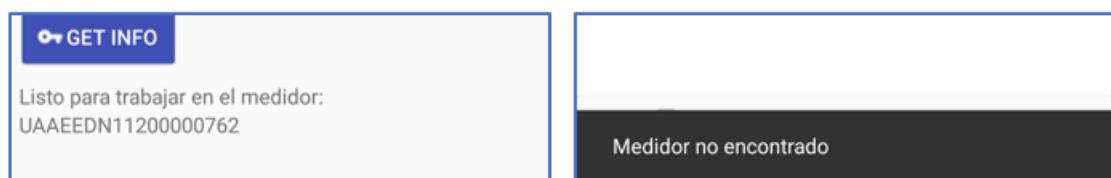
Select then the 'Trabajo' tab and click on the 'Nuevo' button :



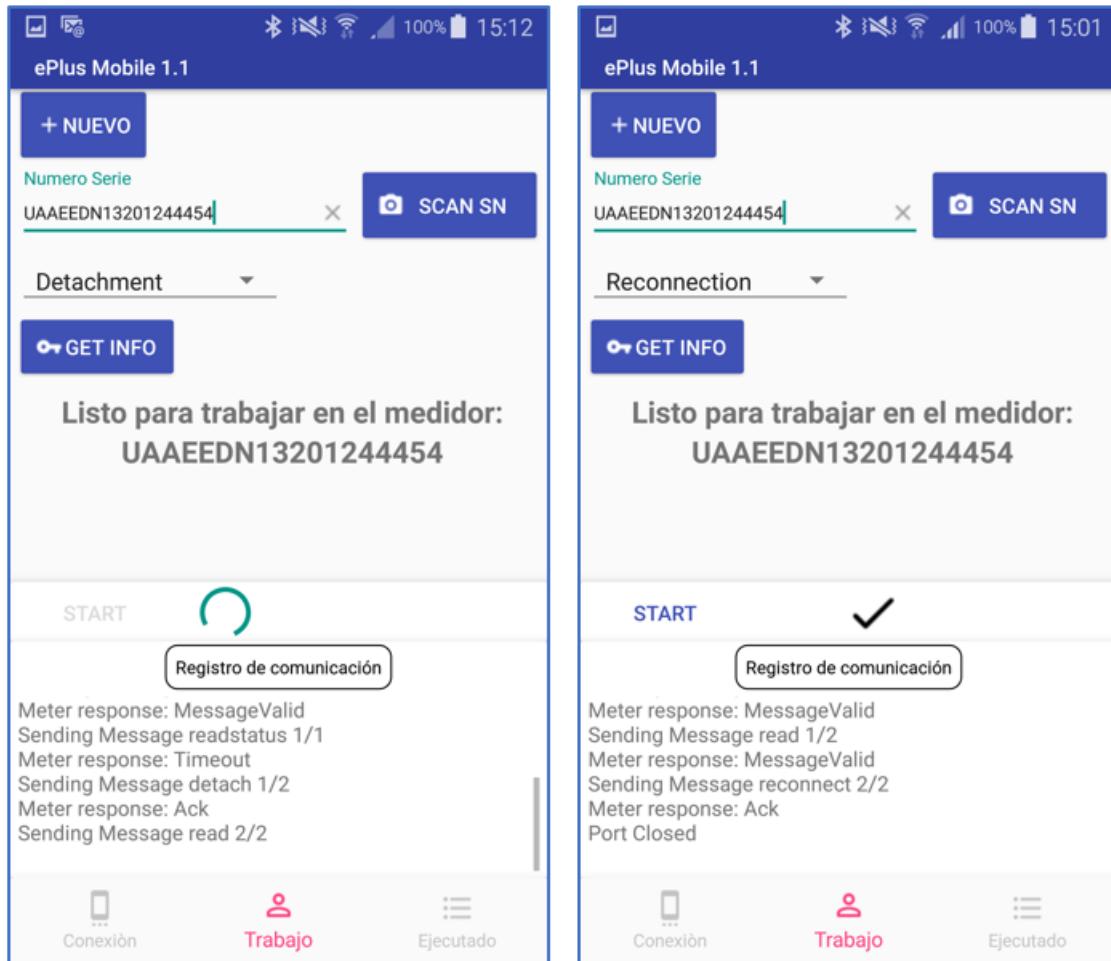
Insert manually the serial number of the meter or scan it clicking on the Scan SN button, in this case a scanner form is shown:



Clicking on the Get Info button the meter detail is shown, if a meter is correctly detected its details are listed below the Get Info button else a notify message is shown:

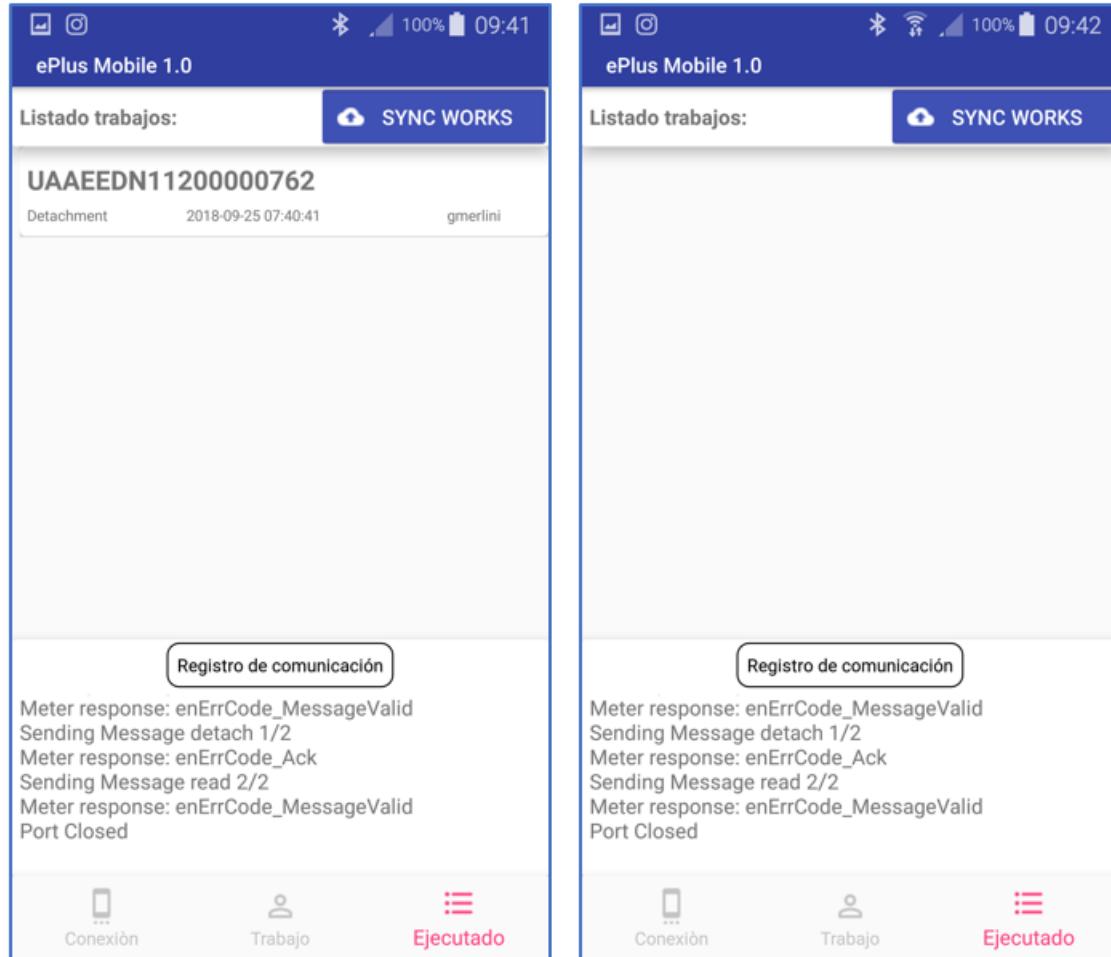


It needs to select a Commercial Work Order to execute (Reconnection, Detachment) and clicking on the Start button, the App executes the selected Work Order, at the end of execution the app sends the Work Order to the SMMPlus using the data network, below an example of correct work order execution with the final sending of the work order to the SMMPlus application:



EPLUS MOBILE EJECUDADO TAB

If the data network is not available the app notifies that the work order has been generated in local environment and it has to be sent manually using the 'Ejecudado' tab:



Clicking on the 'SYNC WORKS' button the work order is sent to the SMMPlus application. Below the 'Listado trabajos' there are All the Works executed but not sent to SMMPlus; clicking on the 'SYNC WORKS' they are all sent to the SMMPlus application.

If there are some trouble in sending the Work Orders it's possible to get the application log file in the internal memory of the smartphone. The log file is in \Enel\eplusmobile , a log file for any day is generated. It needs to send it to the Support group using the Jira application.