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User Manual

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Summary

The aim of this document is to describe how to use the StarBeat product. For all the terms in brackets [], please refer to Product Catalogue.

Distribution List

Document target list

Name	Company

This artifact is available on Confluence:

- Project: [IN - Product StarBeat](#)

Document modifications

The following modifications refer to the old document versions.

Changes Description	Reference
First version	1

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1. Introduction

1.1. Purpose

The purpose of this document is to describe the operation that the operator can perform through the Star Beat product, then its functionality.

1.2. Audience

This document gives information about the Product Functionalities available in the Star Beat System. It will also provide an overall overview of the systems that are involved in the business processes described.

The audience of this document is Enel Global Digital Solution ,and, interested partners, clients, and suppliers.

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2. Authentication and authorization

2.1. Accessing the StarBeat Application

The system manages authentications, and, authorizations in cooperation with the Secure Beat system, so the authentication/permissions functionalities that Star Beat manages are closely to what is defined in Secure Beat system.

The macro functionalities managed are as follows:

1. Single Sign-on compliant
2. Integration with Enel LDAP
3. Authentication from external Enel domain
4. Definition of physical user/operators, and, also application/virtual user (E.g. Digitaly)
5. User Profile association to specific territorial organizations, with different levels of authorization (Create, View, Edit)

2.2. Authentication to StarBeat system via GUI

The Authentication can be executed, for example:

- 1) from the operators in the enel domain and in this case authentication will be transparent (no username and password will be requested by the system)
- 2) from external Enel domain with enelint.username and password (therefore the operator using starbeat must be registered in the enelint domain)

So in the cases above the operator using Starbeat must be registered in an Enel domain (or in the domain in which the systems are installed), because Kerberos / LDAP, in collaboration with the 'SecureBeat' System, will check if the operator is enabled to operate on the StarBeat product.

When, for example, an enelint user accesses the StarBeat application with a supported web browser a popup opens and prompts for the user credentials. Upon providing valid credentials on "ENELint" domain the user is allowed access to the application.

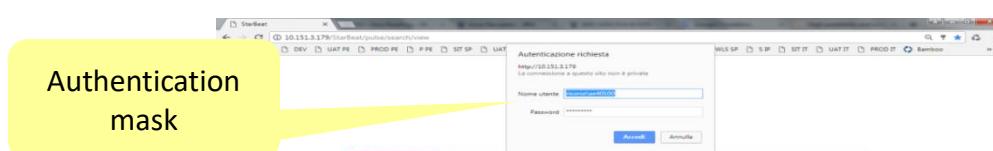


Figure 1 – Login to the StarBeat Application

2.3. Header StarBeat system information

On successful login the operator will always display the Star Beat header section, that is available in all the web pages.

The header section provides, a **customizable Logo**, and, information about:

- the operator logged in,
- the system language,
- the Environment,
- the product version,
- the installation country/company
- the Breadcrumbs

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On successful login the user name is shown in the top left corner of the page:

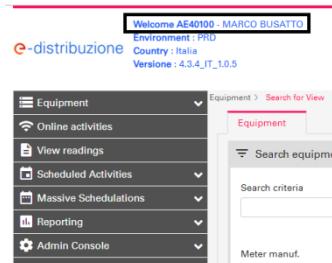


Figure 2 – Logged username information

2.3.1. StarBeat Multi language - change language

The header fields have interaction with the web pages, for example in case of changing language, all the GUIs of StarBeat System will be shown in selected language. Star Beat system is developed and configured in English, as it is the reference language. The default language is a specific installation setting, so the default language depends from the configuration of the installation.

In each product installation, the system loads all the available languages. Through the language field in the header each operator in any StarBeat UIs can changes the default language.

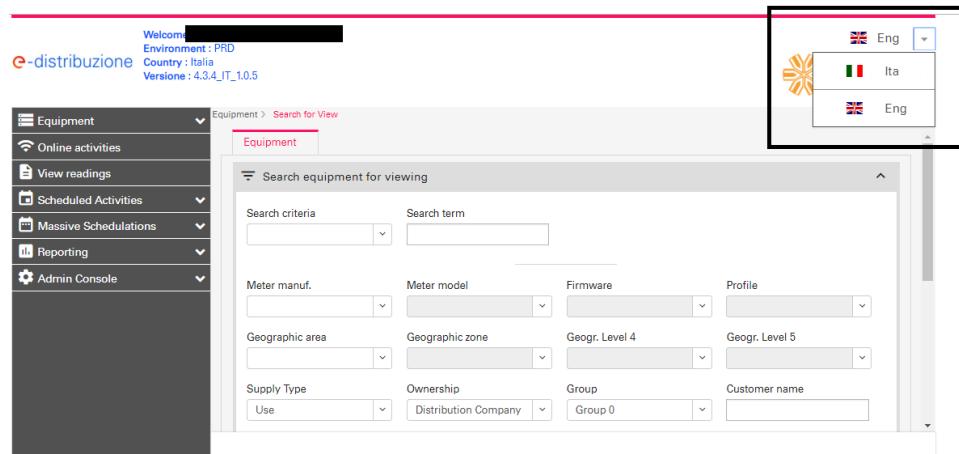


Figure 3 – application language setting

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3. Star Beat System functionalities

The Star Beat system verifies the operator's authorisations, asking to Secure Beat system for which functionalities, and, on which territorial hierarchy, the operator is enabled.

The functionalities referred to the menu items are described in the following chapters:

- *Equipment* - see chapter 4
 - *Installation* - see chapter 4.1
 - *View* - see chapter 4.2
 - *Edit* - see chapter 4.3
- *Online Activities* - see chapter 5
- *View readings* - see chapter 6
- *Scheduled activities* - see chapter 7
 - *Create and Maintain* - see chapter 7.1
 - *View* - see chapter 7.2
- *Massive Scheduling* - see chapter 8
 - *Insert* - see chapter 8.1
 - *View* - see chapter 8.2
 - *Edit* - see chapter 8.3
- *Work Order* - see chapter 9
- *Reporting* - see chapter 10
 - *KPI* - see chapter 10.1
 - *Equipment* - see chapter 10.2
 - *Communication* - see chapter 10.3
 - *Telereading* - see chapter 10.4
 - *Call tracing* - see chapter 10.5
 - *Error details* - see chapter 10.6
 - *Warning details* - see chapter 10.7
- *Admin console* - see chapter 11
 - *Groove Properties* - see chapter 11.1
 - *Sync Properties* - see chapter 11.2
 - *Profiled Checks* - see chapter 11.3
 - *Profile Match* - see chapter 11.4

3.1. Navigation Menu

Therefore the operator will be able to operate only on the functionalities (menu and sub menu) on which it is enabled, so in the following image the operator that has accessed is not enabled for the Work Order function.

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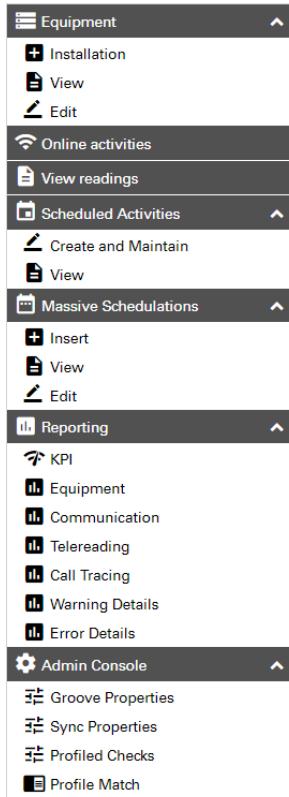


Figure 4 – Navigation menu without the Work Order Menu item

To access the desired functionality the user selects the corresponding menu item in the left navigation menu.

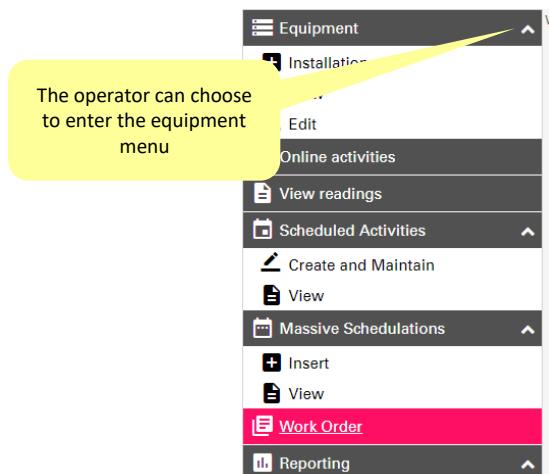


Figure 5 – Navigation menu (snapshot with the Work Order Menu item)

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4. Equipment Master Data

The operator accesses the menu in order to operate on the equipment master data.

4.1. Installation

The Equipment installation functionality allows the operator to enter meters, communication module, default scheduled activities in the StarBeat Master Data.

The **Save** button on the bottom of the page becomes enabled when:

- all mandatory fields, i.e. the ones marked with an asterisk, are entered, or **automatically pre-compiled**.
- all fields have a valid value

An invalid input is marked with a red border and an error description as a tooltip when the mouse pointer is placed over the field.

Most noticeable fields are the following, however, it should be noted that most of this information can be automatically evaluated by StarBeat:

- *Installation date*: (*automatically proposed/prefilled*) the date, with optional *Installation Time*, the equipment was installed. This field is part of the available search criteria for the equipment search.
- *POD*: a 15 alphanumeric code identifying the Point Of Delivery for the equipment. No logic is performed on this field by the system during the meter acquisition process. This field is part of the available search criteria for the equipment search.
- *Dist. Company / Geographic area / Geographic zone*: country specific categorization of equipment based on geographic location. Available options for the geographic zone depend on the area selected, and available options for area depend on company selected. These fields are part of the available search criteria for the equipment search.
- *Group*: (*automatically proposed/prefilled*) defaulted to Group 0, allows the user to categorize equipments in groups from 0 to 5. This field is part of the available search criteria for the equipment search.
- *Manufacturer S/N (Meter ID 1) and Software meter ID*: meter serial number 1/. This field (*Software meter ID*) is checked against the one returned by the meter during data acquisition and causes the reading to be marked as warning in case of mismatch. This field is part of the available search criteria for the equipment search.
- *Reading password*: (*automatically proposed/prefilled*) password used to open the communication with the meter, used in the data acquisition process.
- *Writing password*: (*automatically proposed/prefilled*) password use in the clock synchronization activity.
- *Multidrop / HDLC / Call via S/N*: (*automatically proposed/prefilled*) information used by the system to communicate
- *Main communication (Type / Baud rate / Data bit / Parity bit / Stop bit) automatically proposed/prefilled*: type and settings to be used in the communication with the meter during the data acquiring process.
- *Secondary communication - automatically proposed/prefilled - (Type / Baud rate / Data bit / Parity bit / Stop bit)*: information only, not used by the system
- *Phone number / IPv4*: parameters used in the communication with the meter during the data acquiring process.
- *Start reading date*: (*automatically proposed/prefilled*) start date to be acquired on the first data acquisition
- *Schedulation enabled*: (*automatically proposed/prefilled*) if set to NO the equipment will not be

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acquired by the system

- *Type of Reading (Load curves): (automatically proposed/prefilled)* sampling interval of the equipment, used in the communication with the meter during the data acquiring process.

When the user is done inputting the equipment data, and there are no errors, the user can save the data. On clicking on the *save* button a confirmation popup opens:

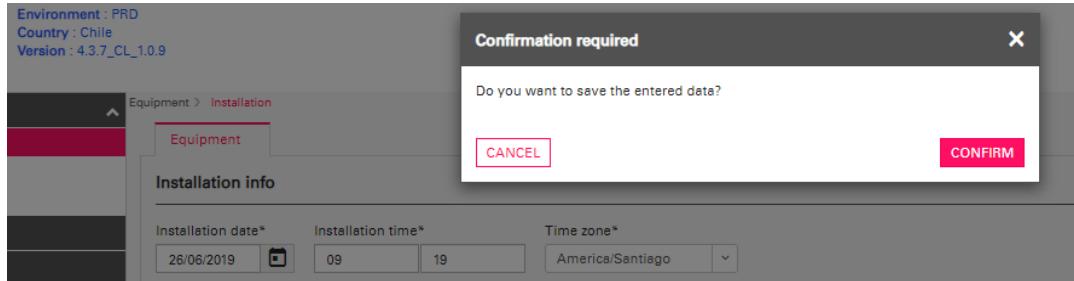


Figure 6 – Save / Edit confirmation popup

Clicking *Cancel* the popup closes and the user can amend the entered data, while clicking *Confirm* a visual effect (bar moving on top of the page) informs the user that the system is processing the save request. Although the inputted data was already checked in the page, it is again checked by the back end server for both a tampering protection and a finer level of checks.

The result of the save request is then prompted to the user with an information or error message, in case of error the message details the errors reported by the server.

On a successful installation in the master data the user is automatically redirected to the **edit** page for the just entered the equipment.

Navigating away from the installation page causes the loss of unsaved data.

All installed equipments with *Scheduling enabled* set to YES in the “Default System Schedulation” Tab will be automatically scheduled for meter reading by the system.

Figure 7 – System schedulation / Schedulation enabled

Default scheduling parameters are (may vary on specific installation):

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- *Load curves*: the user can specify the sampling interval (hourly or 15 minutes), load curves are read every day. Currently supported: hourly
- *Billing registers*: registers are read the first day of each month
- *Diagnostic log*: not supported
- *Clock synchronization*: meter clock synchronization with the server time is performed every day

Acquired data can be accessed with the *Reading view* functionality (See Chapter 6).

4.2. View

The Equipment installation functionality allows the user to view the Equipment data entered through the installation functionality (see chapter 4.1).

The UI the same fields explained in installation section (see chapter 4.1) but the fields are not editable.

4.3. Edit

The Equipment installation functionality allows the user to update or view the Equipment data inserted through the installation functionality (see chapter 4.1).

When the corresponding menu item is selected the equipment search page is shown allowing the user to retrieve the list of existing equipments matching the inputted criteria.

Figure 8 – Equipment search

In the results table appearing after clicking on the *Search* button the user can select the equipment to edit / view by clicking on the icon on the first column.

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Equipment Id	Pod Code	Meter Id1	Meter Serial N2	Geographic Zone	Meter Group	Installation Date T Z	Primary Communication Type
10	2803247	1704C509	1704C509	REGIÓN METROPOLITANA	SF24	20/07/2017 10:16:24	GPRS
1059	16887766	1704C016	1704C016	REGIÓN METROPOLITANA	SF21	25/09/2017 12:18:23	GPRS
1060	1688748	1704C470	1704C470	REGIÓN METROPOLITANA	SF21	25/09/2017 12:18:27	GPRS
1266	1185467	17070366	17070366	REGIÓN METROPOLITANA	SF32	25/09/2017 12:31:59	GPRS
1476	2720288	1704C011	1704C011	REGIÓN METROPOLITANA	SF22	01/11/2017 13:56:25	GPRS
1488	659045	1704C021	1704C021	REGIÓN METROPOLITANA	SF23	01/11/2017 13:56:26	GPRS
1489	670571	1704C211	1704C211	REGIÓN METROPOLITANA	SF23	01/11/2017 13:56:26	GPRS
1495	1239430	1704C298	1704C298	REGIÓN METROPOLITANA	SF23	01/11/2017 13:56:26	GPRS

Figure 9 – Equipment search results

The *Reset* button clears any inputted data in the search criteria and in the results table.

The view functionality shows the selected equipment data in view mode (i.e. non editable mode) and has no action buttons while the edit functionality allows to change the existing data and save it with the *Save* button. The edit page validation and rules follows the behaviour described in the installation functionality (see chapter 4.1).

The edit page also allows to mark an equipment as *Removed*. To remove an equipment just entered a valid *Removal Date* and provide a *Removal Reason* in the corresponding fields (these fields are only available in the edit page).

Figure 10 – Equipment removal

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5. Online Activities

The online activities functionality allows the user to perform a communication with the meter and see the results and the acquired data. The online activities requires to the user to input the communication parameters if the meter is a new one, but fill the fields automatically if the meter is already in the Master Data.

When the corresponding menu item is selected the on line activities page is shown.

The screenshot shows the 'Online Reading' configuration interface. At the top, there's a red header bar with the text 'Online Reading > Start Online Reading'. Below this, the main form is divided into several sections:

- Equipment data:** Includes fields for 'Manuf. S/N*' (04888948), 'Software meter ID*' (04888948), 'Timezone*' (America/Santiago), 'Manufacturer*' (EMH), 'Model*' (LZQJ M1 (default item)), 'Firmware*' (Standard Firmware), and 'Profile*' (EMH LZQJ Chile).
- Customer Data:** Fields for 'POD Code' (3194616), 'Customer name' (MALL PLAZA ALAMEDA), 'Inst. address' (AVDA. LIBERTADOR BERTI), 'Street nr.' (3470C), 'Postal code', and 'City' (SANTIAGO).
- Communication data:** Options for 'Main' or 'Secondary' connection, 'HDLc*', 'Phone number', 'IP address*' (10.112.17.207), 'Port' (9911), 'Telco provider*' (Movistar), 'Password*' (ADMIN015), 'Type*' (GPRS), 'Data bit*', 'Parity bit*', 'Stop bit*', 'Baud rate*' (9600), and 'Call by SwMeterID' (Yes).
- SwMeterID reading:** Options for 'Yes' or 'No'.
- Load Profile configuration:** A section for 'Type*' (Block) and activity types (Clock Synchronization, Diagnostic Registers, Billing Registers, Reset registers). It also includes settings for 'Instrumentation Profile quarter hours' and 'Load Curves quarters hours'.
- Activity type:** A list of checkboxes for various activities: Clock Synchronization, Diagnostic Registers, Billing Registers, Reset registers, Instrumentation Profile quarter hours, and Load Curves quarters hours. Each activity has associated frequency, interval, and days settings.

At the bottom of the interface, there are buttons for 'BACK', 'EDIT EQUIPMENT', 'GME LOG', 'DATA DETAILS', and 'RUN'.

Figure 11 – on line activities reading main page

Most noticeable fields are the following:

- *Manufacturer S/N (Meter ID) and Software meter ID:* meter serial number. These fields are presented alongside the meter ID read from the meter to allow the user to easily check the expected meter ID is acquired

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- *Manufacturer / Model / Firmware / Profile*: meter parameters used by the system for the communication and data acquisition. These fields are linked one another allowing the user to select only valid configurations.
- *Phone number / IP address*: parameters used in the communication with the meter during the data acquiring process. The IPv6 actually is not used
- *Type / Baud rate / Data bit / Parity bit / Stop bit*: type and settings to be used in the communication with the meter during the data acquiring process
- *Register reading*: the register data will be acquired if YES, not acquired otherwise
- *Clock sync*: the clock synchronization will be performed if YES, not performed otherwise
- *Load curves / Days*: the load curves data will be acquired if YES, not acquired otherwise. In case the load curves are requested the user can select the time interval to acquire:
 - *Days*: data will be acquired for the last number of days with respect to the current date
 - *Period*: data will be acquired in the date interval inputted
 - *All*: all data will be acquired
- *Diag. Registers*: not used actually in all the installation or for all the meter profiles

When all required data are entered the *Run* button becomes enabled and the user can start the reading by clicking on it. After the reading starts the *GME Log* button becomes enabled and when pressed the GME Log popup opens.

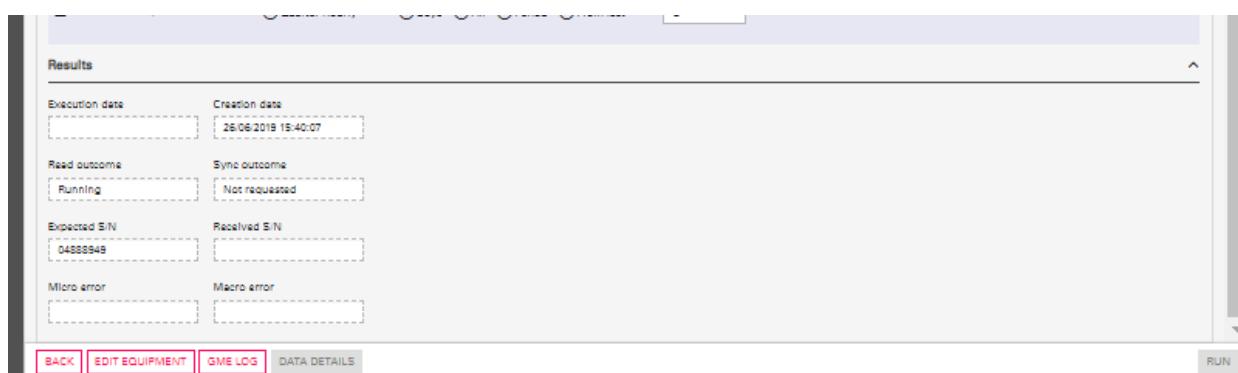


Figure 12 – GME Log button enabled

The popup auto updates itself informing the user of the current communication step being processed.

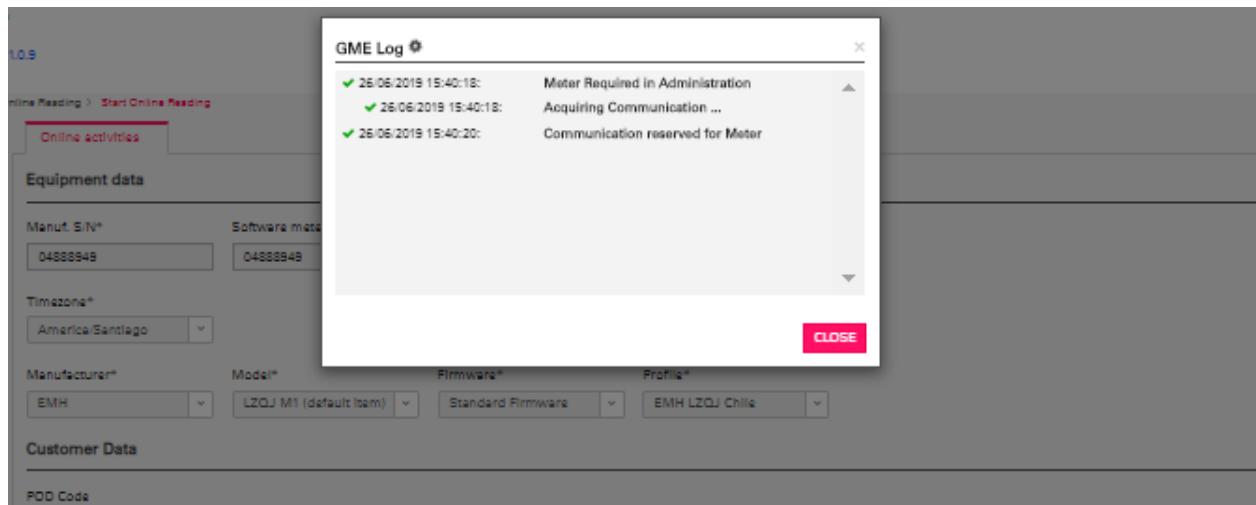


Figure 13 – GME Log popup

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When the communication completes, regardless the GME Log popup is open or closed, the results section of the page gets updated with the reading result summary and the *Data details* button becomes enabled and when pressed opens the results popup.

Execution date	Creation date
24/06/2019 14:15:14	24/06/2019 14:15:03
Read outcome	Sync outcome
Ok	Not requested
Expected S/N	Received S/N
74003118	74003118
Micro error	Macro error
0	

Buttons: BACK, EDIT EQUIPMENT, GME LOG, DATA DETAILS, RUN

Figure 14 – Results section

In the results section the summary information are shown as well as the reading detail for the requested metrics (register, load curves or both).

Clicking on [Data Details], the user can enter the view reading page that will show the list of the readings related to the executed on line activity. See next chapter for details ([Ch. 6](#)).

	Creation date	Status change date	Equipment ID	Call ID	Activity Type	Status	Macro Error	Micro Error	Source	Lot Id	
24/06/2019 14:15:13	24/06/2019 14:15:59	1000	20190600000...	Billing Registers	✓				O		

Table Footer: 1 of 1 items

Figure 15 – view reading section

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6. View readings

The reading view functionality allows the user to view the reading results and the acquired data, if any, the activities types are detailed and displayed by origin of the request and according to other information, that can be used as a filter in order to analyse the meter readings in a punctual point of view.

When the corresponding menu item is selected the equipment search page is shown allowing the user to retrieve the list of existing equipments matching the inputted criteria.

Figure 16 – Search equipment for readings

In the results table appearing after clicking on the *Search* button the user can select the equipment to access the list of readings performed by the system.

Figure 17 – View readings

The view readings page allow the user to restrict the search results based on the reading date (from and to). If the search results are more than 100 a message informs the user that only the first 100 readings are shown. The user can sort data by clicking on the column header with the following logic:

- First click: ascending sorting
- Second click: descending sorting
- Third click: remove sorting

For more advanced sorting, the user can click on more than one column header holding the *shift* key pressed to filter firstly on the first column clicked, then on the second and so on.

A visual order of sorted columns is shown with numbers next to the sorting indication arrow.

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Figure 18 – Advanced view readings sorting

6.1. Export the grid contents

An export functionality is available on the view readings table by clicking on the action button on the table top right, or the excel button:

- *Export all data as CSV*: exports all the rows loaded in the grid
- *Export visible all data as CSV*: exports all visible rows loaded in the grid
- *Export all data and tab in excel*: export all data (raw data , normalized data, Execution info, and, the meter master data)

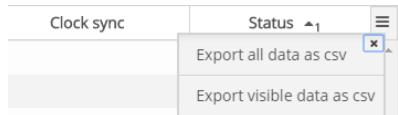


Figure 19 – Exporting view readings data in csv

Figure 20 – Exporting view readings data in excel

The user can access the acquired data by clicking on the document icon on the first column of the view readings table (raw data, and, normalized data).

Figure 21 – view readings - raw data

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Both tables data can be exported by clicking on the action button on the table top right as described in the view readings table.

Obis standard	Description	Value	Unit	Capture time	
1-1:13.7.0*0	Instantaneous Power Factor	0.965400			
1-1:73.7.0*0	Power Factor In Phase L3 (T)	0.942400			
1-1:S3.7.0*0	Power Factor In Phase L2 (S)	0.978600			
1-1:33.7.0*0	Power Factor In Phase L1 (R)	0.979000			
1-1:72.7.0*0	Instantaneous Voltage In Phase L3 (T)	117.800000	V		
1-1:S2.7.0*0	Instantaneous Voltage In Phase L2 (S)	118.700000	V		
1-1:32.7.0*0	Instantaneous Voltage In Phase L1 (R)	119.000000	V		
1-1:71.7.0*0	Instantaneous Current In Phase L3 (T)	1.348000	A		
1-1:S1.7.0*0	Instantaneous Current In Phase L2 (S)	1.428000	A		
1-1:31.7.0*0	Instantaneous Current In Phase L1 (R)	1.231000	A		
1-1:81.7.1*2	Total Positive Active Energy In Tariff 1 previous month -1	10359564.000000	kWh		
1-9:82.8.0*2	Summation of Energy 4 previous month -1	0.000000			
1-8:82.8.0*2	Summation of Energy 3 previous month -1	0.000000			
1-7:82.8.0*2	Summation of Energy 2 previous month -1	0.000000			
1-6:82.8.0*2	Summation of Energy 1 previous month -1	0.000000			
1-5:82.8.0*2	External Energy 4 previous month -1	0.000000			
1-4:82.8.0*2	External Energy 3 previous month -1	0.000000			
1-3:82.8.0*2	External Energy 2 previous month -1	0.000000			
1-2:82.8.0*2	External Energy 1 previous month -1	0.000000			
1-5:82.8.0*2	External Energy 4 previous month -1	0.000000			
1-4:82.8.0*2	External Energy 3 previous month -1	0.000000			
1-3:82.8.0*2	External Energy 2 previous month -1	0.000000			
1-2:82.8.0*2	External Energy 1 previous month -1	0.000000			
1-5:82.8.0*2	External Energy 4 previous month -1	0.000000			
1-4:82.8.0*2	External Energy 3 previous month -1	0.000000			
1-3:82.8.0*2	External Energy 2 previous month -1	0.000000			
1-2:82.8.0*2	External Energy 1 previous month -1	0.000000			

Figure 22 – Reading details / Register

The load profile readings data shows the data referring to the selected date and channel, the data is immediately refreshed when the user changes any of the dropdown menu values.

The system is configured to read all available channels since the date of the last successful load curves reading date.

Load Curves quarters hours							
Execution date	Status	Meter Clock	Meter Timezone	Server Clock	Server Timezone		
27/06/2019 00:10:54	Warning						
Expected SwMeterID	Received SwMeterID	Meter Clock	Meter Timezone	Server Clock	Server Timezone		
1704C509							
Raw data		Normalized data					
Date from	Date to						
24/06/2019	25/06/2019						
SEARCH							
Date	Start Ti...	Stop Time	Status word	A L1	A L2	A L3	A+
25/06/2019	23:45:00	00:00:00		12043.201000	10.199000	12009.916000	52.810000
26/06/2019	00:00:00	00:15:00		12082.277000	10.227000	12052.242000	52.964000
26/06/2019	00:15:00	00:30:00		12135.800000	10.131000	12105.672000	52.703000
26/06/2019	00:30:00	00:45:00		12153.097000	10.169000	12126.463000	53.085000
26/06/2019	00:45:00	01:00:00		12112.965000	10.334000	12087.170000	53.498000
26/06/2019	01:00:00	01:15:00		12166.741000	10.144000	12142.095000	52.865000
26/06/2019	01:15:00	01:30:00		12133.814000	10.207000	12110.497000	53.145000
26/06/2019	01:30:00	01:45:00		12139.887000	10.311000	12115.828000	53.502000
26/06/2019	01:45:00	02:00:00		12166.839000	10.561000	12143.177000	54.915000

Figure 23 – Reading detail / Load profile

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7. Scheduled activities

The operator utilizes these functionalities in the below modalities:

1. The functions via **user interface** allows the operator to search for equipments, to select one, in the obtained result list, in order to:
 - a. **view**
 1. the **Manual Scheduled Activities** on it, so also the Massive Scheduled Activities (schedules that are open on equipments lot);
 2. the **Default Scheduled Activities** on it;
 - b. **edit**:
 1. the Manual Scheduled Activities on it, but the system does not allow to edit the **Massive Scheduled Activities** (schedules that are open on equipments **lot**) in this functionality, and does not allow to edit the **Default Scheduled Activities**;
 - c. **create** a new manual scheduled activities:
 1. using one of the configured schedule templates available, in order to create manual scheduled activities from template;
 2. creating a custom manual scheduled activities;
2. The function can be utilized also via **system interface**, and, it allows the external system:
 - a. to **update** Manual and Default Scheduled Activities.
 - b. to **create**, or, to **update** Manual Scheduled Activities (but not the schedules that are open on equipments lot)



Figure 24 – Scheduled Activities menu

7.1. Create and Maintain

This functionality allows the operator:

1. to **view** the **Manual Scheduled Activities**, so also the Massive Scheduled Activities, the **Default Scheduled Activities** on it; to do this, use the button/icon:
2. to **edit** the Manual Scheduled Activities on it, to do this, use the button/icon:
3. to **create** Manual scheduled activities, , to do this, use the button/icon:

The operator must to search for equipments, in order to select one of it (in the obtained result list) for access to the scheduled list on it (Look at the two images below):

The screenshot shows a search interface for equipment selection. It includes fields for 'Search criteria' and 'Search term'. Below these are dropdown menus for 'Meter manuf.', 'Meter model', 'Firmware', 'Profile', 'Geographic area', 'Geographic zone', 'Geogr. Level 4', 'Geogr. Level 5', 'Supply Type', 'Ownership', 'Group', 'Customer name', and 'Installation addr.'. There is also a section for 'Last activity date' with options for 'Performed in the interval', 'Not performed for at least n days', and 'Performed at least once'. At the bottom, there are filters for 'Telereading inhibit.' (radio buttons for 'Enable', 'Disable', 'All'), 'Offline' (radio buttons for 'Enable', 'Disable', 'All'), and date range filters 'Installation Date From' and 'Installation Date To'.

Figure 25 – Equipment Search for Scheduled Activities selection A

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Area	Zone	UO	POD Code	External Customer ID	Manufacturer S/N	Software Meter ID	Phone Number	
D2 - NORD	D22L - VENEZIA	D22LU2 - MESTRE	IT001E00218604	x	05G10265156105733	56105733	3206295237	LA ▲
D3 - CENTRO NORD	D31A - BOLOGNA-FE...	D31AU5 - SAN GIOV...	IT001E00036766_TE...	486875828	00G10247074003118...	74003118	3339235625	IS □
D3 - CENTRO NORD	D31C - FORLI-RAVEN...	D31CU3 - FORLU-FAE...	IT001E00035485_TE...	487578533	00G10265056008258...	56008258	3202547729	SI □
D3 - CENTRO NORD	D31A - BOLOGNA-FE...	D31AU2 - FERRARA	IT001E00253217_TE...	486884509	16G262A7078050513...	76306513	3293590806	IS □
D3 - CENTRO NORD	D31C - FORLI-RAVEN...	D31CU3 - FORLU-FAE...	IT001E00249757_TE...	487580716	05G10269296201823...	96201823	3204990054	AC □
D3 - CENTRO NORD	D34F - REGGIO EMIL...	D34FU5 - GUASTALLA	IT001E00219840_TE...	486900725	00G10269196101081...	96101081	3208653808	AC □
D3 - CENTRO NORD	D31A - BOLOGNA-FE...	D31AU3 - SASSO M...	IT001E00036430_TE...	487583049	00G10265056001436...	56001436	3203773397	SI □
D3 - CENTRO NORD	D34F - REGGIO EMIL...	D34FU4 - SASSUOLO	IT001E00228062_TE...	488928023	00G1026938612790...	96122790	3203774022	AC □
D3 - CENTRO NORD	D31C - FORLI-RAVEN...	D31CU1 - RIMINI-RIV...	IT001E00033784_TE...	487583877	14G102A2156307786...	56307786	3202547631	LA ▾

Figure 26 – Equipments list for Scheduled Activities selection B

To select a meter in the list, click on the icon or button . A click on the icon gives access to the detail page that it can see below:

ID Group	Description	Creation Author	Creation Date	Last Editing Author	Last Editing Date	Activity Type
3011	SYS	STARBEAT	28/08/2017 14:18:07			Load Curves quarters hours
3011	SYS	STARBEAT	28/08/2017 14:18:07			Billing Registers
3011	SYS	STARBEAT	28/08/2017 14:18:07			Clock Synchronization
Test	AEIV056		04/08/2019 08:12:27	AEIV056	04/08/2019 12:18:08	Billing Registers
sche test 8	AE40100		07/12/2018 09:38:12			Load Curves quarters hours
544546545	AE15177		15/11/2018 15:14:18			Billing Registers
Riprove1511	AE15177		15/11/2018 14:52:30			Billing Registers
aaa	AE37865		11/10/2018 16:32:57			Billing Registers
...

Figure 27 –Create and Maintain – Scheduled Activities list – Pic 1

This functionality like many others shows the following two sections (The fields in these sections will be only displayed, so will be not editable, they are for information only):

1. The **Equipment details** is a standard UI section in which there will be shown the equipment information, i.e. the basic equipment data related at the selected equipment.
2. The **Customer data** is a standard UI section in which there will be shown the Customer information, i.e. the basic Customer data related at the selected equipment.

P.S.: These sections will be collapsible, so, thanks to the specific button pressure, the fields, contained in it, may be shown or disappear.

Figure 28 – Scheduled Activities - Master data

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Figure 29 –Create and Maintain – Custom data

In this functionality the **scheduled activities status** (active \ not active) was rendered with different row colors. So the scheduled activates list section displays the default and the manual scheduled activities; the list of the scheduled activities will be displayed with different colors and in the following order an logic:

1. The first rows in the list are the ‘activities type’ created automatically by the system, i.e. the [Default scheduled activities], these are colored in blue and light blue, at alternate rows.
2. The second series of rows , in the list, are the [Manual Scheduled Activities] still active, that have the [ending date] most recent of the current date. This second series of rows are colored in green and in light green, at alternate rows. This second series of rows are ordered by 'starting date' (the most recent [starting date] to the oldest [starting date]).
3. The third series of rows in the list, are the [Manual Scheduled Activities] not active, that the [ending date] smaller (lower) than the current date, i.e. a past date in the [ending date] field. This third series of rows are colored in grey and in light grey, at alternate rows. This third series of rows are ordered by 'ending date' (the most recent [ending date] to the oldest [ending date]).

Figure 30 –Create and Maintain – Scheduled Activities list - Pic 2

This functionality allows the operator to **view** the **Manual Scheduled Activities**; to do this, use the button/icon: ; and, the following page will open.

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schedule > View > Schedules > Single Schedule

Scheduled Activities				
Equipment details				
Customer Data				
View Default Activity Schedule				
Custom	Task Group			
No				
Description				
SYS				
Starting Date	Ending Date			
28/08/2017				
Activity Type	Frequency	Day	From (HH)	To (HH)
Load Curves quarters hours	Daily			
Billing Registers	Monthly	1		
Clock Synchronization	Weekly	Saturday		
BACK				

Figure 31 –Create and Maintain – Single Scheduled Activities view details

This functionality allows the operator to **create** Manual scheduled activities, to do this, use the button/icon: ; and, the following page will open.

Schedule > Create and Maintain > Schedules > Add

Scheduled Activities				
Equipment details				
Customer Data				
Create Manual Activity Schedule				
Custom	Task Group			
<input checked="" type="radio"/> Yes	<input type="radio"/> No			
Description*	Starting Date*	Ending Date*		
Star Beat	02/07/2019	03/07/2019		
Activity Type	Frequency	Day	From (HH)	To (HH)
Billing Registers	Weekly	Thursday	03	03
Clock Synchronization				
Load Curves quarters hours				
BACK		SAVE		

Figure 32 –Create and Maintain – Single Scheduled Activities create details

If a new one is created and saved, to assist the operator, the system verifies that the schedules are created in compliance with the automatic controls; the following page/message will open.

Schedule > Create and Maintain > Schedules > Add

ERROR36: Hour from must be greater than hour to

ERROR31: In the weekly schedule, the day is not included in the range

Scheduled Activities				
Equipment details				
Customer Data				
Create Manual Activity Schedule				
Custom	Task Group			
<input checked="" type="radio"/> Yes	<input type="radio"/> No			
Description*	Starting Date*	Ending Date*		
Star Beat	02/07/2019	03/07/2019		
Activity Type	Frequency	Day	From (HH)	To (HH)
Billing Registers	Weekly	Thursday	03	03
Clock Synchronization				
Load Curves quarters hours				
BACK		SAVE		

Figure 33 –Create and Maintain – Single Scheduled Activities create details

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7.2. View

This function via user interface allows the user to search for equipments, to select one equipment in the obtained result list, in order to view Manual and Default Scheduled Activities (this to allow only some users to be enabled for viewing only) . The operator will be faced with the same GUI described above, but will not be able to edit or add.

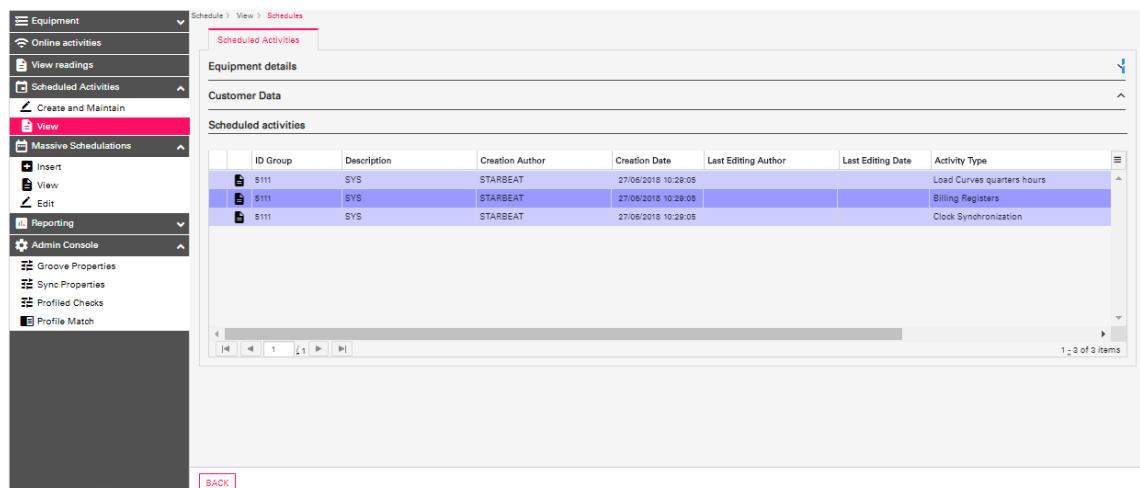


Figure 34 –Create and Maintain –Scheduled Activities view

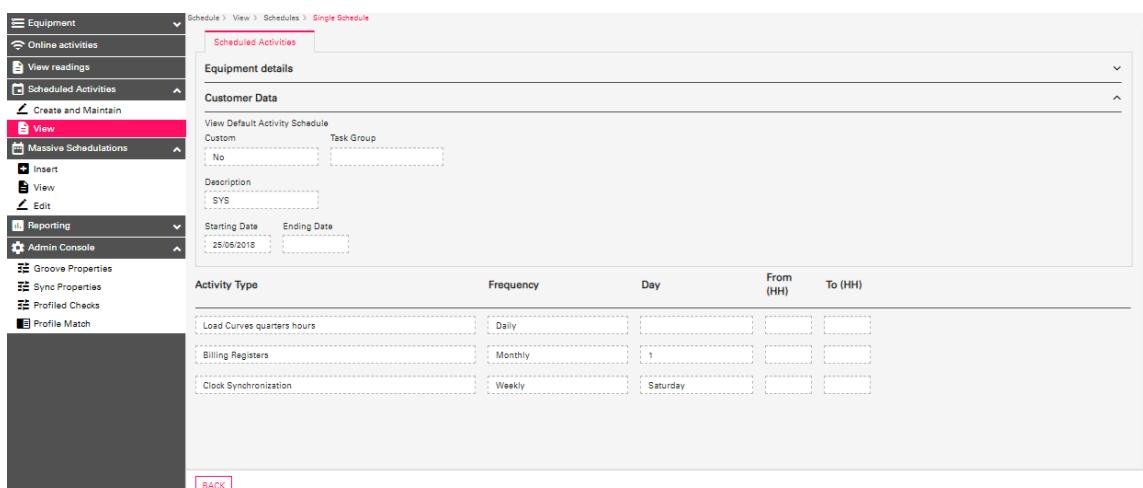


Figure 35 –Create and Maintain –Scheduled Activities view details

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8. Massive Schedulations

This functionality is used in order to manage, via user interface, the massive schedules.

1. In order to create massive schedules please see the paragraph 8.1 - Insert
2. In order to edit massive schedules please see the paragraph 8.2 - View
3. in order to view massive schedules please see the paragraph 8.3 - Edit
4. in order to view the status of the activities execution of an massive schedule please see the paragraph 8.2 - View



Figure 36 – Massive Schedulation – Menu

8.1. Insert

This functionality is used in order to create massive schedules, via UI, this means that the system give the possibility 'to search/selects or/and 'to import' inventoried equipments, in installed status , in order to create the same scheduled activities for all the selected equipments.

N.B.:

1. The operator, via excel file, can import only inventoried equipment
2. The operator can create lots only with activities compatible with all the selected equipments.

The figure below shows the search parameters that the system makes available in order to extract the list of meters on which the operator wants to do the same activity massively (default values can be set as default filters).

The image shows a screenshot of a software application window titled 'Massive Scheduling > Equipments lot'. The main section is titled 'Massive selection for scheduling'. It contains several search and filter fields:

- Search criteria:** Includes dropdowns for 'Meter manuf.', 'Meter model', 'Firmware', 'Profile', and 'Geographic area'.
- Activity Type:** A dropdown menu with three radio button options: 'Performed in the interval', 'Not performed for at least n days', and 'Performed at least once'.
- Selection Filters:**
 - Telereading inhibit:** Radio buttons for 'Enable', 'Disable', and 'All'.
 - Offline:** Radio buttons for 'Enable', 'Disable', and 'All'.
 - Installation Date:** Two date pickers labeled 'From' and 'To'.

 At the bottom left is a 'RESET' button, and at the bottom right is a large red 'SEARCH' button.

Figure 37 – Massive Schedulation – Search for equipments to enter in a lot

Meters that result from the search can be selected or deselected, they will appear in the appropriate section called selected meter (Figure 36)

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e-distribuzione Environment : IT
Country : Italia
Versione : 4.4.0_IT_1.0

StarBeat

Area	Zone	UO	POD Code	External Customer ID	Manufacturer S/N	Software Meter ID	Phone Number
D2 - NORD	D2L - VENEZIA	D2LL2 - MESTRE	IT001E00218604	X	06G10265156105732	56105732	3205285287
D2 - CENTRO NORD	D2A1 - BOLOGNA-FER...	D2IAU2 - SAN GIOV...	IT001E00038766_TEMP2	486875828	00G10247074000118_T...	74003118	3209238625
D2 - CENTRO NORD	D2C1 - FORLI-RAVENN...	D2ICU2 - FORLI-FAEN...	IT001E00034656_TEMP2	487578532	00G10265056003258...	56003258	2203547729
D2 - CENTRO NORD	D2A1 - BOLOGNA-FER...	D2IAU2 - FERRARA	IT001E00218604_TEMP2	486884809	16G262A7078306512...	76308513	3203580806
D2 - CENTRO NORD	D2C1 - FORLI-RAVENN...	D2ICU2 - FORLI-FAEN...	IT001E00249757_TEMP2	487580716	05G10269286201828_T...	96201822	2204990054
D2 - CENTRO NORD	D2A1 - BOLOGNA-FER...	D2IAU2 - GUASTALLA	IT001E00219848_TEMP2	4868900725	00G10268186101081_T...	96101081	2203553808
D2 - CENTRO NORD	D2A1 - BOLOGNA-FER...	D2IAU2 - SASSO MA...	IT001E00038420_TEMP2	487580349	00G10269056001426_T...	56001406	2203772097
D2 - CENTRO NORD	D2A1 - BOLOGNA-FER...	D2AFU4 - SASSUOLO	IT001E00228062_TEMP2	486882623	00G10269396122790_T...	96122790	2203774022
D2 - CENTRO NORD	D2C1 - FORLI-RAVENN...	D2ICU1 - RIMINI-RICC...	IT001E00032764_TEMP2	487553677	14G102A2156307786...	56307786	2202547631

Eq.Id	POD Code	Manuf. S/N	Zone	Group	Inst. datetime	Comm. type
10	IT001E00218604	06G10265156105732	D2L - VENEZIA	Group 0	28/08/2017 13:58:41	GSM
1000	IT001E00038766_TEMP2	00G10247074000118_T...	D2A1 - BOLOGNA-FERRARA	Group 0	30/11/2001 15:40:00	GSM
1004	IT001E00219848_TEMP2	00G10268186101081_T...	D2AF - REGGIO EMILIA-MODE...	Group 0	06/09/2012 15:07:00	GSM

IMPORT FROM FILE **NEXT**

Figure 38 – Massive Scheduling – Equipments result list and Selected equipment

The operator can press the below icon, in order to enter in the scheduled activities list related the meter in the row , (The system will open the GUI in the Figure 30)

The operator can also import a meters list from file by pressing the button ‘import from file’ the system will open the dedicated GUI (figure 37)

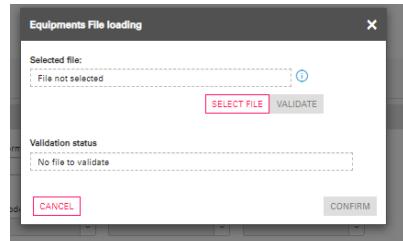


Figure 39 – Massive Scheduling – Import Equipment list



The operator can also delete the meters in the list pressing the appropriate icon

By pressing the next button, the operator can then set the activities that will be validate, saved and performed on all the meters in the ‘selected meter’ list

The next GUI allows to select, and set up the scheduled activities planned on all the selected meters.

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Figure 40 – Massive Scheduling – Meter list and Activities configuration

The system will validate the activities, i.e. it will check if the set activities can be performed on all the selected meters.

Figure 41 – Massive Scheduling – Activities validation

8.2. View

This functionality is used by operators, via user interface. The operator can search lots, in order to view the equipments selected in the lots ,and, select a Lot to:

1. view the list of equipments in the lot and the activities scheduled for all them.
2. to export the execution details of the selected lot (and the activity execution for each equipment in the lot)

N.B.: The operator can view the lots he / she has created, or, all the lots if the operator is a SB System Administrator.

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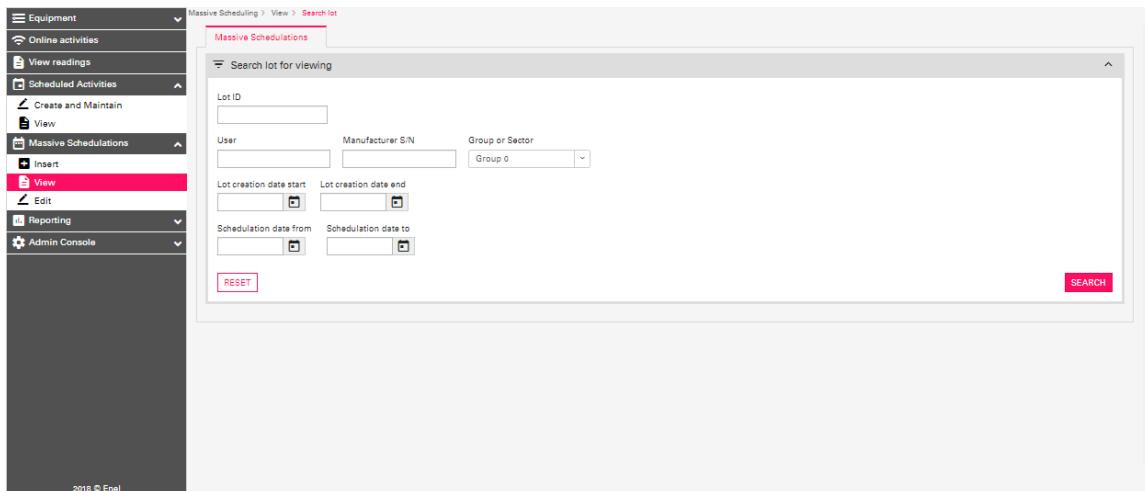


Figure 42 – Massive Scheduling – Search for Lot

The search will provide a list of lots (Fig. 40). From the list of lots the operator can:

- see the meters contained in it (fig. 43), by press the icon:
- download the *massive scheduling result execution status* (fig. 42), by press the icon:

	ID Lot	Description	State	Creator User	Creation Date	Last editing author	Last editing Date	Starting scheduling date	Ending scheduling date	Equipment Lot	Progress
	2	sch tt	✓	AE40100	17/08/2017 15:59:22			17/08/2017	17/08/2017	1	100 %
	1	LOT_1	✓	AE40100	17/08/2017 12:10:51			17/08/2017	18/08/2017	2	100 %
	3	222	✓	AE40100	17/08/2017 16:22:14			17/08/2017	18/08/2017	1	100 %
	4	lot3	✓	AE40100	18/08/2017 14:54:34			18/08/2017	22/08/2017	5	100 %
	5	sch 4	✓	AE40100	22/08/2017 15:02:45			22/08/2017	23/08/2017	1	100 %
	6	sch mass	✓	AE40100	09/10/2017 17:08:49			09/10/2017	12/10/2017	3	100 %
	51	desc	✓	AE40100	08/03/2018 10:52:54			07/03/2018	10/03/2018	2	100 %

Figure 43 – Massive Scheduling – Search for Lot with lot results list

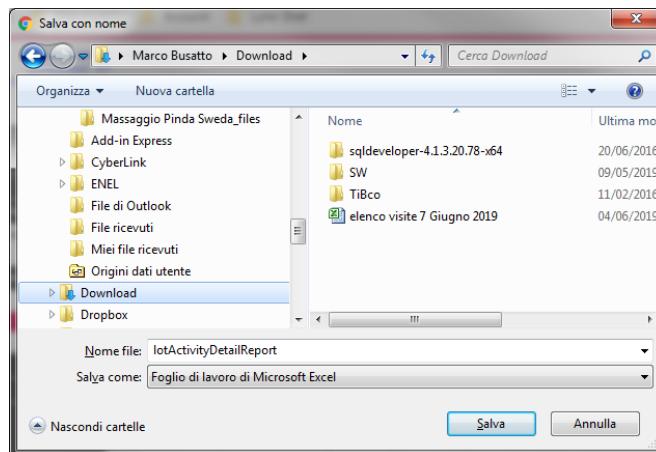


Figure 44 – Massive Scheduling – result execution status download

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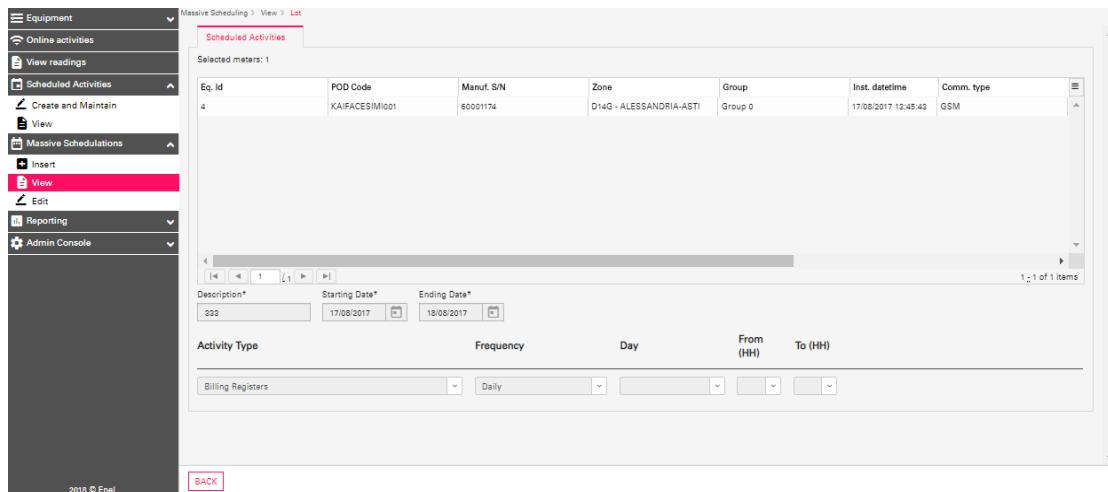


Figure 45 – Massive Scheduling – Meters contained in the Lots

8.3. Edit

The operator, via GUI, utilizes this function to **Edit Massive Schedules** still active, and, can perform the following actions:

1. the operator can search, via User Interface, Lots (massive schedules), in order to edit the selected one
2. the operator, after doing a lot search with result, can select the desired lot in which the operator, can add/remove equipments, or, confirm the equipment already present in the lot:
 - a. If the operator wants **add equipments** in the selected lot , the operator must:
- Step1) **search**, via User Interface, inventoried equipments in installed, so **select** the desired equipments, in order to add the same scheduled activities for all the selected (but compatible) Equipments.
- Step2) **import** , via file , the desired equipments, in order to add the same scheduled activities for all the selected (but compatible) Equipments '**Function - Massive Schedules - Import From File**';
 - b. If the operator wants **remove equipments** in the selected lot, the operator must: select/remove the equipments, that the operator wants remove, in the selected equipment list;
3. the operator, after the selection of desired lot , and after confirming/Editing the list of equipment present in the lot, can **add or remove Scheduled Activities** (Task)
 - a. If the operator wants **add** Scheduled Activities must enter a new activities.
 - b. If the operator wants **remove** Scheduled Activities must remove an existing activities.

N.B:

1. The system gives the possibility to modify only the lots still active (ie with the planning end date in the future compared to today). (row in green in the Fig. 44)
2. The operator can edit the lots he / she has created, or, all the lots if the operator is a SB System Administrator.
3. The lot editing possibility, so the edit icon (present in the section that lists the searched lots result) will be enabled and visible only:
 - a. to the operators who created the lot ,or, to the system administrators.
 - b. if the schedule execution timeline is not already passed, compared to the current date. So the Massive schedules cannot be edited if the 'Schedule ending date' is smaller to current date.



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Figure 46 – Massive Scheduling – Lots list

Figure 47 – Massive Scheduling – Meters in Lots list

Figure 48 – Massive Scheduling – Meters in Lots list

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Figure 49 – Massive Scheduling – Activities on Meters in Lots list

Figure 50 – Massive Scheduling – Activities Validation

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9. Work Order

The system also manages work orders from an external system.

The system via GUI provides the opportunity to search and view the result of work orders.

Bienvenido AF40100 - MARCO BUSATTO
Ambiente de desarrollo - PRD
Pais : España
Version : 4.3.9_ES_10.4

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StarBeat

Figure 51 – Massive Schedulation – Activities Validation

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10. Reporting

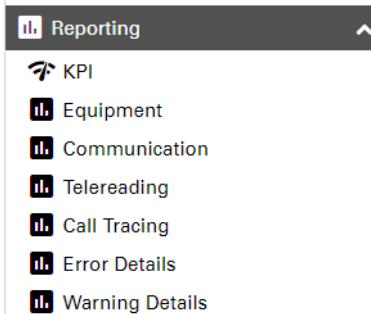


Figure 52 – Massive Schedulation – Activities Validation

10.1. KPI

The KPI Dashboard shows the below three main sections, and, gives access to the below sub-pages of details:

Above all sections there are the '**Date from**' and the '**Updated date**' fields.

The Territorial Organization Filters : The filters settings influence only the **Telereading Panel** section.

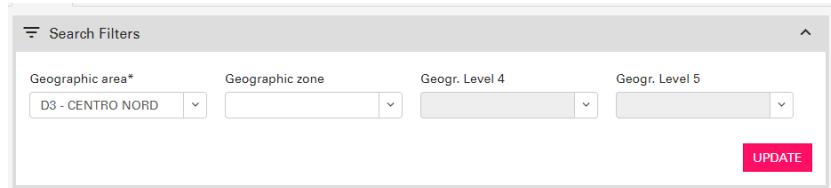


Figure 53 – KPI filters

The Telereading Panel section. In this dashboard enters the telereadings executed for the manual ,and, the default scheduled activities. This panel shows:

- the number of **Telereadings** made **hourly** divided in success/unsuccess percentages (graph and table) . This UI section give access to the '**KPI Dashboard - Effectiveness Telereadings**' UI. For others details see the [FU - KPI Dashboard - Effectiveness Telereadings](#) .
- the number of **Telereadings** made **daily** divided in success/unsuccess percentages (graph and table) .

The daily gauge is like the hourly gauge but related to the day; that means the percentage, instead of to be calculated over the cumulative expected value at the hour, as in the first graph on the left, is calculated on cumulative expected value for the whole day (that is on the scheduled tasks). However, looking the normally activities , the first part of the day all the activities are be made ,and, then the two graph will be equally for the most part of the day. So, the graph on the right is a bar stacked histogram: in red the number of readings in error respect the daily total of scheduled tasks, in blue the number of readings executed with success respect the daily total of scheduled tasks and in green/gray (n.b. the system uses the same colors in Telereadings Daily Evolution) the number of readings to be executed. The scheduled task are the scheduled activities planned in automatic by system or manually by operator or the external system. The sum of readings in error and readings with success is equal to the number of readings made until that moment. In addition, there are absolute values and percentage values and a new table containing the data of scheduled tasks, of executed tasks and tasks in error. Respectively of two gauges, the table contains the current hour and two previous hours or the current day and two days previous.

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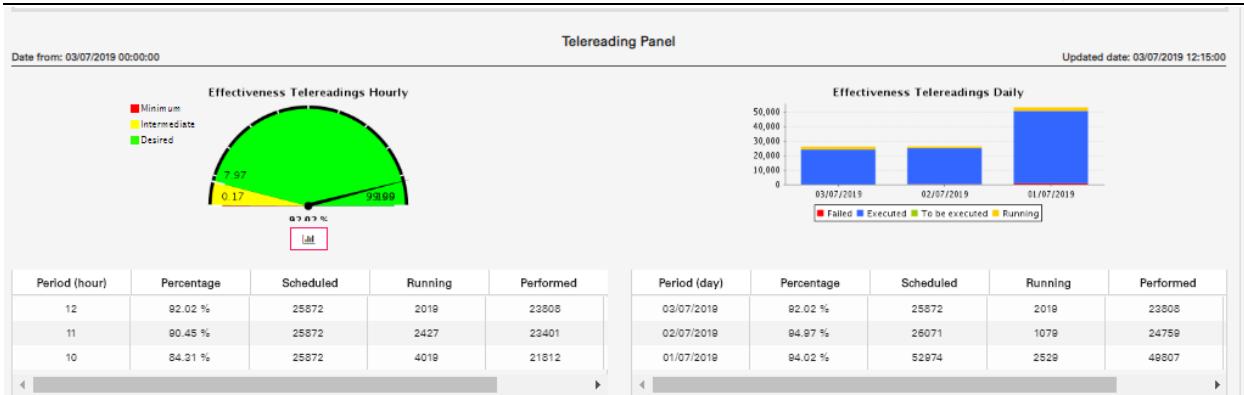


Figure 54 – TELEREADING PANEL

The Communication Panel section. This panel shows the number of Communication made in Starbeat in a day by type of communication channel, counting the calls successfully and with failure. In the Call dashboard enters the manual ,and, the default scheduled activites. The Panel contains:

- the **Call** graph : a pie chart for the percentage of successful and unsuccessful communications with two decimal digits respect the number of executed communications; this UI section give access to the '**KPI Dashboard - Effectiveness Calls**' UI (and this also provides access to the **Monthly Trend (Effectiveness Calls: evolution in last 30 days** that shows the graph with the trend of the last 30 days). For others details see the [KPI Dashboard - Effectiveness Calls](#) .
- the **Hourly lines occupation** graph : a char of Hourly occupation of [GSM lines](#) during the current day respect the total number of [GSM lines](#).
- the **effectiveness calls** Table : a table that shows
- the rows divided by current day ,and, previous day;
- in the columns the effective calls for type of communication ,and, for successful/unsuccessful of the communications execution.

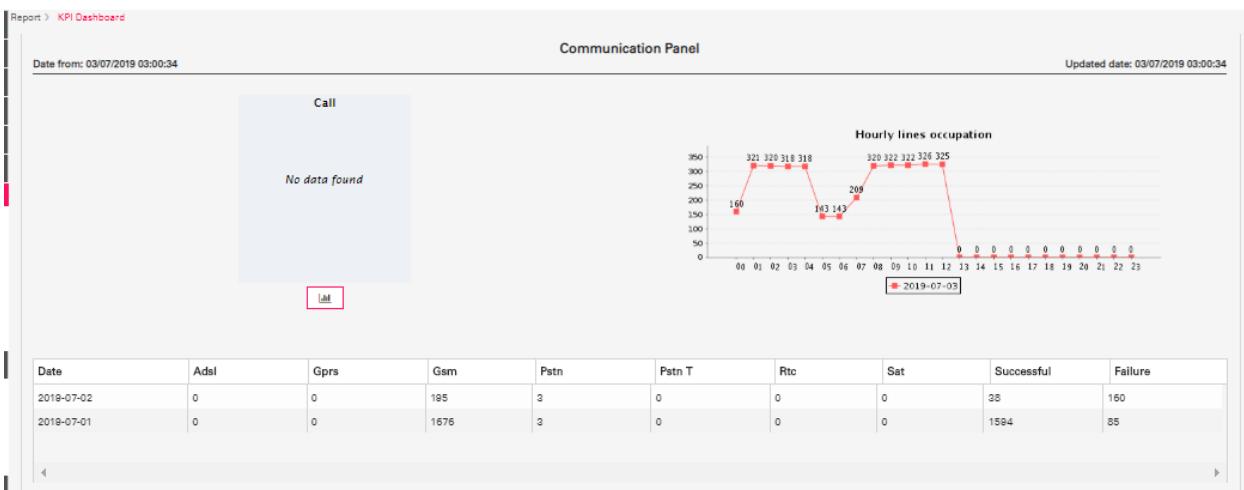


Figure 55 – COMMUNICATION PANEL

The Mater Data Updating Panel section. In master data updating section there are the 'Last Updating Date' and 'The Last sending date'; this to monitor the misalignment of master data. The Panel contains:

- the **pie char** reports the percentage of message received (Create/Update/Remove) by Starbeat from external system divided by result (Success/Unsuccess). This pie char

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section give access to the **KPI Dashboard - Master Data Update** UI, for details see the FU - KPI Dashboard - Master Data Update

- a **table** shows the message 'Source' coming from external system to Starbeat for the master data Insert/Update/Remove, in detail: the table shows when the message has been received, validated and loaded by SB System.

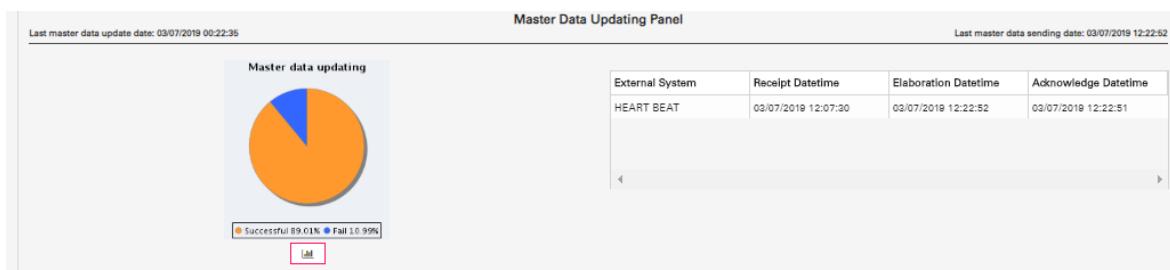


Figure 56 – Master Data Updating Panel

10.1.1. KPI Dashboard - Effectiveness Telereadings

The 'KPI Dashboard - Effectiveness Telereadings' UI shows the below sections, and, gives access to the below sub-pages of detail. In this UI are present filters, two charts ,and, an errors table:

1. These sections will be shown based on the territorial filters set on the KPI Dashboard page, and in any case, in the GUI will be shown only the information to which the operator is enabled.
2. The filters section. At the top of the UI are present the filters: 1) Filter per Activity (Load Profile, Registers, Instrumentation Profile, ...) - 2) Filter per Schedulation (Manual, System) - 3) Filter per Group (Group 0, Group 1, ...). All the detail page will change on selecting a filter. The filters could be used at the same time.
3. The first chart is the same shown in previous UI (**Effectiveness Telereadings Hourly**).
4. The second chart contains a line for the cumulative value for the scheduled readings divided by hour for all the day (the line is drawn from the 00.00 of the day) and an histogram that contains the sum of readings in error, of readings executed with success, of readings to be executed and approximates the line. Each bar will contain the cumulative value of executed or not (the axis will contain only the hours)
5. The table of synthesis of errors divided by type of error occurred during the telereadings. The data will be ordered in descending way respect the number of occurrences for the current day and for the previous day. Each number contains a link to the Error Details report, so this Ui give access to the Error Details Report.
6. This UI give access to the **Monthly Trend** , that shows the graph with the trend of the last 30 days

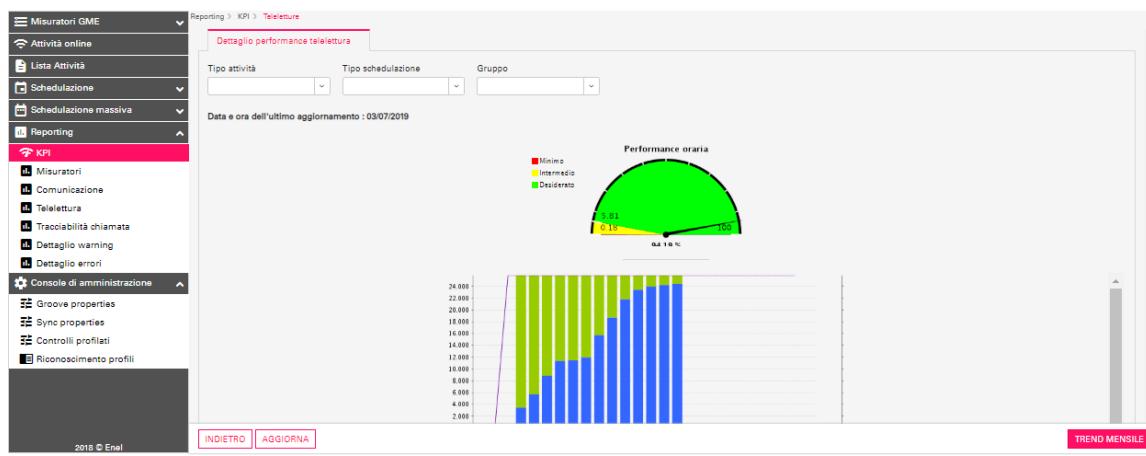


Figure 57 - Effectiveness Telereadings

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Figure 58 – Error grouping

The system extracts the data at the UI opening , in relation to the shown section ,and, to the user authorization.

- In the 'KPI Dashboard - Effectiveness Telereadings' UI, at the 'Monthly Trend' button pressure, the system calls the algorithm 'Monthly Trend - Effectiveness Telereadings Hourly' the system shows to the operator the 'Monthly Trend' Graph, and for to do this the system calls the TS - KPI Monthly Evolution.
- The **Territorial Organization** algorithm: The territorial filters set on the KPI Dashboard page influences the sections, all the detail pages linked, and, in any case, in the GUI will be shown only the information to which the operator is enabled will be presented .

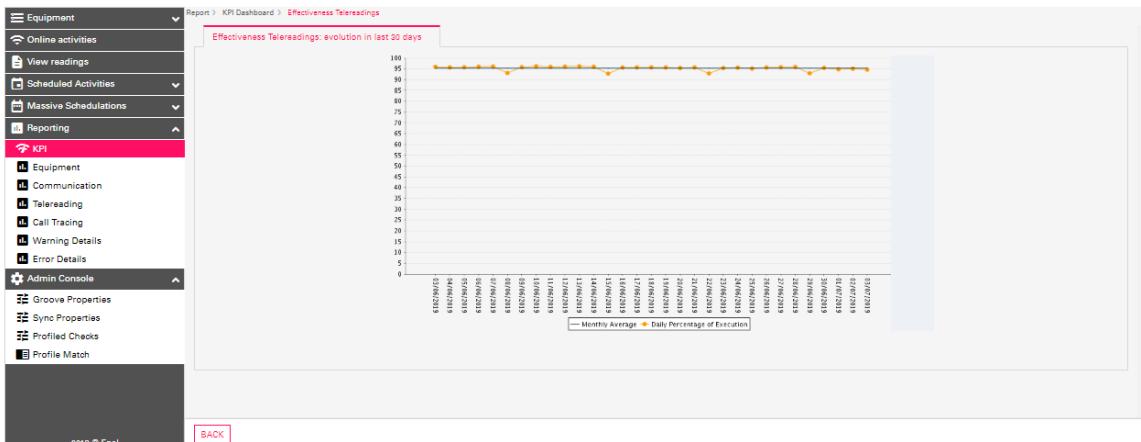


Figure 59 - Monthly Trend

10.2. Equipment

The Equipment report shows the equipments historical data.

So the operator can :

- view the historical data related to the searched equipment/s (installed ,or, removed) .
- export the reported historical data in PDF, or, CSV, or else Excel file.
- view the data changes made to the selected equipment.
- export the extracted data related to the changes made to the selected equipment.

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Below, the filter parameter GUI section:

Figure 60

Figure 61

Figure 62

- The Equipment Report, at the UI opening, it can be show in a different modality, and, depends form the configuration in the country installation. The UI will appear differently if default values have been set, in the filter parameters (The defaults are set in the transcoding table).
- There is a hidden feature when this report is reached by the 'installed' link of the 'telereading' report. In this case, the telereading report will pass a date range (start and end of month if coming from the monthly view, start and end day if coming from the daily view), and, the report equipment will include in the extraction, the meters removed in the interval of past date. The functionality will not be used standalone so the extractions made by report equipment could not match the equivalents made through the aforementioned link.

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10.3. Communication

The Communication Report shows the synthesis of call executed for day, and, to get access to the Error details Report by day and communication channel

Below, the filter parameter GUI section:

Figure 63

Date	GSM		GPRS		PSTN	
	Successful	Error	Successful	Error	Successful	Error
01/03/2019	64	3	0	0	0	0
02/03/2019	109224	48815	0	0	4359	1142
03/03/2019	238004	124458	0	0	10336	2851
04/03/2019	258857	86734	0	0	8053	1900
05/03/2019	218922	86755	0	0	8248	1778
06/03/2019	203049	135049	0	0	10484	1892
07/03/2019	210275	153614	0	0	11415	2049
08/03/2019	211077	477105	0	0	11415	2049

Figure 64

10.4. Telereading

The Telereadings report contains summary information of the Telereadings volumes , reported by month, and, then by day (in the detail UI) .

Below, the filter parameter GUI section:

Figure 65

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Month	Installed	No scheduled	Scheduled	Acquired	Acquired Remotely	Acquired with workorder	Acquired with Enel Local	In error	% acquired	Off line technical	% offline
02-2019	12515	217	12298	11907	11871	0	0	1324	96.53 %	185	1.48 %
03-2019	12513	537	11976	14594	14473	0	0	7374	100.0 %	207	1.65 %
04-2019	12506	573	11933	11874	11743	0	0	11920	98.41 %	342	2.73 %
05-2019	12521	597	11924	12035	11892	0	9	2082	99.73 %	417	3.33 %
06-2019	12518	602	11916	11915	11774	0	13	1652	98.81 %	449	3.59 %
07-2019	12487	616	11871	11665	11648	0	0	787	98.12 %	458	3.67 %

Figure 66

Below the GUI that the system opens if an operator click on the "Installed" column/row, in the figure 66

Report - Equipment											
Activity Type											
<input type="radio"/> Performed in the interval <input type="radio"/> Not performed for at least n days <input type="radio"/> Performed at least once											
State											
Installed <input type="button" value="▼"/>											
<input type="button" value="BACK"/> <input type="button" value="RESET"/> <input type="button" value="SEARCH"/>											
Manufacturer S/N	POD Code	Ownership	Area	Zone	Off. Comm. Flag	Off. Comm. Flag Date	Off. Tech. Flag	Off. Tech. Flag Date	End Date	Last LP Date	
16G262A707509827	IT001E54968888	Distribution Company	D2 - CENTRO NORD	D24F - REGGIO EMILIA	<input checked="" type="checkbox"/>	False	<input checked="" type="checkbox"/>	False	03/07/2019	03/07/2019	
16G262A707509871	IT001E4287771	Distribution Company	D2 - CENTRO NORD	D25H - UMBRIA	<input checked="" type="checkbox"/>	False	<input checked="" type="checkbox"/>	False	03/07/2019	03/07/2019	
16G262A707502682	IT001E4290393	Distribution Company	D2 - CENTRO NORD	D23G - LIVORNO-PISA	<input checked="" type="checkbox"/>	False	<input checked="" type="checkbox"/>	False	03/07/2019	03/07/2019	
16G262A707508734	IT001E54997976	Distribution Company	D2 - CENTRO NORD	D21A - BOLOGNA-FER...	<input checked="" type="checkbox"/>	False	<input checked="" type="checkbox"/>	False	03/07/2019	03/07/2019	
16G262A707503054	IT001E42279564	Distribution Company	D2 - CENTRO NORD	D23G - LIVORNO-PISA	<input checked="" type="checkbox"/>	False	<input checked="" type="checkbox"/>	False	03/07/2019	03/07/2019	
16G262A707503054	IT001E42279564	Distribution Company	D2 - CENTRO NORD	D23G - LIVORNO-PISA	<input checked="" type="checkbox"/>	False	<input checked="" type="checkbox"/>	False	03/07/2019	03/07/2019	
16G262A707500852	IT001E42269740	Distribution Company	D2 - CENTRO NORD	D22D - SIENA-GROSS...	<input checked="" type="checkbox"/>	False	<input checked="" type="checkbox"/>	False	03/07/2019	03/07/2019	
00G1024424620048	IT001E420554	Distribution Company	D2 - CENTRO NORD	D22D - SIENA-GROSS...	<input checked="" type="checkbox"/>	False	<input checked="" type="checkbox"/>	False	03/07/2019	03/07/2019	
		Distribution Company	D2 - CENTRO NORD	D22D - SIENA-GROSS...	<input checked="" type="checkbox"/>	False	<input checked="" type="checkbox"/>	False	03/07/2019	03/07/2019	

Figure 67 – master data details

Below the GUI that the system opens if an operator click on the “acquired” columns/rows

Report : Telereading > Acquired detail

Telereading Acquired Report

Day	Billing Registers	Load Curves quarters hours	Clock Synchronization	Read Configuration	Logbook Registers
01-07-2018					
02-07-2018					
03-07-2018	26	11414		1	

1, 2 of 2 items

BACK EXCEL CSV PDF

Figure 68 - Telereading Daily Report



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Figure 69 - Telereading Acquired Report

10.5. Call tracing

The Call Tracing shows the synthesis of call make to executed an activity.

Below, the filter parameter GUI section:

Figure 70

Figure 71

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10.6. Error details

The Warning Details shows the errors occurred in the activities execution. So in detail the operator can extract:

1. all the errors (occurred in the activities execution) related to the searched equipments (installed ,or, removed), or, related the searched 'executed activities'.
2. all the equipments that have executed a determinate activity with errors
3. all the activities/equipments that have generated a determinate errors.
4. etc.

Below, the filter parameter GUI section:

Figure 72

Date	Time	Error Code	Error description	Activity Type	Com. channel	Manufacturer S/N	POD	Ownership	Geographic area
03/07/2019	08:24:27	9011	9011	Clock Synchronisation	GSM	11G102A7376200775	IT001E42475607	Distribution Company	D2 - CENTRO NOF
03/07/2019	08:31:32	2101	Problems in the communication	Clock Synchronisation	GSM	00G10269198100788	IT001E40086608	Distribution Company	D2 - CENTRO NOF
03/07/2019	08:31:12	2101	Problems in the communication	Clock Synchronisation	GSM	00G10264046000662	IT001E00264425	Distribution Company	D2 - CENTRO NOF
03/07/2019	08:31:03	9011	9011	Clock Synchronisation	GSM	00G14577077050563	IT001E00256457	Distribution Company	D2 - CENTRO NOF
03/07/2019	07:48:41	9011	9011	Clock Synchronisation	GSM	00G80006016000098	IT001E48548328	Distribution Company	D2 - CENTRO NOF
03/07/2019	07:40:52	9011	9011	Clock Synchronisation	GSM	00G14875057002488	IT001E00226029	Distribution Company	D2 - CENTRO NOF
03/07/2019	07:38:28	2404	Error happens during Registration	Load Curves...	GSM	00G14577077004909	IT001E00252733	Distribution Company	D2 - CENTRO NOF
03/07/2019	08:32:51	9011	9011	Load Curves...	GSM	00G14877077004805	IT001E00249732	Distribution Company	D2 - CENTRO NOF

Figure 73

10.7. Warning details

The Warning Details shows the warnings occurred in the activities execution. So in detail the operator can extract:

1. all the warnings (occurred in the activities execution) related to the searched equipments (installed ,or, removed), or, related the searched 'executed activities'.
2. all the equipments that have executed a determinate activity with warnings
3. all the activities/equipments that have generated a determinate warnings .
4. etc.

Below, the filter parameter GUI section:

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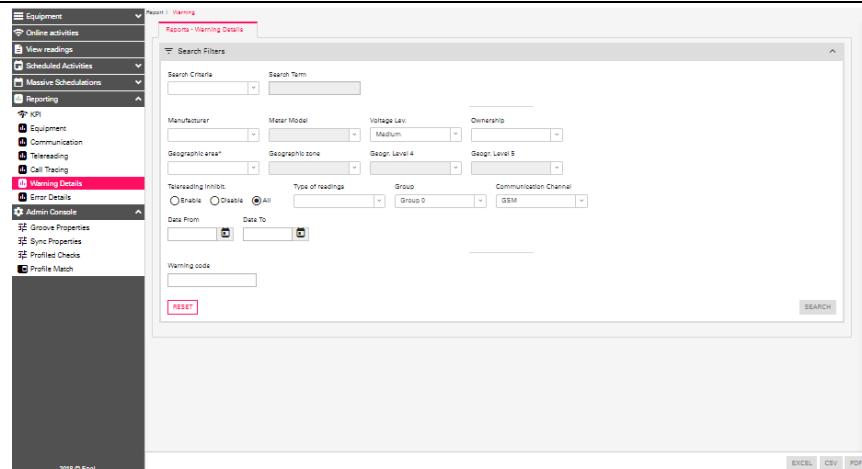


Figure 74

Figure 75

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11. Admin console

The Admin Console is used by the product administrators to view and to edit the system working parameters in the specific installation. The dedicated user interfaces are listed below, and, the details of these GUI/entities at the below link:

- [EO - Admin Console - Groove properties console](#)
- [EO - Admin Console - Sync properties console](#)
- [EO - Admin Console - Profiled Checks](#)



Figure 76

11.1. Groove Properties

In the Groove console will present the properties used in order to configure the Groove component parameters via GUI.

The properties are divided into the following subdomains:

- Scheduler
- Executor
- ResponseHandler

Some examples of the properties present in this Groove Proprieties GUI:

- **Schedules Retrais:**
 - the number of maximum retries that the system can perform with the main channel is called MAX_PRIMARY_RETRY
 - the number of maximum retries that the system can perform with the secondary channel is called MAX_PRIMARY_RETRY_BACKUP
- **DAYS_FROM_LAST_CONFIG_READ_DATE**
 - Number of days to retry config reading

Property	Description	Value	Last Editing Date Time	Last Editing Author	Save
ACTIVITY_DAILY_DEFAULT_END_HOUR	Default execution hour for this type of task	24			<input type="button" value="SAVE"/>
ACTIVITY_DAILY_DEFAULT_START_HOUR	Default execution hour for this type of task	1	20/07/2018 16:26:04	AE66464	<input type="button" value="SAVE"/>
ACTIVITY_DAILY_EXPIRATION_DAYS	Number of expiration days for this type of task	0	03/04/2019 16:26:18	AE66464	<input type="button" value="SAVE"/>
ACTIVITY_HOURLY_EXPIRATION_DAYS	Number of expiration days for this type of task	0			<input type="button" value="SAVE"/>
ACTIVITY_MONTHLY_DEFAULT_END_HOUR	Default execution hour for this type of task	24			<input type="button" value="SAVE"/>
ACTIVITY_MONTHLY_DEFAULT_START_HOUR	Default execution hour for this type of task	1	20/07/2018 16:26:33	AE66464	<input type="button" value="SAVE"/>
ACTIVITY_MONTHLY_EXPIRATION_DAYS	Number of expiration days for this type of task	5			<input type="button" value="SAVE"/>
ACTIVITY_START_DELAY_DAY	Number of days from the scheduling datetime to the execution datetime	1			<input type="button" value="SAVE"/>

Figure 77

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11.2. Sync Properties

In the 'Sync Console' entity will present properties, in order to configure the sync component parameters via UI.

The properties are divided into the following Tab:

- Common Properties
- Provider Properties

Property	Description	Value	Last Editing Date Time	Last Editing Author	Save
sync.abb.waitTimeProcessingInstantaneousRead...	waiting time in milliseconds before checking the process of instantaneous request for ...	10000			SAVE
sync.accessServerAuthentication.enabled	Authentication on Access Server Enabled: true/false	true			SAVE
sync.accessServer.maxNumberOfAuthenticationAt...	SYNC_PROPERTYsync.accessServer.maxNumberOfAuthenticationAttempts	1			SAVE
sync.accessServer.maxNumberOfSocketAttempts	SYNC_PROPERTYsync.accessServer.maxNumberOfSocketAttempts	1			SAVE
sync.atdial.command.gsm	AT DIAL COMMAND	ATDI			SAVE
sync.atdial.command.gsm.aem	AT DIAL COMMAND	ATD			SAVE
sync.callViaSerialNumberByProfile.7001	Call via serial number true for EMH Chile	true			SAVE
sync.checkProgramming.11	checkProgramming.11	true			SAVE

Figure 78

The 'Sync Console' properties can be changed. In case one 'Sync Console' properties was edited, by an operator via UI, the system will track the editing date, the editing user, and, the modified record will be historicized.

11.3. Profiled Checks

In the 'Profiled Checks' entity will present the system checks, in order to verify some parameters:

- before some 'activities type' execution.
- after some 'activities type' execution.

The properties present in this Profiled Checks are in the other deep administrative documentation.

NB:

- The profiled controls that display the error codes: H909, and, H908, in some cases may not be performed (Online Activities on non-inventoried Eq.)

Method signature	Description	Proc error code	Log level
serialNumberCheck	Check if the request/response meter serial number differs	H901	Warning
checkForEmptyEntries	Check if response contains at least one error	H908	Warning
checkMeterBrandOthers	Check if request/response meter brand differs	H900	Warning
checkMeterModelOthers	Check if request/response meter model differs	H901	Warning
checkNewSyncDumbMars	Check if request/response meter class synchronization differs	H902	Warning
checkProfileDumbProfile	Check if start reading data and first returned sample differs	H902	Warning
checkOscsControl	Check if response contains data	H903	Warning
serialNumberCheckNull	Check if readed serial number is null	H904	Warning
checkEquipmentProfileNull	Check if equipment profile is null	H905	Warning
checkTaskInfoExpired	Check if the task is not expired	H906	Warning
checkTaskInfoValidable	Check if task is validable (number of reply is not over)	H907	Warning
isAppliInNormalStatusInfluenceResponse	Check if application status is available (normal or maintenance)	W904	Warning

Figure 79

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12. Definitions, Acronyms, and Abbreviations

All terms, acronyms and abbreviation are contained in the Project Glossary and here below.

Abbreviations - Acronyms	Definition
AMM	Automated Meter Management
AMM Suite	Global AMM Solution including multiple systems
AMMS	Automated Meter Management System
ASDU	Data Unit Application Services
ATR	Third Party Network Access
BO	Back Office
CPD	Data center
CUPS	Universal Supply Point Code
DB	Data Base - Base Dati
DH	Hourly discrimination
EI	External Interface - Interfacce Esterne al Sistema
EMD	Equipment Master Data - Dati Anagrafici Attrezzature
EXABEAT	Measure system
FE	Front End
GME	Electronical Measuramente Device - Gruppo di Misura Elettronico
GUI	Graphical User Interface - Interfaccia Grafica Utente
Heart Beat	Master Data System
Job	Group of tasks related to the same communication session (multidrop chain). A job can also contain tasks related to a single meter.
Meter	Measure Point
Multidrop	The multidrop feature, in when more than one meter that aim to the same node and are bounds in a chain to be read and in the same communication session.
N.A.	Does not apply
OLA	Online Activity/Activities
POD	Point of delivery
PS	System Parameter - Parametri di Sistema
RPT	Report
SB	Star Beat
SBS	Star Beat System
SBS	Star Beat System - Smart Metering System for the acquisition of measurement data from devices connected to the high & medium voltage grid
SCH	Scheduler - Modulo Star Beat che si occupa di pianificare le attività da eseguire sugli Equipment
SI	System Interface - Interfaccia di Sistema
Task	Single operation (e.g. Load Profile Reading) to execute.
TOUs	Territorial Organizational Units
UI	User Interface - Interfaccia Utente
UOT	Territorial Organizational Unit
WO	Work Order - Ordine di lavoro (Richiesta di esecuzione attività su GME)
WORK BEAT	Work Order System
XSD	Scheme XML definition

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