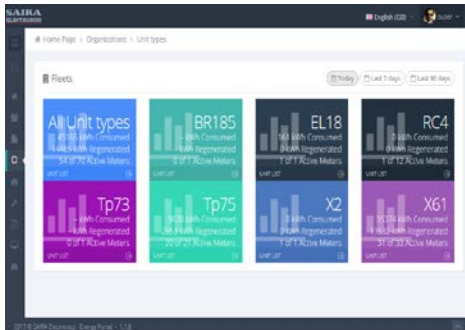


Forum Eress 2018

FROM DATA COLLECTION TO DATA MANAGEMENT

Rome – 13th June 2018



ENERGY - TSI -2014

Each Member State shall have to be able to collect train energy consumption data through a ground server.

UIC Leaflet 930

Each Member State shall have to be able to validate energy consumption and to correctly allocate it to the relevant railway undertaker.



Loc&Pas TSI - 2014

The energy meter becomes mandatory on all new and renewed rolling stock that will operate on networks equipped with an energy data collection system.



EN 50463 part 2

EN 50463 part 3

EN 50463 part 4

UIC leaflet 930
(Exchange of
data for cross-
border railway
energy
settlement)

On board

Sensors

Energy
Meter



On ground

DCS

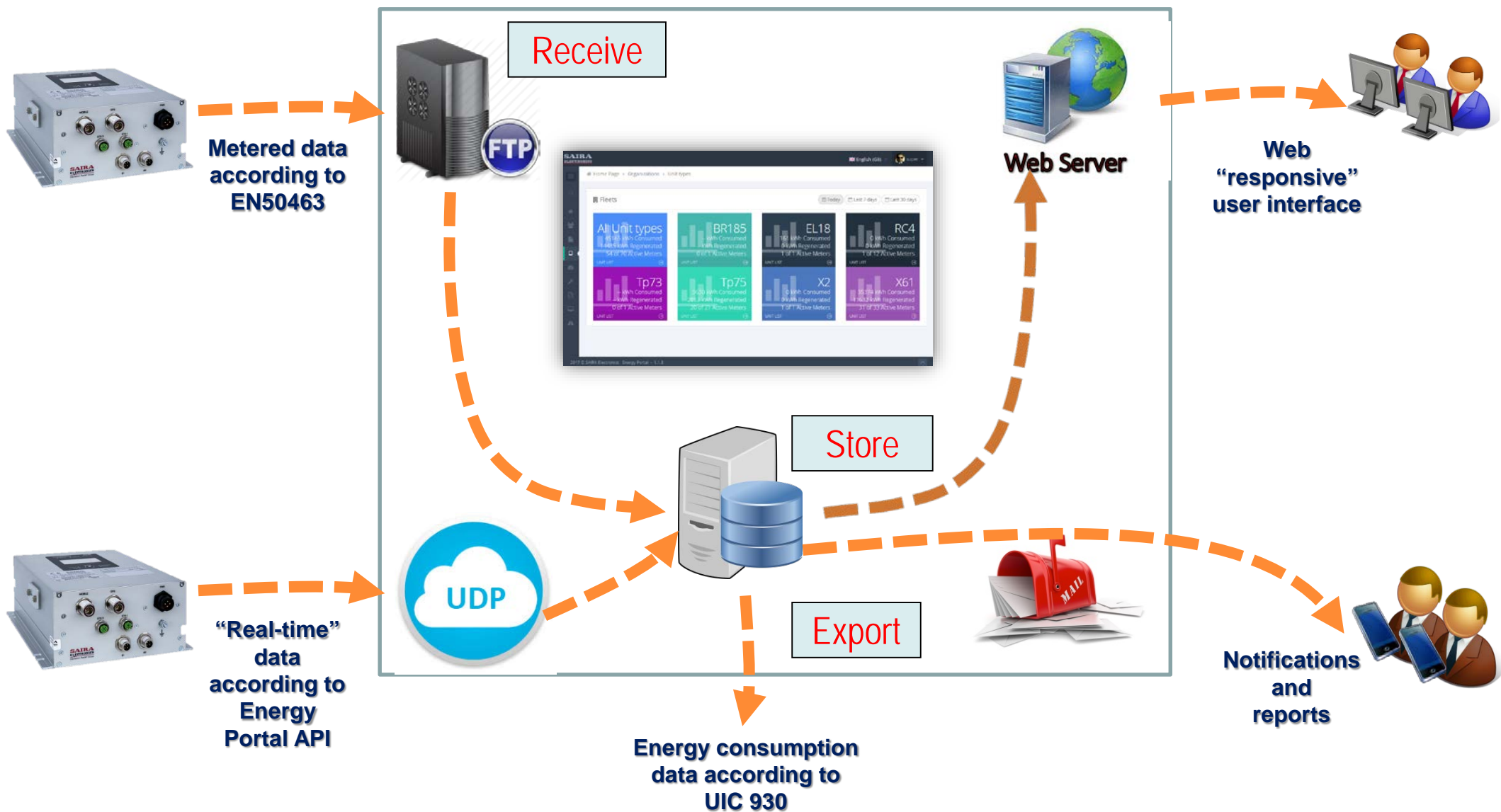


Energy Portal

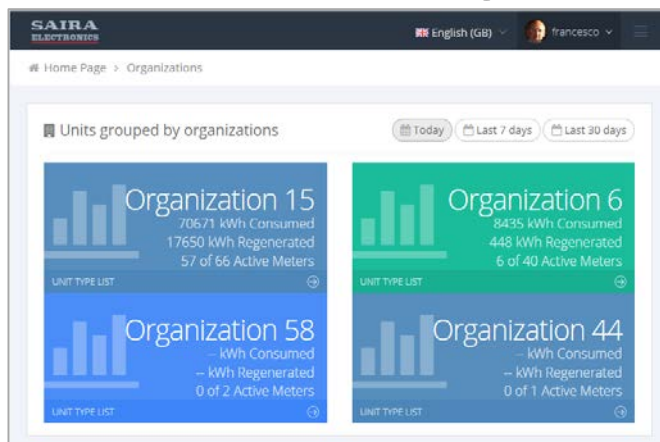
Energy
Settlement
systems



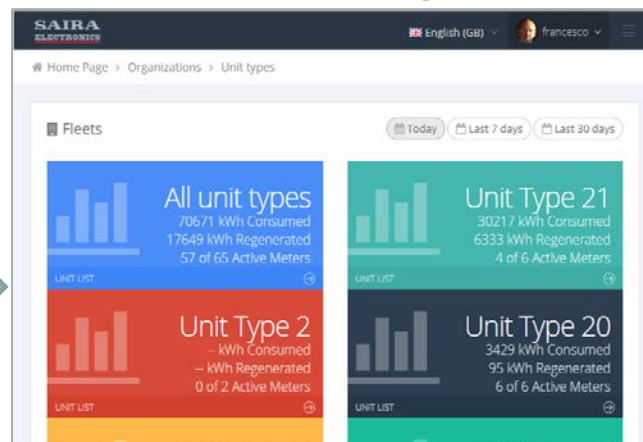
Erex billing



Asset management and configuration



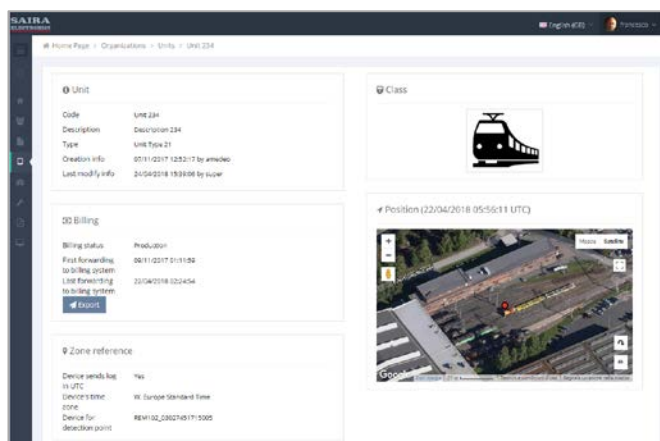
User's organizations



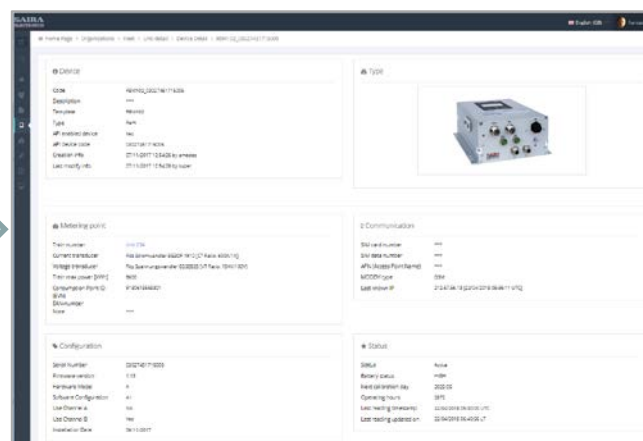
Organization's fleets

Code	Description	Type	Active today	Last reading timestamp	Billing status
Unit 222	Description	Unit Type 21	Inactive	21/04/2018 23:40:00	Production Billing Detail
Unit 228	Description	Unit Type 21	Inactive	21/04/2018 02:25:00	Production Billing Detail
Unit 234	Description	Unit Type 21	Active	22/04/2018 09:30:00	Production Billing Detail
Unit 235	Description	Unit Type 21	Active	22/04/2018 05:10:00	Production Billing Detail

Fleet's unit list



Unit



Meter

Code	Code Source	Code External	Description	Realtime	Real/F
R_000029	ch_B_line_voltage_minimum	Voltage minimum value	It contains the minimum voltage(V) measures of the channel B	No	Real
R_000028	ch_B_line_voltage_maximum	Voltage maximum value	It contains the maximum voltage(V) measures of channel B	No	Real
R_000027	ch_B_line_voltage_average	Voltage average value	It contains the average voltage(V) measures of channel B	No	Real
R_000021	ch_B_energy_quality	Value quality	It represents the quality of measured energy of channel B (Valid=127, Uncertain=61, Estimated=58, Unknown=68)	No	Real
R_000050	ch_B_energy_total_reactive/regenerate	Total reactive energy regenerate	It represents the total consumption of reactive regenerate energy(KVAR) of the channel B	No	Real
R_000045	ch_B_energy_total_reactive	Total reactive energy consumption	It represents the total consumption of reactive energy (KVAR) of the channel B	No	Real
R_000047	ch_B_energy_total_regenerate	Total active energy regenerate	It represents the total consumption of regenerate energy(KWh) of the channel B	No	Real

Configured Measures

Different assets and configurations are managed in a simple, coherent and unified way.

Diagnostics events

SAIRA
ELECTRONICS

English (GB)
francesco

Home Page > Organizations > Fleet > Unit detail > Logs >

Date insert (UTC)	Application name	Level	Message / Exception	-
from 19/04/2018 00:00 to 22/04/2018 00:00	events	All		QSearch

Log list
Export

Show 50 entries

Date insert (UTC)	Application name	Logger	Level	Site	Message	Exception compiled
21/04/2018 23:40:06	events	T5	Info		sent rem102_1_03027451715005_1524354000.tgz to ftp.	Detail
21/04/2018 22:40:08	events	T5	Info		sent rem102_1_03027451715005_1524350400.tgz to ftp.	Detail
21/04/2018 21:40:46	events	T5	Info		sent rem102_1_03027451715005_1524346800.tgz to ftp.	Detail
21/04/2018 20:40:42	events	T5	Info		sent rem102_1_03027451715005_1524343200.tgz to ftp.	Detail
21/04/2018 19:40:34	events	T5	Info		sent rem102_1_03027451715005_1524339600.tgz to ftp.	Detail
21/04/2018 18:40:40	events	T5	Info		sent rem102_1_03027451715005_1524336000.tgz to ftp.	Detail
21/04/2018 17:40:36	events	T5	Info		sent rem102_1_03027451715005_1524332400.tgz to ftp.	Detail
21/04/2018 16:40:33	events	T5	Info		sent rem102_1_03027451715005_1524328800.tgz to ftp.	Detail
21/04/2018 15:40:26	events	T5	Info		sent rem102_1_03027451715005_1524325200.tgz to ftp.	Detail
21/04/2018 14:40:32	events	T5	Info		sent rem102_1_03027451715005_1524321600.tgz to ftp.	Detail

Diagnostics events from all applications are collected in a single, easily searchable repository.

Extended energy management

Search Filters

Unit, time and devices

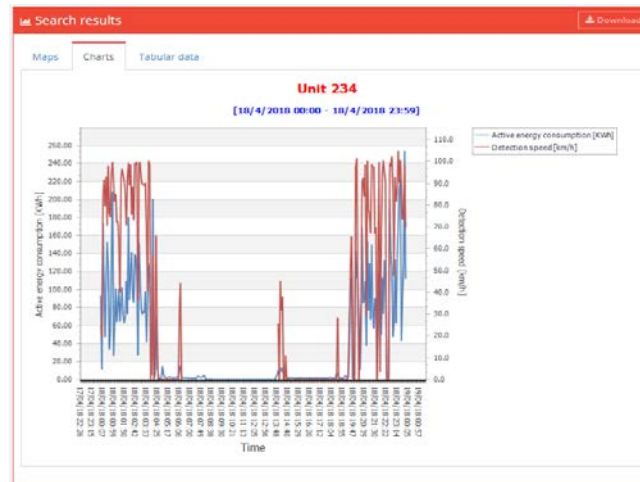
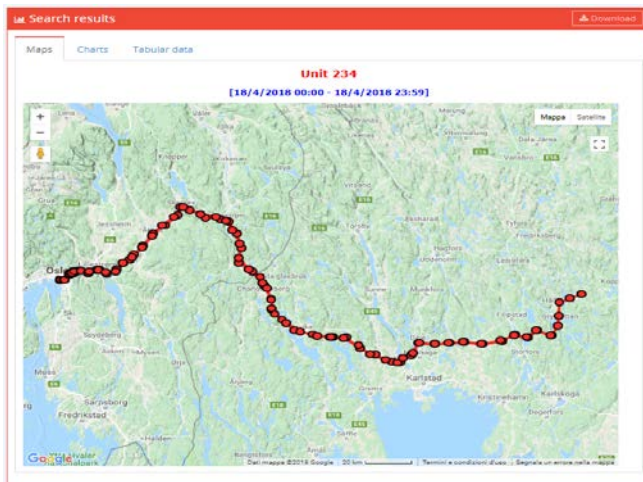
Unit types: Unit Type 21
Unit: Unit 234
Devices: ☒ [REM102_03027451715005]
Filter period: APRIL 18, 2018 - APRIL 18, 2018

Detail

Search

Measures selection

☒ Active energy consumption
☐ Altitude
☐ Compiled Energy Billing Data ID
☐ Current average value
☐ Current minimum value
☐ Insertion timestamp
☐ Original file
☐ Power factor
☐ Reactive energy regeneration
☐ Total active energy consumption
☐ Active energy regeneration
☐ Calibration
☐ Condition flags
☐ Current maximum value
☒ Detection speed
☐ Operating hours
☐ Position quality
☐ Reactive energy consumption
☐ Satellites in view
☐ Total active energy regeneration



Search results

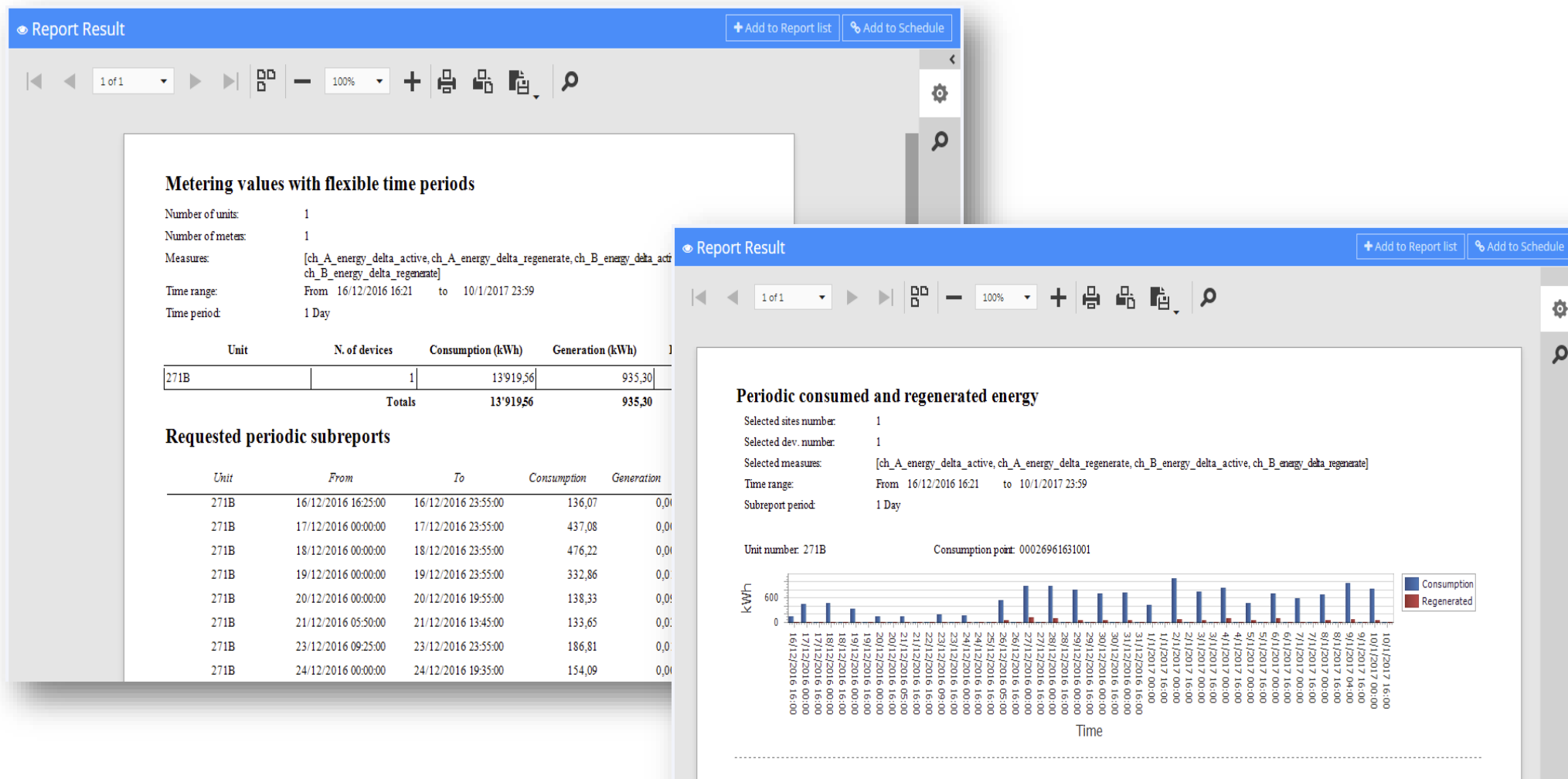
Unit 234
[18/4/2018 00:00 - 18/4/2018 23:59]

Export CSV

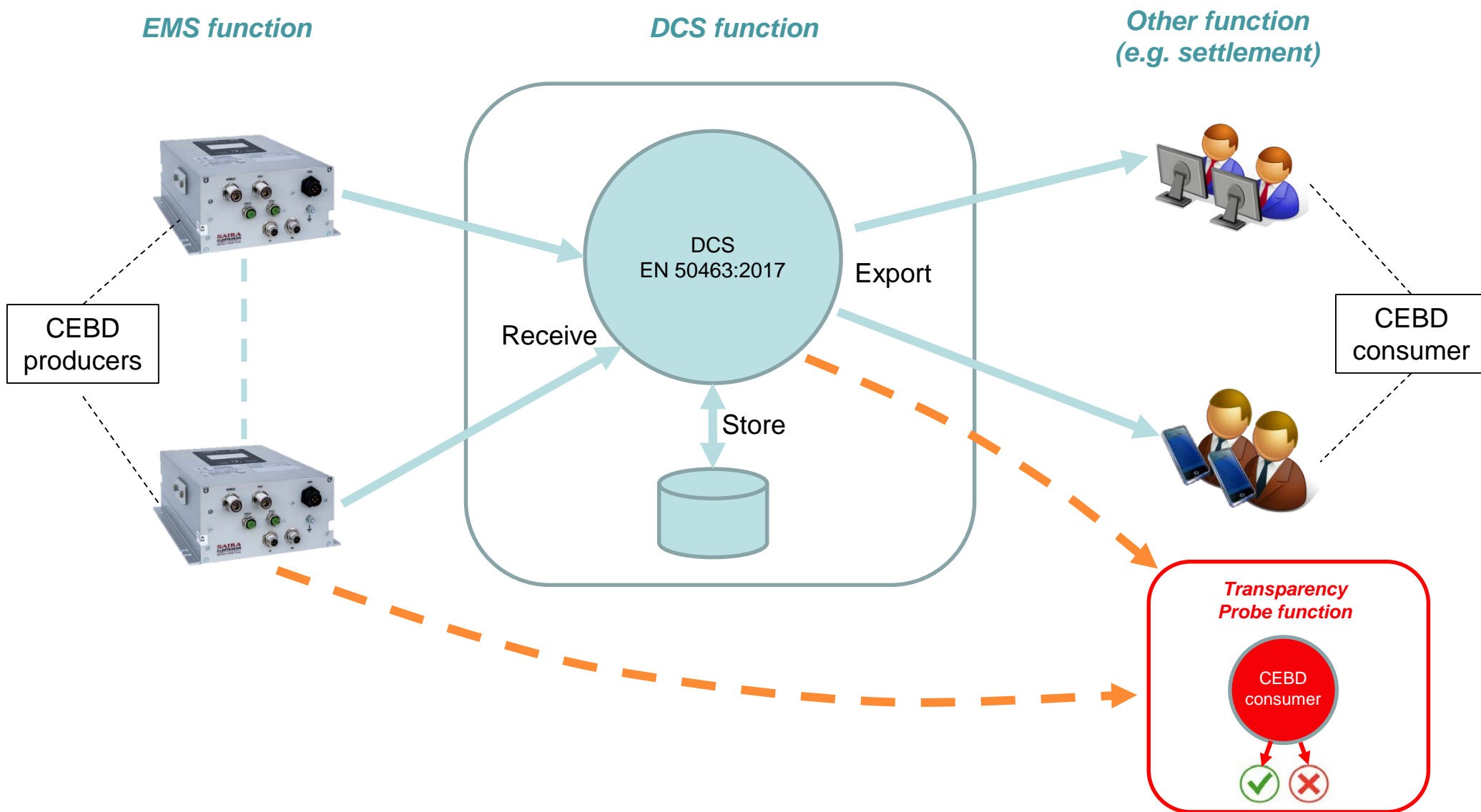
Detection time	Detection point (lat)	Detection point (lon)	Active energy consumption	Detection speed
18/04/2018 00:00:00	59.82621	14.69892	93.56	24.8
18/04/2018 00:05:00	59.83666	14.69195	11.12	19.3
18/04/2018 00:10:00	59.81839	14.60824	174.40	84.0
18/04/2018 00:15:00	59.79685	14.62716	110.89	91.6
18/04/2018 00:20:00	59.72117	14.52044	47.46	79.6
18/04/2018 00:25:00	59.68205	14.51595	115.64	93.1
18/04/2018 00:30:00	59.63669	14.4641	152.40	70.7
18/04/2018 00:35:00	59.66173	14.39492	128.10	98.0
18/04/2018 00:40:00	59.63003	14.28044	33.74	76.1

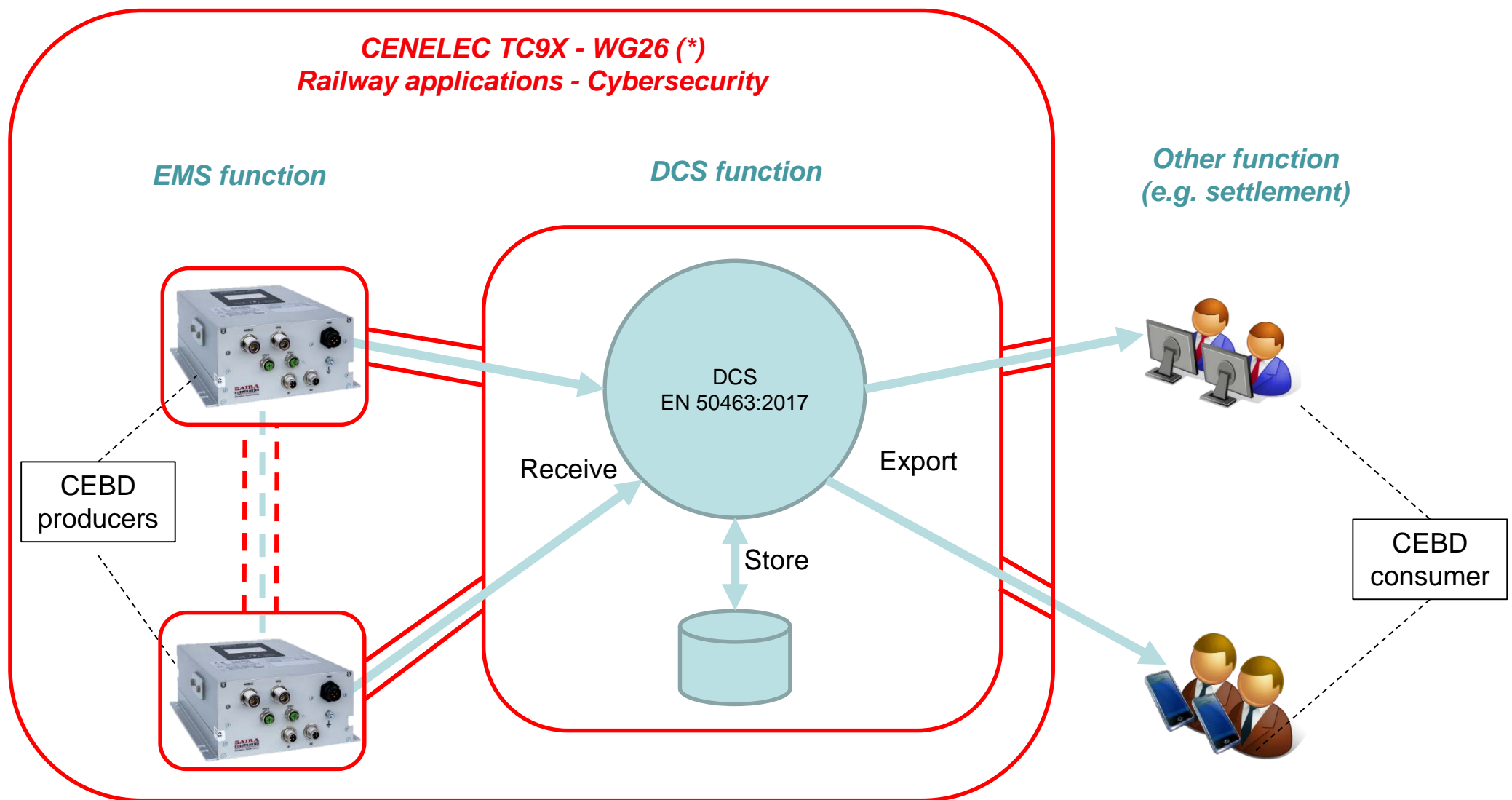
Energy data can be searched, analyzed and related with all other collected data.

Railway advanced reporting



Report designed by European railway operators are ready to be used.





(*) under development: Technical Specification expected by February 2020, then EN