

EMS Day - ERESS
07.10.2020

ÖBB-Infrastruktur AG



SIMPLE AND ACCEPTED COMPREHENSIVE PACKAGE FOR ENERGY METERING WITH CROSS-BOARDER RAILWAY TRAFFIC FOR CAPTURING AND BILLING THE DEMAND OF TRACTION CURRENT ON EUROPEAN RAILWAY CORRIDORS

- Infrastructure managers
- Railway undertakings
- Leasing providers of traction vehicles
- Manufacturers of traction vehicles



railpower box

- Settlement and Billing in **15 COUNTRIES**
- Over **1,600 UNITS** in **15 COUNTRIES**
- **42 CUSTOMERS** all over Europe

CONVINCED COMPANIES ALL OVER EUROPE

Railway undertakings



Manufacturers of traction vehicles

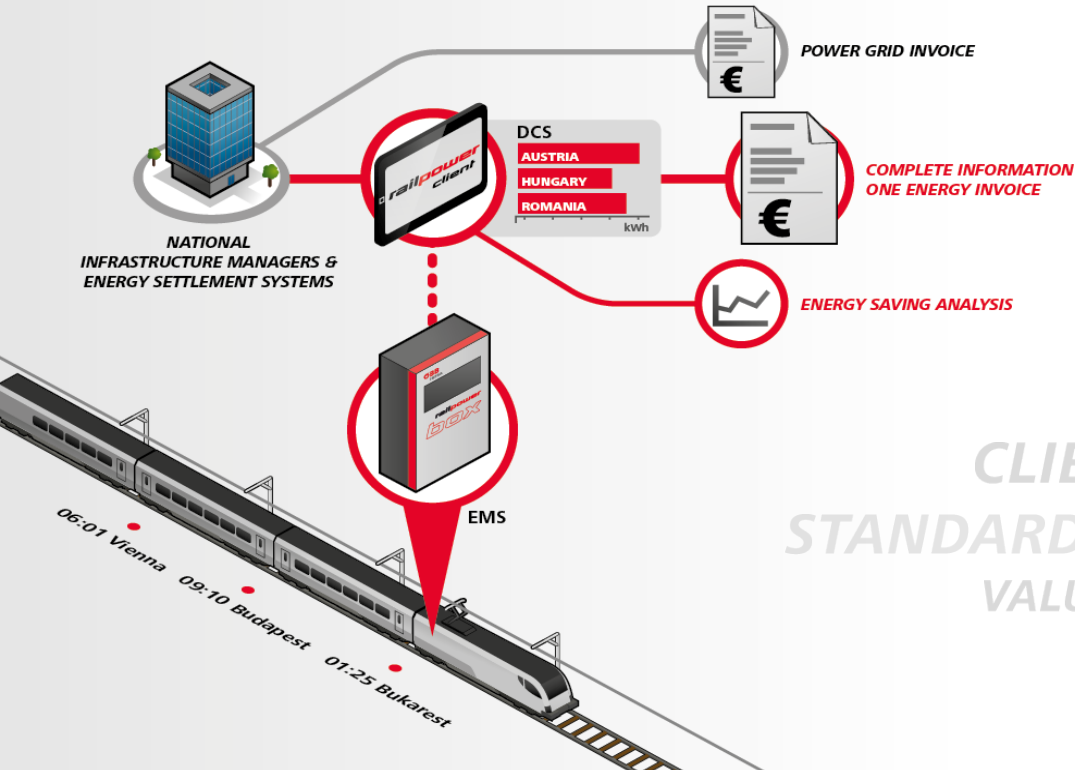
SIEMENS **STADLER** **BOMBARDIER**

Leasing provider of traction vehicles



railpower box

Automatic remote meter reading



TRANSPARENCY

24/7 AVAILABILITY

1 AND 5 MINUTE VALUES

<http://rpclient.oebb.at>

CLIENT CUSTOMISATION

STANDARDISATION

VALUES SPECIFIC TO COUNTRY

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Data Visualisation and Settlement with railpower client

- Europe-wide platform for energy data management within the rail sector that offers the maximum of safety and transparency for a new generation of international energy data management systems
- **COMBINES THE EXPERTISE OF THE RAILWAY- AND ENERGY MARKET IN ONE APPLICATION**
 - Direct and quick overview between energy forecast and actual energy demand
 - Energy data capture
 - Energy data management
 - Energy efficiency
 - Energy billing



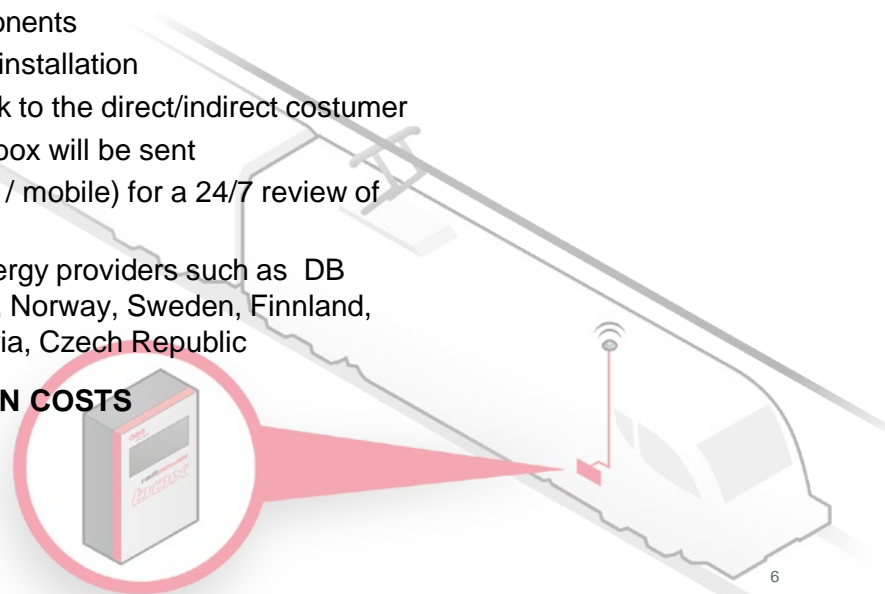
***railpower* client**

<http://rpclient.oebb.at>

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Business model

- **THE ÖBB-INFRASTRUKTUR AG BEARS THE INVESTEMENT COSTS FOR THE RAILPOWER BOX AND PROVIDES THE RAILWAY UNDERTAKINGS WITH THE SYSTEM FOR A MONTHLY MEASUREMENT FEE**
- **MEASUREMENT FEE INCLUDES**
 - Hardware and software of the railpower box incl. all components
 - Training of a Europe wide service stations network for the installation
 - Remote monitoring of the equipments, immediate feedback to the direct/indirect costumer
 - Spare parts management - for any mulfunction, a replace box will be sent
 - Access to the internet application railpower client (desktop / mobile) for a 24/7 review of energy and position data
 - Data exchange with other infrastructure managers and energy providers such as DB (Germany), SBB (Switzerland), EREX (Denmark, Belgium, Norway, Sweden, Finland, Netherlands), MAV (Hungary), Slovenia, Romania, Bulgaria, Czech Republic
- **THE RAILWAY UNDERTAKING BEARS THE INSTALLATION COSTS**
 - Support for the first installation by ÖBB-Infrastruktur AG



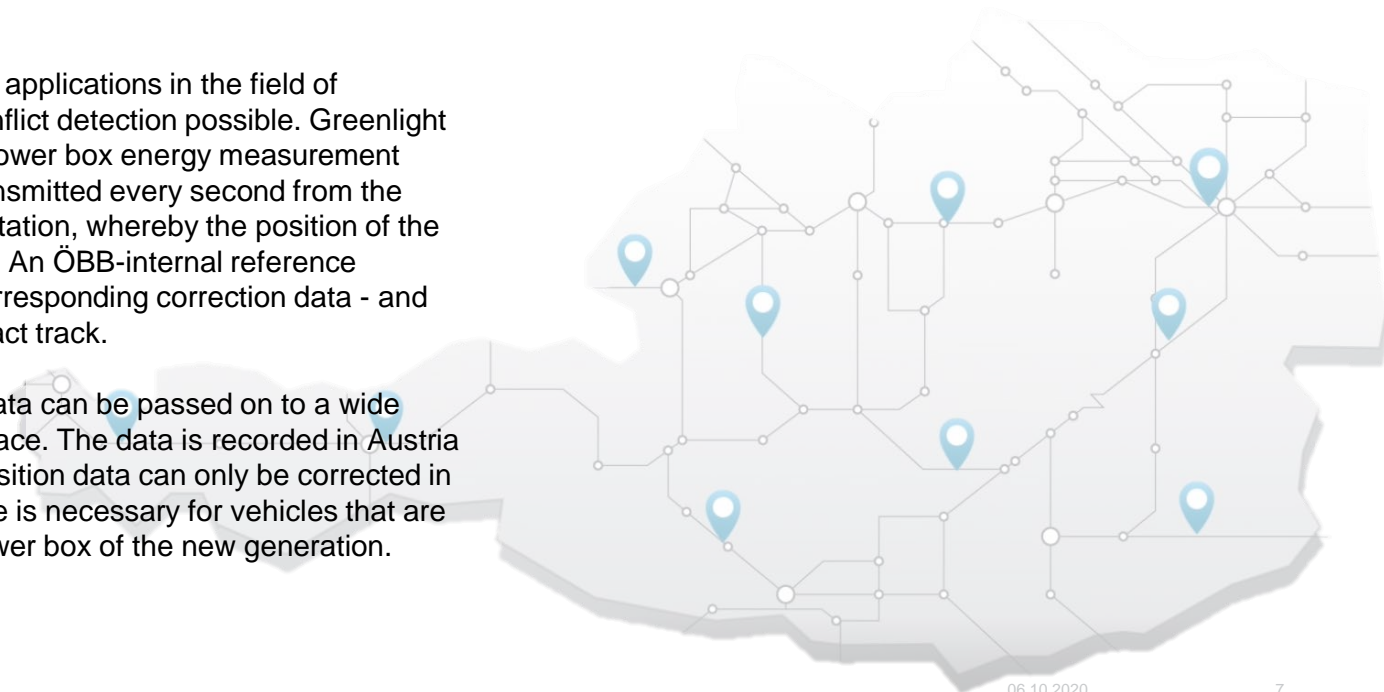
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Greenlight

We are bringing a first milestone in the automation of train operations onto the rails: **PRECISE REAL-TIME POSITIONING WITH GREENLIGHT.**

This enables further innovative applications in the field of Operation optimization and conflict detection possible. Greenlight complements the existing railpower box energy measurement system. All relevant data is transmitted every second from the traction vehicle to the ground station, whereby the position of the train is determined in real time. An ÖBB-internal reference network then calculates the corresponding correction data - and now locates the train to the exact track.

This high-precision real-time data can be passed on to a wide variety of systems via an interface. The data is recorded in Austria and in abroad, although the position data can only be corrected in Austria. No additional hardware is necessary for vehicles that are already equipped with a railpower box of the new generation.



railpower box

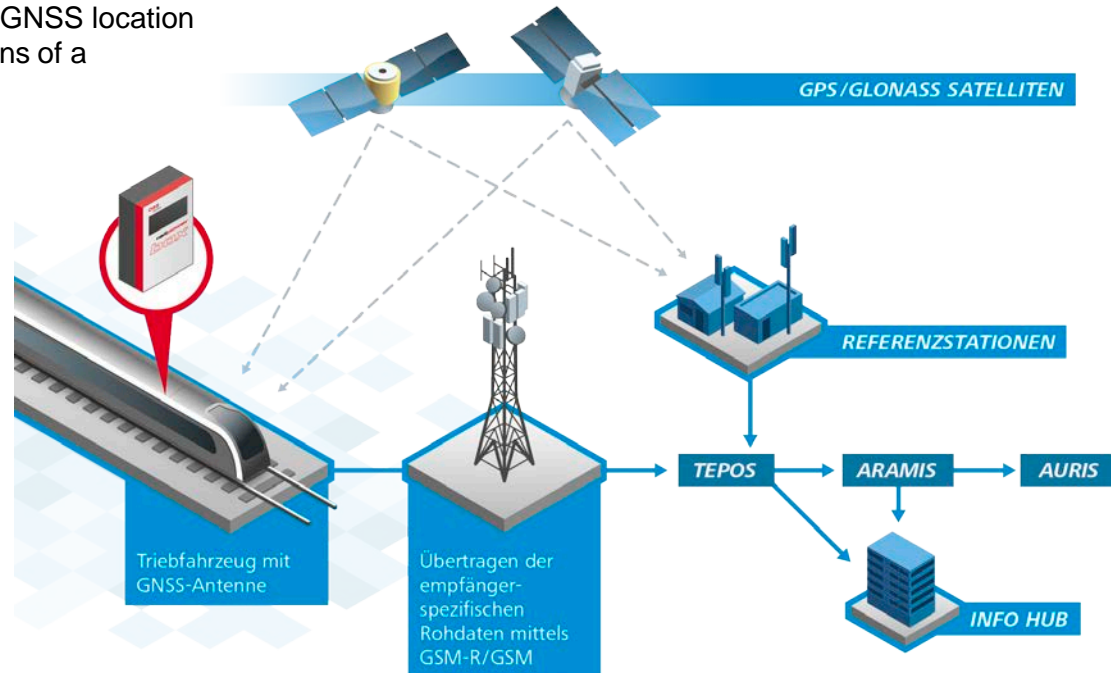
Greenlight

TRACK-PRECISE LOCATION

Using the reference locations, the accuracy of the GNSS location reports (~ 3 - 5 m) is optimized to ~ 30 cm by means of a correction calculation.

ALREADY EQUIPPED VEHICLES

- Veh.Type 1016/1116
- Veh.Type 1216
- Veh.Type 1144
- Veh.Type 1063/1163
- Veh.Type 1064
- Veh.Type 2016
- Veh.Type 2070
- Veh.Type 4744/4746
- Veh.Type 4124/4024
- Veh.Type 5047



railpower box

Greenlight

TRAIN DETECTION – WARNING-APP

- Exact detection of the train stop & departure of the train regardless of signal locations
- Triggering the train connection announcement
- Triggering a timer when there is a minimum stay in a train station or station
- Erase the train on the monitors and platform displays

