Customer Success Story:
SNCF

Market segment
Rail

Power management at the heart of rail reliability

Location:
France

Challenge:
Upgrade of the UPS for the network rail infrastructure

Solution:
Eaton UPS

Results:
With the use of Eaton technology, SNCF can increase the reliability of its infrastructure and guarantee the continuity of its service.

"The solutions developed by Eaton perfectly answered our needs and allowed us to move forward smoothly with our national network renovation and expansion projects"

Yassir Hazzaz, National Engineer for Power Supply and Signalling Systems, SNCF Réseau.

Background

SNCF Réseau manages, maintains and develops the French rail network, with the ambition to offer by 2020 the safest, highest performing and most innovative network.

Generating €6.5bn of revenue in 2015 and with €6.2bn in investments, SNCF Réseau focuses its efforts on maximising operational safety, maintenance and upgrades and on offering optimal access to the national network infrastructure, while insuring traffic management and promoting the development and optimisation of the network.

The Rail Traffic Department (DCF) manages 15,000 trains daily over a network of 30,000km, including 2,000km dedicated to high-speed lines, maintained and monitored 24 hours a day. Critical to this is optimising the use of the railway network in real-time to keep train traffic running smoothly.

"Reliable and efficient uninterruptible power supplies (UPSs) are critical to protect our networks from the various disturbances and power cuts that can affect sensitive infrastructures such as signalling and telecommunications. SNCF Réseau pays particular attention to the quality and the maintenance of its power supply fleet," said Hazzaz Yassir, National Engineer for Power Supply and Signalling Systems, SNCF Réseau.

Challenge

In 2012, the railway signalling department of SNCF Réseau's "Engineering and Projects" department issued a tender and chose to work with Eaton to install UPSs for its signalling projects (renewals and new installations).

"The demands of the specifications were specific and complex and required the supplier to adapt the solution in order to meet installation constraints in small spaces, with difficult access conditions," highlighted Hazzaz Yassir.

For this project, it was agreed to update the power system with Eaton UPSs, as well as bringing the latest innovation and technologies in power quality.

The team faced significant installation challenges. Service continuity had to be ensured, meaning that any operations on existing lines had to be scheduled at night on limited time slots, sometimes reduced to four hours. Handling, safety and site access were also encountered, requiring Eaton's flexible approach to workflow and a thorough organisation throughout to replace or install new UPSs.

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Solution

A dedicated team from Eaton was established to engineer and design the solution, producing schematics and bill of materials, and ensuring proper installation and setup of the equipment.

To ensure the successful integration of the new systems, a factory acceptance test was performed and approved at Eaton's Finnish production facility, prior to installation on site.

"This approval of the first product was a key part of our project approach," explained Hazzaz Yassir. "If the first products performed properly, it would allow us to validate the entire project and then enable deployment to a national level."

The UPSs were installed on trackside in the Computerised Control Units (CCU), the Remote-Control Centres (RCC) and the Centralized Traffic Control System (CTCS) which manage rail traffic. In 2016, in response to growing digital and IT needs, the project framework was extended to cover telecommunications.

To do this, four types of racks were selected to meet the installation and space challenges while offering the greatest levels of back-up time:

- Single-user operator dedicated to telecoms with 8h back-up time
- Telecommunication type from 4 to 20 kVa (non-redundant)
- For the CCU: up to 20 kVa with a 4 to 6 hours supply
- For the RCC and CTCS: up to 20kVa and 6 hours backup time. These racks integrate a 24 VDC power supply with certified railway rectifiers.

Close support at all times

Eaton followed up this project with the setting up of programmable controllers and secured by-pass to simplify the intervention of network technicians and to limit the risk of false manipulations.

The delivery, handling, project coordination and installation on site, as well as commissioning and autonomy tests with load banks, have been guaranteed throughout France.

After the delivery of the project, Eaton carried out the training of maintenance agents. Maintenance contracts are handled by a network of service engineers in France and are capable of intervening in less than 8 hours throughout the country.

Results

The implementation of the Eaton UPS technologies allows time saving and cost reduction by limiting the number of power-related incidents, and reinforces the reliability and the safety of the system.

"Ensuring the safety of our networks and equipment is our priority. The solutions developed by Eaton perfectly answered our needs and allowed us to move forward smoothly with our national network renovation and expansion projects. Eaton's capacity to answer within a reasonable time frame and their ability to adapt to the constraints helped push the project forward," added Hazzaz Yassir.

Eaton has been answering to SNCF Réseau's evolving needs for several years and is available through a dedicated account manager. In May 2016, SNCF renewed the power management contract until 2020.

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Eaton Industries Manufacturing GmbH

Secteur Electrique EMEA
Route de la Longeraie 7,
1110 Morges, Suisse
www.eaton.fr