



# Finland's high-speed Pendolino trains get a reliability boost from Saft MRX batteries

**Long-term field trials confirm improved reliability and reduced maintenance needs of nickel-based batteries in meeting heavy-duty backup power demands.**

## Passenger confidence

Following successful field trials, Finnish rail operator VR Group is equipping its fleet of Sm3 Pendolino high-speed passenger trains with Saft MRX specialized rail batteries. The nickel-based batteries are helping to boost passenger confidence in the prestigious Pendolino service – which interconnect Finland's major cities at speeds of up to 220 km/h – by addressing reliability and maintenance issues with the current onboard batteries. Field trials over two of Finland's harsh winters demonstrated the ability of MRX

batteries to deliver excellent reliability and minimal maintenance while meeting the heavy-duty backup power demands of the Sm3 Pendolino trains. This has led VR Group to select Saft's MRX as the standard choice for all its Pendolino battery replacement projects for the next two years. The Saft MRX battery systems provide the high-power backup power needed to:

- ensure continuous operation of critical safety and passenger comfort services such as emergency lighting, communications, door operation, and heating and ventilation
- reliably deliver heavy-duty power needs even in winter temperatures that can fall to - 20°C or lower.



Case study



**SAFT**

## 'Fit and forget'

VR Group had experienced issues of premature failure and frequent maintenance needs, such as regular topping up with water, with the existing batteries. This was the key reason for the decision to switch to Saft's Saft MRX batteries – they are virtually 'fit and forget' units, with a target service life of 15 years.

The battery packages, installed below the floor of the six-car Sm3 Pendolino trainsets, comprise three 96 V battery systems, each with 80 MRX 180 batteries with a nominal capacity of 180 Ah.

*"We are committed to building an excellent reputation for reliability on Finland's Pendolino services and changing to the Saft MRX batteries is set to play an important role in this process, says Hannu Ryyppö, head of electric safety for rolling stock at VR Group. The Saft batteries have proved their capability in two trial installations, where we were impressed by both their reliability and low water consumption"*



## Saft MRX specialized nickel-based rail batteries - key benefits

- 30% lighter and smaller than conventional Ni-Cd batteries, offering significant increases in passenger-carrying capacity, while enabling OEMs and operators to specify the optimum battery system for the installation
- robust Sintered/Plastic Bonded Electrode (S/PBE) construction
- very low lifecycle cost since Saft's superior nickel-based technology is field-proven to last more than 15 years with no risk of sudden-death failure
- integrated water filling system; two-year topping up interval
- strong, flame-retardant plastic container, highly resistant to shock and vibration
- wide operating temperature range of -20°C to +50°C; resistant to extreme temperatures from -50°C to +70°C.



### Saft

12, rue Sadi Carnot  
93170 Bagnole - France  
Tel. : +33 1 49 93 19 18  
Fax : +33 1 49 93 19 64  
www.saftbatteries.com

Document N°21839-2-0712  
Edition: July 2012

Data in this document is subject to change without notice and becomes contractual only after written confirmation.

Photo credits: Saft, Fotolia, Bombardier.  
Attitudes design&communication – C246/3

© Saft – Société par Actions Simplifiée au capital de 31 944 000 €  
RCS Bobigny B 383 703 873