ENHANCING THE TRAVELER EXPERIENCE

SADEL WILL SHOW AT INNOTRANS 2014 AN EXCLUSIVE TRAIN, IN WHICH ARE IMPLEMENTED ITS ON BOARD SOLUTIONS FOR **AUDIO** AND **VIDEO INFORMATION, PASSENGER ENTERTAINMENT, EMERGENCY CALLS, VIDEOSURVEILLANCE** AND **ON-BOARD DIAGNOSTICS SYSTEMS.** SADEL ON-BOARD SOLUTIONS ARE BASED ON AN ARCHITECTURE, WHICH USES REDUNDANT COMMUNICATION CHANNEL, MEETING THE HIGHEST SECURITY REQUIREMENT.

The Sadel advanced technology transforms the train into a magic "world on rail", where passengers experience the lightness and the sensation of freedom that only the travel by rail can give. After doing all in a rush, arriving late to the station, passengers catch their train and the first thing they wish to do, after having found a seat, can devote to their favourite activity. On-board services and warm welcome make them feel at ease and at this point, they can relax themselves until the station of destination. Sadel helps people to share contents at anytime, anywhere and with any devices. In this way, Sadel makes travelling a pleasant experience and increase passengers' feeling of comfort and safety, making them feel connected with the world around them.

SADEL ADVANCED SOLUTIONS

SADEL is the leading company in the Italian market for more than ten years and it has been known for the quality, reliability and its competences.

Sadel designs, customizes, delivers and installs high-tech on-board systems and solutions for support of the on-board staff, train-to-land communication, on-board diagnostics and passengers' connectivity, information, safety and security.

Sadel provides Constructor, System Integrators and Operators, its solutions with the shortest lead time and a very competitive quality/price ratio. In this dynamic reality, Sadel offers integrated solutions based on state-of-the-art communication network, which delivers advanced technological services for passengers and train staff of all types of trains, from commuter to high speed.

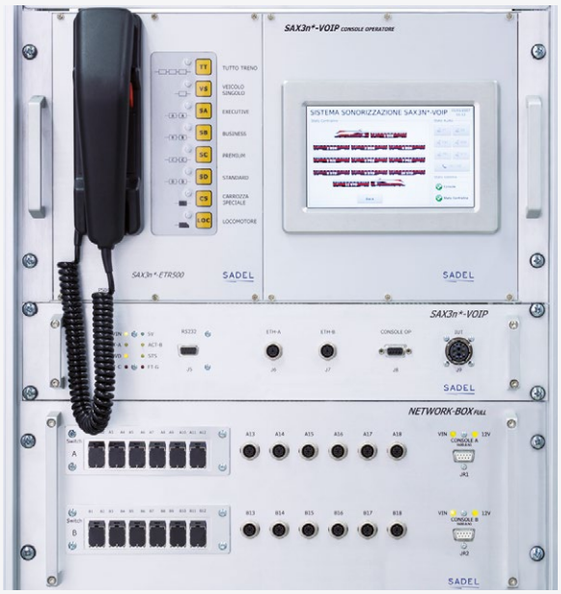
INFOTAINMENT SOLUTIONS

Sadel provides a full range of high efficiency on-board monitors with LED backlight and ultimate CPU technology. Thanks to advanced digital audio public address IP control units and coach digital audio amplifier, the system can broadcast music and deliver automated announcements, as well as conductor messages, to the whole train or single cars. The basic information regards the train route, the possible delay behind schedule, expected arrival time to the next station and information about connections (including its track, route, destination and departure times). Using Wi-Fi with their personal devices such as laptops, netbooks, smartphones, passengers have the access to all the above information and can plan or reorganize the journey taking into account current circumstances. The entertainment services available in some trains, lead passengers to enjoy the breaking news, weather forecasts, sports and financial news, as well as movies or commercial advertisements broadcasted on the internal coach displays, directly on their personal devices. In particular circumstances such as emergency or specific difficult situations, the train staff or the Operations Centres can transmit to passengers high-priority warnings that overrides the audio entertainment system.

SECURITY SOLUTIONS

The **Passenger Emergency Interphone** (PEI) allows passengers to communicate with the train staff, and vice versa. The receiver end-point could be chosen between train driver cabins, train staff location or ground station. A serial or Ethernet interface establishes a connection with the entire infotainment systems to provide diagnostics and working condition data. In this way, PEI became integral part of a comprehensive video surveillance solution. Furthermore, the **Video Surveillance** with IP Cameras and DVR monitors potentially critical situations on the train for safety purposes.

OBoE - Eccoti

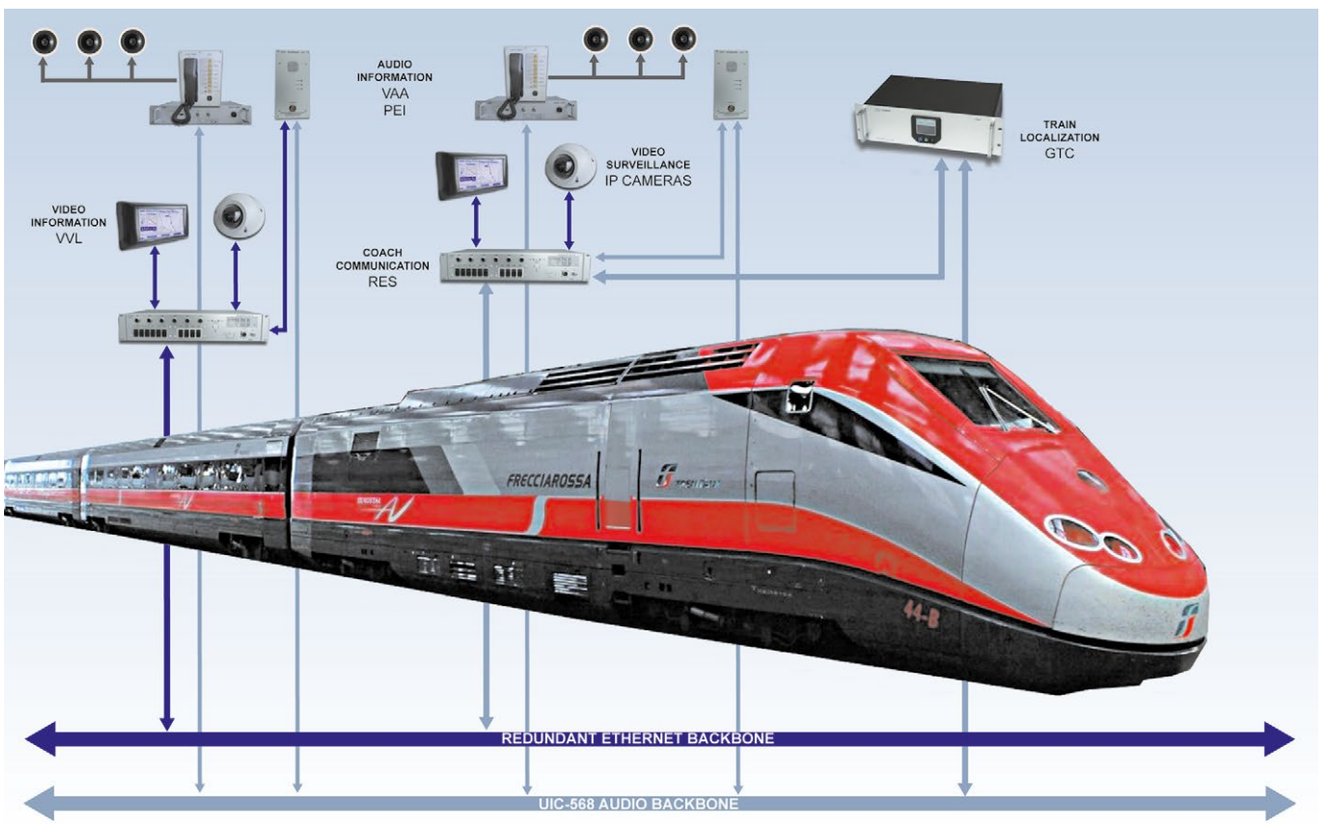


Sax3n-VOIP – Network Box

OBoE (On Board Equipment) or **Global Tracking Communicator** is the "director" of all the on-board systems. Normally it is placed in the driving trailer of the train and allows communication with a ground system using GSM/GPRS and Wi-Fi modules. OBoE, thanks to the GPS receiver and the programmed train track, loaded before departure, provides audio and data information related to train journey, next stop announcements, advertisements, etc.

Eccoti or Conductor Monitor is the video interface for train staff, based on TFT 17 inches, and through this device, they have access to a complete set of information for instantly identify potential problems and efficiently monitor the train condition and functioning.

Sax3n-Voip or Voip Audio Amplifier is the coach audio digital amplifier that allow to deliver specific and differentiated announcements, according to the train class.



ALE 642 – ANSALDOBREDA

Double Decker TAF – ANSALDOBREDA

Minuetto – ALSTOM

Vivalto – BOMBARDIER

ATR 220 – PESA

FLIRT - STADLER

COMMUNICATION SOLUTIONS

For what concerns **the train staff, driver and other on-board train crew** have access to a complete set of information, allowing them to instantly identify potential problems and efficiently monitor the train condition and functioning. A high performance Railway Communication Gateway addresses a broad number of services like multi-channel wireless interface, online multimedia or digital signage contents distribution and monitoring of all the connected devices. These exchanges are guaranteed by standard and railway GSM/GPRS, HSPA or LTE communication modules and advanced GPS receiver. It is also possible to upload data and download diagnostics without traffic costs in stations and railway depots equipped with Wi-Fi access points. Railways Ethernet Switches (RES) are Layer 2 / Layer 3 Gigabit switches placed on each coach to realize a redundant train IP backbone with excellent levels of performance, security and reliability. The RES provides a wide range of protocols, services and features such as VLAN and Quality of Service, traffic shaping and advanced multicast support. Redundancy of inter-carriage links can be achieved using multiple ports in link Aggregation mode. RSTP/MSTP allows the deployment of more complex network topologies. It's fully manageable, providing detailed diagnostics based on SNMP protocol.

As it can be seen from the photos, to date Sadel has installed over 15000 devices in different customized configurations for all types of rolling stock

MORE INFORMATION

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Train Staff Handset
Passenger Alarm Interphone

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for Passengers & Train Staff
with LED backlight

Video Surveillance

IP Cameras
Digital Video Recorder
Train Server with 15" MMI

Entertainment

Video & Audio Seat Players
Multimedia Server
Wi-Fi Client

Localization

Control Digital Unit
with GSM/GPRS & GPS
Audio Interface - Advanced MMI

Networking

Railway Ethernet Switch
Powerline Communication Box
WiFi & HSPA Router

Visit us at

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23-26 september 2014, Berlin

Hall 4.1 - Stand 511

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