

EURAILMAG REDAZIONALE E PAGINA PUBBLICITARIA – SETTEMBRE 2013

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BUSINESS & TECHNOLOGY

THE MAGAZINE FOR EUROPEAN RAIL DECISION MAKERS

ROLLING STOCK & URBAN SYSTEMS –
TICKING THE RIGHT BOXES

SECURITY OF RAILWAYS AGAINST
ELECTROMAGNETIC ATTACKS

LOST IN TRANSPORT –
TRAVELLING THE INFORMATION CHAIN

KEEPING CABLE IN THE RIGHT HANDS,
THE RIGHT PLACE

INTEGRATED CONTROL & ERTMS IN ITALY



EVOLVING INFOTAINMENT SYSTEMS FOR AN IMPROVED TRAVEL EXPERIENCE

AN INTEGRATED SYSTEM WITH AUDIO, VIDEO AND ENTERTAINMENT DEVICES BASED ON A STATE-OF-THE-ART COMMUNICATION NETWORK DELIVERS ADVANCED AND RELIABLE TECHNOLOGICAL SERVICES FOR PASSENGERS. SADEL PROVIDES READY-TO-USE INFORMATION SOLUTIONS TOWARDS SYSTEM INTEGRATORS, CONSTRUCTORS AND OPERATORS ALREADY ADOPTED ON HIGH SPEED AND COMMUTER TRAINS.

Being a **Passenger Information System (P.I.S.)** supplier always leads us to think what should be the next frontier of the infotainment on-board. During the last years the market has demonstrated that operators and passengers consider, as standard of service, punctuality, comfort and availability of accurate journey information and facilities at the same level. Every kind of technology coming from consumer's world has been deployed on the train to ideally make the businessman and tourist think that no interruption is occurring to their work or leisure, feeling comfortable and being virtually accompanied by the train personnel and services.

So -no surprise- probably the best keyword to explain this trend is **connectivity**: from the very first step inside the coach, the passenger enjoys the same breaking news, weather forecasts or movies broadcasted on the internal displays, directly on his PC, tablet or smartphone via Wi-Fi, by accessing the train intranet. A manager keeps working on his e-mails through the web or accessing his company intranet, taking advantage of a high speed internet wireless communication. The automatic audio and video announcements notify the users about delays on the track, coincidences on arrival or the availability of the restaurant coach and refreshments. As well as the news, this

info can be delivered in ad-hoc format to the traveller personal devices using web services or dedicated apps. The concept of connectivity can be applied also to the train crew job: the train chief is potentially always in touch with passengers, because he can spread messages through the audio subsystem or sending commands from his smartphone accessing the train intranet as well. Moreover, he can monitor the video surveillance system, for example to view the exact place where an emergency lever has been pulled, giving immediate assistance to customers. The full linking of the entire P.I.S. guarantees an easier maintenance of network appliances (train switches, communication gateways and Wi-Fi access points) and end-devices such as LCD displays, LED panels, audio control units, passenger emergency intercoms and IP Cameras.

Vehicle Video LCDs (VVL) are high efficiency on-board TFT-LCD monitors with LED backlight and state-of-the-art CPU technology, showing information about train journey, entertainment and commercial advertisement. The passenger can be advised about current position of the train on a georeferenced map, time tables at the next stop, emergency messages, news and commercial with static images or video sequences.

The **VOIP Vehicle Audio Amplifiers (VAA-VOIP)** are digital public address control units for broadcasting music, delivering standard messages and high-priority warnings to the passengers. The **train staff handset** could be local or remotely installed and also operates as interphone for communication with passengers, locomotives, train conductor cab and ground control centre.

Passenger Emergency Intercoms (PEI) allow calls from passengers to train personnel. 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 system to provide diagnostics and working condition data. In this way, PEIs become integral parts of a comprehensive video surveillance solution.

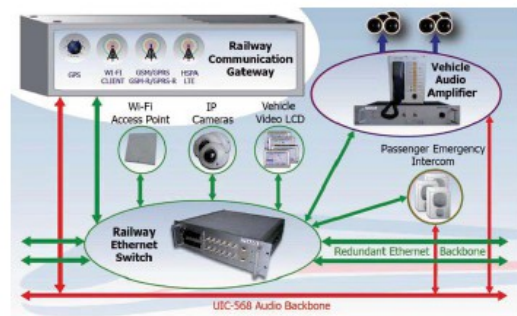
The **CCTV subsystem with IP Cameras** equipped with internal microphone and **Digital Video Recorder (DVR or NVR)** distributed along the vehicles monitor and record potentially critical situations on the train for safety purposes.

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 (802.11 g and n) access points. **Railway Ethernet Switches (RES)** are Layer2/Layer3 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. All the devices can be customized in mechanical layout, materials and connectors upon client's request and fulfill EN50155 certification. Total connectivity is both the target and the result of a system based on complete integration. It's the right way to boost train services to their maximum potential. For this purpose, the importance of well designed and reliable building blocks is beyond question.



With over 5000 products installed on high speed trains and additional 7000 devices on local and commuter trains, Sadel is a leading player in the European market for P.I.S. solutions ■

MORE INFORMATION
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