

onway and PaxLife Innovations win STA tender

A single WLAN and infotainment system on trains



Photo: STA/Tessaro



We opted for onway and PaxLife since this infotainment solution integrates perfectly with our passenger information system architecture.

Patrick Dejaco, Head of Information Systems
at STA - Südtiroler Transportstrukturen AG

Initial position

By means of a public tender STA – Südtiroler Transportstrukturen AG in Bolzano – was looking for a modern WLAN and infotainment system to use on all South Tyrolean trains. The tendered services include providing, operating and maintaining the entire system (router, hotspot controller, media server, central management system) for at least six years, with the option to extend to nine. It will be installed on 25 Stadler ETR 170 trains from three different generations, as well as eight new Alstom trains that will be added to the fleet over the next two years.

The bidding consortium – comprising onway (Schweiz) ag (Switzerland) and PaxLife Innovations GmbH (Germany, www.paxlife.aero) – is looking forward to fulfilling the contract and cooperating with STA, and would like to thank STA very much for the trust placed in them.

Solution overview

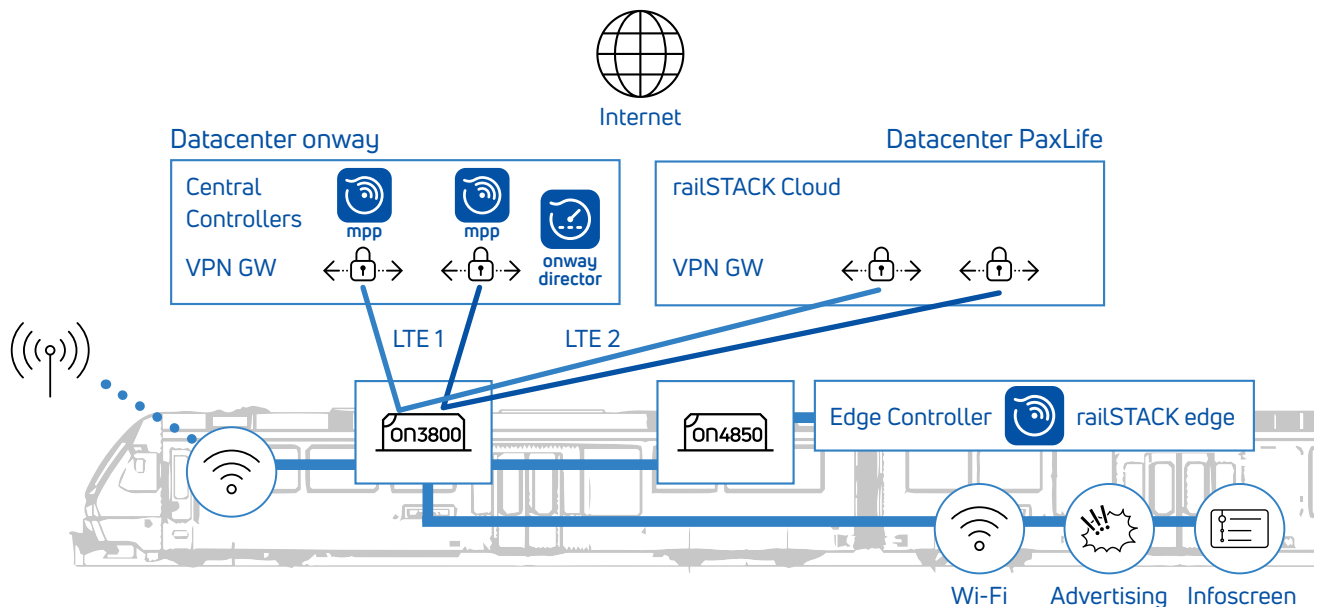
The solution portfolio consists of onway's basic infrastructure, which includes providing a high-performance vehicle-to-ground connection, the train hardware (router, server), and the CarlOS operating system to automatically distribute, operate and monitor applications across the entire fleet. Thanks to the open architecture, any applications – such as infotainment in this example or other future applications including video surveillance, ticketing, passenger counting, etc. – can run on the same hardware using onway's basic infrastructure.

In addition, PaxLife Innovations developed the infotainment system based on railSTACK, a CloudEdge platform, which, in addition to content management functions for regional and journey-specific con-

tent, also provides a fully comprehensive display of the usual journey-specific PIS content on vehicle screens and portals, as well as other dynamically integrated information. Unlike conventional architectures, the railSTACK-based structure allows the reuse of one single software on any vehicle type (train, bus, mountain railway, etc.), thereby allowing centralised, cross-fleet control for STA over displayed formats and content.

Architecture overview

The following graphic shows the architecture for the overall STA (Südtiroler Transportstrukturen AG) system:



The train hardware includes the ON3800 router and the ON4850 multimedia server.

For the vehicle-to-ground connections, VPN connections are automatically established via all available uplinks and bundled into a FatPipe. If the train is at a station, an additional VPN connection is automatically established via the station WLAN and used as a further channel – to download large content, for example. In this process, it is possible to actively control which of the connections may be used for which applications.

On the ground side, onway's data centre is responsible for all aspects of passenger WLAN. In addition to the redundant VPN gateways, this includes the equally redundant central hotspot controllers mpp, as well as the onway director – the management system for monitoring and managing all onway router and server components – used for administering and monitoring all internet accesses.

PaxLife's railSTACK platform consists of a core that provides multi-tenant fleet, node and software management, as well as monitoring capabilities and exposes them via API, CLI and a user-friendly web front-end. The web service paxCMS is provided for STA to manage the on-board software application for passenger information and displayed content used on both the portal and train displays. With paxCMS, authorised users can easily adapt the infotainment (updating, splitting the screen, adding external elements, etc.) even without programming knowledge and, thanks to railSTACK edge, roll it out across

individual vehicles or entire vehicle fleets at the touch of a button for a chosen validity period. railSTACK edge provides the railSTACK core with the systems, portal and displays to be used by passengers and integrates third-party systems (triggers and, if applicable, data from on-board passenger information systems, central traffic and disruption data, weather, news, etc.).

The main advantage afforded by the cooperation between onway and PaxLife Innovations is that the ON4850 multimedia server hosts the ON3800 router and the local railSTACK data centre, and can work double-redundantly.

STA - Südtiroler Transportstrukturen AG

STA – Südtiroler Transportstrukturen AG focusses on sustainable, innovative and responsible mobility in South Tyrol. The high-quality, well-connected, appealing and modern expansion of public and sustainable mobility is both an aspiration and a mission. There are about 180 employees in the team.