



Harnessing smart transportation with S&T Group

By Michael Riegert, CEO at Kontron Transportation

It goes without saying that transportation is an essential part of everyday life, and digitalization is playing a key role in transforming the sector. From cars, public rail, freight and avionics, operators are constantly finding new ways to increase efficiency, speed and cost effectiveness, as well as seeking to reduce CO₂ emissions and their environmental impact.

This is being accomplished thanks to the continued emergence of smart transportation solutions. As the advent of Industry 4.0 has become increasingly essential for businesses globally, more companies are adopting solutions to meet modern demands, including transportation operators. With the world getting more connected, more pressure is placed on operators to identify the most optimum smart transportation solutions to utilize. It is essential that the selected (I)IoT solution can enable complex data management consistently and reliably.

Endless possibilities of smart transportation

When integrated effectively, smart technology can revolutionize the future of transportation. Various aspects of smart transportation solutions are already in place, such as traffic signal control, automatic plate recognition, intelligent transportation systems (ITS) and speed cameras. All of which make it easier to keep the roads safer from accidents and help identify speeding and road violations.

Smart transportation is primarily based around data and management processes, and this allows all transportation drivers to monitor safety and condition of their vehicles more efficiently. This is essential for all drivers, but especially for public transport operators, such as rail or bus. With smart monitoring applications, operators can assess performance in real-time, and can determine a further course of action for improving speed, efficiency, and overall passenger experience.

Facilitating digitalized rail transportation

By providing operators with the technology to increase efficiency, accuracy and management processes on and off the railway, S&T Group strives to deliver the best possible rail experience for passengers, railway operators and staff.

Due to its reputable position as a leading solutions provider, S&T Group's company Kontron Transportation was given the opportunity to demonstrate its end-to-end IoT expertise in the smart transportation market, when it secured three major contracts as a GSM-R (Global System for Mobile Communications – Rail) provider. This involved enhancing mission-critical rail transport for the Správa železnic, state organization owner of the railway infrastructure in the Czech Republic.

With more than [17,000 employees and 1,500 railway station stops nationwide](#), Správa železnic wanted to increase the amount of rail passengers using its service, and play its part in reducing the amount of CO₂ emissions and accidents caused by vehicles on the road. To achieve this, railway operators needed to increase rail accuracy, time-management and predictive processes.

The implementation of Kontron's patented Smart Monitoring System technology provides significant upgrades to radio and frequency planning processes, and improves configuration capabilities for crucial rail transmission, and railway dispatcher signals. This enhances the safety and accuracy of passengers in more than 100 new GSM-R base sites to date, by improving overall functionality and time-effectiveness in energy, engineering, and site management. Kontron's work is currently ongoing, with Správa železnic's digital transformation targeted for completion by 2024.

Additionally, the Smart Technological Units implemented by Kontron enables Správa železnic to achieve its long-term sustainability and management goals, by providing automated application functionality that eliminates unnecessary energy-intensive operations, while also improving security, repair costs and reliability in all aspects of the railway operation.

A seamless transition

Thanks to Kontron's extensive solution implementation over the course of two years, Belgium railway operator Infrabel was able to successfully complete the infrastructure migration of its GSM-R core communications network to R4 Voice over IP (VoIP) technology as part of its ongoing communications resignalling programme. Due to the seamless migration from the legacy R99 TDM network, Infrabel improved the overall efficiency and availability of radio communications on the Belgian network, increasing reliability, and reducing risks of traffic disruption due to unavailability of the data transmission service.

With smart transportation becoming increasingly more essential as demands rise, a smart IoT or IIoT solution is needed to ensure that the industry can fulfil its full potential. As the enabler for rail digitalization solutions, S&T Group can facilitate a seamless transition to a smarter, safer and more sustainable future for transport.

Kontron Transportation is a leading global supplier of end-to-end communications solutions for mission-critical and carrier networks. The portfolio includes GSM-Railways, FRMCS, TETRA, DMR, LTE solutions for mission critical networks as well as mobility solutions for the public transport sector and is enabled through a comprehensive service value chain. A further mission is to provide a critical E2E IIoT solution dedicated for railway operators. Kontron Transportation invests in research and development and is an associated member of the European research initiative Shift2Rail.

Kontron Transportation is part of S&T group and headquartered in Vienna (Kontron Transportation GmbH) with main subsidiaries in Belgium, France, Germany, Portugal, Spain, the Czech Republic and United Kingdom. To find out more about Kontron Transportation offering, please click [here](#).

S&T Group offers a wide array of innovative IoT solutions in smart transportation, such as autonomous driving technologies made to enhance automated vehicle functionality. To find out more about S&T Group's transportation offering, please click [here](#).