SPOTLIGHT

Kontron Transportation's *Martin Piovarci*, Product Line Manager for Mission-Critical portfolio, delves into the company's brand-new MCx solution which plays a part in the future of rail critical communications.

AFTER MORE THAN 20 years of GSM-R success story, FRMCS and the 3GPP MCx framework pave the evolution path towards the next-generation of rail mobile communication.

Not only have major railway companies engaged themselves in first MCx and FRMCS pilots and field trials, but also private railway operators have also started to leverage the advantages of MCX technology within their networks.

The implementation of MCx solutions are key building blocks of FRMCS, such as the one developed by Kontron Transportation, which enables operators and infrastructure managers to immediately take advantage of a modern 'state-of-the-art' mission-critical communication system.

Kontron Transportation has just launched a new MCx-based communication solution for railways. What were the reasons to develop this solution?

Mission critical networks for railways need a modern, flexible and future-proof communication solution exploiting capabilities of broadband technologies. Two of the main drivers of our development are the evolving requirements, especially derived from next-generation use cases such as automatic train operation (ATO) with high density application and the need to become independent from proprietary and custom technologies and its lifecycles constraints.

The MCx technology was a natural choice for us because it is standardised under 3GPP and unifies all needs for mission-critical services of the global industry including railways. We worked within 3GPP and contributed to the MCx standardisation from the beginning and endorsed it in the relevant groups for the rail sector.

In the meantime, the MCx standard has undoubtedly established itself and is accepted as the basis for the FRMCS rail system, which cannot only be credited to Kontron, but to the entire rail standardisation community. MCx services such as voice with push-to-talk features, secure and reliable alerting, messaging, data exchange and video communications are indeed the key elements for realising the railways' vision of a future mobile communications system.

How exactly does Kontron's MCx solution work?

Kontron Transportation's next-generation MCx solution is based on a 3GPP IMS/MCx architecture and provides open and standardised interfaces that enable the highest level of interoperability, avoid vendor lock-in, and simplify interconnectivity with future broadband networks while enabling the interworking with the existing GSM-R services. The heart of our solution is an IMS-based SIP core with MCx and Next-Gen Dispatcher application servers, which can be used together with private dedicated or public 3GPP transmission networks. Even non-3GPP RANs can be used as a transmission network without worsening reliability and quality of service of the overall solution.

What are the benefits for the customer?

We advocate early implementation of MCx, as adoption of mission-critical services and applications is a key success factor for a smooth transition of rail operations to FRMCS. With MCx a rail operator can embrace much awaited advanced use cases such as ATO and it allows operators to immediately profit from widening the GSM-R network reach using MCX interworking functions. Use cases such as hybrid MCx/GSM-R marshalling yards, MCX as a fallback solution for GSM-R or even providing functional 'GSM-R-like' communications for non-GSM-R devices are only possible with MCx.

In addition, with intuitive and customised mobile applications running on COTS hardware, along with the next-generation GIS-based dispatcher, we aim to give railways tools that go beyond voice-centric communications.

For more information, please visit:
www.kontron.com/ktrdn