

Successful migration from R99 to R4 for the GSM-R Core Network of the railway operator Infrabel

As part of its vast program to modernize infrastructures and systems, Infrabel announced the success of its GSM-R core network infrastructure migration with Kontron Transportation.

Montigny-le-Bretonneux, France, February 16, 2021 – Driven by its ambition to make the Belgian rail network one of the safest in Europe and as part of its vast program to modernize infrastructures and systems, Infrabel announced the success of its GSM-R core network infrastructure migration from the R99 TDM technology to R4 Voice over IP, much more efficient and more reliable.

This migration program has been completed as planned and without any delay by the Kontron Transportation Team, within only 24 months, which represented an extremely aggressive schedule.

The complete switchover of Infrabels railway telecommunication traffic took place on the weekend of December 6, 2020. This last step consisted of a changeover of the entire radio access network (controllers and base stations) and concludes the migration activities of the GSM-R core network from the R99 TDM technology to R4 Voice over IP, much more efficient and more reliable.

The GSM-R system (Global System for Mobile communications - Railways) allows trains to communicate with rail traffic control stations, but also for driving, traffic control and maintenance staff to communicate with each other in a secure mode. It also makes it possible to support data communication applications, such as those required for the ETCS level 2 rail signaling system associated with speed control. It was therefore undoubtedly necessary to increase the level of reliability and availability of the GSM-R network, in order to reduce the risks of interruption of rail traffic linked to an unavailability of the data transmission service.

This last migration step was carried out, like the previous ones, with no impact on the quality or continuity of the services provided to operational users of the GSM-R network and therefore,

above all, to railway companies that are Infrabel customers. It materializes the achievement of the final milestone of the project within the allotted 24 months, which represented an extremely aggressive schedule. In order to achieve this objective, the teams of Infrabel and its industrial partner Kontron Transportation, the world number 1 manufacturer of PMR GSM-R systems and specialist in the migration of critical networks, jointly developed, then validated and implemented a set of migration procedures adapted to the drastic operational constraints of rail operations, in particular in terms of maximum duration and planning of service interruptions.

It should be noted that before application in Belgium, similar migration procedures have already been implemented by Kontron Transportation under equally restrictive conditions, whether it concerns the Network Rail system in the United Kingdom in the midst of the 2012 Olympic Games or, more recently, the SNCF network in France. However, the Infrabel project has two particularities: for the first time, it involved replacing an entire core network system supplied by a third-party vendor. In addition, and because of the ETCS operation on high-speed lines, it was necessary to ensure efficient continuity of service at border crossings. These are major technical challenges that the Infrabel and Kontron teams have successfully overcome.

Alex Raviart, head of the I-ICT department which has been responsible for the operation and maintenance of the Infrabel GSM-R network since 2006, is proud to be able to announce this great success of the GSM-R core network migration project, without delay with respect to the initial project plan, despite a context made very difficult by the health crisis. He expresses warm thanks to everyone involved in this achievement.

Michael Riegert, CEO Kontron Transportation, said : « We are very proud of this excellent teamwork and we greatly appreciate the technical competence and operational performance that we have found with our client Infrabel. We welcome the prospects of future success that the continuation of this cooperation offers to both companies ».

About Kontron Transportation

Kontron Transportation is a leading global supplier of end-to-end communications solutions for mission-critical 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. Kontron Transportation invests in research and development and is an associated member of the European research initiative Shift2Rail.

Kontron Transportation is part of the S&T group and headquartered in Vienna (Kontron Transportation Austria AG) with main subsidiaries in Belgium, France, Germany, Portugal, Spain, the Czech Republic and United Kingdom.

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