RailBusinessDaily

Nokia and SBB complete next generation FRMCS frequency trial for smartrail 4.0 project

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Espoo, Finland – Nokia and Swiss Federal Railways (SBB, CFF, FFS) have completed a proof of concept trial to help define radio frequency for the new Future Railway Mobile Communication System (FRMCS) standard.

As part of the collaboration, Nokia carried out LTE 1900MHz TDD (Time Division Duplex) radio frequency testing with SBB in the cantons of Fribourg and Neuchâtel, Switzerland.

Due to be introduced in 2025, FRMCS will bring a host of benefits to rail operators and passengers. These include cost containment through increased utilization of existing infrastructure, enhanced levels of safety and security, and improved rail network performance and reliability.

Robert Badertscher, Head of Connectivity at smartrail 4.0, SBB said: “This proof of concept project is a major contribution to delivering FRMCS as essential enabler for smartrail 4.0, which is an industry-wide initiative to prepare Swiss railways to modernize the rail system. The result sets an important direction in terms of FRMCS frequencies for the industry program’s goal to exploit the potential of new, emerging technologies for the railways of the future.”

When fully deployed, FRMCS will be capable of handling the huge volumes of information that underpin new services such as improving the capacity of the existing tracks.

Jochen Apel, Head of Global Transportation, Nokia said: “SBB is at the forefront of work to define the FRMCS standard, which will provide a gateway to a new generation of rail industry innovation. This proof of concept will also contribute to work that both SBB and Nokia are carrying out with other rail companies to ensure all the benefits of FRMCS are realised for operators and passengers.”

In this frequency proof of concept, Nokia deployed remote radio heads, with tests using rolling stock specially equipped with measurement instruments.

The global leader in GSM-R deployments, Nokia has worked with SBB for more than 20 years, delivering end-to-end communications solutions and services over multiple technologies including GSM-R, IP/MPLS[2] and Optical networks. Currently, the industry standard for rail communications, GSM-R does not provide the necessary bandwidth to deliver all the benefits that FRMCS will offer.

Apel added: “This work is essential to enable a smooth transition to international deployment of FRMCS and is fundamental to unleashing the potential that the new standard will deliver across security, safety and productivity. Nokia is also working with rail companies elsewhere in Europe as they explore how 5G and digital transformation can enhance customer services and operational efficiency.”

smartrail 4.0 is a joint endeavor involving SBB, BLS, Schweizerische Südostbahn AG, the Rhaetian Railway, Transports publics fribourgeois and the Union of Public Transport. The smartrail 4.0 program is a collaboration that aims to prepare Swiss railways for the digital future.

Photo credit: SBB