FTS 3020 – Bearer Independent Communication (BIC)

Flexible and secure operational rail communication services via public mobile networks

Public Transport

FREQUENTIS
FOR A SAFER WORLD

Focusing on operational communications rather than infrastructure boundaries

GSM-R networks ensure seamless communication for trains, adhering to rigorous European standards for full interoperability. While vital for railway companies, standardized and interpretable communication systems according to EIRENE are not required for regional and connecting rail operations and railway staff communication. Nonetheless, the relevant railway companies (railway traffic and infrastructure companies) still require the same or similar operational processes and communication services.

Goodbye complexity, hello efficiency: FTS 3020 – BIC modernises your rail communication

FTS 3020 – BIC serves as a cost-effective complement or alternative to outdated analogue and digital radio technologies, as well as GSM-R, particularly suitable for regional and connecting lines. It provides flexible and secure operational communication for all railway staff, optimising efficiency and reliability across various roles, from train drivers to station controllers and depot personnel.

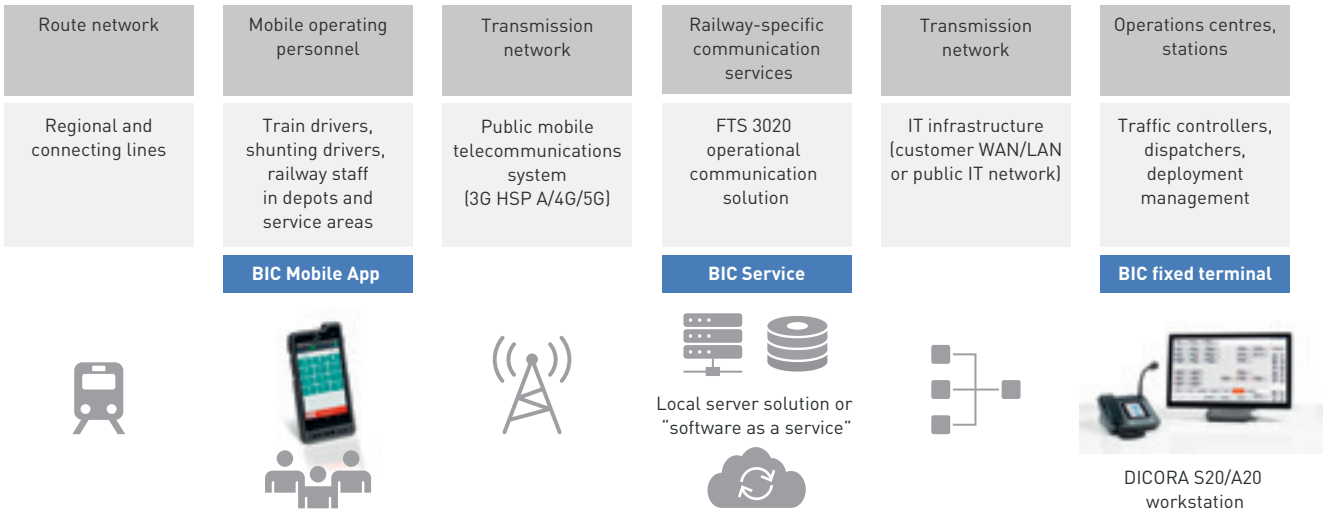
FTS 3020 – BIC performance features at a glance

The concept is based on providing a modern, mission-critical communication solution without having to set up and maintain a dedicated radio infrastructure. The different generations of the public mobile network available along the route (3G HSPA, 4G/LTE or 5G) are used to provide the following railway-specific communication services, leaning on EIRENE:

Supplements GSM-R (Closes the gap to MCX/ FRMCS)	Emulates the EIRENE functions "Over-the-top" solution in 3G/4G/5G mobile networks	Location-based addressing (Based on GPS location information)	Functional addressing (Based on functional roles)
Group call service (Geographic group calls based on a conference call)	Railway emergency call (Group call with highest priority)	Point-to-point calls (Based on functional addressing)	Point-to-point messages (Text messages based on functional addressing)
Can be registered as CT2, CT6 and CT7 phone number	Use of commercially available smartphones (Android)	Intuitive user interface interface (Follows the principles of GSM-R devices)	Uniform call processing for dispatchers (No different processing between GSM-R and BIC participants)

The architecture of an easy-to-integrate solution

The FTS 3020 – BIC architecture includes the BIC service, which is part of the standard FTS 3020 GSM-R operational communication solution extended to work only with public networks or in a mixed configuration with GSM-R. It also includes the BIC dispatcher terminal, representing the stationary working positions for the controller to communicate with train and maintenance staff. The last element is the BIC Mobile App representing the HMI for all mobile users on any Android smartphone to use the rail specific functions.



Integrating the solution

DICORA S20

Frequentis offers the BIC communication solution as a local server solution in the customer's own IT infrastructure. If you do not want to be concerned with the infrastructure, the solution can optionally be provided in hosted software-as-a service form. Commercially available smartphones with the Frequentis BIC mobile application serve as end devices for mobile users and provide the access point to the railway-specific communication services. Intuitive navigation, combined with user-guided features and preprogrammed speed dial functions, grant users easy access to these services.

Users in the control centre communicate using the Frequentis DICORA workstation with a touch-based and flexible user interface. Frequentis offers two type of terminals: the DICORA A20 and DICORA S20, which differ in their audio equipment.

Due to the „over-the-top" approach, the solution does not require any enhancements or specific adjustments in the mobile network and can therefore be integrated very quickly and without additional costs for the radio infrastructure. Through this approach, the FTS 3020 – BIC closes the functional communication gap that exists for railway infrastructure companies until the introduction of the standardised Future Railway Mobile Communication Services (FRMCS).

Since the BIC functionality is a purely software-based application, it can be upgraded to a FRMCS/MCX-compliant implementation at any time via a software upgrade.

Cost-effective solution without compromise

Use of existing public mobile networks and existing smartphones

Extended coverage for corporate communication

Use of railway-specific services without having to set up specific radio infrastructure

Effective operations with functional phone numbers

The role of an employee during a shift is in the foreground, not a personal phone number

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