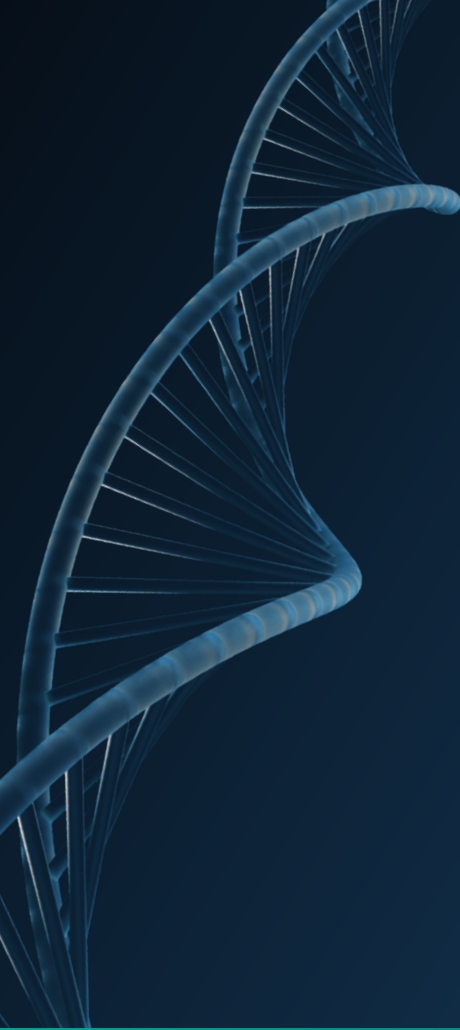


We Create FRMCS

Kontron Transportation

End-to-end communication solutions
for mission-critical networks





We Create FRMCS

Mission-critical communication solutions are our DNA.

With 30+ years of experience in mission-critical communication, we are the #1 partner for railways in their migration to FRMCS.

We shape standards, drive regulation, and deliver an end-to-end 5G portfolio that meets the highest benchmarks of safety, reliability, and lifecycle support.

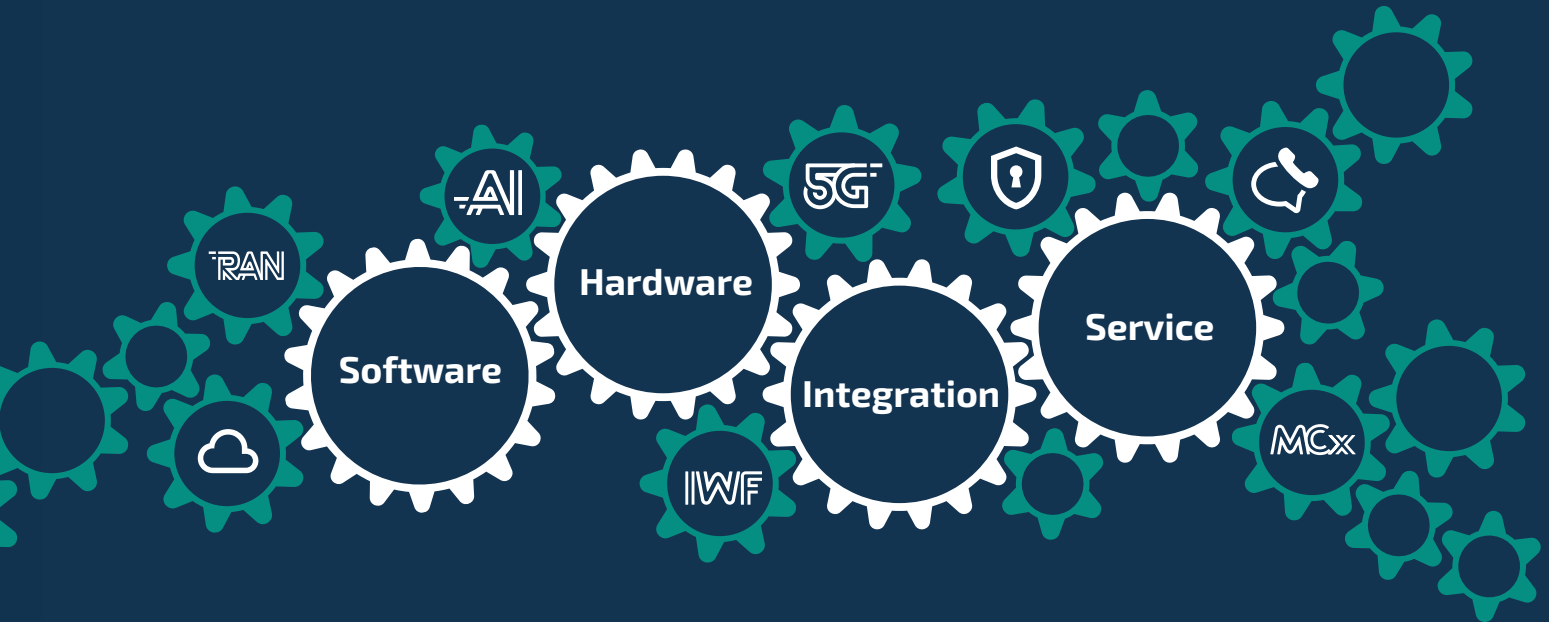


End-to-End Solutions Engineered to Last

At Kontron Transportation, we deliver end-to-end communication solutions that seamlessly integrate our own innovations with trusted partner technologies. Through decades of industry experience and a commitment to engineering excellence, we craft systems perfectly tailored to our customers' requirements.

Our end-to-end services portfolio spans the entire solutions lifecycle: From initial research and planning to implementation, maintenance, and long-term support, we ensure every component works together flawlessly to deliver lasting value.







MCx

5G

TRAN

vDCR

A 5G Portfolio Made for Railways

Designed for safety, scalability, and seamless integration,
our 5G solutions lay the foundation for a successful transition to FRMCS.

MCx

Mission-critical
services for voice,
video, and data

5G Core

A flexible core
network solution
delivering high
performance and
reliability

5G RAN

Radio Access
Network solutions
optimized for railway
operations

vDCR

A secure and
scalable
virtualization
platform

MCx

Future-Proof Communication Suite

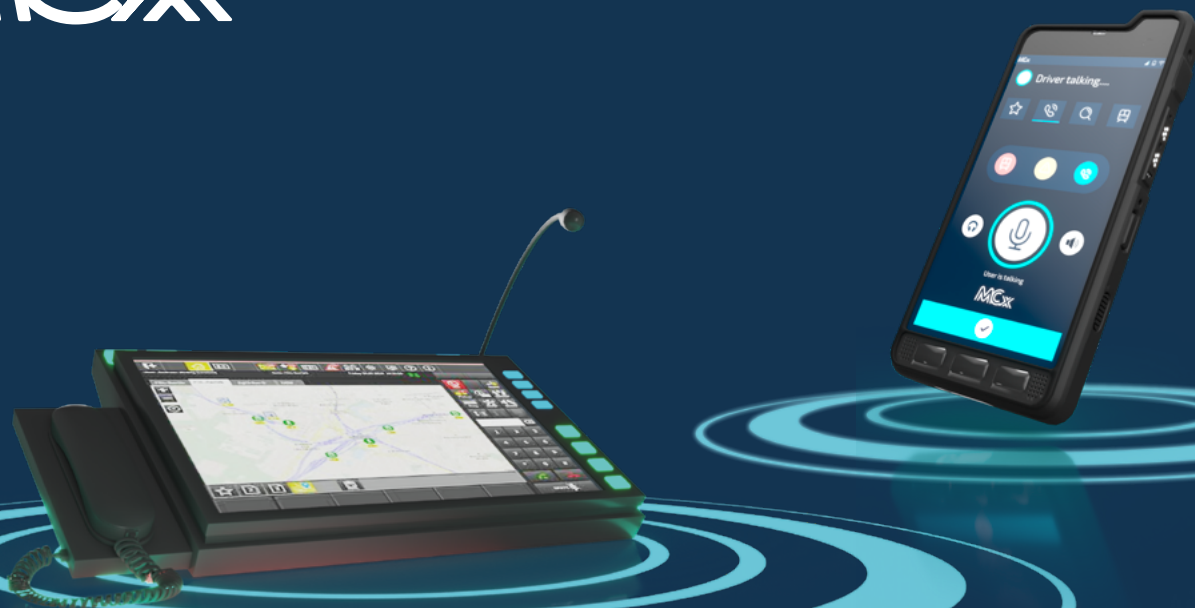
Our MCx solution delivers modern train radio and dispatcher functionality based on 3GPP FRMCS standards.

For main lines, it leverages private 5G infrastructure; for secondary lines, our OTT solution uses public networks, making advanced communication accessible without heavy investment.

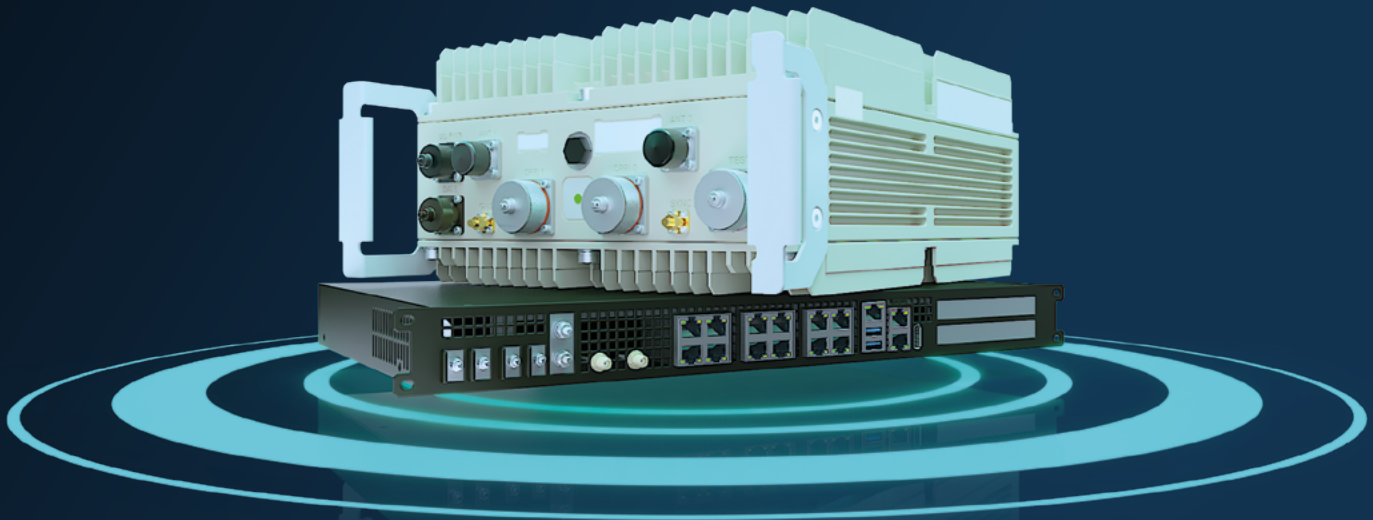
- Trusted by a steadily growing number of railway operators across Europe
- Supports approx. 1,500 km of track in Germany
- Powers ~1,300 MCx clients and ~60 dispatcher positions
- Combines standardized MCx functionality as well as custom features
- Certified by multiple German federal states
- Chosen for EU-Rail's FP2-MORANE-2 project

MCx

kontron
The Power of IoT



FRAN



Kontron Transportation
Your trusted partner for FRMCS.

NextGen RAN

Reliable, Robust & Ready for the Future

Our 5G Radio Access Network delivers ultra-reliable, high-speed connectivity with a modular, flexible architecture that supports both 900 and 1900 MHz bands.

Designed for versatility and flexibility, our RAN can be deployed in a multitude of scenarios and installation options both indoor and outdoor.

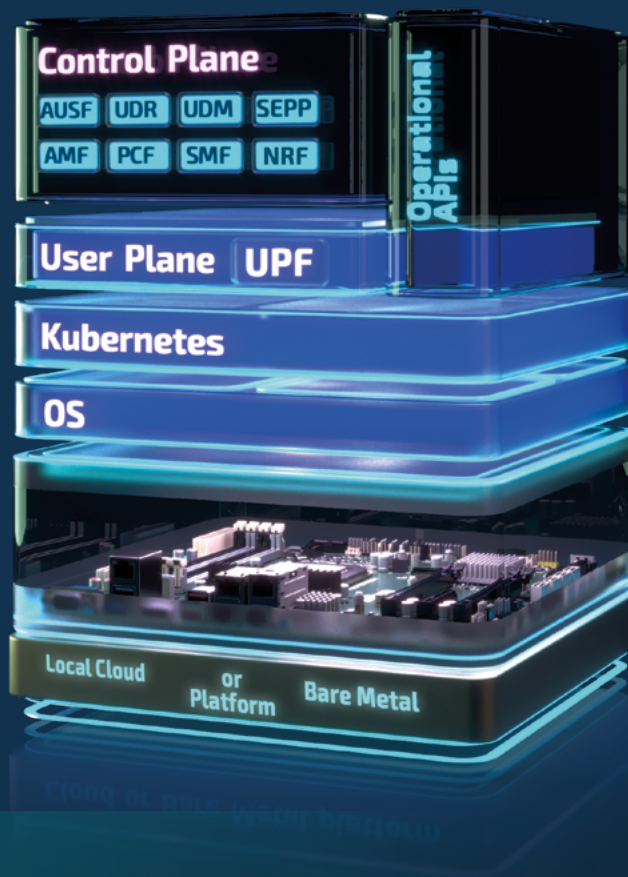
- Designed for 4G/5G private networks & 5G/FRMCS – 3GPP based
- Complementary to 4G/5G Core & our MCx solution
- Hardware platforms technology agnostic – 4G to 5G by software upgrade
- Reliability and system availability as key attributes
- Extended product life cycle

5G Core

The Heart of FRMCS Connectivity

A cloud-native, 3GPP compliant solution designed for mission-critical railway networks, our 5G Standalone Core delivers ultra-low latency, high availability, and seamless scalability, whether deployed in a local cloud or on bare metal.

With full support for control and user plane functions, intuitive web-based management, and robust security, the Core enables fast, flexible deployment of FRMCS services. It's the foundation for future-ready rail communication—secure, efficient, and built to perform.

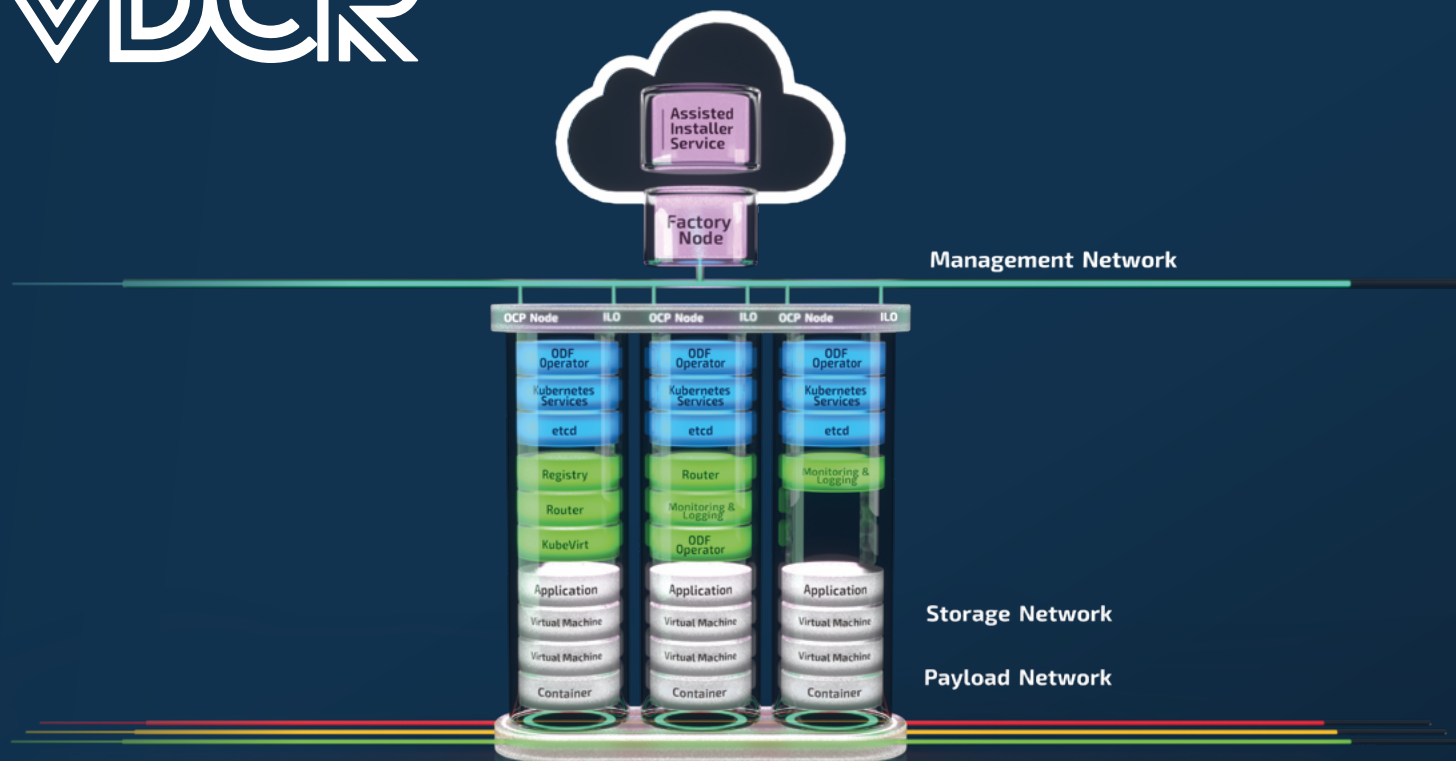


vDCR

The Platform Behind Smarter Railways

Our vDCR is a secure, scalable, railway-optimized virtualization platform designed to host advanced applications including AI-powered assistants and predictive maintenance tools.

Built on enterprise-grade hardware and industry standards, it supports both GSM-R and FRMCS environments, bridging legacy and future systems. vDCR enables fast, reliable deployment of modern services while meeting the highest standards of safety and performance.



Shaping Standards Driving Regulation

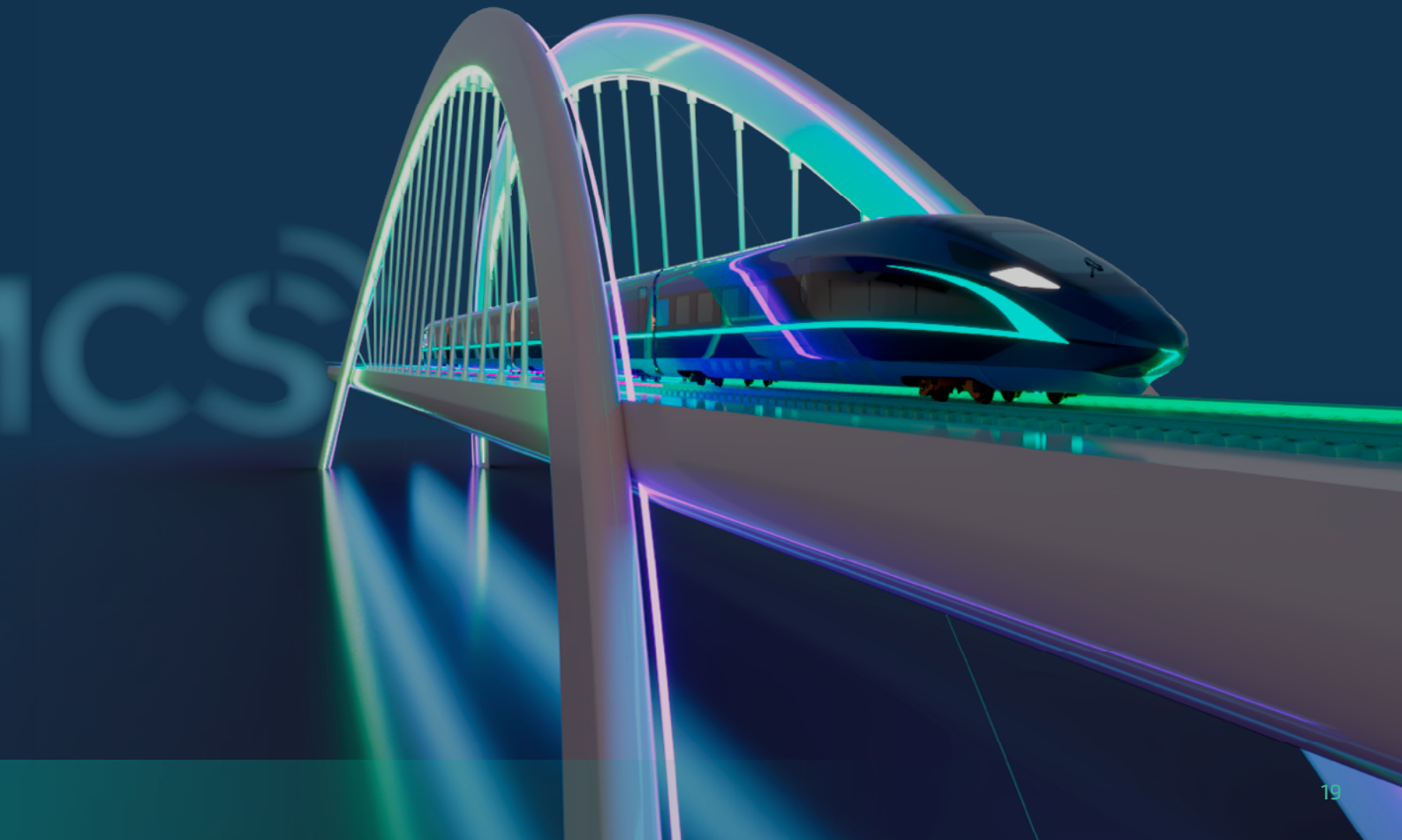
Kontron Transportation has been a core contributor to FRMCS from the very beginning, shaping its technical foundations, guiding its standardization, and validating its implementation across Europe.

Through deep engagement in 3GPP, ETSI, UIC, ECC, and key EU research projects, we've ensured that FRMCS reflects the real-world needs of railway operations and can be deployed effectively in live environments.



Kontron's FRMCS Contributions Include:

- › Active participation in ETSI TC RT (formerly NG2R) defining FRMCS architecture
- › Representing rail needs in 3GPP SA6 for mission-critical communication (MCx)
- › Spectrum planning in ECC/UGFA leading to harmonized bands (ECC Decision 20(02))
- › Development of the GSM-R/FRMCS coexistence solution "Whitespace"
- › **Integration and testing** of onboard prototypes in the 5G RAIL project
- › Leading involvement in the **FP2-MORANE-2** testing and validation project
- › Long-term commitment through Europe's Rail Joint Undertaking membership





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The Power of IoT