

## KONTRON MISSION-CRITICAL COMMUNICATION OVER 5G USE CASE

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### WHY MCX IS ESSENTIAL AND A NATURAL FIT FOR 5G

In critical environments, **communication can't fail**. Whether in **defense, public safety (PPDR), railways, airports, utilities, or industrial operations**, reliable voice and data are the backbone of safe and efficient operations. Standard commercial networks are not built to meet these demands — but Kontron mission critical MCX and 5G networks are.

#### Why Mission-Critical Communication?

When lives, security, or vital services are at stake, organizations need:

- Guaranteed connectivity in any situation.
- Instant, clear communication across teams and locations.
- Resilient infrastructure that keeps working during crises.
- Compliance with global standards for interoperability.

Kontron MCx over 5G delivers **3GPP-standardized suite of services**—including mission-critical voice (MCPTT), video (MCVideo), and data (MCData)—designed to deliver **secure, real-time, and prioritized communications** for public safety, utilities, and transportation sectors. It replaces legacy narrowband systems such as **TETRA and DMR** by leveraging **5G broadband capabilities**, including **network slicing for guaranteed QoS, high-speed data transmission, and ultra-low latency**.

## KONTRON'S MISSION-CRITICAL COMMUNICATION SOLUTIONS

Kontron a carrier-grade 5G Core is integrated with Mission Critical Services (MCx) on a single platform. Our solution is designed for low latency, high reliability, and prioritized communication, making it an ideal fit for mission-critical sectors.

### Industry Scenarios

In a large manufacturing plant, MCx enables instant, secure group calls, real-time video sharing, and priority messaging over 5G. Workers and supervisors communicate seamlessly across the facility, improving safety and response times during emergencies.

### Military Scenarios

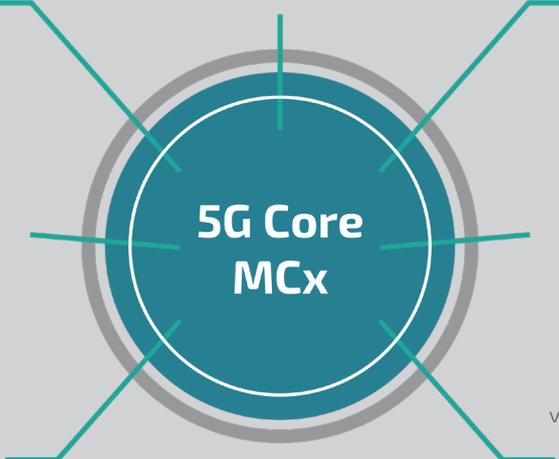
Soldiers use rugged 5G devices with seamless handover between cells, ensuring uninterrupted secure voice, video and data exchange for coordinated maneuvers, rapid threat alerts, and emergency support, even in contested or noisy environments.

### Ports/Airports Scenarios

MCx enables instant, secure group communication among ground staff, security teams, and logistics coordinators. The solution supports push-to-talk, priority messaging, and real-time video sharing over 5G networks, ensuring smooth operations, quick response to incidents, and seamless coordination even in noisy, high-traffic environments.

### Mining Scenarios

In mining operations, MCx provides mission-critical push-to-talk and real-time video communication between underground workers and surface control. It ensures instant alerts for hazardous conditions, coordinates evacuation procedures, and supports hands-free voice commands, enhancing safety and operational efficiency in harsh environments.



**5G Core  
MCx**

### Banking Scenarios

In banking, MCx enables secure, instant communication between branch staff, security teams, and central operations. Push-to-talk and priority messaging help coordinate cash handling, respond rapidly to security incidents, and ensure smooth customer service operations across multiple branches and ATMs.

### Healthcare Scenarios

In hospitals, MCx enables secure, real-time voice and video communication between doctors, nurses, and emergency teams. It supports priority calls for critical patient care, instant group coordination during emergencies, and seamless handover improving response times and patient outcomes.

### Railways Scenarios

In railways, MCx provides mission-critical voice and data communication between train drivers, control centers, and maintenance teams. Push-to-talk, group calls, and real-time video sharing enable quick coordination during delays, emergency response, and track maintenance, ensuring passenger safety and operational efficiency.

## MISSION-CRITICAL MOBILE BROADBAND ENABLES

- Multimedia-rich services within an expanded ecosystem.
- Improved situational awareness to protect people and assets.
- Seamless migration path toward FRMCS and PPDR standards.
- Integrated support for Train Control & Management Systems.
- Enabler of Automatic Train Operation for future rail networks.
- More efficient working environments in a fast-changing industry.
- Increased productivity and enhanced worker safety.
- Greater operational control with higher accuracy and fewer resources.
- Faster, more reliable handling of operations—24/7x24.

## WHY KONTRON?

Kontron delivers a carrier-grade, cloud-native connectivity platform combining 4G/5G Core, Cloud, and AI Voice capabilities, optimized for industrial-grade performance and low-power edge deployments. Built on deep expertise in embedded systems, telco software, and industrial computing, Kontron enables operators and enterprises to deploy secure, standards-based communication networks with seamless scalability from compact starter deployments to nationwide or full-campus coverage. With open integration and edge-ready architecture, Kontron supports Industry 4.0 transformation and mission-critical connectivity across public safety, transportation, utilities, and industrial environments.

