5G MPN
FOR INTELLIGENT AIRPORTS
USE CASE

WHY INTELLIGENT AIRPORTS ARE ESSENTIAL?

Airports worldwide are under increasing pressure to modernize, digitalize, and automate their operations. Growing passenger volumes, higher expectations for service quality, and the need for stronger security demand a new generation of infrastructure driven by reliable, high-performance wireless connectivity.

Traditional airport networks—often based on fragmented Wi-Fi, legacy radio systems, and wired infrastructure—struggle to support the scale, mobility, and real-time demands of modern airport environments. To address these challenges, **5G-powered intelligent airports** are becoming a must-have foundation for transformation.

Main challenges and motivations are:

- Ensuring uninterrupted connectivity across terminals, gates, runways, and operational zones.
- Meeting strict security and surveillance requirements, including real-time video and analytics for new models or devices.
- Improving operational efficiency across aircraft turnaround, baggage handling, ground handling, and logistics.
- Enhancing inventory and asset tracking for luggage, equipment, containers, and supply chains.
- Delivering superior passenger experiences through personalized services and low-latency digital applications.
- Integrating siloed workflows between airport operations, airlines, service providers, retailers, and authorities.
- Supporting automation initiatives such as autonomous vehicles, drones, and smart IoT systems.
- Handling increased data volumes and enabling real-time decision-making.

BUSINESS BENEFITS

30–40%
TCO reduction
over 3–5 years

Up to 40%
operational efficiency gain
ROI < 12 months

Up to 60%
CAPEX vs cabling
30% lower OPEX

20–30%
OPEX savings
from unified private infrastructure

KONTRON'S 5G SOLUTION: USE CASES & BENEFITS

Airports are increasingly adopting a wide range of **5G-driven applications** that elevate daily operations and improve service delivery. Reliable **high-bandwidth connectivity** enables continuous communication across gates, aprons, runways, and aircraft systems. **Passenger services** benefit from instant updates, digital entertainment access, and smarter movement through terminals using analytics and biometric tools.

On the operational side, 5G supports aircraft telemetry exchange, black-box data offload, runway activity oversight, and more efficient flight planning processes. Ground operations can leverage **real-time tracking** for vehicles and equipment, robotic assistance, and automated check-in or bag-drop stations. Staff safety is improved through **connected body cameras** and **prioritized links for emergency teams**.

Together, these capabilities form the basis for a secure, responsive, and **highly optimized airport environment**.

USE CASE	CHALLENGES AND LIMITATIONS	KONTRON 5G MPN BENEFITS
Mission- and business-critical communications	Need for a high reliability wireless communication—providing both voice and data services with low latency, while ensuring seamless interconnection with existing infrastructure.	Kontron 5G MPN is an end-to-end mission-critical communications suite, including 5G Core and RAN, combined with 5G devices and applications such as MCx and VoNR, to deliver secure and reliable voice and data services.
Baggage handling	High-volume throughput, real-time tracking, and seamless coordination with legacy systems.	Baggage handling with deterministic low latency, high device capacity, and reliable automation. Supporting real-time control of QR/RFID scanners, digital cameras, and other devices, while providing seamless monitoring and flexible wireless deployment for improved efficiency and reduced errors.
Camera surveillance & security	High uplink video, secure access, and mobile cameras are limited by rigid and complex wired setups—challenges that 5G solves with secure and flexible connectivity.	Deployment of 5G wireless cameras on remote locations, sensorics, drones, and AGWs across the airport—indoors and outdoors, even at the edge of the property—without the constraints of network cabling.
Support for internal campus business	The need of reliable, secure connectivity for POS, mobile devices, IoT, and passenger information screens, while minimizing cabling across the campus—challenges 5G can address.	5G provides reliable and secure connectivity for all devices, reduces infrastructure investment, enables flexible deployment, supports scalable device growth, and improves real-time information.

WHY KONTRON?

Kontron's 5G platform is optimized for **industrial-grade performance**, **low power edge deployments**, and **open integration** with third-party automation systems. Combined with our deep experience in embedded systems, telco software, and industrial computing, Kontron is uniquely positioned to support manufacturers on their **Industry 4.0 and digital transformation journey**—starting with a compact **5G Starter Pack** and scaling to full-factory coverage.

Kontron, d. o. o. | E: marketing.slovenia@kontron.com | W: www.kontron-slovenia.com