ViTrust: making mission-critical mobile broadband a reality today
Opening up new possibilities

Every second counts in an emergency. It’s critical that emergency services can respond quickly and have the right information to rapidly assess the situation and take action. LTE enables real-time video and broadband data services that greatly enhance the situational awareness for first responders.

LTE opens up a new vista of communications possibilities for rescue missions and disaster recovery situations. It can also enhance the day-to-day operational efficiency of public safety agencies with new applications for surveillance, real-time database access and remote medical assistance.

- Group communication including push-to-video
- Real-time video
- Database lookup and reporting
- Remote monitoring
- Location and mapping
- Control room applications
Public safety operators have different requirements and different resources. With Nokia, you can deploy your LTE mission-critical network to match your situation, such as operational and capital budgets, available spectrum, existing commercial operator network availability and expected revenues. Nokia LTE solutions offer many options to suit any deployment schedule and offer an evolutionary path to meet your future needs.

**Deploy LTE the way you want**

**Dedicated public safety network**
Public safety operator deploys private LTE radio access and core network infrastructure solely to provide public safety services and applications over mobile broadband.

**Hybrid solution**
Public safety operator has a network and/or spectrum sharing agreement with a commercial mobile network operator. The public safety operator may also implement a dedicated LTE network in key locations, while using the commercial network in other areas.

**Fully commercial operator network based**
Commercial mobile operator provides the full network and all services for public safety users based on a negotiated service level agreement and price.

**Mobile virtual network operator (MVNO)**
Public safety operator uses commercial mobile network infrastructure instead of deploying own network, but operates its own subscriber database, applications and billing services.
Nokia is at the forefront of 3GPP public safety communications standardization.

Our end-to-end approach, including services, provides the resiliency, as well as network, device and application security, that mission-critical communications needs.

High service availability is achieved by our redundant and robust products; scalable architecture; user and service prioritization; and temporary coverage options for peak load situations and remote areas.

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**End-to-end security**

- Network protection at any layer (RAN, IP/MPLS, microwave and optical)
- Application encryption
- User and device security
- Firewalls, access control, authentication and authorization

**Network and service availability**

- Microwave link reliability with adaptive modulation
- MPLS-based fast recovery and multi-fault resiliency
- Geo-and hot control redundancy of key network elements
- Enhanced power backup systems
- #1 in network planning and design*

**Traffic and user prioritization**

- Policy management
- QoS-capable backhaul and radio networks
- Traffic engineering
- User differentiation based on 3GPP standard QCIs
- Load balancing and admission control
Nokia ViTrust: a full mission critical portfolio

Advanced Command Center
- Improved situational awareness with rich-media call-taking and enhanced multi-agency cooperation with virtual control rooms

E2E security solutions
- NetGuard Security Management solutions, professional and managed security services

Public safety devices' applications and software customization
- Push-to-video, push-to-talk, location tracking and other public safety capabilities on public safety devices. Tailor-made Android firmware for the operational needs of public safety agencies.

Public safety group communications applications
- Solution offers push-to-talk, push-to-video, alert messaging, location tracking and video management.

Interworking gateways
- Interworking solutions to meet the need of continuity of communications across legacy networks (PMR/TETRA) and LTE networks.

Improved situational awareness with rich-media call-taking and enhanced multi-agency cooperation with virtual control rooms

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Radio access
- Airscale base stations and LTE Flexi Zone small cells for reliable coverage and capacity, indoors and outdoors.

Backhaul network

Core network
- Scalable solutions including compact units to serve deployable and small networks, mid-sized for full network deployments, and data centers for nationwide networks.

E2E security solutions
- NetGuard Security Management solutions, professional and managed security services

Professional services
- Expert consulting, network design, implementation and integration, optimization and network management support.
Nokia is your trusted partner

Moving to LTE may seem like a technology leap for public safety agencies.

A partner that understands mission-critical requirements and the evolution of technology and services is vital to ensure the best planning and implementation of your transition to LTE for public safety.

Nokia is that trusted partner. We offer deep expertise that goes beyond just the technology. We have a history of helping commercial operators to move from legacy technologies to today’s LTE networks. We are also actively supporting them on their journey to 5G.

Nokia ViTrust, our LTE end-to-end approach and standards-based solutions combined with a comprehensive service portfolio help you safely adopt broadband technologies that meet your specific public safety deployment needs. We are also working with public safety agencies to build resilient networks and to manage them reliably and efficiently.

Nokia has a 60-year history of working with government customers such as security agencies and other governmental departments. More than 110 organizations across the globe have chosen Nokia IP, optical, microwave, or 4G LTE technology for their mission-critical networks.
It’s time for action
Help make the world safer with commercial LTE networks
About Nokia

Nokia is a global leader in the technologies that connect people and things. Powered by the innovation of Bell Labs and Nokia Technologies, the company is at the forefront of creating and licensing the technologies that are increasingly at the heart of our connected lives.

With state-of-the-art software, hardware and services for any type of network, Nokia is uniquely positioned to help communication service providers, governments, and large enterprises deliver on the promise of 5G, the Cloud and the Internet of Things. [http://nokia.com](http://nokia.com)

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