



MOTOROLA PUBLIC SAFETY LTE



An aerial view of a city street during autumn. The street is lined with trees that have yellow and orange leaves. Several cars are visible on the road, including a dark SUV in the foreground and a white sedan further down. A traffic light is visible at an intersection in the distance. The overall scene is a typical urban street scene.

A FEW SECONDS FROM NOW

A DISPATCHER WILL SEE LIVE VIDEO OF TWO LITTLE GIRLS WALKING TO SCHOOL AN ELDERLY WOMAN WALKING HER DOG A SUSPICIOUS MAN LOITERING AT THE CORNER

When the moment requires vigilance, Public Safety LTE delivers video to nearby squad cars to deter a potential incident from developing. Equip your first responders with the real-time visibility and heightened situational awareness they need to keep themselves, and the people and cities they protect, safe.

**YOUR CHANCE TO PROTECT IS RIGHT AROUND THE CORNER.
WILL YOU BE READY TO KEEP THEM SAFE?**

TRANSFORMING PUBLIC SAFETY WITH BROADBAND INNOVATION

RICH-MEDIA INFORMATION ANYTIME, ANYWHERE

DESIGNED TO THE STANDARDS

BUILT FOR PUBLIC SAFETY

BACKED BY EXPERIENCE AND VISION

Today, the most advanced mobile broadband technologies on the planet are available to public safety, delivering unprecedented access to real-time, multimedia information anywhere, anytime.

Fueled by open standards, shared intellectual property, a rich ecosystem of developers and the promise of scaled economies, LTE has been selected for the future of public safety mobile broadband.

Public Safety LTE will enable powerful solutions for better protecting our first responders and the communities they serve, with the priority, control, security and performance at the core of mission critical operations.

Connecting advanced multimedia services to today's mission critical voice and offering a new collection of innovative data devices to join the trusted two-way radio, Public Safety LTE is a critical ingredient in delivering the next generation of public safety communications.

THE POWER OF MOBILE BROADBAND FOCUSED ON PUBLIC SAFETY NEEDS

A STANDARDS-BASED APPROACH

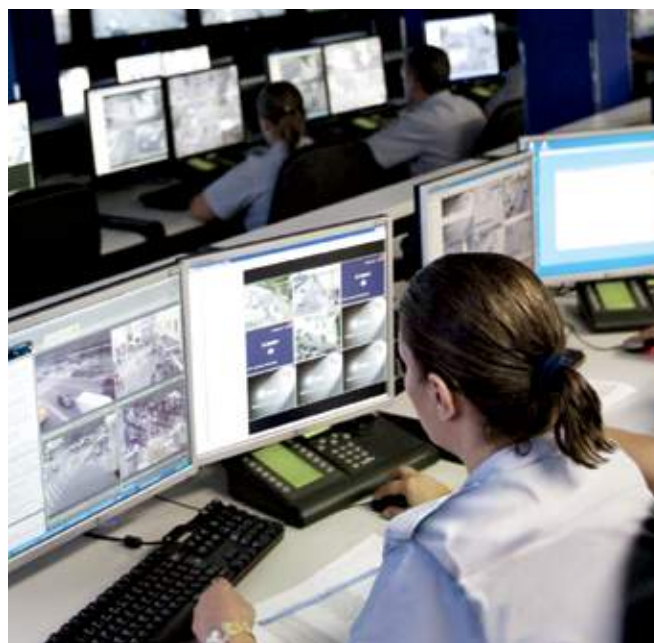
Technology standards play a vital role in ensuring networks, applications and devices are compatible with one another for the successful movement of information.

BUILT FOR PUBLIC SAFETY

First responders entrusted with protecting life and property have unique, specialized communications needs. Successful operations require robust and reliable networks, hardened user devices and applications built to meet the needs of public safety organizations.

EXPERIENCE AND VISION

Backed by over 75 years of experience in serving public safety, Motorola has the most comprehensive vision for next generation public safety communications, combining advanced new technological capabilities with the reliability of the industry's most trusted mission critical voice solutions.



MOTOROLA STANDARDS-BASED LTE SOLUTION BUILT TO MEET PUBLIC SAFETY REQUIREMENTS

LTE NETWORK	APPLICATIONS	LTE DEVICES	
<p>STANDARDS-DEFINED COMPONENTS</p> <ul style="list-style-type: none"> • Mobility Management Entity (MME) • Public Data Network Gateway (PGW) • Home Subscriber Server (HSS) • Serving Gateway (SGW) • Policy and Charging Rules Function (PCRF) • Enhanced Node B <p>PROVEN PERFORMANCE</p> <ul style="list-style-type: none"> • Field-proven reliability • High throughput for multi-media content delivery • High availability & resiliency via Geo-Redundant Core • Flexible, on-demand coverage via LTE deployable sites • Quick response times for real-time applications 	<ul style="list-style-type: none"> • Roaming to carrier and other public safety LTE networks • LTE push-to-talk (PTT) communications linked to two-way radio networks • Mobile Virtual Private Network (MVPN) • Role based agency control over user accounts • Secure and encrypted end-to-end connections • Single sign on, presence & location services • Agency control over user accounts • Users and data dynamically prioritized to serve the most critical incidents • Video content adapts to best fit the network and receiving device capabilities 	<ul style="list-style-type: none"> • Rugged vehicular modems for wide area connections to mobile applications and superior performance • USB LTE modems bring quick and easy connections to laptops and mobile computers • Handheld computers provide total broadband mobility with LTE in your hand • Embedded LTE modules connect sensors, cameras and other electronics for remote monitoring and control, surveillance and reporting 	
SERVICES			
<ul style="list-style-type: none"> • Pre-deployment consulting and design • Installation and integration 	<ul style="list-style-type: none"> • Post-deployment operations with security, management and support • On-going support and network optimization with hardware and software maintenance 	<ul style="list-style-type: none"> • Priority technical support • Device repair turnaround time (3days) • On-going support and network optimization with hardware and software maintenance 	<ul style="list-style-type: none"> • LTE SIM production and provisioning service • Network performance and fault monitoring

FIELD-PROVEN LTE WITH SUPERIOR PERFORMANCE

BRINGING THE STRENGTH AND EXPERIENCE OF THE GLOBAL COMMERCIAL CARRIER MARKET TO PUBLIC SAFETY

Motorola has teamed up with Ericsson, the world's leading provider of technology and services to telecom operators, to deliver LTE technology leadership and market scale advantage to public safety. The undisputed leader in LTE development and standardization, Ericsson offers field-proven stability, throughput, and latency – key factors for Public Safety LTE end users. Ericsson will provide standards-based products for LTE access and packet core networks, along with related services, and ensure that the LTE mobile broadband technology meets the mission-critical demands of Motorola Next Generation Public Safety solutions.



APPLICATIONS BUILT FOR PUBLIC SAFETY

DELIVERING THE MOST CRITICAL INFORMATION

LTE VOICE SERVICES

Connect public safety LTE users to each other or to P25 users with secure, high-performance voice PTT services. Optimized for public safety, the LTE PTT solution has familiar P25 features like group scan, priority override, late join and other first responder group management call features. The solution operates with integrated P25 common call controller services to provide a unified PTT experience, allowing P25 and LTE users to easily collaborate. With common vocoding techniques for both P25 and LTE, Motorola's LTE PTT solution lowers latency and enhances voice quality by eliminating the transcoding found in many gateways.

Fully integrated with the LTE solution, our VoIP telephony uses advanced scanning techniques so users on a telephone call can be notified of critical PTT activity and won't miss calls.

DYNAMIC RESOURCE PRIORITIZATION

Public Safety LTE systems immediately prioritize those users most critical to serving an incident, de-prioritize nonessential users and, when necessary, pre-empt.

The user's profile, determined by agency, individual, role, home serving area, incident level and participation, distinguish service tiers and dynamically adjust quality of service (QoS) and prioritization based on individual, application and incident.

DATA SECURITY

Mobile Virtual Private Networks (MVPN) designed to work with Public Safety LTE systems provide end-to-end encryption, safeguarding sensitive information transmitted over the air in a wireless environment. Because it is designed to work with LTE QoS mechanisms, MVPN can safely protect the payload data while providing the necessary flags for QoS and prioritization handling.



REAL-TIME MULTIMEDIA INTELLIGENCE

Video applications designed for real-time wireless streaming are aware of the constant changing signal quality inherent with wireless broadband. As a user's signal quality changes, video parameters such as resolution and frame rate automatically adjust to best fit the capabilities of the broadband connection and the device screen specifications.

UNIFIED SERVICES ACROSS MULTIPLE COMMUNICATION NETWORKS

Integrating Public Safety LTE with Project 25 and enterprise data networks opens the opportunity to deliver an enhanced service of mission critical voice augmented with broadband multimedia applications. This unification of services could lead to common mapping of talk-groups and multimedia-groups, enabling services such as Push-to-Image and Push-to-Video mapped to voice talk-groups.

NATIONWIDE INTEROPERABILITY WITH LOCAL CONTROL

BRINGING TOGETHER THE ADVANTAGES OF STRONG COOPERATION BETWEEN PUBLIC SAFETY LTE AND CARRIER 3G AND 4G

Through an alliance with Verizon Wireless, Motorola's Public Safety LTE solution delivers a true private and public solution with an operational framework to support nationwide interoperability using both public safety LTE networks and Verizon Wireless networks.

This solution provides public safety with the ability to determine and set policies that best fit their operating needs on their private LTE broadband network, along with the ability to roam onto a nationwide public carrier broadband network for extended coverage.



PURPOSE-BUILT BROADBAND DEVICES

INSPIRED BY MISSION CRITICAL EXPERIENCE



LEARNING FROM USERS ON THE FRONT LINES

At its foundation, Motorola's design methodology depends on close collaboration with those who most intimately use our technology.

Motorola is using standardized open market LTE components to build a broad selection of LTE devices optimized for use by public safety and government enterprise users.

COMMUNICATING ANYWHERE

Multi-mode devices will allow public safety users to connect on their private networks as well as wireless carrier networks.

BUILDING AN ECOSYSTEM OF SUPPLIERS

LTE promises public safety a rich ecosystem of devices spurred by large communities of global developers, as well as steep cost declines emerging from the economies of scale for carrier LTE deployments worldwide.

MOTOROLA PUBLIC SAFETY LTE DEVICES



HANDHELD DEVICES

- Total mobility with smart devices offering interfaces designed for public safety
- Superior survivability and performance for public safety environments



USB DEVICES

- Bring LTE connections to existing laptops and mobile computers
- Standard USB data interface provides a quick and easy connection



IN-VEHICLE MODEMS

- Wide-area connections to mobile applications in vehicle
- Higher grade radio performance for reliable network connections

THE POWER OF MOTOROLA

SUPPORTING YOU EVERY STEP OF THE WAY

A COMPREHENSIVE SERVICE PORTFOLIO

Motorola offers a full spectrum of services to partner with public safety agencies in developing a technology and operations strategy, establishing a business plan, designing and deploying an optimized network and managing ongoing support.

TURN-KEY PUBLIC SAFETY LTE SYSTEM

End-to-end system designed to optimize mission critical operations and enable interoperability with public carrier networks, two-way radio systems and the broader enterprise data network.

IMPLEMENT RAPIDLY TO MEET DEADLINES

Unparalleled expertise and experience in deploying large-scale public safety networks that marry IP-based networks with optimized transport of broadband mobility services across wide and local area networks in the most challenging environments

SHORTEN USER ACTIVATION TIME

Motorola's SIM provisioning service simplifies the provisioning process by programming SIMs specific for your network, pairing them with user equipment before it ships and enabling services to dramatically reduce the activation time for your users

SUPPORT THE MOBILE BROADBAND SYSTEM

LTE system performance and continuity assured with 7 x 24 x 365 network monitoring and triage. Emergency response teams can engage directly with development, production and factory engineers for rapid resolution.

SECURE DATA, PROTECT AGAINST THREATS

Defend against threats and protect data resources for gap-free security across the entire next generation communications platform from applications and services, IP transport, Public Safety LTE, radio networks, down to the data on a user's device.

MULTI-TECHNOLOGY, MULTI-VENDOR PLATFORM

An experienced team of Motorola IT professionals can manage the broadband multimedia platform supporting the public safety and government member agencies to minimize total cost of ownership.



ACCELERATING PUBLIC SAFETY LTE

PROVIDING INDUSTRY LEADERSHIP, DRIVING CRITICAL PUBLIC SAFETY INNOVATIONS AND SUPPORTING A GLOBAL DEVELOPMENT COMMUNITY

FIRST	ISRAEL MINISTRY OF DEFENSE TO DEPLOY MISSION CRITICAL LTE HANDHELDS	2015
FIRST	MISSION CRITICAL LTE NETWORK FOR RIO DE JANEIRO DURING BRAZIL 2014 WORLD CUP	2014
FIRST	LA RICS REGIONAL LTE NETWORK DELIVERS MISSION CRITICAL DATA FOR 80+ AGENCIES	2014
FIRST	DEMONSTRATION OF PUBLIC SAFETY LTE SWITCHOVER TO CARRIER ROAMING	8/7/2011
FIRST	ALLIANCE FOR PUBLIC AND PRIVATE NATIONWIDE PUBLIC SAFETY LTE	2/23/2011
FIRST	BROADBAND VIDEO TO WORLD'S FIRST PUBLIC SAFETY LTE DEVICE	11/9/2010
FIRST	PUBLIC SAFETY LTE DEVICE MODULE USING STANDARD COMPONENTS	11/9/2010
FIRST	OVER-THE-AIR DATA SESSION USING IN-FIELD PUBLIC SAFETY NETWORK	10/28/2010
FIRST	LTE 700 MHz BTOP FEDERAL BROADBAND GRANT AWARD	8/19/2010
FIRST	DEMONSTRATION OF LTE PRIORITIZATION AND CONTROL	8/1/2010
FIRST	DEMONSTRATION OF LTE RUTHLESS PRE-EMPTION	8/1/2010
FIRST	PUBLIC SAFETY LTE AWARD WITH SAN FRANCISCO AREA BAYWEB NETWORK	7/29/2010
FIRST	PUBLIC SAFETY APPLICATIONS DEMONSTRATED OVER LIVE LTE NETWORK	11/17/2008

ENHANCE PUBLIC SAFETY OPERATIONS

FOR DAY-TO-DAY, PLANNED EVENTS AND CRITICAL OPERATIONS

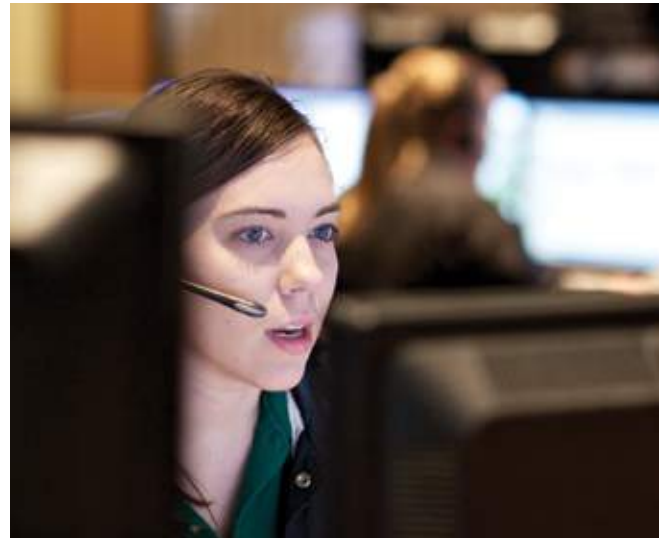


THERE'S NO SUCH THING AS A ROUTINE TRAFFIC STOP

OFFICERS MUST KNOW THEIR ENVIRONMENT AND CONTROL THEIR EXPOSURE

A clear view of the scene ahead is paramount; when a car door slams, an officer can see what just happened even though he was focused on completing a report.

- Share in-vehicle video with team and dispatch
- Scan license and connect to remote databases for fast identity verification
- Instantly read plates for lookup and auto-match against hot list
- Officers return to patrol quickly with in-field reporting and submission



A CITY CELEBRATES, EVENTS ARE PLANNED

CENTRAL COMMAND COORDINATES ACROSS THE GOVERNMENT ENTERPRISE

Integrated command connects multiple agencies, serving public safety, public service and public works, for a shared, real-time operational picture and effective event coordination.

- Coordinated command center
- Video surveillance
- Citizen inquiries and requests submitted through social media
- Perimeter security ensured with immediate match of individual to credentials
- Ability to push tasks to mobile workers

SHARE NETWORK RESOURCES ACROSS THE GOVERNMENT ENTERPRISE



OFFICER NOTICES A TRAFFIC LIGHT IS DAMAGED

Instantly sends map coordinates to a centralized municipal database.



A UTILITY TRUCK DRIVES PAST A SUSPECTED VEHICLE

Instantly sends map coordinates to police dispatch.

CONNECTING TEAMS TOGETHER

FOR A COORDINATED RESPONSE AND SAFER COMMUNITY



A BARRICADED SUSPECT TAKES HOSTAGES

DECISIONS MADE IN THE FIRST MINUTES CAN DETERMINE THE OUTCOME

Resources are dynamically prioritized for the most critical responders and real-time, shared situational awareness empowers a coordinated response across multiple agencies.

- Intelligent video streaming
- Remote control of surveillance devices and bomb disposal robots
- Rapid file transfer for images, floor plans and manuals
- Multiple agencies coordinate response with PTT over LTE



AN OVER-TURNED TANKER BRINGS TRAFFIC TO A HALT

POLICE, FIRE, EMS, STATE, FEDERAL AND MUNICIPAL AUTHORITIES RUSH TO ACTION

Evacuation needs are considered, state highway workers prepare for clean-up and nearby schools are notified so that buses can be rerouted.

- Alarms, sensors and triggers
- Instant access to hazmat procedures
- Remote experts communicate directly with on-scene responders
- Dynamic mapping and monitoring applications for weather and traffic
- Remote medical services

CONNECTING FEDERAL, STATE AND LOCAL JURISDICTION



BORDER PATROL AGENT IN PURSUIT

Share real-time video and location information with local law enforcement.



CROSSING STATE LINES DURING PRISONER TRANSPORT

Status update and location information shared with local authorities.

EMPOWERING YOUR FORCE IN THE FIELD

FOR IMPROVED AWARENESS AND PRODUCTIVITY

VIRTUAL PARTNER WHERE EVER YOU GO



INSTANT ACCESS AT YOUR FINGERTIPS

Instantly connect into records, databases and other back office systems while on foot.

COMMUNICATE ANYWHERE

Roam and interoperate beyond your home network on other public safety or carrier networks.

STAND UP TO DAY-TO-DAY USE

Robust hardware designed to survive harsh weather and the beating of every day use.

ON THE MOVE WITH MOBILE BROADBAND



INFORMATION TO THE VEHICLE

Share real-time, multimedia information between the command center and the LTE-enabled vehicle for greater situational awareness

REAL-TIME VIDEO STREAMING

Enable live video streaming within the vehicle while dynamically adapting the stream to optimize the LTE capacity

INSTANT, IN-FIELD REPORTING

Interface with the records management system in the command center to enable field-based reporting and work flow management

IN A FEW SECONDS

A STOLEN VEHICLE WILL TURN DOWN THIS STREET

**THE DRIVER WILL BE IDENTIFIED AS AN ARMED
FUGITIVE WANTED IN THREE STATES**

BACK-UP UNITS WILL BE ON THE WAY

When the moment brings danger, arm your first responders with the situational awareness they need to execute their plan. Combine mission critical voice with secure, streaming broadband multimedia. Unify voice, data and video on one system, connecting the entire government enterprise, and linking public safety with commercial systems. Equip your first responders with the real-time information they need, wherever they are, so they can react with confidence, and better keep citizens and the cities they protect, safe.

**YOUR OPPORTUNITY TO BENEFIT FROM PUBLIC SAFETY LTE
IS COMING. WILL YOU BE READY?**

TRUSTED IN 5-ALARM FIRES.

TRUSTED IN ACCIDENTS WITH LIFE THREATENING INJURIES.

TRUSTED IN TENSE HOSTAGE SITUATIONS.

**TRUSTED IN MAJOR HURRICANES, EARTHQUAKES AND
OTHER NATURAL DISASTERS.**

TRUSTED DURING THE WORLD'S LARGEST SPORTING EVENTS.

**MOTOROLA CREATES INNOVATIVE PUBLIC SAFETY SOLUTIONS TRUSTED
BY FIRST RESPONDERS FOR MORE THAN 75 YEARS.**

Motorola is leading the way to a new generation of public safety solutions by combining advanced new technological capabilities with the reliability of the industry's most trusted mission critical solutions to provide real-time sharing of crucial voice, data and video communications where they're needed most.

To learn about Motorola Next Generation Public Safety and how your organization can benefit from Public Safety LTE, visit motorolasolutions.com/nextgen

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