



Overview

The primary objectives of public-safety organizations are to keep citizens, communities, and public spaces safe; with faster response, improved operational efficiency, and reduced costs.

Public safety and emergency response challenges are growing in complexity and expectations are rising with increasing demands for critical communications across a growing spectrum of voice, data, and video.

In a crisis situation, every second counts. Potentially life-threatening situations change in a heartbeat, and decisions must be made in seconds. This Cisco vision for the Internet of Things (IoT) provides the platform to help support this mission.

Cisco Digital Public Safety

Secure Mobile Communications and Collaboration



Figure 1. Networked Connection of People, Process, Data, and Things

The Network: The Platform for IoT

IoT—the networked connection of people, process, data, and things—presents a tremendous opportunity for today’s public safety. The deployment of proven, mature, secure, converged mobility solutions, network security, cloud, and big data enables an integrated mission fabric and provides the power to connect public-security agencies in ways that fundamentally change operations.

The IoT is opening new possibilities for connecting agencies in the most challenging areas of operation and enhancing situational awareness and response capabilities across the mission environment, helping to provide:

- Real-time situational awareness
- Intra-agency communication and collaboration (voice, data, video)
- Data analytics and information sharing
- Increased community engagement and stakeholder outreach
- Support for humanitarian missions

This integration of machine with human communications, collaboration, and analytical elements enables real-time decision advantages and is crucial to bringing greater intelligence and security to public-safety operations. IoT incorporates physical objects, such as ground sensors, beacons, fixed and mobile video, vehicles, and unmanned aerial vehicles (UAVs), with secure networks to create capabilities for communication and collaboration. This keeps public-safety field personnel connected to

vital information they need to respond to ever-changing conditions, and allows agencies to:

- Enhance operational capabilities through real-time voice, video, and data situational awareness
- Bridge communications gaps by integrating existing Land Mobile Radio (LMR) and cellular capabilities with next-generation wireless technologies
- Connect mission people, processes, and data in new ways that optimize detection, assessment, and response capabilities

Cisco Digital Public Safety

Government, public safety, security, and justice organizations around the world need new ways to protect and serve citizens, while reducing costs and improving operational efficiency. This public-safety mission in the twenty-first century requires real-time and untethered interactions between citizens, field personnel, law enforcement, intelligent sensors, and intelligent analytics systems. Cisco's digital solutions can help, with cost-effective solutions to keep citizens and public spaces safe using:

- Compute, storage, and virtualization assets in the data center and operational technologies
- Fog computing nodes to extend IP to the tactical edge
- Comprehensive network security policies from the data center to the edge
- Cisco Intercloud Fabric for connectivity
- Voice- and video-enabled secure mobile infrastructures
- Wearable and remote sensors

The Cisco Digital Public Safety solution is replicable and scalable to enhance operations and requirements across the mission environment to:

- Provide automated incident detection, assessment, and response capabilities
- Integrate sensor platforms to capture data and to close communications gaps
- Support fixed and rapid deployment operation centers with collaboration and situational awareness tools

- Host information resources in a secure cloud for anywhere, anytime access
- Interconnect agencies and field personnel beyond conventional capabilities

Automated Incident Detection, Assessment, and Response Capabilities

Change-detection capabilities automate the discovery of incidents, and analyze data to deploy the appropriate response resources and tactics. Citizens can report incidents using any available communications device. These can be combined with video surveillance and sensors to help public safety organizations collect real-time information. This makes it possible for agencies to accelerate incident management to:

- Reduce time between incident detection and response
- Help field personnel to make decisions based on all available information
- Get the right information to the right people at the right time

Integrated Sensor Platforms to Capture Data and Close Communication Gaps

Integrated intelligent sensors and alarms allow agencies to capture data, and to create a backhaul link between sensors and data collection points. Analytics tools process data and events at the tactical edge or in the cloud, and provide a visual presentation of data and events for in-depth analysis, decision-making, and execution.

Operation Centers with Collaboration and Situational Awareness Tools

These tools support both fixed and mobile rapid-deployment operation centers to facilitate:

- Integration of administrative plus command-and-control functions
- Mobile office environments through portable "office-in-box" or "office-on-wheels" solutions
- A rich set of tools for applications such as voice, video, and data services

Expanded Access and Collaboration with Information Resources in the Cloud

Optimize internal processes using shared cloud-based services to accelerate deployment. Benefits include increased flexibility and collaboration, cost savings from consolidated data centers and open data, and increased mobility—all with security that provides the framework for operational efficiency. Agencies can also provide broader access to resources such as:

- Enterprise applications
- Telephony
- Video conferencing
- Chat
- Telepresence
- Whiteboard

A Secure Platform with Cisco IP Network Mission Fabric

This platform provides the tools that help interconnect agencies and field personnel to:

- Seamlessly integrate wired and wireless technologies (LMR, Wi-Fi, public 3G and 4G, private 4G, and satellite)
- Combine existing and next-generation mission-critical voice, video, and data applications
- Allow mobile and fixed nodes to communicate voice, video, and data
- Support multilevel security
- Complement typical LMR and satellite communications with next-generation public networks, plus provide mobile cellular broadband and ad-hoc mesh networks as needed

Why Cisco?

Through digital solutions, Cisco and its ecosystem of partners help organizations in every country and community in the world to provide a smarter, healthier, and safer environment. This digital platform also provides the capabilities to improve operational efficiency, reduce costs, and grow innovation.

Because Cisco solutions are everywhere, we have the resources and expertise to work with government organizations to transition to the twenty-first-century government. Cisco helps public safety and security organizations deliver innovative capabilities with network solutions, expertise, and resources. For more information, contact your local Cisco account representative or authorized Cisco partner, or visit www.cisco.com/go/government.

