Extending First Responder Network Services with 5G

Ensuring Secure, Mission-Critical Communications and Network Priority for First Responders in the Federal Government
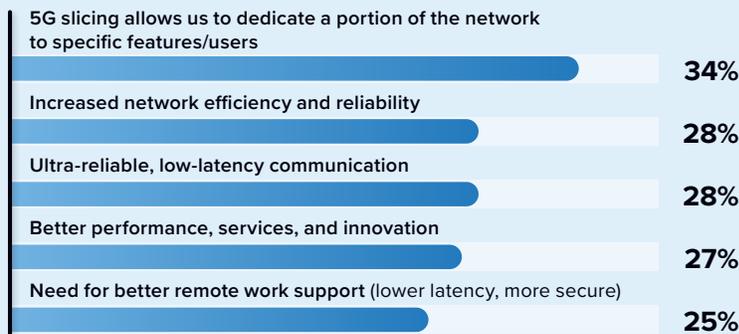
Alison Brooks, Ph.D.
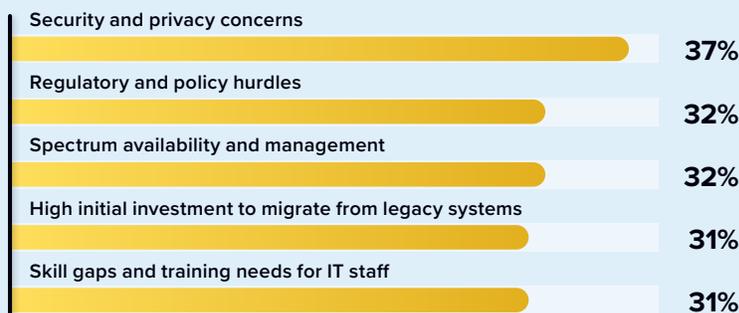Research Vice President,
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68% of federal agencies are **already implementing 5G or planning to complete implementation** within the next two years.

Top Drivers of 5G Investment

5G slicing allows us to dedicate a portion of the network to specific features/users — **34%**

Increased network efficiency and reliability — **28%**

Ultra-reliable, low-latency communication — **28%**

Better performance, services, and innovation — **27%**

Need for better remote work support (lower latency, more secure) — **25%**

Top Challenges to Adopting 5G

Security and privacy concerns — **37%**

Regulatory and policy hurdles — **32%**

Spectrum availability and management — **32%**

High initial investment to migrate from legacy systems — **31%**

Skill gaps and training needs for IT staff — **31%**

n = 241; Source: IDC's *North America Government Buyer Intelligence (NAGBI) Survey,* November 2024

Federal first responders prioritize 5G adoption to enhance emergency operations, seeking improved performance and reliability while carefully weighing cybersecurity and regulatory requirements.

The transition to next-generation connectivity and network modernization is fundamentally reshaping how federal agencies conduct emergency response operations. Resilient, high-performance networks have become mission-critical as federal agencies increasingly rely on connected devices, AI, and cloud-based applications.

Federal agencies are making strategic investments in network infrastructure to better address the growing complexity of emergency response scenarios.

FEMA (Boston) and FEMA (Baltimore) are case studies that exemplify this complexity. These investments support the deployment of next-generation technologies, such as AI-powered decision support systems, real-time video analytics, and advanced sensor networks. Modernization efforts also focus on establishing redundant communication pathways and ensuring seamless interoperability between disparate agency systems, which are critical requirements for effective, coordinated emergency response efforts.

Network performance, availability, and reliability are paramount concerns for federal emergency response teams that depend on connected smartphones, cellular laptops, tablets, and IoT devices for mission-critical communications. As these agencies begin to embrace AI-driven operations and automated processes, their network infrastructure must successfully handle growing data demands while ensuring priority access during large-scale incidents.

When 5G technology combines with modern security protocols, such as the Cybersecurity and Infrastructure Security Agency's Trusted Internet Connections 3.0, it provides federal first responders with the enhanced network performance and security that is essential for their operations.

Implementing network slicing functionality and zero trust security architectures ensures the protection of sensitive communications and the prioritization of critical emergency traffic.

Looking ahead, federal agencies with demanding IoT and edge connectivity requirements are already exploring next-generation solutions. This forward-looking approach aligns with their need for enhanced situational awareness through advanced IoT deployments, such as sensor networks and connected surveillance systems. Integrating AI-optimized network operations further supports efficient and effective federal emergency response.

To fully realize these benefits, federal agencies should prioritize investments in telecommunications services that deliver enhanced network performance and innovation capabilities. This includes leveraging current 5G deployments while preparing for future technologies, all within a framework that maintains the highest levels of security and operational efficiency. Success in this modernization effort requires careful alignment with federal security guidelines while ensuring the agility to adopt emerging technologies that support the mission-critical communication and connectivity needs of federal emergency response teams.

Message from the Sponsor

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T-Priority from T-Mobile offers first responders unprecedented 5G connectivity with priority access, low latency, and expanded capacity to support data-intensive tools, such as drones and AR/VR. During extreme network congestion, T-Priority helps ensure reliable performance for critical missions.

Explore how T-Priority empowers first responders in emergencies.

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