Priority

Transforming first responder operations with T-Priority: Insights from experts.

Executive summary.

In an era of increasingly complex emergency response needs, T-Mobile has developed T-Priority, the nation's first network slice designed to support public safety and critical infrastructure agencies. T-Priority provides first responders with a dedicated slice of its 5G Standalone (5G SA) network, enabling access to faster 5G speeds[1] and lower latency than other networks, clearly demonstrating the T-Mobile leadership in delivering advanced, reliable, and scalable solutions for first responders.

T-Priority represents a quantum leap in emergency communications technology, utilizing network slicing capabilities that can only be achieved through 5G SA technology. This innovative approach offers first responders fast speeds and low latency more consistently, with access to network resources that can dynamically expand, helping keep critical communications uninterrupted during extreme network congestion while supporting Mission Critical Push-to-Talk (MCPTT) with fast call-setup times.

The T-Priority solution goes significantly beyond basic priority access, providing a comprehensive communication ecosystem that supports data-intensive applications across law enforcement, fire and rescue, emergency medical services, as well as critical infrastructure operations. Leveraging a network that offers more 5G capacity and 2.5x faster speeds than competitors, T-Priority empowers first responders by supporting real-time data transmission, enhanced situational awareness, and improved team coordination.

As public safety technology advances, T-Priority supports expanding operational capabilities, improving service levels, and enhancing personnel safety by providing a robust, adaptive communication infrastructure that meets the evolving needs of emergency response teams. The T-Mobile investment in the first responder community extends beyond network infrastructure, reflecting a long-term commitment to helping emergency personnel operate with confidence, capability, and continuity.

Five key takeaways.

5G

1. Revolutionary 5G technology: Unlike dedicated channels like the FirstNet Band 14 that are built on 4G, T-Priority operates on a 5G Standalone network with a dedicated network slice, delivering low latency and fast throughput with capacity across a vast network.

2. Enhanced operational capabilities: The network supports advanced applications such as live-streaming drone video, real-time body camera footage, live crime mapping, thermal imaging transmission, and 5G-powered telemedicine, with MCPTT supporting integrated video, image sharing, and location tracking at mission-critical reliability.

3. Network priority: T-Priority provides first responders with priority access to network resources and dynamically expands capacity during times of extreme congestion to help keep uninterrupted critical communications.

4. Comprehensive security framework: Leveraging advanced security protocols, including end-to-end encryption, mutual authentication, and network segmentation, T-Priority helps protect mission-critical communications from emerging cyber threats.

5. Future-ready communication platform: T-Priority provides a flexible foundation for emerging public safety technologies, supporting advanced applications like artificial intelligence and augmented reality, with MCPTT extending reliable two-way communication across all personnel.

Industry insight: The evolution of critical communications for first responders.

Ildefonso de la Cruz
Telecommunications Industry Analyst

Ildefonso de la Cruz is a wireless technology strategist and industry analyst with nearly 15 years of experience. He specializes in cellular 5G networks and connectivity solutions for mission-critical communications, advising government agencies and service providers. He recently provided some insight into T-Priority following the announcement that T-Mobile would become the primary carrier for all city operations in New York City.

"T-Mobile clearly understands the requirements of this community (first responders), and it appears they're ready to deliver as the reliance on broadband is quickly expanding," de la Cruz said.

According to de la Cruz, successful public safety broadband hinges on the "three Cs":

- **Coverage:** "Coverage is king. You cannot switch to broadband unless the coverage is there." De la Cruz emphasized the significance of the T-Mobile Starlink connection in eliminating outdoor dead zones, noting that while initially limited to text, "the fact that the connection has been established is remarkable."
- **Congestion Avoidance:** The T-Mobile dedicated slice of their 5G Standalone network helps maintain uninterrupted access during emergencies when networks typically become overloaded. "The fact that this can be physically done today, it's the recipe in many markets. The Standalone network is key," de la Cruz said.
- **Capacity:** Enhanced network capabilities support more connected devices and faster speeds. "The more capacity that you can offer, the more capabilities you can provide. I don't have to be limited to voice or text. I can go into real-time analytics, augmented reality, video feeds."

De la Cruz emphasized that T-Priority addresses the practical needs driven by the benefits of decision making based on real-time data.

> **"Normal day-to-day operations may occur 99% of the time, but 1% of the time it's truly critical communications, and that's the difference between life and death."**

Traditional radio systems limit data-driven decision making. "When you have a radio, you have nothing but voice," de la Cruz explained. "In fire services, you may have a situation where visibility is extremely poor. With team operations, you have to ask repeatedly, 'Where's my team and what's their equipment status?' Broadband can provide that info at a glance. This can't be achieved by land mobile radio (LMR)."

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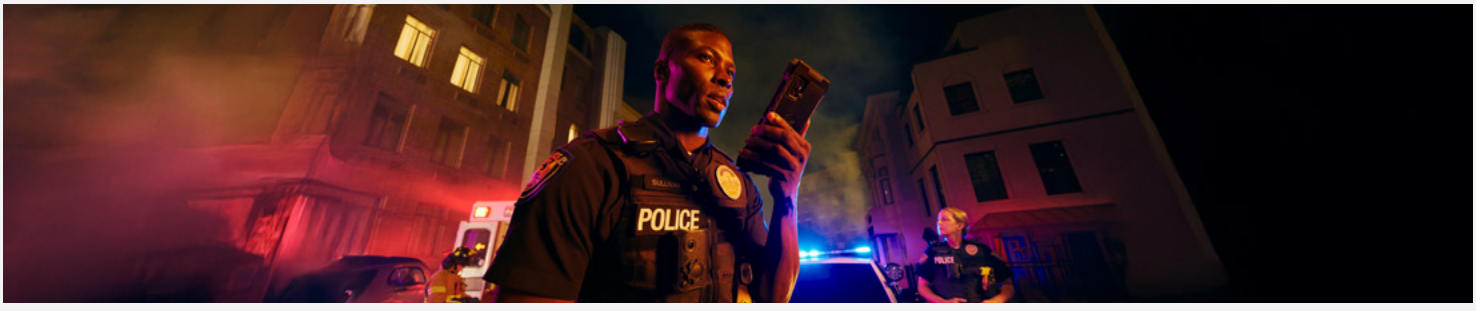
The industry is entering what de la Cruz calls "a time of coexistence," where agencies maintain their P25 radios while "evaluating the benefits of running a parallel network."

To support this transition, de la Cruz notes that T-Mobile has established strategic partnerships across the first responder industry.

"For a long time, LTE was good enough because the use cases were limited. But with T-Priority, you'll have the ability to embrace modern use cases without concern of capacity."



The public safety challenge.

Public safety operations depend on rapid, reliable access to voice, video, and data, often under the most demanding conditions.

Yet mobile networks are typically not optimized to meet the specific needs of emergency personnel, especially during large-scale incidents when network congestion can spike without warning. While traditional systems like LMR provide voice redundancy and security, they are often siloed and limited in bandwidth. Increasingly, agencies are adopting mobile broadband solutions to support data-intensive applications such as:

- Live-streaming body-worn cameras.
- Integrated real-time crime centers and mobile command platforms.
- Drones and ground robotics for search, reconnaissance, and overwatch.
- Telemedicine and remote physiological monitoring.
- Field-based incident management and situational awareness systems.

These tools depend on fast, reliable, low-latency connectivity to operate effectively. This connectivity becomes even more critical during time-sensitive, high-stakes situations. Network congestion is an ongoing concern during major events such as active shooter responses, natural disasters, or large public gatherings that can saturate commercial networks, leading to dropped calls, buffering, or degraded data performance. The challenge is not simply having 5G. It's about having assured access to the network's full capabilities when others are competing for the same bandwidth. Agencies need a solution that preserves operational performance during the very scenarios when communication is most critical.

The T-Priority solution: Network slicing that changes everything.

T-Priority is the T-Mobile purpose-built public safety solution that leverages the power of a nationwide 5G standalone network to support the mission-critical needs of public safety agencies and critical infrastructure organizations. At its core, T-Priority provides prioritized access through a dedicated network slice, the first of its kind in the United States.

What makes network slicing revolutionary.

Network slicing is a breakthrough capability enabled by 5G SA architecture that allows the creation of multiple virtual networks within a single physical infrastructure. Unlike traditional traffic management tools that rely solely on device-based or SIM-level prioritization, T-Priority goes further by creating a path for more optimized use of the 5G network by public safety and critical infrastructure users.

The T-Mobile nationwide 5G SA network, covering over 98% of Americans, enables capabilities particularly relevant to public safety:

- **Lower latency:** Enhances responsiveness for real-time applications.
- **Increased network capacity:** Supports simultaneous data-heavy use in high-density environments.
- **Device density support:** Allows deployment of more sensors, wearables, and IoT devices.
- **Dynamic network slicing:** Automatically assigns additional network resources during periods of extreme network congestion.

How the T-Priority network slice performs.

The T-Priority dedicated network slice functions as a secure, virtual pipeline within the T-Mobile 5G SA network, providing:

- **Assured resources:** Network slice designated for public safety and critical infrastructure users.
- **Dynamic capacity:** During extreme congestion, additional resources are allocated to maintain target performance.
- **Comprehensive coverage:** Backed by the T-Mobile nationwide network across more than two million square miles.

The network slice dynamically adapts to changing circumstances:

- **Normal operations:** Delivers premium performance with lower latency and faster data speeds.
- **Moderate congestion:** Automatically prioritizes public safety traffic to maintain high performance.
- **Extreme congestion:** Can expand to access nearly all available network capacity, enabling uninterrupted communication when it matters most.

A first responder perspective on T-Mobile 5G and T-Priority.

Jonathan Boyd
Fire Chief

In a rapidly evolving technological landscape, few voices from the emergency response community have been as forward-thinking about connectivity needs as Allen, Texas, Fire Chief **Jonathan Boyd.**

His experience and insights on T-Mobile's 5G network and T-Priority service offer valuable perspective on the future of emergency communications.

Rethinking priority in emergency communications.

Boyd advocates for a fundamental shift in how we conceptualize priority in emergency services:

> **"We need to rethink priority, it's not 'I need this frequency (radio)' or 'I need this road.' It's 'I need priority for my data.'"**

The growing need for capacity.

Boyd is particularly concerned about future capacity needs: "We can't even imagine the capacity that we will need. Look how quickly we have moved from LTE, and the future will accelerate this."

"All of these things, drones, AI, video recognition. None of these will matter if we don't have the infrastructure to support them. We have to have enough capacity to have room, extra space for those developments."

Boyd emphasizes that the fire service has reached a critical point where capacity has become essential:

"We are now in the realm where we need capacity. Bandwidth is going to come into play perhaps sooner than we thought because AI is going to grow in importance. The challenge in major incidents is the overflow of information. Humans just can't keep up with it. AI will play an immediate and valuable role in that area."

T-Priority and network slicing.

Boyd's perspective on priority and capacity align perfectly with T-Priority, which uses network slicing to allocate dedicated resources to emergency responders during critical situations.

"T-Priority offers an additional layer of bandwidth security, allowing we get the bandwidth we need in critical moments, while still allowing the general public to stay connected."

He notes that data demands are growing exponentially in emergency response, with video being the biggest consumer of bandwidth: "5G already offers a massive improvement over 4G in terms of data capacity.

More bandwidth means that even during major emergencies, there's still room for everyone, both first responders and the general public."

"Overall, I'm optimistic about this new technology (network slicing) and will be closely watching the T-Priority rollout with the city of New York. That will be a big test and success there will pretty much validate the legitimacy of the technology."

Comprehensive priority and security framework.

The T-Mobile prioritization framework combines multiple layers to protect public safety communications from disruption, working in concert to provide a resilient foundation for mission-critical communications.

Multi-layered priority access.

- **Wireless Priority Service (WPS):** Provides cross-network voice priority during times of congestion through federal program integration.
- **Priority access and preemption:** Helps keep data and voice resources are available by managing network traffic during peak demand, placing public safety users in higher access tiers.
- **T-Priority slice:** Adds dynamic, dedicated capacity for 5G-based data applications, helping to maintain performance even when commercial traffic surges.

Robust security architecture.

Public safety communications demand strong, resilient security. Key security features include:

- **End-to-end encryption:** Secure transmission of voice, video, and data traffic.
- **Device and SIM-level access control:** Allows only authorized users and devices can access the T-Priority slice.
- **Isolated network slicing:** Protects public safety traffic by running on a logically separate slice from consumer traffic.
- **Federally compliant security protocols:** Aligns with NIST standards and federal cybersecurity requirements.

Real-world impact and innovation platform.

T-Priority enables public safety agencies to adopt emerging technologies with confidence and scale them as needed. Applications now possible include:

- **Real-time video sharing:** Live feeds from body-worn cameras, drones, and vehicle-mounted systems enhance situational awareness.
- **Connected medical devices:** EMS teams can transmit patient vitals and receive remote consults in the field.
- **AI and predictive tools:** Cloud-connected applications support threat assessment and deployment strategies.
- **Autonomous systems:** Ground robots and aerial drones require low-latency connectivity for safe deployment.
- **IoT integration:** Environmental sensors, gunshot detection, and location trackers create more intelligent operations.

These solutions depend on predictable access to high-performing network resources under variable conditions. T-Priority delivers that foundation, allowing agencies to invest in innovation without losing functionality when it matters most.

A technology perspective on T-Priority from the T-Mobile Chief Technology Officer.

John Saw
T-Mobile CTO

Dr. John Saw is the T-Mobile President of Technology and Chief Technology Officer. He's known for pushing the boundaries of wireless innovation and is responsible for the architecture and evolution of the T-Mobile Network as well as the company's innovation center, the Tech Experience 5G Hub.

With decades of leadership experience in wireless engineering, including pivotal roles at Sprint and Clearwire, Saw offers a unique perspective on how network slicing and 5G Standalone (SA) technology are redefining the possibilities for public safety communications.

"The network slice is truly a breakthrough," Saw explained. "It gives first responders more capacity, significantly better performance, and the speed that only a 5G network can deliver."

Unlike legacy solutions tied to a specific portion of the spectrum like the FirstNet Band 14, the T-Mobile nationwide 5G SA platform delivers priority access across the entire 5G spectrum. "That's a factor of ten to one," he said. "You don't need dedicated spectrum anymore because we provide priority and preemption across the entire network."

Built on the T-Mobile 5G SA core, T-Priority offers first responders a dedicated, dynamic slice of the network, something not possible with older LTE or Wi-Fi technologies. According to Saw, this architecture isn't just faster and more responsive; it's also inherently more secure.

"With the network slice approach, the data is not comingled with other traffic," he noted. "And every layer in the 5G protocol has been built with security in mind." From encrypted SIM provisioning to zero-trust architecture, T-Priority incorporates protections that go far beyond those available on conventional mobile networks.

One of the most impactful real-world applications, Saw shared, involves prehospital care for stroke victims. In partnership with Ceiba Health, an ambulance service, T-Mobile deployed a network slice to enable EMS teams to transmit real-time video and data to hospital physicians while enroute.

"With stroke patients, every minute counts," he said. "In a way, our network slice is being used to save lives."

Saw also highlighted the benefits of Mission Critical Push-to-Talk (MCPTT) that are made possible by T-Priority. "Push-to-talk has long been a trusted tool, but now you can push more than voice," he said. "With MCPTT on a network slice, you're pushing protected video and data too. It's a significant upgrade over conventional PTT."

Looking ahead, Saw believes the demands placed on public safety communications will only increase.

> **"Ten years ago, the priority was a phone call. Today it's real-time video from drones and body-worn cameras," he said. "We're designing for the future."**

That future includes expanding coverage to the hardest-to-reach places. T-Satellite with Starlink now delivers satellite-to-cellular service[2]. As the first and only space-based mobile network in the U.S., it can help keep people connected in the more than 500,000 square miles of the country unreached by any carrier's earth-bound cell towers.

"First responders are the lifeline service for all of us," Saw said. "We've invested nearly $200 billion into our network, business, and spectrum so they can have the best network possible,[3] because when every second counts, technology can and should make the difference."

Why T-Mobile leads in Public Safety communications.

The T-Mobile leadership in 5G results from years of sustained investment, infrastructure development, and strategic commitment to serve critical sectors like public safety:

- **Nationwide 5G Standalone network:** T-Mobile was the first U.S. provider to launch a true 5G Standalone network, now available to over 330 million people nationwide.
- **Largest dedicated slice deployment:** T-Priority represents the first and largest 5G network slice deployed exclusively for public safety agencies and critical infrastructure organizations.
- **Integrated priority services:** Combines WPS, priority access, preemption, and slicing under one unified framework.
- **Public Safety-centered support:** Dedicated engineers, product specialists, and account managers focused on emergency services.

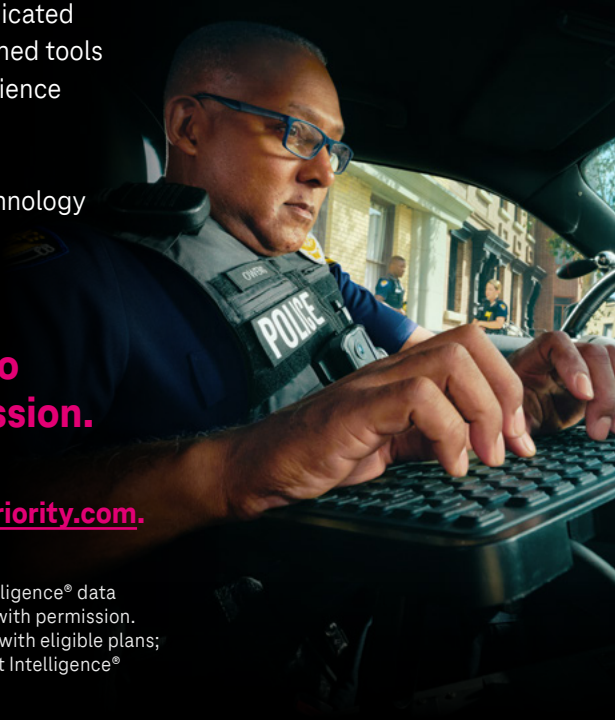
This approach is grounded in listening to public safety leaders and delivering practical solutions.

Whether providing coverage in underserved areas, supporting advanced mobility tools, or helping agencies transition to next-generation capabilities, the goal remains consistent: helping first responders maintain the communications support they need before, during, and after critical events.

Conclusion: The future is operational today.

The demands on public safety communications are growing, and so are the expectations of what technology can deliver. First responders need more than connectivity; they need a platform that enables operational continuity, protects mission-critical applications, and scales to meet evolving threats. T-Priority answers that call by combining the strength of the T-Mobile 5G Standalone network with a first-of-its-kind network slice dedicated to public safety and critical infrastructure personnel. When paired with established tools like WPS, priority access, and preemption, it delivers a layered approach to resilience that stands apart in today's mobile landscape.

Whether you are seeking to enhance situational awareness, modernize your technology infrastructure, or prepare for the next large-scale incident, T-Priority provides a foundation built for the future and ready to serve today.



Talk to a T-Mobile Public Safety Solutions Expert to learn how T-Priority can support your agency's mission.

The next evolution in emergency communications isn't theoretical. It's operational. And it's available now. **For more information, go to T-Priority.com.**

1 Fastest: Based on median, overall combined 5G speeds according to analysis by Ookla® of Speedtest Intelligence® data national 5G download and upload speeds for 2H 2025. Ookla trademarks used under license and reprinted with permission. 2 T-Satellite: With compatible device in most outdoor areas in the U.S. where you can see the sky. Included with eligible plans; or $10/mo.; auto renews monthly. Cancel anytime. 3 Best Network: based on analysis by Ookla of Speedtest Intelligence® data 2H 2025. Ookla trademarks used under license and reprinted with permission.

For qualifying organizations on eligible rate plans. WPS enrollment with USDHS required for enhanced network functionality (including priority access, preemption, basic performance baseline, and T-Priority Slice features). Features available on our network; not available while roaming. T-Priority Slice features (data prioritization and enhanced downlink baseline) available in areas of Ultra Capacity 5G coverage with capable device and 5G Standalone settings; see T-Mobile.com/5Glayers. Baseline commits available network resources to help maintain threshold throughput; does not guarantee threshold speeds in all network conditions. Coverage not available in some areas.

T Priority