Wireless Broadband Alliance Enhances Emergency Services Communications in Challenging Environments

New reports outline the framework for how Wi-Fi and OpenRoaming™ can be used to deliver reliable emergency calling and priority communications between the public, first responders, public safety organizations and emergency services.

Logo of the Wireless Broadband Alliance

LONDON, UNITED KINGDOM, October 8, 2025 /EINPresswire.com/ -- The Wireless Broadband Alliance (WBA), the global industry body dedicated to driving the seamless and interoperable service experience of Wi-Fi across the global wireless ecosystem, has today launched three reports, providing a framework for how Wi-Fi, Passpoint® and OpenRoaming™ can facilitate and sustain emergency calling and priority communications around the world. Developed by WBA's Mission Critical & Emergency Services Program, the framework demonstrates how across indoor venues, dense public spaces and other challenging environments, Wi-Fi further enhances the availability, reliability and performance of communications networks between the public, first responders, public safety organizations and emergency services.

> "These reports show how Wi-Fi and OpenRoaming enhance cellular network emergency communications to deliver seamless resilient, standards-based services..."
>
> *Tiago Rodrigues, President and CEO of the Wireless Broadband Alliance*

Wi-Fi has already proved a critical line of communications in emergency situations, such as Hurricane Katrina when cell towers were affected. Equally, in densely populated public spaces and indoor environments, Wi-Fi can be a lifeline for communication between the public, emergency services and first responders, where other methods may be limited by signal strength, connection density and bandwidth.

These papers provide a framework and practical advice to the emergency services, public safety organisations, mobile operators, device manufacturers and Wi-Fi providers. They explain how Wi-

Fi extends traditional mobile services to enhance public safety responses, while also helping mobile operators manage the signal challenges of indoor spaces, densely populated public spaces and weak or dead spots.

Crucially the papers also demonstrate how enhanced mission critical communication services can be delivered for emergency services personnel, ensuring they are able to manage and co-ordinate responses through robust two-way communications in large operations such as disaster recovery and crowd control.


Tiago Rodrigues, President and CEO of the Wireless Broadband Alliance

A common vision for Wi-Fi in public safety
The reports reinforce WBA's leadership and commitment to advancing Wi-Fi innovation for public safety, emergency preparedness, and global standards alignment. Collectively the papers share a vision for the delivery of emergency communications that covers six areas:

- Wi-Fi as Mission-Critical Infrastructure - All three reports highlight Wi-Fi's evolution to a standards-compliant, resilient infrastructure capable of supporting emergency and public safety services
- Emergency Services Access – Ensure support for E-911/E-112 calls over Wi-Fi regardless of mobile subscription status
- Priority Access for NS/EP Users - Wi-Fi allows real-time prioritization of first responder traffic during network congestion
- OpenRoaming & Passpoint Integration - Enables secure, seamless, and policy-based access across federated Wi-Fi networks
- Advanced Location Handling - Shared emphasis on accurate, standards-based location delivery using RFC 5580, IEEE 802.11mc Round Trip Time (RTT), and Location Configuration Information (LCI) or emergency call routing to local PSAPs
- Regulatory & Legal Readiness - Clear legal frameworks and alignment with 3GPP, IEEE, FCC, and global emergency standards.

Emergency Calling over Wi-Fi Networks Industry Framework
This report defines an end-to-end framework for emergency calling over Wi-Fi, enabling users without cellular coverage or credentials to place calls, while ensuring secure, authenticated, and location-aware communication through credential-free Wi-Fi access. The framework covers network discovery, secure connection to the network and location identification, and has been developed to ensure both operational and legal requirements around the world are met. Strategically, the report expands the availability of emergency services access to unconnected and Wi-Fi only users, calling on device manufacturers to embed emergency profiles into their

devices.

Download the paper: https://wballiance.com/emergency-calling-over-wi-fi-networks-industry-framework

Cellular Emergency Calling over OpenRoaming Wi-Fi Networks
As a mobile operator, understanding how to cost-effectively extend Voice over Wi-Fi (VoWi-Fi) to improve coverage in weak signal areas or dead spots, is key to enabling emergency services communications. This report outlines how OpenRoaming can be used as a global extension of traditional mobile voice services, combining SIM-based authentication, emergency call routing and accurate location detection to deliver lower cost roaming-friendly emergency Wi-Fi calling. It also demonstrates how OpenRoaming's bronze performance tier supports VoWi-Fi with sufficient Quality of Service (QoS) to support emergency calling, as well as providing international emergency fallback when a cellular service is not available.

Download the paper: https://wballiance.com/cellular-emergency-calling-over-openroaming-wi-fi-networks

National Security & Emergency Preparedness (NS/EP)
For organizations and government agencies performing in NS/EP roles, reliable communications networks are critical to disaster recovery, crowd control, and other emergency situations. Networks must be robust, prioritize emergency traffic, and be resilient in high-load scenarios. Increasingly, IoT devices have a crucial role to play in emergency situations. From access control to CCTV and critical national infrastructure control systems, uninterrupted connectivity must be maintained.

This report shows the performance improvements, such as Quality of Service in high-load scenarios, that Wi-Fi enables for government agency and emergency service users, validating its suitability for approval by policy makers and adoption by service providers for use in safety-critical sectors.

Download the paper: https://wballiance.com/national-security-emergency-preparedness

Tiago Rodrigues, President and CEO of the Wireless Broadband Alliance, said: "Emergency communications must be seamless, secure and dependable—indoors, in dense public spaces and during crises. These reports show how Wi-Fi and OpenRoaming enhance cellular network emergency communications to deliver seamless resilient, standards-based services for the public, first responders and emergency services teams coordinating emergency responses."

Matthew MacPherson, CTO, Wireless at Cisco, added: "Cisco has led the industry effort with WBA members to bring mission critical services such as Emergency Calling and National Security and Emergency Preparedness services to Wi-Fi. These services, long available only on cellular, are now extended to Wi-Fi, making it a platform that supports life-saving and mission critical needs.

Citizens, enterprises, and governments can now rely on Wi-Fi alongside cellular when it matters most. Converging Wi-Fi and 5G for emergency services creates a stronger foundation that better serves our communities, our emergency responders, and ultimately all of us."

Josephine Micallef, Vice President of Cyber and Network Systems at Peraton Labs, added: "Wi-Fi is a critical technology for supporting national security and emergency preparedness communications. Our efforts in this area, which were supported by the Emergency Communications Division of the Cybersecurity and Information Security Agency within the U.S. Department of Homeland Security, have been aimed at defining and standardizing the capabilities to allow individuals with NS/EP responsibilities to take advantage of Wi-Fi networks. These reports provide a clear view of how to exploit the priority features in Wi-Fi technologies to enable the ubiquitous, low-latency and high-throughput communications these authorized users need to exploit emerging applications, including artificial intelligence and autonomous systems, when performing their critical duties."

To learn more about the WBA's Mission Critical & Emergency Services Program and download this set of reports, visit: https://wballiance.com/mission-critical-emergency-program/

About the Wireless Broadband Alliance
Wireless Broadband Alliance (WBA) is the global organization that connects people with the latest Wi-Fi initiatives. Founded in 2003, the vision of the WBA is to drive seamless, interoperable service experiences via Wi-Fi within the global wireless ecosystem. WBA's mission is to enable collaboration between service providers, technology companies, cities, regulators and organizations to achieve that vision.

WBA undertakes programs and activities to address business and technical challenges, while exploring opportunities for its member companies. These initiatives encompass standards development, industry guidelines, trials, certification, and advocacy. Its key programs include NextGen Wi-Fi, OpenRoaming, 5G, IoT, Smart Cities, Testing & Interoperability and Policy & Regulatory Affairs, with Member-led Work Groups dedicated to resolving standards and technical issues to promote end-to-end services and accelerate business opportunities.

Membership in the WBA includes major operators, service providers, enterprises, hardware and software vendors, and other prominent companies that support the ecosystems from around the world. The WBA Board comprises influential organizations such as Airties, AT&T, Boingo Wireless, Boldyn Networks Broadcom, BT, Charter Communications, Cisco Systems, Comcast, CommScope, HFCL, Intel, Reliance Jio, Telecom Deutschland and Turk Telekom.

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