

5G Empowering the Smart Network

ready ✓

**More First
Responders
Rely on
Verizon.**

verizon ✓

The nation's best 4G LTE

4G is our foundation, 5G Ultra Wideband is our evolution. Our solutions and our support of our customers are what make Verizon the nation's #1 network.



Our 4G LTE covers
326.5 million people

More than
98% of the U.S. population

Over
2.56 million square miles

or about 450,000 square miles more coverage than the nearest competitor.¹

¹ [verizonwireless.com/featured/better-matters/](https://www.verizonwireless.com/featured/better-matters/)

This does not show exact coverage. Wireless service is subject to network and transmission limitations, particularly near boundaries and in remote areas. Customer's device, weather, topography and other environmental considerations affect service, which may vary significantly in buildings. Most recent 4G LTE coverage may be available at [verizonwireless.com](https://www.verizonwireless.com)

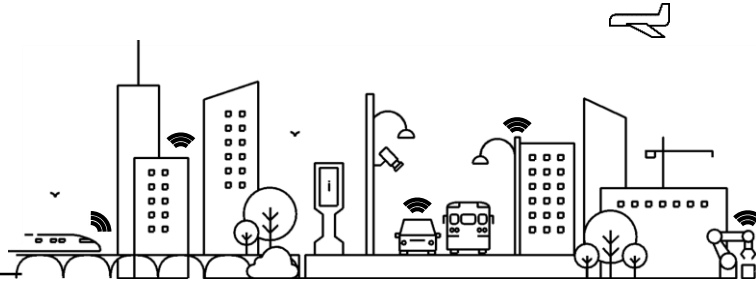
5G Ultra Wide Band is already here...

5G testing
11 markets
2017

First 5G network with
first commercially available
5G-enabled smartphone
April 3, 2019
In Chicago, and Minneapolis

First to launch
5G with 5G Home
October 1, 2018
In Houston, Los Angeles,
Sacramento, and Indianapolis

30+ cities with Verizon 5G Ultra
Wideband service
by end of 2019



Cities include:

- New York
- Atlanta
- Chicago
- Denver
- Detroit
- Indianapolis
- Minneapolis
- Phoenix
- St. Paul
- Washington DC
- Providence

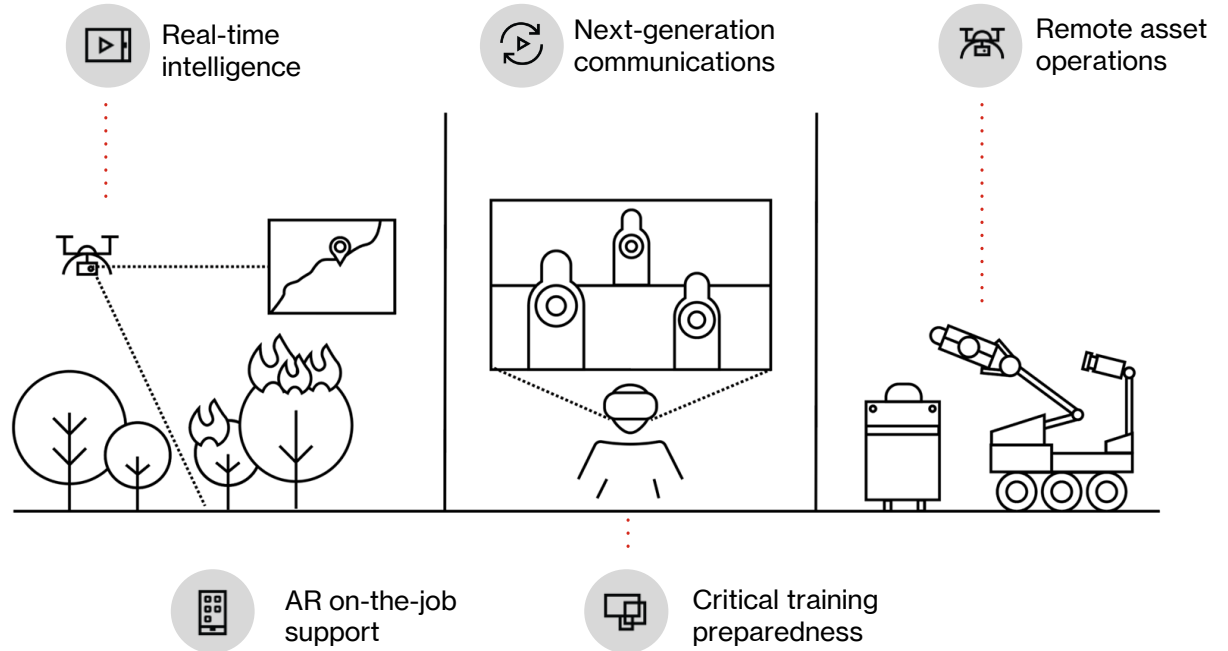
5G Devices to date:

- motorola moto z4
- Samsung Galaxy Note 10+ 5G
- Samsung Galaxy S10
- LG V50 ThinQ
- Inseego Hotspot

5G for public safety

5G will potentially support many solutions for public safety and first responders, including:

- Real-time intelligence
- Critical training preparedness
- Next-generation communications
- Remote asset operations
- Augmented reality (AR) on-the-job support



Responder Private Core

Segregating public safety traffic

- Available today
- Reliable, resilient
- Advanced, future-ready technology

Private Network Traffic Management Priority

Data priority

- Strong past performance
- Quality of service from device to cloud
- Segmentation for built-in security

Wireless Priority Service

Voice priority

- Experience
- Technology leadership
- Commitment to public safety

Mobile Broadband Priority

Network access priority

- Most requested priority service
- Any device
- Always on, always ready



Preemption Services

Reallocating network resources to public safety

- Ruthless, always on
- Voice and data
- No additional charge

Verizon Smart Communities Public Safety Portfolio



Intelligent Video

Actionable video with proactive notifications enabling advanced video analysis

Available



Real Time Response System

Location-based operating dashboard providing data fusion services for multiple data sets

Available



Gunshot Detection

Scalable, cost-effective and citywide gunshot detection service

H2 2019



Digital Evidence Management

Centralized evidence solution, providing crowdsourcing, automation and collaboration

2H 2019



Intelligent Video 2

Verizon managed and hosted city-wide surveillance solution and video management system

H2 2019

Verizon Smart Communities



Lighting

- Intelligent Lighting
- Core Node
- City Hub



Public safety

- Intelligent Video
- Real Time Response System



Traffic

- Intelligent Traffic Management
- Traffic Data Services
- Intersection Safety Analytics



Parking

- Parking Optimization
- Video Node
- Video Node 4K
- Digital Kiosk

Verizon Connect

Verizon Connect can help you manage fleet and mobile workforce operations. We have solutions for every size and segment of government.



Fleet management



Mobile resource management



Networkfleet

We also work with vehicle original equipment manufacturers to deliver built-in or aftermarket services to top auto brands.

Program Overview

The future of public safety technology will be powered by 5G networks. From critical communications, to situational awareness, to virtual reality, to drones; 5G will enable life saving capabilities that will empower the first responders who protect our communities. Verizon and ResponderXLabs created the 5G First Responder Lab program, a year-long accelerator, to enable emerging technologies with impact for first responders on 5G. The program will provide startups and other innovators access to 5G tech to develop, test and refine 5G solutions for public safety.

- Much of the Lab's activities will be anchored at the 5G Lab in Washington D.C.
- The initial Lab will last one year and include 15 first responder companies over three separate sessions (cohorts)

Each Cohort will include a 3-month enablement process whereby we:

- Invite 5 first responder technology companies to the Lab
- Prime the companies on 5G and define the use case testing strategy
- Evaluate and advise them on go-to-market strategy
- Showcase the companies through an event with public sector agencies

5G Responder Lab

- First-of-its-kind innovation incubator that gives innovators access to 5G technology to develop, test and refine 5G solutions for public safety.
- In collaboration with our partners at Responder Corp, the program is headquartered here in the DC 5G Lab
- 15 innovators in 3 separate cohorts with public safety solutions are given access to Verizon 5G network and mentors
- 1st cohort companies showcased in May include: Aerial Applications, Blueforce Development, Qwake, Kiana and Adcor Magnet Systems
- Currently testing with the 2nd Cohort and [will demo here in DC on October 16th - join us](#)
- More info at 5GFirstResponderLab.com



5G^v FIRST RESPONDER LAB



First Responder Lab Winners (Cohort #1)

Company	Description	Why 5G?
Qwake <i>(AR + Computer Vision)</i>	AR to help firefighters see in smoke-filled, zero-visibility, hazardous environments . Connects those in the front line with incident command wirelessly, transmitting a firefighter's visual POV and location to command & control by using AR displays, high speed thermal cameras, and a computer module.	High frame rates, live video streaming and transfer of AR detection to edge will need 5G for high peak data rate and low latency
Blueforce <i>(Info. Sharing)</i>	Situational awareness solutions and Mobile technology tools to support information sharing, intelligence analysis, and inter-agency situational awareness. Designed & built to break down the barriers to information sharing amongst responder agencies.	High BW and throughput needed for Delivery of multiple hi-res video feeds with consistent quality, no buffering or disruptions.
Aerial <i>(Drones)</i>	Drone solutions to turn visual data into actionable insights . Turn drone data into actionable insights, linked to assets in a geospatial, map-based environment for effortless access and analysis.	5G needed to connect high density of video/IoT sensor networks. Live photo upload to MEC to promote AI detection
Kiana <i>(Cloud based detection)</i>	Cloud-based device detection and presence analytics for operations, security and proximity services. Leverages machine-learning techniques to provide predictive and behavioral analysis	Low Latency critical to transfer latest location information to first responders about situation. High peak data rate to transfer 4K camera live feed to first responders
Adcor <i>(360 Degree Video)</i>	Provides situational awareness through a 360-degree Field of View (FOV) live-stream which is transmitted real-time over the internet and the cellular networks using a single lens with no stitching.	While it streams live, the system also records the whole 360 FOV which is then stored in the cloud for later review. The live stream is geo-referenced and geo-located on a map and the user can extract geographic coordinates from any object/asset appearing on the video.

First Responder Lab Winners (Cohort #2)

Company	Description	Why 5G?
Asylon <i>Autonomous Drones for Security</i>	Fully autonomous, persistent drone as a service system optimized for security with payload/battery change at base station. In the air 52 mins/hour.	When performing autonomous payload refresh at base station (8 mins) 5G would allow full download of footage and response in minutes versus days
NSena VR <i>VR Training for Police</i>	NSENA creates virtual reality for law enforcement & corrections, with over 50 proprietary training modules and adding one new module each month.	MEC allows for experts in fields like bomb detection to be "in the room" with police in every jurisdiction and train with the best. MEC allows for multiplayer streaming with low latency required
Pixo VR <i>VR Platform for Public Safety Training</i>	PIXO VR provides fully immersive and interactive Virtual Reality Training for first responders and other high-stakes professionals responsible for some of the world's most dangerous jobs.	VR requires high bandwidth, low latency for best results. 5G enables both.
TwoSix Labs <i>Biological weapon detection</i>	SIGMA was designed to network thousands of cost effective radiation sensors (static, mobile, and man carried) to provide real-time scanning of the radiological environment, real-time alerts and identification of detected radiological sources, and real-time communication with all networked sensors.	5G needed to connect high density of IoT sensors to expand geographical coverage + bandwidth for adding video to sensors for investigation of trigger
Waycare <i>Traffic Safety and Optimization</i>	Waycare is a GovTech 100 company that is shaping the future of city mobility, enabling cities to take full control of their roads by harnessing in-vehicle information and municipal traffic data for predictive insights and proactive traffic management optimization.	5G needed to connect high density of video/IoT sensor networks. Live photo upload to MEC to promote AI detection

October - Cohort 2 Experience Day in DC

5G Lab in Downtown DC, Thursday Oct 16
3 PM - 6 PM

Audience: 120 Verizon Customers (SLED and FED decision emergency response directives), VZ Execs, and members of Responder Innovation ecosystem

- A Primer on Relevant 5G Currencies
- An Overview of Verizon's Public Sector Products - 5G Network
- 5G Demos from the 5 Startups
- Content Capture/Press

<https://www.5gfirstresponderlab.com/cohort2/>

> Click Register to Attend



5G[✓] FIRST RESPONDER LAB



Questions?

