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Emerging capabilities for first responders:

Forecasting requirements, envisioning new tools

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Network upgrades, additional data and artificial intelligence applications are set to vastly improve first responders' situational awareness.

With enhanced evidential training and streamlined data access, firefighters, emergency medical service providers, police officers and 911 dispatchers will be better equipped to handle incidents.

The backbone of these capabilities is a reliable network that supports edge computing, automated analysis and easy sharing of content among agencies and team members. Some tools are newly available. Others, such as automated incident reporting, will be a reality soon.

SmartBrief hosted a discussion about these capabilities with three technical specialists working with first responder agencies on behalf of technology and communication services provider Verizon and Verizon Frontline, which provides technology and solutions for first responders on the front lines. The recorded webinar, "Emerging capabilities for first responders: Forecasting requirements, envisioning new tools and enhanced situational awareness capabilities" can be accessed <u>here</u>.

"There's some great innovation work that is going on leveraging newer capabilities. … It's not only restricted to using their computers, their smartphones or tablets and basic connectivity. … It also includes [internet of things] sensors, drone feed and other capabilities that public safety agencies were not using previously," said panelist Azhar Khan, Solutions Specialist National Lead for Verizon Frontline.

Imagine if an AI-enabled surveillance system could automatically report a possible incident to 911. The dispatcher could quickly share the video clip and other relevant information to responding agencies. A third of first responders attending the webinar said having enough information about an incident before arrival is a challenge.

The second-most-cited challenge was stakeholder coordination. This can be exacerbated by insufficient network coverage, which was the top concern cited, and inexperience sharing strategies and information. Access to new bandwidth addresses both.

Verizon is aggressively deploying 5G Ultra Wideband. By early 2024, it is slated to be almost everywhere Verizon now offers at least 4G/LTE coverage.

"That deployment is going to solve all the coverage and capacity concerns that agencies may have, in general. It's really going to … provide the first responders and our public safety customers with some additional capabilities and tools so at least they can run their mission-critical application with low latency and higher bandwidth," Khan said.

Fellow panelist Justin St. Arnauld, Associate Director – Solutions Architect at Verizon Wireless, called 5G UW a game changer, in many cases tripling overall channel bandwidth. It will facilitate computing at the edge and computing in the network, both of which are becoming more prolific, St. Arnauld said.

Extra bandwidth can aid training exercises, said panelist Toni Isla, Executive Program Manager of Public Safety at Verizon Frontline. Isla recalled watching firefighters use virtual reality to train on truck pump operations.

"Why? Because it's not that easy to do real-time training for firemen. ... You need to put the truck down out of service. You need the space. You're going to be working with live pumps, live water or live equipment. How can you do that in a virtual environment and coordinate all that, right? So there is a value in training. It's not always easy, but I think leveraging the technologies that are being put out there today will help not only make our first responders more efficient but [also], in this case, ... coordinating across agencies. We also looked at that, right? Not individual training but training across various agencies, both public and private," Isla said.

A lot of first responders are experiential learners, so augmented reality and virtual reality can be a good supplement to e-learning or live, in-person training, Isla said. Besides the obvious advantages, additional training may help to retain and recruit first responders, which can be difficult in tight job markets.

To make the most of these tools, though, first responders need to know how to leverage the network. Khan pointed out that most of the nation's police forces, for example, have fewer than 25 officers. The right tech can be a force multiplier, especially for agencies with tight budgets and seeking greater efficiencies. Many relevant tools can be accessed on first responders' personal devices, St. Arnauld said.

Access to surveillance video, agency databases and drone data can greatly improve a responder's situational awareness. Unfortunately, it also provides more vector points that can be hacked. Public agencies have borne more cyberattacks in the past few years. Cloud-based solutions, zero-trust systems, remote system observation and, in some cases, network ownership help address cybersecurity concerns that are expected to remain challenging, St. Arnauld said.

Otherwise, though, the future holds only good news. St. Arnauld, Khan and Isla forecast continued innovation in first responder communication systems, as leaders at Verizon Frontline and other stakeholders continue to brainstorm what solutions may aid first responders in future scenarios. Digital inclusion efforts by Verizon and others are bringing service to more areas of the nation. Accessing heavy data in the field

will soon be the norm. And collaboration efforts will mature, as data is easier to share and stakeholders train in interagency, frontline communication.

"I think you'll see affordances from the network that will enable users to be much more tailor-made to the applications that they're looking to use," St. Arnauld said.

The goal is seamless service, data in real time, intel-rich 911 dispatcher reports, greater surveillance capabilities and the application of AI to analyze images and data. Predictive analytics, preventive policing and automation promise to change how agencies respond to emergencies and keep first responders safe.

To learn more, visit <u>verizon.com/frontline</u>.