



DEMYSTIFYING 5G:

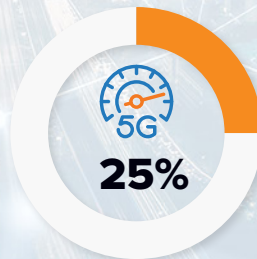
Where Next-generation Connectivity Uniquely Helps Public Safety



By 2035:
\$13.2T
22.3M jobs

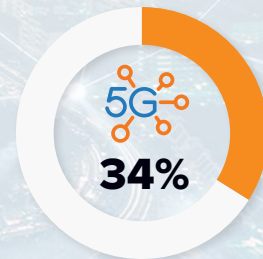
The World Economic Forum pegs 5G's impact as **\$13.2 trillion in global economic value and 22.3 million jobs by 2035.**

Source: The World Economic Forum white paper, *The Impact of 5G: Creating New Value Across Industry and Society*, January 2020



of respondents cite the single **biggest benefit of 5G deployments is the ability to leverage more data-intensive applications.**

Source: IDC's US IoT Decision Maker Survey, July 2021



of state and local agency respondents are **implementing 5G or planning to in the next 18 months.**

Source: IDC's US IoT Decision Maker Survey, July 2021

There has been a lot of news about, and industry speculation on, 5G—some of it on the mark, some of it patently incorrect, while other commentary is directionally correct albeit aspirational. To help end users sift through the noise, this Info Snapshot will focus squarely on the things that 5G uniquely enables by examining what can 5G solve for public safety.

There are four high-level benefits that will be generated by the technological innovations of 5G:

- 1 Low latency.** This refers to the extent to which data is delivered in “real-time”.
- 2 Ultra-reliability.** 5G is much more technologically reliable than previous networking generations. Some public safety applications benefit most from ultra-reliability, others benefit from low latency, and some benefit from both.
- 3 High density.** 5G can manage the growth in communication and device density coming from IoT, smartphone proliferation, and the broad expansion of cloud-hosted data
- 4 Ultra-fast speeds.** 5G can handle bigger data volumes and bandwidth requirements generated by the explosion of devices sharing spectrum and connected to the cloud.

So, what public safety use cases could uniquely benefit from real-time data exchange — i.e., low latency? Anything that requires data exchange in significantly less than a second. Examples include:

- ▶ High stakes undertakings like robotics for bomb diffusion, or autonomous vehicles, which rely on both immediacy and precision.
- ▶ Augmented and virtual reality solutions (AR/VR) will also require ultra-low latency. Emergency responders' use of AR viewers to assist in civilian public safety services are expected to be increasingly used to add valuable context, but the immediacy of the data relay will be critical.

What public safety use cases benefit from ultra-reliability? Core services for which there is no room for failure — 911 emergency services, for example.

What public safety use cases require optimal management of device density? As our world becomes increasingly IoT-enabled, 5G's ability to manage endpoints, so that the data generated can be converted into insights, will become pivotal; 5G will be able to manage one million devices per sq km. Crowd management during large-scale and mega events (the Super Bowl, for example) will need to orchestrate data exchange in a fundamentally complex and complicated environment.

Lastly, what technologies and use cases require faster data processing? Use cases pertaining to rich media, like high definition video and AR/VR. Managing data from the explosion of CCTV cameras, cell phone, and other video sources also requires faster data processing to derive situational insights during an active shooter incident, for example. The growth in volume and types of video evidence sources and net new digital assets is creating a digital deluge in public safety. As agencies seek to rein in that chaos, they will increasingly rely on the processing capacity and immediacy facilitated by 5G.

For public safety agencies interested in 5G, the key questions to ask moving forward are: When is it most beneficial to have specific information with no observable delay? Where can 5G help most to churn noise into knowledge? Where do we need 5G most to ingest data from a near-infinite stream of endpoints?



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