

We're building our network to deliver the full potential of 5G. Are you ready?

The Eight Currencies of 5G

What makes 5G networks so special compared to previous cellular networks? There are eight performance attributes, or currencies, to be considered when evaluating whether a 5G network can deliver on its full potential.

Without all eight of these currencies, you don't have a true 5G network. With them, you have a powerful, game-changing platform for innovation. And that's what Verizon is building.

Let's break down each currency in detail.

1. Throughput

Verizon has taken its award-winning 4G network to new heights, reaching:

- 953 Mbps in a real-world environment, using 4G LTE Licensed Assisted Access (LAA)¹
- 1.45 Gbps in 4G LTE Advanced in six-channel carrier aggregation²

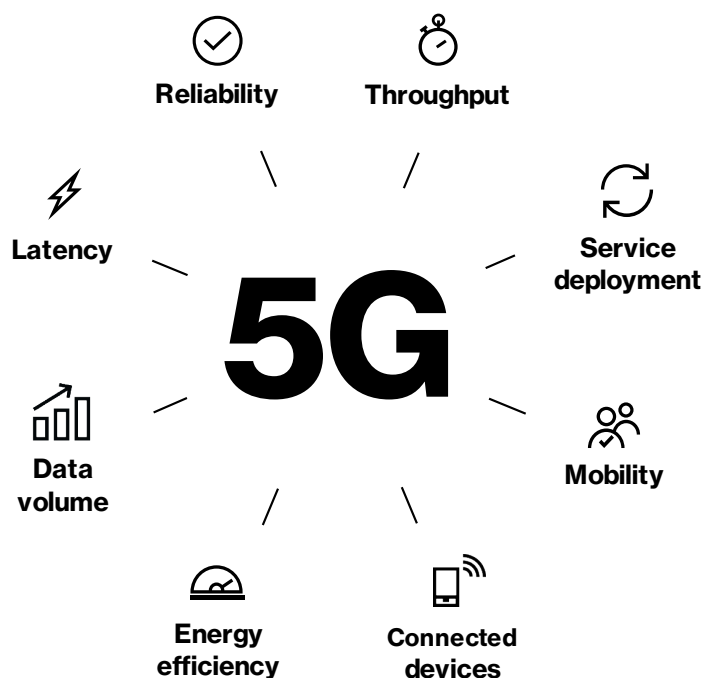
5G has the potential to deliver speeds many times faster than today's 4G, powering uses such as intelligent video, remote diagnostics and mobile command centers for live audio and video.

5G networks will one day offer peak data rates of up to 10 Gbps. So far, Verizon 5G Home has demonstrated speeds of 600 to 800 Mbps downlink and 250 Mbps uplink in third-party testing.³

2. Service deployment

Network virtualization (i.e., using software to perform network functions) enables service and application deployment without having to install additional hardware. This will lead to a reduction in typical service deployment time from 6 months to 90 minutes.

Faster deployment times means we can roll out new features and security improvements quickly.



3. Mobility

5G technology is designed to enable devices that are traveling up to 500 kph (310 mph) to stay connected to the network.⁴ We've tested 5G network handoff techniques to enable passengers in fast-moving vehicles and trains to stay connected while they are moving.

4. Connected devices

The number of connected devices will be more than three times the global population by 2022.⁵ 5G will be capable of supporting up to 1 million devices in a square kilometer.⁶ Verizon 5G Ultra Wideband will eventually handle 100 to 1,000x times more connected devices per square kilometer than 4G.

This will allow cities to tap into the power of 5G for things like smart streetlights, remote security monitoring, intelligent rail and smart parking solutions.

5. Energy efficiency

Sustainability is one of Verizon's core values. 5G will have lower energy requirements for network operations (10% of current device consumption).

Also with 5G, complex functions could happen within the network, near the end user.⁷ That means the end user's device will not need as much processing capability and will consume less energy.

6. Data volume

The 5G standard is designed to support up to 10 TB/s/km².⁸ This means that a 5G network can carry a massive amount of data for a large number of simultaneous users.

So users in high-density areas—like airports, stadiums and urban areas—will all experience the fast speeds and low latency of 5G service.

“What is the general-purpose technology of this new Industrial Revolution? It's the 5G network. In an era that's all about fast, clear connections—between people and people, between people and devices, and between devices and devices—the connective network is the universal enabler, the essential platform.”

—Hans Vestberg, CEO, Verizon Communications

7. Latency

5G's rapid end-to-end latency (the time it takes for data to travel from the user, over the network to the central processor and back again) will be one of the drivers of true technological change, bringing data transit speed to many times less than the blink of an eye.

All kinds of new applications become possible once you reach very low levels of latency, including:

- Immersive extended reality (XR), combining augmented reality (AR), virtual reality (VR) and mixed reality (MR)
- Autonomous driving
- Computer vision
- Haptics-enabled tactile internet
- Robotics

To provide a comparison, 4G LTE networks currently offer latency in the realm of 40 to 50 ms.⁹ Verizon 5G Ultra Wideband should eventually offer less than 10 ms end-to-end response times.¹⁰

8. Reliability

Verizon offers the most reliable 4G LTE network in the nation. We've been ranked #1 in overall network performance in the U.S. by RootMetrics 13 times in a row.¹¹

And we are bringing that same expertise and focus as we architect and build our 5G network.

What will 5G mean for your organization?

We're building our network to deliver the full potential of 5G, so our customers can:

- Drive enhanced productivity
- Create new revenue streams
- Generate and harness massive amounts of data to improve operations
- Provide secure, mission-critical services
- Respond more quickly to changing business dynamics
- Deliver better value to customers

The transformative power of 5G

The Eight Currencies can only be fully realized on a 5G network built the right way. And we're working to build those eight currencies into our network, so that our customers can realize the full, transformative power and potential of 5G.

With Verizon 5G Ultra Wideband, you'll be ready. Ready to connect. Ready to innovate. Ready to grow. Ready for what's next.

Learn more:

Let's begin your transition to 5G. Are you ready? Contact your business specialist or visit [verizonwireless.com/vzw/businesssolutions/contactus.jsp](https://www.verizonwireless.com/vzw/businesssolutions/contactus.jsp)



1. <https://www.verizon.com/about/news/verizon-ericsson-and-qualcomm-reach-superfast-953-mbps-wireless-speed-dynamic-real-world>
2. <https://www.verizon.com/about/news/verizon-nokia-and-qualcomm-use-lte-advanced-technology-six-carrier-aggregation-reach-145-gbps>
3. <https://www.rcrwireless.com/20181002/test-and-measurement/rcr-exclusive-in-first-independent-testing-verizons-5g-network>
4. <https://www.itu.int/md/R15-SG05-C-0040/en>
5. <https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/white-paper-c11-741490.html>
6. <https://www.samsung.com/global/business/networks/insights/news/5g-is-now-part-1-2018-the-year-of-5g/>
7. <https://www.verizon.com/about/our-company/5g/how-5g-will-pull-cloud-closer>
8. <https://5g-ppp.eu/wp-content/uploads/2015/02/5G-Vision-Brochure-v1.pdf>
9. Latency improvements are due to lower latency in the 5G radio access network and the extension of the core network closer to end users.
10. <https://www.verizon.com/about/news/hans-vestberg-keynotes-2019-consumer-electronics-show>
11. Based on RootMetrics® by IHS Markit's RootScore® Reports: 2H 2019. Tested with best commercially available smartphones on four national mobile networks across all available network types. Experiences may vary. RootMetrics awards are not an endorsement of Verizon.