

WHAT IS 5G?

Fifth-generation wireless, or 5G, will be the latest cellular technology that promises to deliver data rates between 1-10 Gbps (20 Gbps peak) at network latencies as low as 1 ms or less. This improvement in performance over 3G and 4G LTE cellular networks will revolutionize the types and breadth of applications that can be delivered to mobile devices.

PACKET TRANSMISSION SPEEDS BY NETWORK GENERATION

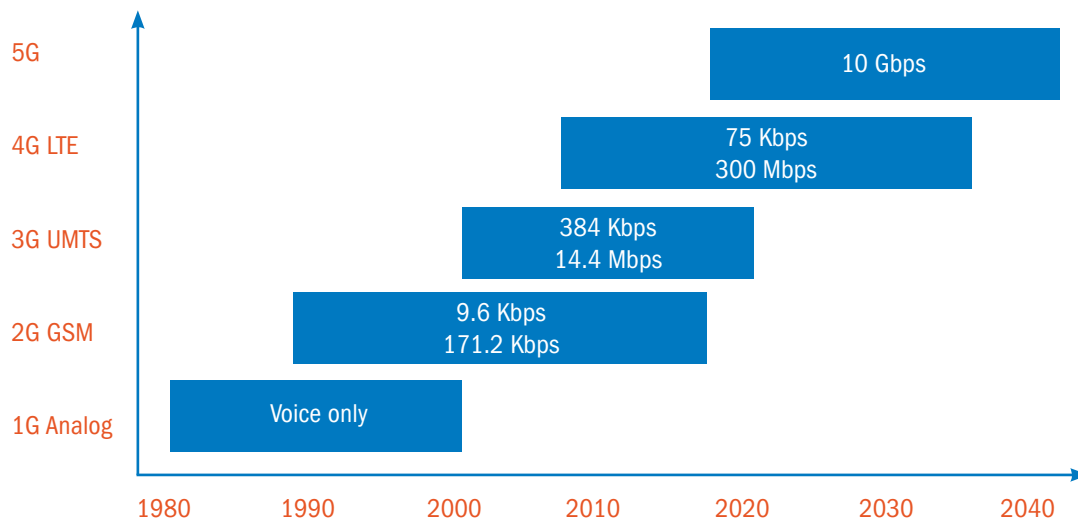


Figure 1. 5G could boost cellular data speeds by 30 times from 4G LTE

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WHY IS IT IMPORTANT?

Our society has become digital in nature as we are able to access and deliver information seamlessly through cellular and private networks. 5G is touted in many circles within the telecommunications industry as a revolutionary new technology when it eventually becomes widely deployed, as it will create new use cases that will evolve over the next decade.

5G applications are based on three key technology pillars:

- High throughput:** Targeted to enhanced mobile broadband and mobile handset applications. Maximum speeds of 20 Gbps for downlink and 1 Gbps for uplink, although initial deployments will probably fall between 4 Gbps and 8 Gbps for downlink. Ideal for 4K video streaming.
- Massive IoT:** Targeted to support up to a million low-power nodes per square mile. Applications such as Massive Machine Type Communications (MMTC) or IoT sensors will benefit from the scalability that a 5G cellular network offers.
- Low latency:** End-to-end latency of 1 ms. Ultra-Reliable Low-Latency Communications (URLLC) required by telemedicine, AR/VR gaming, and self autonomous vehicles are the early use cases that will develop.

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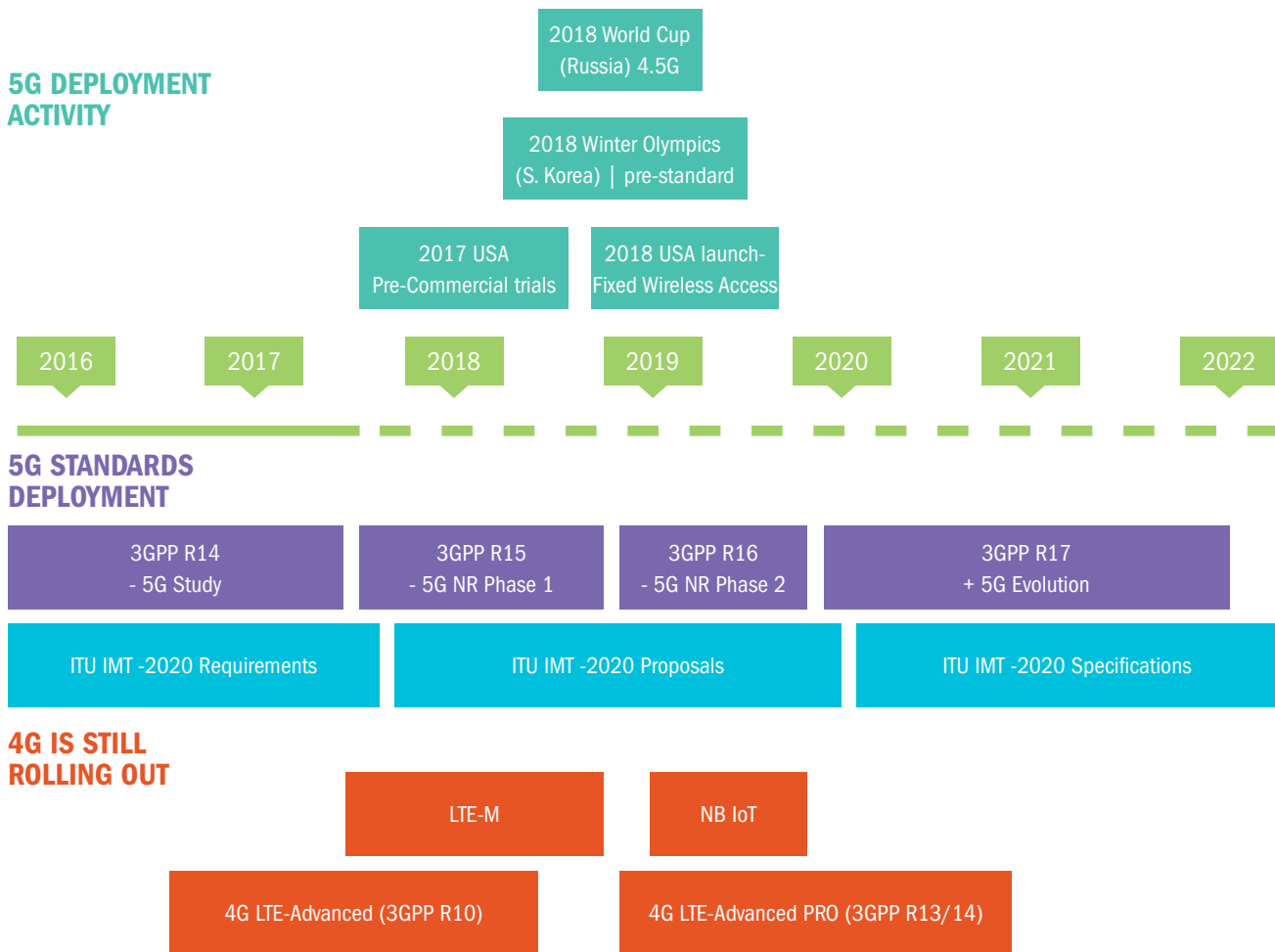
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STANDARDS

As with 3G and 4G mobile network technologies, 5G will be standardized through the 3rd Generation Partnership Project (3GPP), the cellular communications standards organization. The 3GPP will liaise with the International Telecommunication Union (ITU) to ensure adherence to its International Mobile Telecommunications system vision for 2020 (IMT-2020). This view of the horizon for the future of mobile technology will be instrumental in setting the agenda for the World Radio communication Conference 2019 (WRC-19), where deliberations on additional spectrum are taking place in support of the future growth. While 5G isn't anticipated to be fully standardized until 2020, mobile broadband trials are currently underway as noted in the following timeline.

5G STANDARDIZATION AND DEPLOYMENT TIMELINE



To learn more, contact a wireless technology expert at anixter.com/wireless.

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Anixter Inc. World Headquarters
 2301 Patriot Boulevard
 Glenview, Illinois 60026
 224.521.8000

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1.800.ANIXTER | anixter.com

