Call For Action/Verizon
5G Consumer Guide

Wireless technology continues to evolve and each new generation brings enhanced speeds and services for consumers. Over the past decade, Americans have transitioned from 3G to 4G service on many of their mobile devices. Wireless providers continue to improve and invest in 4G networks, but they also are now deploying the next major advancement in wireless technology – 5G or 5th generation.

5G networks promise to bring much higher wireless data speeds with quicker response times, or "lower latency." Higher speeds and lower latency are critical to support our growing world of connected devices. Telemedicine, self-driving vehicles, and other emerging applications (such as augmented reality/virtual reality, gaming) will need immediate reaction times. Below are common questions about the technology and the equipment needed to provide the service.

What is 5G?
5G is the abbreviation for "5th generation mobile networks" or "5th generation wireless systems". 4G, or 4G LTE, is the current (and still developing) standard in wireless networks. 5G will enable much faster and lower-latency service compared to the current 4th generation (LTE) wireless technology.

Isn't 4G fast enough?
For many uses, 4G works very well and will continue to do so. However, 5G has improved network functionality that can enable a new wave of high-bandwidth, low-latency applications, such as self-driving vehicles, augmented reality/virtual reality, telemedicine, etc.

How much faster will it be?
5G has the potential to provide speeds 10 to 100 times faster than 4G LTE. Current 4G download speeds are around 12-36 Mbps and 5G services will provide speeds of 300 Mbps or greater. The latency, or response time, of 5G will be nearly instantaneous.

Why is low latency important?
Low latency means reduced delay in the delivery of data. For connected devices a quicker response means a seamless experience for the user. Many emerging technologies, like virtual reality, remote surgery, and self-driving vehicles, will depend on near-instantaneous response times.

My home WiFi is already 5G, is this the same technology?
Your home WiFi may operate on 5GHz (gigahertz) spectrum, which is a specific radio frequency. This is not the same as 5G, which is the abbreviation for 5th generation wireless.

Is 4G going away?
4G LTE will remain the core of mobile wireless services for many years. Companies continue to invest significantly in improvements in 4G LTE technology, even as they invest in 5G technology. These improvements will provide additional capacity to handle consumers' growing wireless data needs.

Will I need new phones or devices to use 5G?
Yes. 5G will require devices with different antennas and other components designed to receive and send 5G signals. 5G home broadband users will need a 5G wireless router. For mobile services, new devices, such as handsets and tablets, are being developed to work on 5G networks. Older devices that are not compatible with 5G technology will still work on existing 4G networks, but will not benefit from the speed and latency enhancements of 5G upgrades.

How much will 5G service cost?
Consumer pricing for 5G services is not yet available. Wireless service continues to be a very competitive industry.

Will 5G be an option to replace my wired Internet or phone connection?
Yes. 5G can deliver service at speeds that compete with and in many areas exceed the speeds that wired broadband offers.

Do wireless companies need new equipment to deliver this service?
Yes. To deliver 5G, wireless companies must deploy new 5G radios ("small cells").

What are small cells?
Small cells are low-powered radios that provide wireless service to a coverage area. Small cells have smaller coverage area than traditional radios deployed on traditional cell towers. Small cells are often deployed in 4G networks to increase network capacity in areas with high numbers of users.

Where will they go?
Small cells are frequently deployed on light/utility poles, on rooftops, on the sides of buildings, and similar locations. Their small size typically makes them less obtrusive. You have probably seen some without even realizing it.

What do small cell installations look like?
4G and 5G small cell installations differ and can include: small boxes mounted on utility or municipal poles or cylinders mounted on top of poles, and sometimes the equipment can be hidden within a pole. Companies have different designs to address the needs of different locations.

Why do so many small cells need to be installed?
5G that is deployed on high frequency spectrum will be capable of supporting fast speeds and low latency. However, high frequency spectrum does not travel as far as the lower frequency spectrum that is currently in use for 4G. To compensate for the shorter distances that these signals can travel, it will be necessary to place radios at closer distances.

Why can't they add 5G to the same towers they use for 4G?
Wireless providers are deploying 4G and 5G equipment on the same infrastructure where possible. But deploying 5G radios only on the large towers that provide 4G coverage over large areas will not be sufficient for 5G services. 5G requires small cells closer to end users.

Will 5G small cells interfere with other devices in my home?

No. The 5G small cells will operate using technologies designed to avoid interference and will operate at frequencies not used by other household devices.

Is 5G safe?
All wireless facilities – including network equipment and devices -- are required to comply with Federal Communications Commission (FCC) safety standards.

The FCC, in consultation with numerous other federal agencies, including the Environmental Protection Agency, the Food and Drug Administration and the Occupational Safety and Health Administration, has developed safety standards designed to ensure that wireless communications networks and equipment operate within safe levels. The standards were developed by expert scientists and engineers after extensive reviews of the scientific literature related to radio frequency (RF) biological effects. The FCC explains that its standards "incorporate prudent margins of safety." The FCC provides information about the safety of RF emissions from cellular base stations on its website at: http://www.fcc.gov/oet/rfsafety/rf-faqs.html.