

5G: The progress so far

4G entered the market in the late 2000s and made mobile Internet speeds up to 500 times faster than 3G. The increased speed supported HD video streaming, cloud services, high-quality video calls and faster Web browsing. This year and next year, 5G should start rolling out all over the world and consumers will soon be able to enjoy data speeds of up to 100 gigabits per second. That's 1,000 times faster than 4G.

5G ADOPTION AROUND THE WORLD

Canada

Canada's Telus Mobility has given 2020 as the year 5G will be available to its customers, but says people in the Vancouver area can expect early access.

United States

5G broadband Internet from Verizon and C Spire is currently available at a handful of locations, and AT&T has mobile 5G services available for select customers in a dozen cities. More areas will get at-home and mobile 5G this year, from those companies and others like T-Mobile.

Latin America

First 5G deployments in the 3.5GHz band are expected this year in Argentina, Brazil, Chile, Colombia and Mexico.

Britain

Britain's largest network operator EE will roll out 5G in 16 cities this year.

China

China Mobile, China Unicom and China Telecom continue to run trials ahead of wide rollout of 5G from next year.

South Korea

Three major mobile operators – SK Telecom, Korea Telecom and LG Uplus – launched commercial 5G services late last year.

Japan

Three current telcos plan full-scale 5G launch next year in time for the Olympics.

Singapore

StarHub announced last November that it completed its first outdoor pilot of 5G on the 3.5GHz frequency band in partnership with Nokia. However, there's no information on when StarHub will have a 5G network ready for Singaporean customers.

Singtel, Ericsson and Singapore Polytechnic launched Singapore's first live 5G test facility in January. The facility's objectives are to test and develop 5G capabilities.

The Straits Times understands that 5G mobile networks will be deployed in Singapore after 2020.

Australia

Optus has provided selected customers in Canberra access to 5G home broadband. 5G availability will be rolled out in more areas by March next year.

France

France's telecoms regulator will auction off 5G spectrum late this year with 5G rollout planned for next year.

DIFFERENCES BETWEEN 5G AND 4G



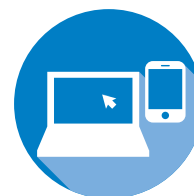
Speed

5G can reach transfer speeds of up to 100 gigabits per second, which is as much as 1,000 times faster than 4G. A 20GB file can be downloaded in one second.



Supports more connections

5G uses a broad range of frequencies. The millimetre wave bands (30GHz to 300GHz range) are less cluttered with existing cellular data. 5G can support 1,000 devices per metre.



Smarter networks

5G can understand the type of data being requested and switch automatically to using the appropriate power mode to deliver that data. Higher-powered mode will be used for HD video streaming for example.



Latency

5G latency is much lower than 4G. Consumers can expect immediate response to video calling, streaming, online gaming and other mission-critical applications.



Less wireless interference

5G frequencies are highly directional. This means more strategically placed antennas are required to support 5G. Highly directional frequencies allow devices to be used next to other wireless signals without causing interference.



Challenges

As with any new technology, security has to be figured out to prevent spying. Government and Internet service providers must ensure sufficient levels of security are in place before 5G can be rolled out.