

Phone firms and the quest for the 5G Holy Grail

3 March 2015, by Roland Lloyd Parry



The mobile device "Ara" by Yezz with other gadgets during the 2015 Mobile World Congress in Barcelona on March 3, 2015

Lightning-quick downloads, driverless cars and remote surgery: telecom firms are racing to develop a new generation of "5G" mobile networks that could start to change the world in five years.

Executives and regulators from Asia, Europe and the United States jostled to define their quest for the 5G Holy Grail on Tuesday at the Mobile World Congress in Barcelona, a mega-trade show for telecom innovations.

With the current 4G standard enabling fast broadband access via mobile smartphones, governments and manufacturers are hoping by 2020 for the next great leap forward to connect not only humans but also billions of machines.

They see the next generation enabling connection speeds up to 1,000 times faster than current ones.

Korea Telecom on Monday said it hoped to roll out its first 5G technology even sooner, at the 2018 Winter Olympics in Pyeongchang, South Korea.

Later, extra fast and secure 5G connections will enable self-driven cars guided by automatic connections to traffic systems, said Korea Telecom's chief executive, Chang-Gyu Hwang.

"In the future, drivers' licences may be gone and cars will be mobile offices," he said.

Long-distance surgery

To fulfil the 5G dream, manufacturers must build infrastructure that can carry mobile phone signals powerful and quick enough to unfailingly support split-second activities, such as surgical operations or automatic traffic movement.

"They want it to be really fast and using as little power as possible," as well using a narrower range of radio frequencies to make devices compatible across the world, Ben Wood, an analyst at global mobile communications research group CCS Insight, told AFP.



A man operates an SK telecom robot during the 2015 Mobile World Congress in Barcelona on March 3, 2015

"But there isn't even a ratified standard yet."

The deputy chairman of Chinese phone maker Huawei, Ken Hu, forecast 5G would deliver transmission speed of just a millisecond—quick enough to make a driverless car safely brake in time in case of an accident.

Hu said 5G would also be defined by download speeds that could enable users to download films in seconds.

"5G will become a powerful technological platform which will enable many new applications, new business models and even new industries," Hu said.

The GSMA, the world mobile operators' consortium that organises the Barcelona gathering, said in a report in December that with ultra-fast 5G, "an operation could be performed by a robot that is remotely controlled by a surgeon on the other side of the world".

Trillions in investment

Tech specialists at the Boston Consulting Group estimated in a report that [mobile](#) companies would have to spend \$4 trillion (3.6 trillion euros) on research and investments by 2020 to develop 5G.

The European Union has set up a 5G public-private partnership with telecom firms with overall funding of \$4.2 billion, hoping to ensure a share of the market for European companies, which have fallen behind Asia and the United States in the deployment of 4G.

The Samsung Galaxy S6 is presented during the 2015 Mobile World Congress in Barcelona on March 1, 2015

In Barcelona on Tuesday Guenther Oettinger, the EU digital economy commissioner, said the bloc wanted to sign agreements with Japan, China and the United States to cooperate on 5G research. It has already signed such an accord with South Korea.

"With 5G Europe has a great opportunity to reinvent its telecom industrial landscape," Oettinger told an audience at the congress on Tuesday.

He presented the EU's "vision for 5G" which forecasts that seven trillion "smart" objects could one day be connected to the Internet.

In Asia, South Korea alone has invested \$1.6 billion aiming to commercialise 5G technology by 2020, according to the GSMA.

Japan aims to have 5G services available in time for the 2020 Olympic Games in Tokyo.

Among companies, "Samsung, LG, Huawei, all the big players are trying to test certain types of equipment that they think will be 5G," Kevin Curran, a computer sciences specialist at the University of Ulster, told AFP.

"But what equipment we're going to use in six or seven years time, in modern times it's very hard to predict."

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APA citation: Phone firms and the quest for the 5G Holy Grail (2015, March 3) retrieved 25 January 2022 from <https://phys.org/news/2015-03-firms-quest-5g-holy-grail.html>

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