

**5G is now**

We stand on the cusp of a new era, the likes of which we've never seen before. A new age of lightning-fast mobile communications where everyone and everything is connected. Where smarter devices and intelligent analysis of massive data flows will light up the cloud, powering change and a new world of opportunity.

5G has arrived - the fifth generation of mobile communications technology, after 4G, 3G and 2G before it - and it will change the way we think. It is different from its predecessors. 5G represents an explosion in data capacity and computing possibility thanks to its scope to bring about ubiquitous connectivity across the globe.

By the end of 2020, when 5G rolls out in earnest, it is estimated that 6.5 billion people will be using mobile networks for data communications and 100 billion 'things' - such as vehicles, industrial machines, meters, medical devices and home appliances - will be connected to the network over 5G.

Huawei recognised as the world's 5G leader

Huawei is the world leader in 5G. And it's not just Huawei that says that. The European Commission - in its March 2019 report by its internal think tank, the European Political Strategy Centre

- recognises Huawei as the standard-setter in 5G and the top 5G equipment vendor in the world.

This market leadership has not come about by chance. Huawei has spent a decade of research in 5G, spending over 500 million euros in the past four years alone to ensure we are indeed the No.1 5G standard setter. We recognised the potential early, adopting Professor Erdan Arian's monumental work on polar codes back in 2008 and promoting it as the basis for 5G commercial applications worldwide.

Huawei is now a member of over 360 standards bodies, industry alliances and open source communities in the world, including Europe's 5G Infrastructure Public Private Partnership (5G-PPP), the International Telecommunication Union's IMT2020 5G initiative, Japan's 5G Mobile Forum (5GMF), the Next Generation Mobile Networks (NGMN) alliance of global operators and the 3rd Generation Partnership Project (3GPP).

In Europe, we have taken part in 25 of the EC's Horizon 2020 research projects, many of them dedicated to advancing 5G, and we are a member of the 5G Infrastructure Association board, the private side of the 5G-PPP. We have been trying out 5G in Europe since 2015, in cutting-edge testbeds such as the 5G Vertical Industry Accelerator in Munich, the 5G Innovation Centre at the University of Surrey in the UK, and one of the few rural areas where 5G trials are being carried out in Groningen, the Netherlands.

Our innovations, research projects and trials have also clearly demonstrated to us that 5G will impact heavily on the way business is done in vertical markets like intelligent traffic systems, smart power grids and health care services. 5G will be the basis for urban applications such as smart cities, self-driving vehicles and zero-wait Ultra-HD video streaming in dense areas. Sectors such as logistics, environment and agriculture will also benefit hugely from the introduction of 5G from 2020 onwards.

Huawei's end-to-end products and solutions

The first 5G services, using enhanced Mobile Broadband (eMBB), are already with us and were demonstrated at the 2019 Mobile World Congress in Barcelona. Over live networks in Barcelona city centre, Vodafone used Huawei's 5G end-to-end (E2E) products and solutions to provide live coverage over 80 MHz C-Band spectrum, with downlink rates of up to 1.7 Gbps. Huawei also demonstrated super-fast video file download and play on its new foldable 5G smartphone.

It is a significant technical achievement by Vodafone and Huawei engineers to have incorporated the latest 5G standard into commercial technology so quickly. Vodafone is on track to have 5G networks using Huawei equipment ready for customers in some European cities in the second half of 2019. Huawei has signed over 30 commercial contracts for 5G with mobile operators worldwide, of which 13 in Europe, with companies including Vodafone, Telecom Italia, EE, Hatch, Sunrise, Altice and Monaco Telecom. We are also carrying out commercial testing with 50 carriers.

Leading operators are moving quickly toward 5G commercial deployment, because first movers will benefit first. Huawei's 5G smartphones will be on sale in 2019, creating whole new experiences for users. On the network side, our innovative, simplified antenna solutions will keep rental costs low for carriers, allowing them to commercially deploy 5G fast. Huawei is also a main provider of other vital equipment for 5G networks such as switches, routers, small cells and network slicing gear.

5G is now ON. Huawei's leading 5G end-to-end capabilities, and innovative products and solutions, are attracting customers worldwide. Through heavy investment and continuous innovation, we are committed to helping carriers deploy 5G networks easily, rapidly, and cost-effectively. And we are ready to work with all stakeholders to drive the robust development of the 5G industry.

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