

How 5G will support the emergency services



Mobile^{UK}



Why should we care about 5G?

5G will benefit our economy and society.

It will be better at doing the things that 4G does already, but significantly it will offer faster and more reliable mobile internet.

It will also do things that 4G cannot. It has the potential to change the ways in which we learn, how we communicate and how we do our jobs through the simultaneous and seamless connection of our digital devices.

But because it is often described using technical jargon, many people are unaware of how 5G will enhance their life.

This pamphlet explains the benefits of 5G using examples and language that anyone can understand.

It is one of six pamphlets that look at the impact of 5G. The topics included in these pamphlets are:

- [How 5G will help healthcare](#)
- [How 5G will increase rural opportunities](#)
- [How 5G will support the emergency services](#)
- [How 5G will help councils](#)
- [How 5G will improve the home and the workplace](#)
- [How 5G will help the environment](#)



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How will 5G support the emergency services?

5G can support the emergency services such as ambulances and fire engines in their work to save lives. While 4G plays a major role through the emergency services network, 5G is expected to provide added capabilities. For instance:

- Paramedics will be able to send vital signs and 360° images, alongside high-resolution video calls between ambulance and hospital staff in real time, thanks to the ultra-low latency of 5G networks.
- 5G connectivity will enable the use of augmented reality (AR) via equipped glasses to enable emergency services to use artificial intelligence (AI) technology to guide them through critical procedures at an emergency scene or en-route to hospital.



5G networks are being gradually rolled out across the UK. As and when you have access to 5G connectivity will depend on where you live, your network provider and whether you have 5G-enabled devices.

If you have further questions about 5G, some of the most common questions have been answered on the final page

5G and the emergency services

Enhancing existing and introducing new ways of connecting ambulances with doctors and hospitals.

5G will further enhance the capabilities of existing 4G-enabled health technology which allows ambulance crews to instantly transmit life-saving details about a patient's condition to awaiting emergency departments. 5G will enable high-definition uninterrupted video calls assisting doctors to prescribe urgent treatment as ambulances make their journey to hospital. Information, from ultrasound images to blood pressure readings, and from heart rate to body temperature, can be sent to doctors ahead of an ambulance patient's arrival. This technology is not hypothetical – O2 and Vodafone began trialling 5G “smart ambulances” in the East of England and Milan.¹



A handheld police helicopter.

5G-enabled drones will improve the abilities of 4G drones, surveying large areas from the sky and enhancing the images that are relayed to a handheld device carried by a police officer on the ground. The drone can provide thermal imaging to track down a crime suspect on the run, or stream live footage to help with effective control of large crowds. These drones will do some things that police helicopters do, but at less cost. Vodafone had been working with the New Zealand Police to adopt this drone technology.²



Bringing the emergency control room closer to the front line.

Emergency control rooms take 999 calls from the public and trigger the emergency services to respond. With 5G-enhanced video links at the scene of an emergency, the control room can see what is happening in real time and with more clarity than 4G - including the precise positions of all emergency personnel.⁴ Augmented reality can help response teams provide information in difficult environments, such as helping firefighters navigate smoke filled environments.⁵ Not only this, but the digital evidence collected at the scene of an emergency can be automatically and immediately uploaded to internal servers, reducing red tape and saving even more time through 5G than the speed possible with 4G.⁶



More quickly identifying an unfolding emergency.

Bristol harbour installed thermal cameras specifically designed to alert the authorities when people fall into the water. The technology was implemented after ten people tragically died in drowning accidents in the city in one year alone. The thermal cameras pick up when a person breaks a virtual barrier at the harbour edge - the council control centre is notified via 5G technology and the local fire and rescue is subsequently called out if required. The lives of two people have already been saved by the technology.⁷



¹ <https://www.vodafone.co.uk/business/5g-for-business/5g-customer-stories/connected-ambulance#:~:text=Connected%20ambulances%20help%20staff%20in,to%20just%20a%20few%20milliseconds>

² Vodafone NZ, How 5G is helping New Zealand Police get a better view, <https://www.vodafone.co.nz/business/insights/police-better-view-5g/>

⁴ Ericsson blog, September 2019, 5G emergency response abilities highlighted by Altice and Ericsson

⁵ Forbes, July 2020, 5G To The Rescue—The Future Of Better Information And Communications For First Responders

⁶ TechUK, How can 5G technology support the emergency services?

⁷ BristolLive, April 2019, Bristol Harbourside's 'God send' 5G cameras save two lives

The statistics



In the future 5G connectivity, with its enhanced connectivity opportunities, is expected to be used to assist in hundreds of thousands of ambulance call outs.

In September in England, ambulances attended 662,906 incidents that involved a face to face response. 388,695 incidents involved transportation to the emergency department.⁸



5G-enabled technology could significantly reduce the cost of some services.

Dorset Police, for example, believe that its drone unit - the country's first - has saved it £170,000.⁹



5G will become integral to the emergency services, building on and adding new capabilities to existing connectivity, and ultimately helping save lives.

Today there are 300,000 frontline emergency service users who depend on using handheld devices or operating equipment in 50,000 vehicles, 115 aircraft and 200 control rooms.¹⁰

⁸ NHS, Ambulance Quality Indicators, September 2020

⁹ Bournemouth Echo, February 2019, The NPAS police helicopter is more expensive than drones

¹⁰ Gov.uk, Emergency Services Network

Frequently Asked Questions

1. How do I get access to 5G?

Firstly, you need a 5G signal in your area (just as you need a 4G signal to get 4G now). Secondly, you need a device that can receive 5G signal - some 5G-enabled smartphones are available now, with more coming onto the market.

2. Does 5G pose a danger to your health?

5G uses radio waves - as does 4G, 3G etc. - which have been found safe in numerous studies when used within guidelines. Public health organisations around the world support this conclusion.

3. Does 5G mean more masts and antennae?

Some new infrastructure will be needed to connect more remote communities to the 5G network. But existing masts will be adapted for 5G wherever possible. If new sites are needed, relevant planning rules will apply to them being built.

4. Is 5G bad for wildlife?

No. Despite many false claims, wildlife has not been found to be negatively affected by 5G.

5. Will 5G offer an alternative to broadband?

4G and 5G can both provide mobile home broadband connections. However, while 5G will offer potentially near gigabit capable speeds in the future, currently UK 5G mobile networks don't provide the same capacity or offer speeds as fast as 'full fibre' for home broadband.

Source: Mobile UK - www.mobileuk.org

5G CHECK THE FACTS

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