

Cornerstone Community Information Sheet

5G Services

As 5G technology is deployed across the country more and more services will become available and our lifestyles, economy and even the way we commute will be transformed. Additional base stations and upgrades to existing ones will be needed to meet this demand and improve the quality of service.

Practical uses of 5G

Two areas where these benefits are becoming evident are education and health,

The relationship between 5G and education is evolving at a massive rate with educators exploring the relevance of Virtual Reality (VR) technologies for education and training. Crucially, VR can support remote learning, allowing students a presence in the classroom even when working elsewhere.

5G's ability to deliver real-time information (low latency), ultra-fast speeds (critical for high-definition images and video), increased capacity and heightened security will also allow learning on the job, thanks to technologies such as Augmented Reality (AR) goggles, which can give engineers real-time instructions on how to fix a machine on a production line, for example.

Health care is undergoing a rapid transformation, patients across the country are now becoming accustomed to relying on remote healthcare services such as virtual GP appointments, and ordering online deliveries of essential medical supplies.

5G will prove critical in providing the infrastructure required to deliver remote health services over the next decade. 5G's fast and secure services will be fundamental in scaling the patient benefits of remote healthcare and keeping medical records protected and private. Trials have shown that connecting ambulance crews to expert resources using 5G allows paramedics to work with doctors and conduct specialist procedures in real time whilst on the road.

Health concerns

Various international assessments have concluded that below the International Commission on Non-Ionizing Radiation (ICNIRP) Guidelines there is no evidence of adverse health effects for wireless networks (including 5G).

In January 2019 the Finnish Radiation and Nuclear Safety Authority (STUK) concluded that:

In the light of current information, exposure to radio frequency radiation from base stations will not rise to a significant level with the introduction of the 5G network. From the point of view of exposure to radio frequency radiation, the new base stations do not differ significantly from the base stations of existing mobile communication technologies (2G, 3G, 4G).'
<https://www.stuk.fi/aiheet/matkapuhelimet-ja-tukiasemat/matkapuhelinverkko/5g-verkon-sateilyturvallisuus>

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In the UK Ofcom, the regulator for the communications services, undertook measurements of electromagnetic fields (EMFs) around 5G base stations. In 2020 they noted: "In all cases, the measured EMF levels from 5G-enabled mobile phone base stations are at small fractions of the levels identified in the ICNIRP Guidelines" https://www.ofcom.org.uk/_data/assets/pdf_file/0015/190005/emf-test-summary.pdf

In Norway the Norwegian Radiation and Nuclear Safety Authority (DSA), noted:

'The overall research shows that the radiation from wireless technology is not hazardous to health, as long as the levels are below the recommended limit values. This is the prevailing view among researchers in many countries today, and it is supported by the EU Scientific Committee. We have used cell phones and radio transmitters for decades and much research has been done on how this affects our health. Risk factors of importance to public health have not been found. With the knowledge we have today, there is no need to worry that 5G is hazardous to health.' January 2019
<https://www.dsa.no/temaartikler/94565/5g-teknologi-og-straaling>

In the light of concerns about 5G signals from some members of the public Public Health England (PHE) commented in 2019:

"It is possible that there may be a small increase in overall exposure to radio waves when 5G is added to an existing network or in a new area. However, the overall exposure is expected to remain low relative to guidelines and, as such, there should be no consequences for public health"
<https://www.gov.uk/government/publications/5g-technologies-radio-waves-and-health/5g-technologies-radio-waves-and-health>.

In 2020 the ICNIRP updated their safety guidelines to include further restrictions for frequencies used for 5G services. ICNIRP Chairman, Dr Eric van Rongen stated 'the new guidelines provide better and more detailed exposure guidance in particular for the higher frequency range, above 6 GHz, which is of importance to 5G and future technologies using these higher frequencies. The most important thing for people to remember is that 5G technologies will not be able to cause harm when these new guidelines are adhered to.' https://www.icnirp.org/cms/upload/presentations/ICNIRP_Media_Release_110320.pdf.

In 2020 the World Health Organisation commented on 5G stating: "Provided that the overall exposure remains below international guidelines, no consequences for public health are anticipated"
<https://www.who.int/news-room/q-a-detail/5g-mobile-networks-and-health>.

In common with all mobile phone base stations, Cornerstone sites with 5G technology will be checked and certified for ICNIRP compliance.

For further information please contact

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