

‘Do the advantages of 5G outweigh possible health risks?’



AT&T started its rollout of 5G using a hotspot in 12 US cities in late 2018. Now, the company has expanded its mobile 5G efforts to seven more cities. In total, the company says it'll have 5G in 30 states by the end of 2019. Unfortunately, for the time being AT&T's mobile 5G is limited to business customers and developers. UK mobile subscribers can get 5G already in major areas. T-Mobile will be the first mobile network provider to start rolling out the network that provides high-speed internet throughout the Netherlands in 2020. The fifth generation of mobile internet not only provides high-speed internet, it can also send data from one device to another almost in real time, support more devices at the same time, and improve the network's security. However, the big question is: do these advantages outweigh possible health risks? Furthermore, in each area hundreds of trees might have to be cut in order to get unhindered contact with tens of thousands of transmitter masts that, so to speak, will be placed on almost every street corner.

Numerous scientists, doctors, environmental organisations and citizens have now, by means of a worldwide petition, called for an end to the rollout of this next generation wireless network, both on Earth and in space. According to them, the harmfulness of radio frequency radiation to humans, animals and the environment has been proven, while governments still point at studies that show that there is no health risk. While civilian opponents of 5G are mainly afraid of harmful biological radiation effects in the long run, such

as a greater risk of brain tumours, skin diseases and dementia, international scientists go much further. They believe that we and the environment will suffer enormous damage as a result of the ubiquitous radiofrequency radiation. In their petition to the United Nations (UN), the World Health Organisation (WHO), the European Union (EU), the Council of Europe and the governments of all countries, they also point at the fact that unprecedented social changes could take place in the years to come. We will have to deal with 'smart' houses, businesses, motorways, cities and self-driving cars. Almost everything we own and buy – from refrigerators and washing machines to milk cartons, hairbrushes and nappies – will contain antennas and microchips and be wirelessly connected to the internet. Virtually everybody on Earth will have access to ultra-fast wireless communications with a very short delay from anywhere on our planet, even in rainforests, the middle of the ocean and Antarctica. Not widely known and recognised is the fact that this will also result in unprecedented environmental changes on a global scale. The planned density of transmission masts is hard to imagine. In addition to millions of new 5G base stations on Earth and 20,000 new satellites in space, an estimated 200 billion radiation emitting objects will soon be part of the Internet of Things, and many more a few years later.

In mid-2018, commercial 5G using lower frequencies and download speeds was applied in Qatar, Finland and Estonia. The rollout of 5G with extremely high frequencies (millimetre waves) is planned happening now. The evidence for the harmfulness for living beings, of radio frequency radiation is, according to the petition's signatories, overwhelming, although there still is widespread denial. Collected clinical evidence of sick and damaged people, experimental evidence of damage to DNA, cells and organs in various plants and animals and epidemiological evidence that electromagnetic pollution

causes the most common diseases of modern times (cancer, cardiovascular diseases and diabetes) to a large extent, together form a literature database of more than 10,000 peer-reviewed studies. If the telecom industry implements its 5G plans, no humans, animals, birds, insects or plants will be able to avoid exposure to radiation, 24 hours a day, 365 days a year. The amount of radiation will be ten to one hundred times greater than it is today. The 5G plans are likely to have serious, irreversible effects on humans and cause permanent damage to all the Earth's ecosystems. Immediate action must be taken to protect mankind and the environment, in accordance with ethical obligations and international treaties.

‘Rollout of 5G on Earth and in space must stop immediately’

ONE TRANSMITTER EVERY 200 METRES

5G technology uses millimetre waves to process the huge amounts of data required for the Internet of Things. Since these waves have difficulty going through compact material, it will be necessary to install a transmitter in every urban environment, probably one every 200 metres. Unlike previous generations of wireless technology, where a single

antenna emits radiation over a wide area, 5G stations and devices use multiple antennas arranged in order to work together to emit focused, steerable, laser-like beams one after the other. Each 5G phone will contain dozens of tiny antennas that work together to capture and transmit an extremely concentrated frequency beam from and to the nearest transmitter mast. The US Federal Communications Commission (FCC) has established regulations that allow a frequency intensity of 20 watts; ten times higher than the current permitted limits for mobile phones. All 5G base stations will consist of hundreds or thousands of antennas that simultaneously emit different laser-like beams to all mobile phones and devices in a given area. This technology is called 'multiple input, multiple output, or MIMO'. At least five companies want to make 5G available from space via 20,000 satellites in low and medium Earth orbit, which will lay a blanket of powerful, focused and controllable radiation over the Earth. Each satellite will emit millimetre waves of up to 5 million watts from thousands of phase-controlled antennas. It is important to note that these satellites are located in the Earth's magnetosphere, which has a major influence on the electrical properties of the atmosphere. The change in the Earth's electromagnetic environment may pose an even greater threat to life on Earth than the radiation from the antennas on the ground.

SCIENTISTS SOUND THE ALARM

Even before 5G came into the picture, dozens of petitions, set up by international scientists, and 3,000 medical doctors in the so-called Freiburger Appeal, called for an end to the expansion of wireless technology and for a moratorium on new base stations. By 2015, 215 scientists from 41 countries were already sounding the alarm. They reported to the United Nations and the World Health Organisation that "several recent scientific publications have shown that electromagnetic

'Involuntary exposure to electromagnetic radiation is inevitable'

fields (EMF) affect living beings." 'More than 10,000 peer-reviewed scientific studies show what adverse effects radio frequency radiation can cause. This is evident from the text of the call on the website 5gspaceappeal.org (where much more information can be found, including a literature list indicating which studies have been consulted). These include cardiac dysrhythmia, cardiovascular diseases, changes in gene expression and metabolism, altered stem cell development, cancer, DNA damage, cognitive disorders, reduced sperm quality, obesity and in children autism, ADHD and asthma. Not to mention the damage to animals and the environment.'

EVIDENCE IGNORED

'Telecom companies and governments have consciously excluded well-known international EMF scientists who have recorded the biological effects of 5G radiation on humans, animals and plants in thousands of peer-reviewed studies', it says in the call that has been in force for over a year now. 'The reasons for the current inadequate safety reg-

ulations include the conflicts of interest that standard-setting bodies have because of their relationships with telecommunications or electricity companies.

This undermines impartiality in the regulation of maximum permitted values for non-ionising radiation'. Emeritus Professor Martin L. Pall presents the conflicts of interest and the important excluded studies in detail in the literature overview on the website. The text of the call states that governments, the European Union, the United States and national governments, in their hurry to implement 5G, relax rules and set aside environmental legislation. 'Currently, most of the wireless facilities are located on private property and certainly at some distance from homes and businesses. In order to be much closer to each other, as required by 5G, the transmitters will now be placed on the pavement, directly in front of houses and businesses and above the heads of pedestrians, including mothers with babies.

Public disclosure obligations and public hearings are deliberately avoided. The sound of opposition has been silenced'.



THE CALL

We call upon the UN, WHO, EU, Council of Europe and governments of all nations

- (a) To take immediate measures to halt the deployment of 5G on Earth and in space in order to protect all human-kind, especially the unborn, infants, children, adolescents and pregnant women, as well as the environment;
- (b) To follow the United Nations Convention on the Rights of the Child and Council of Europe Resolution 1815 by informing citizens, including teachers and physicians, about the health risks (to adults and children) from RF radiation, and why they should and how they can avoid wireless communication and base stations, particularly in or near day-care centres, schools, hospitals, homes and workplaces;
- (c) To favour and implement wired telecommunications instead of wireless;
- (d) To prohibit the wireless/telecommunications industry through its lobbying organisations from persuading officials to make decisions permitting further expansion of RF radiation, including ground- and space-based 5G;
- (e) To appoint immediately—without industry influence—international groups of independent, truly impartial EMF and health scientists with no conflicts of interest, for

the purpose of establishing new international safety standards for RF radiation that are not based only on power levels, that consider cumulative exposure, and that protect against all health and environmental effects, not just thermal effects and not just effects on humans;

(f) To appoint immediately—without industry influence—international groups of scientists with expertise in EMFs, health, biology and atmospheric physics, for the purpose of developing a comprehensive regulatory framework that will ensure that the uses of outer space are safe for humans and the environment, taking into account RF radiation, rocket exhaust gases, black soot, and space debris and their impacts on ozone, global warming, the atmosphere and the preservation of life on Earth. Not only ground-based but also space-based technology must be sustainable for adults and children, animals and plants.

This appeal and your response will be publicly available on www.5gSpaceAppeal.org