

MTC SHARES FACTS & MYTHS ON 5G

WHAT IS 5G?

5G is the fifth generation of wireless communications technologies for cellular data networks. The frequency spectrum of 5G is divided into millimetre waves, mid-band, and low band. Low band uses a similar frequency range as the predecessor; 4G. The 5G millimetre wave is the fastest with actual speeds often being 1 to 2 Giga bytes per second.

Simply said, 5G is smarter, faster and more efficient than 4G. It promises mobile data speeds that far outstrip the fastest home broadband network currently available to consumers. With speeds of up to 100 gigabits per second, 5G is set to be as much as 100 times faster than 4G. As with 4G LTE, 3G and everything before it, the wireless network is transmitted over radio waves, a non-harmful part of the electromagnetic spectrum.

WHAT ARE THE BENEFITS OF 5G?:

- 1ms Latency - faster response time within 1 millisecond;
- 10-100x connected devices – can support more devices at once;
- 10-year battery life for sensors – less maintenance and more reliable;
- 90% reduction in energy use – greener for the environment as generates less waste;
- 1,000 more capacity – supports 1000 more connections at a time;
- 1–100x data rates – offer data transmit rates up to 100 times faster;
- Allows for the support of smart cities, smart homes and augmented reality;
- Allows devices to communicate with virtually zero lag time paving the way for cutting edge advances real time applications, such as allowing for surgeons and Doctors in urban areas or anywhere in the world to perform operations virtually using 5G technology;
- Enables the self-adoption of a new generation of self-driving cars;
- Brings video gaming to a new level stored in the cloud and;
- Has the capacity to revolutionise many industries, e.g. smart farming;
- Simply said, 5G is widely believed to be smarter, faster and more efficient than 4G. It promises mobile data speeds that far outstrip the fastest home broadband network currently available to consumers. With speeds of up to 100 gigabits per second, 5G is set to be as much as 100 times faster than 4G.

IS 5G SAFE?

Firstly, it is important to understand that there is a lot done to ensure public safety with regard to radiation. Before new technologies are introduced to the public they are tested to ensure they will not endanger human beings.

The International Commission on Non-Ionizing Radiation Protection (ICNIRP) is an association registered in Munich, Germany, as a non-profit organisation with a scientific mission. It is formally recognised as an official collaborating non-state actor by the World Health Organization (WHO) and the International Labour Organization (ILO). ICNIRP is consulted by the European Commission and is linked to many organisations engaged in NIR protection worldwide through diverse collaborative projects.

The ICNIRP provides scientific advice and guidance on the health and environmental effects of non-ionizing radiation (NIR) to protect people and the environment from detrimental NIR exposure.

Non-ionising radiation refers to electromagnetic radiation such as ultraviolet, light, infrared, and radio waves, and mechanical waves such as infra- and ultrasound. In daily life, common sources of NIR include the sun, household electrical appliances, mobile phones, Wi-Fi and microwave ovens.

Within the electromagnetic spectrum, NIR is situated below the ionising radiation band that includes x-rays. NIR has less energy than ionising radiation and cannot remove electrons from atoms, i.e. NIR cannot ionise (except for part of the UV band). NIR is sub-grouped into different frequency or wavelength bands. The different subgroups have different effects on the body and require different protection measures).

To this end, ICNIRP develops and disseminates science-based advice on limiting exposure to non-ionising radiation. Experts from different countries and disciplines such as biology, epidemiology, medicine, physics, and chemistry, work together with and within ICNIRP to assess the risk of NIR exposure and provide exposure guidance. ICNIRP experts base their advice on scientific publications about biological effects and action mechanisms of radiation, for the whole NIR frequency range. ICNIRP's protection advice is formulated in its Guidelines, Reviews and Statements, which are publicly and freely available online.

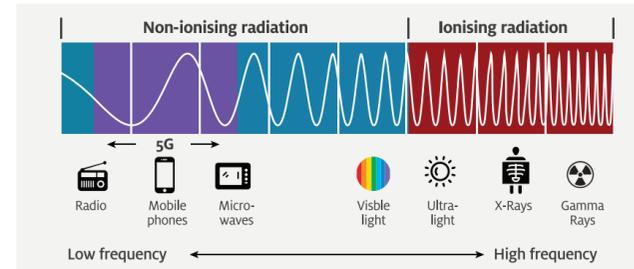
The World Health Organization and GSMA (Global System for Mobile Communications) have already long established and agreed what the acceptable and safe exposure limits should be, that every new technology must comply with. These limits have been set to provide protection for all people (including children) against all established health hazards. With the introduction of every new technology the experts simply repeat the same debate, it is worth noting that the

industry had the same debate with the introduction of 3G and 4G which were all within the established safety limits.

New applications such as 5G, wireless, IoT and wearable devices complies with existing exposure limits. The strict and safe exposure for electromagnetic fields also apply for all frequency bands currently envisaged for 5G. Based on experience with 3G and 4G networks and the result from 5G trials and commercial networks, the overall exposure levels will remain well below the international safety guidelines.

- International RF-EMF limits cover the frequencies and modulations relevant to 5G and health agencies say that no health hazards are expected at levels below the limits;
- 5G assessments show levels similar to 4G meaning that overall exposures will not change by much, remaining a small fraction of the limit values; and
- mmWave frequencies are used today by the mobile and satellite industries, they have been extensively researched and are covered by the international safety guidelines.

Where 5G fits in the electromagnetic spectrum



SOURCE: SCAMP/Imperial College London/EBU

WHY SHOULD WE BELIEVE GSMA?

One can argue that the GSMA is biased and trying to protect the mobile industry with its studies but they have a responsibility to ensure that the mobile industry operates and develop within the guidelines set with WHO & ICNIRP. The fact is the current acceptable exposure limits have been agreed on not only by the GSMA but in partnership with the World Health Organization along with independent experts. Similarly, the Namibian Radiation authority is a member of ICNIRP and is task to ensure that the industry adhere to those standards. CRAN also has a process to verify every equipment being brought in country for telecommunication with their process of Typo Approval. MTC will never bring anything without going through the set regulation.

IS IT TRUE THAT 5G CAUSES CORONA VIRUS?

There has recently been claims online that stems from the fact that radio waves are technically radiation. Although the word tends to be viewed as negative, not all radiation is and radio is non-ionizing and does not excite electrons and knock them out of orbit. 5G can't cause DNA damage, cause cancer or develop corona virus. Every study that claims otherwise has been proven false and inaccurate. The same claims were made about Wi-Fi and 4G when introduced. Corona is caused by a virus and not by electromagnetic radiation.

The Communications Regulator of South Africa ICASA has condemned the theory that 5G networks pose a health risk to consumers. Their statement reads "The authority confirms that type approved electronic communication facilities provided in the country adhere to the prescribed standards and that there is no evidence that they pose any health risks to the citizens". Namibia's telecommunications regulator, CRAN has also clearly stated that they are not aware of any proven correlation between 5G and the covid-19 pandemic.

THE TRUTH ABOUT 5G RADIATION BASE STATIONS:

With the 5G commercial services launched in some countries and areas, the 5G is getting closer to our daily life. There has however been concerns about the radiation emitted by these base stations. Natural objects generally have electromagnetic radiation, even including the sunlight we see every day. However, it depends on the radiation index to judge whether it will cause harm to human health or not.

What is the radiation value of the electric appliances that are commonly used in our daily life? Mobile phones are carried by most people. After testing, it can be found that the radiation value in standby mode is 0.002 W/m². When the call is connecting, the radiation value increases to 0.03 W/m², which is less than the EMF safe standard, 0.47 W/m².

Electric hair dryers are also commonly used in daily life. The radiation value can reach 0.12 W/m² when powered on, which is safe.

When the microwave oven is powered on, the radiation value of the cabinet door can reach 2 W/m², which has exceeded the safety value. However, the radiation value decreases rapidly one meter away, which is about 0.02 W/m². So, everyone should stay away from the microwave oven at least 1 meter away from the microwave.

	EMF Standard
EU	10 W/m²
US	6 W/m²
CHINA	0.47 W/m²
BASE Station	0.006 W/m²
Smartphone	0.03 W/m²
Light Bulb, 20W	0.0024 W/m²
Router	0.03 W/m²
Hair Dryer	0.12 W/m²
Microwave Oven	2.04 W/m²

In fact, the range of the national radiation safety value is to restrict the EMF to be within the standard in the areas that people will live or do activity. According to the preceding test results, we can see that we are perfectly safe even within a very short distance to the base stations.

IS IT TRUE THAT 5G INTERFERES WITH THE WEATHER?

Research tells us that there are no established health or environmental effects from 5G and 5G measurements demonstrate that the overall levels of radio signals in the community remain low and well below international safety guidelines. Technical studies conducted by the ITU also confirm that 5G will not cause any harm to existing services, including weather forecasting. With the separation between weather forecasting spectrum and potential 5G spectrum, as well as reasonable power limits supported by most governments globally and the mobile industry, 5G presents no risk to weather forecasting.

DO TESTING STANDARDS EXIST FOR 5G PHONES AND NETWORKS?

The International Commission on Non-Ionizing Radiation Protection (ICNIRP) have set all the health requirement and the 3GG PP has also set the standard for mobile networks. Many initial 5G deployments will be at frequencies similar to existing 3G/4G/wimax mobile networks, and the same mobile device compliance rate and limit value will also apply to 5G devices. An international standard for assessment of mobile networks exists for all planned 5G frequencies. For 5G devices operating in frequency bands higher than those used by current mobile phones, new test procedures are in development and standardisation activities have been initiated. The International Electrotechnical Commission has published a Technical Report providing guidance on current test methods. A final international technical standard will be completed by 2021.

WHY WERE 5G SITES DESTROYED IN THE UK?

The Police and Counter Terrorism authorities are currently investigating acts of arson against mobile mast in the UK. The GSMA has condemned these acts of violence designed to weaken communications networks at a time where the country is in a crisis. The GSMA has also condemned the link of 5G to corona virus as fake news and warned that the disinformation campaign is aimed at inciting fear, aggression and vandalism against critical infrastructure and essential services. England's National Medical Director Stephen Powis said with reference to 5G and Corona: "The 5G story is complete and utter rubbish, it is nonsense, it's the worst kind of fake news".

WHAT ARE THE FEARS ABOUT 5G RADIATION?

5G has 3 bands. The low, mid and millimeter waves. Some health experts are concerned about the new type of radiation called millimeter waves which will come as a result of the 100s of small cellular antennas that comes with the 5G roll-out. These experts claim that it has the potential to cause emerging health problems with radiation such as headaches, fatigue and irritability. They claim that due to increased proximity and exposure to microwaves, they would rather have the implementation of 5G delayed until more research is done. The World Health Organization has however refuted these claims and declared that 5G radiation is similar to that of 3 and 4G and is still below the allowable global acceptable radiation limit.

WHAT IS BEING DONE TO STOP THE SPREAD OF FAKE NEWS?

Youtube and other social media platforms has already begun to limit the spread of false 5G coronavirus claims after the cellphone tower attack in London. They are now taking steps to limit the spread of conspiracy theories that falsely connect 5G networks with coronavirus. There have been at least 5 reported instances of attacks in the United Kingdom in the past few days. Some Youtube videos claiming the connection between the virus and the super-fast wireless technology have racked up hundreds of views. In a joint statement, BT Groups (BTGOF) EE, Telefonica (TEF) O2, Vodafone and 3 owned by CK Hutchison Holdings said claims that 5G is in any way connected to the coronavirus pandemic have no basis in fact, a statement echoed by experts and multiple government agencies around the world. "Not only are these claims baseless, they are harmful for the people and businesses that rely on the continuity of our services and has led to the abuse of essential services and maintenance"

Many social media and internet platforms have already taken some steps to stem the spread of misinformation surrounding coronavirus, banning content that references fake treatments and cures and highlighting reliable information search and in feeds. However, conspiracy theories

such as the false 5G connection falls into the grey area. Google Youtube calls such videos "borderline content" which means they are not in direct violation of its policies. The company did however say in a statement on CNN Business that the videos could lose advertising revenue and will be removed from search results. The UK Prime Minister, Boris Johnson has called on social media networks to do more to remove false information.

Twitter spokesperson person said "We will continue to take action on accounts that violate our rules, including content in relation to unverifiable claims which incite social unrest, widespread panic or large scale disorder".

DOES NAMIBIA CURRENTLY HAVE ANY 5G BASE STATIONS?

No, there are no 5G base stations in Namibia. The pictures that were taken at the coast and in Windhoek are not 5G base stations. All MTC towers are currently safe and comply with international standards. The telecommunications regulator of Namibia, CRAN, has recently categorically stated that there are no 5G base stations in Namibia yet because they have not awarded such spectrum to any telecommunications operator.

HOW WILL MTC ENSURE SAFE IMPLEMENTATION OF 5G?

Despite the fact that 5G has been cleared by world standards, MTC will still comply with WHO, GSMA and continue to work the Namibia Radiation Authority to ensure that our sites output power remain within the set standard. The Namibia Radiation Authority has 24/7 access to MTC sites and radiation test can always be done to continue proving that MTC rollout services as per set standard. In the past we had public hearings where residents where allowed the opportunity to voice their concerns. We will comply with all these processes because it is our responsibility to assure people that our base stations will be safe and we take that responsibility seriously like we have always done.

GSMA AND WORLD HEALTH ORGANIZATION:

The GSMA recognises that public concerns have arisen in some markets about the safety of mobile communications. The radio signals used by mobile technologies are extensively researched, have been for decades and will continue to be. International guidelines cover all frequencies and those consider by for 5G are also within those ranges. Public health agencies and expert groups consistently conclude that the guidelines protect all persons (including children) against all established health risks. The GSMA and its members welcome and encourage regular independent research and believe that regulations should be evidence-based.

Expert groups and public health agencies such as the World Health Organization (WHO) broadly agree that no health risks have been established from exposure to the low-level radio signals used for mobile communications. In addition, statements from public health agencies also confirm that no health risks are expected from 5G.

ABOUT 5G

- 5G is made of the same technology as 4G (FM radio, heat, visible light, ultraviolet, etc)
- 5G is simply using light at certain frequencies
- 5G frequencies are similar to radar (it is a different usage of the same phenomenon)
- 5G cannot travel far (typically a few hundred metres)
- 5G is easily blocked (even by windows)
- 5G antennas need to be closer to our devices. (This is simply the physics of shorter waves same as your Wi-Fi faces many of these same challenges)
- 5G uses more antennas for the same area (this solves the range and blocking problems)
- 5G produces less radiation for the same area (this is due to the inverse square law in physics)
- 5G is a progression of existing technology
- 5G safety is being continuously evaluated and so far no health risk have been identified

CONCLUSION:

Taking into consideration the facts shared above. The following conclusions can be made;

The conspiracy theory that the Namibian government initiated a lockdown to enable the implementation of 5G technology in secret is fake news because Namibia has no 5G towers;

There is no evidence that 5G causes coronavirus and as confirmed by the World Health Organization and so many experts, this claim is baseless;

It is worth noting that the World Health Organization and the telecommunications industry went through the very same debated with the implementation of 3G and 4G just a few years ago. Namibia implemented 4G based on the same assurance from the WHO and the technology has been safe despite experts warning that its radiation would not be safe for humans;

While the level of radiation of 5G is slightly higher than that of 4G, it is still below the acceptable radiation levels but MTC continues to welcome debate on the matter and will ensure that upon implementation that its safe and that due process will be followed as far as public consultation is concerned.