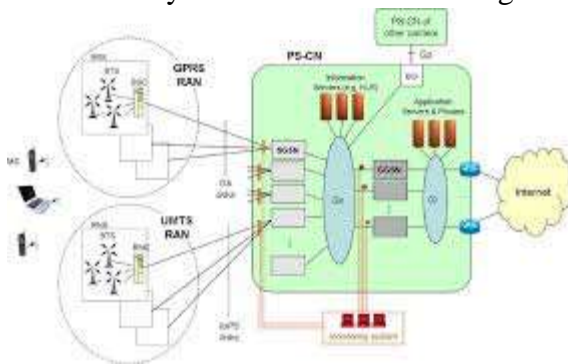


Name: ESOSUAKPO OKEOGHENE JIL

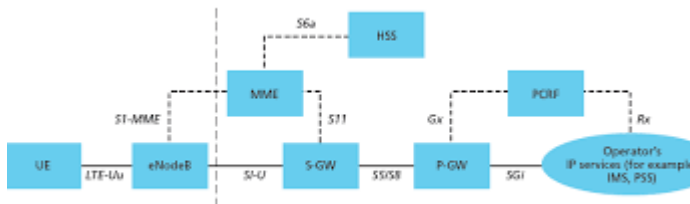
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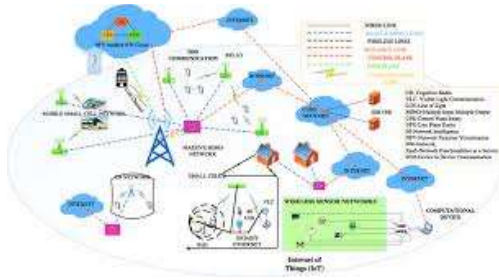
1. Working principle of 3g Network: “3g” simply stands for 3rd generation. It is generally intended for multimedia cellphones i.e. smartphones which feature increased bandwidth and transfer rates to accommodate web-based application. In actual sense none of these would be possible without mobile phone masts or towers that carry cell-phone signals. 3g data technology, uses to network of these phone towers to pass signals, ensuring a stable and relatively fast connection over long distances.



Working principle of 4g Network: “4g” essentially stands for fourth generation. It works very much the same way as 3g but faster. It uses high speed download and upload packets. Users can normally access speeds up to 21mb on the ago depending on the location. It is essentially a highly advanced radio system. Where masts broadcast signals for 4g to work. 4g is a protocol that sends and receives data in packets, and it is entirely IP based. It works through your devices by communicating with a base station which are the masts. These masts relay data from your device to the internet and vice versa.



Working principle of 5g network: This is the 5th generation of mobile wireless systems. It integrates perfectly with the internet of things like other cellular networks, 5g uses a system of cell sites that divide their territory into sectors and send encoded data through radio waves. Each cell site must be connected to a network backbone, whether it is wired or wireless connection. It uses a type of encoding called OFDM, which is similar to the encoding 4gLTE uses. The air interface is designed so it has much lower latency and much greater flexibility than LTE.



I. Advantages and Disadvantages of 3g network

Advantages	Disadvantages
<ul style="list-style-type: none"> The customer will get wireless broadband 	<ul style="list-style-type: none"> Since in telecom sector, there is much competition, so the companies have a very marginal price for their facilities
<ul style="list-style-type: none"> Good for data intensive applications 	<ul style="list-style-type: none"> The mobile are not suitable devices to see TV or web browsing
<ul style="list-style-type: none"> 3g enables video calls and big MMS 	<ul style="list-style-type: none"> The radiation of magnetic waves with the heavy use of the wireless system will affect our life also.
<ul style="list-style-type: none"> 3g network allows people to access music, pictures and videos with ease creating a bigger and open market for those industries in advertising 	<ul style="list-style-type: none"> Due to DTH & 3g technology, everyone will use the multi-purpose services to avoid time loss and keeping records for different service providers

Advantages and disadvantages of 4g Network

Advantages	Disadvantages
<ul style="list-style-type: none"> Seamless network of multiple protocol and air interfaces 	<ul style="list-style-type: none"> New frequencies means new components in the cell towers
<ul style="list-style-type: none"> Extremely high voice quality 	<ul style="list-style-type: none"> Needs complex hardware
<ul style="list-style-type: none"> 4g is 10 times faster than 3g 	<ul style="list-style-type: none"> It is impossible to make your current equipment compatible with the 4g network
<ul style="list-style-type: none"> Higher bandwidth 	<ul style="list-style-type: none"> Higher data prices for consumers

Advantages and disadvantages of 5g Network

Advantages	Disadvantages
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<ul style="list-style-type: none"> Increased Bandwidth for all users 	<ul style="list-style-type: none"> An increased bandwidth means less coverage
<ul style="list-style-type: none"> More bandwidth means faster speed 	<ul style="list-style-type: none"> The radio frequency may become a problem
<ul style="list-style-type: none"> Availability of new technology 	

2. Differences between 2g, 3g, 4g and 5g

Technology	2g	3g	4g	5g
Bandwidth	14-64kbps	2mbbps	200mbps	>1gbps
Multiplexing	TDMA/CDMA	CDMA	CDMA	CDMA
Core network	PSTN	Packet network	Internet	Internet
Handoff	Horizontal	Horizontal	Horizontal& vertical	Horizontal& vertical

3. (I) There is no correlation between 5g and Coronavirus.

(II) 5g networks essentially are made up of radio frequency when you take away both its speed and its reliability which is an electromagnetic wave.

Essentially electromagnetic (EM) waves are divided into two types, let's call them type A and type B electromagnetic waves.

- Type A: These EM waves have lower frequencies, are packed with lower energies and consequentially, are relatively less harmful. Examples are Radio frequencies, Infrared waves, and visible light and ultraviolet rays.
- Type B: These type of waves have extremely high frequencies and power and could cause damage to humans and biological matter. Examples are X-rays and Gamma rays.

As a general rule, how harmful electromagnetic waves are depends on the frequency of the wave, which also translates in their ability to penetrate objects. The lower the frequency the less harmful it is. And radio waves appear to be less harmful.

In relation to the viruses and Covid-19, They are extremely tiny and they don't just affect humans they affect and living organism ranging from bacteria to horses; seaweed to people.

It is known that bats are the natural reservoirs of the coronaviruses which Covid-19 is a form of. Virus reservoirs are one of several animals that cannot or have little sensitivity to the virus due to their immune system and bats have insanely strong immune systems. What makes the virus so deadly is the facts that the virus replicate faster in bats due to their fierce immune systems, such that they jump to mammals

with average immune systems such as humans. As far as we know, Covid-19 got transmitted from bats to a pangolin.

Conclusively, Covid-19 and 5g technology are two things at the two ends of completely different universes. One is a contagious virus that is in no way related to electromagnetic waves and the other is wireless network that WHO has classified as possibly carcinogenic to humans right in the same bucket as caffeine and aloe-vera.