



STUDY OF AMENDMENT OF 4G TO 5G WIRELESS TECHNOLOGY WITH ITS SPECIFICATION AND BENEFITS

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Abstract:

The development of broadband wireless access technologies in recent years was the result of growing demand for mobile Internet and wireless multimedia applications. Mobile communication plays a most important role in telecommunications industry. With the 4G telecommunications systems now starting to be deployed, eyes are looking towards the development of 5th generation or 5G technology and services. Although the deployment of any wireless or cellular system takes many years, development of the 5G technology systems is being investigated. The new 5G technologies will need to be chosen developed and perfected to enable timely and reliable deployment. The new 5th generation, 5G technology for cellular systems will probably start to come to fruition around 2020 with deployment following on afterwards.

INTRODUCTION

Enhancing the wireless Technology Such As 2G,3G,4G developing the remote areas for different profession such as Industries,Medical,College,Doctors, etc. Wireless communication is among technology's biggest contributions to mankind. Wireless communication involves the transmission of information over a distance without help of wires, cables or any other forms of electrical conductors. The transmitted distance can be anywhere between a few meters (for example, a television's remote control) and thousands of kilometres (for example, radio communication).With the use of Wireless communication Technology Communication has enhanced to convey the information quickly to the consumers. Working professionals can work and access Internet anywhere and anytime without carrying cables or wires wherever they go. This also helps to complete the work anywhere on time and improves the productivity.

Architecture of Wireless Technology

If we observe the working of WiFi is based on transmission process. In this process the data which is going to be transferred has to be transmitted in the form of radio signals, and then the device transmits these signals to antenna which is used for transferring of data. This antenna is which is used for transmission purpose is connected with a wired LAN or DSL. A router is also connected with the device which is able to receive the signals and also help in decoding them. Then this information is spread on internet.

Components of Wireless Architecture

Wireless LAN architecture is composed of different components which help in establishing the local area network between different operating systems. These components are very essential for WiFi architecture.

1. Access point
2. Clients
3. Bridge

Access Points

A special type of routing device that is used to transmit the data between wired and wireless networking device is called as AP. It is often connected with the help of wired devices such as Ethernet. It only transmits or transfers the data between wireless LAN and wired network by using infra structure mode of network. One access point can only support a small group of networks and works more efficiently. It is operated less than hundred feet. It is denoted by AP.

Clients

Any kind of device such as personal computers, Note books, or any kind of mobile devices which are inter linked with wireless network area referred as a client of wireless LAN architecture.

Bridge

A special type of connectors which is used to establish connections between wired network devices such as Ethernet and different wireless networks such as wireless LAN. It is called as bridge. It acts as a point of control in wireless LAN architecture.



WIMAX Technology

WiMAX is one of the hottest broadband wireless technologies around today. WiMAX systems are expected to deliver broadband access services to residential and enterprise customers in an economical way. Loosely, WiMax is a standardized wireless version of Ethernet intended primarily as an alternative to wire technologies (such as Cable Modems, DSL and T1/E1 links) to provide broadband access to customer premises. More strictly, WiMAX is an industry trade organization formed by leading communications, component, and equipment companies to promote and certify compatibility and interoperability of broadband wireless access equipment that conforms to the IEEE 802.16 and ETSI HIPERMAN standards. WiMAX would operate similar to WiFi, but at higher speeds over greater distances and for a greater number of users. WiMAX has the ability to provide service even in areas that are difficult for wired infrastructure to reach and the ability to overcome the physical limitations of traditional wired infrastructure. WiMAX was formed in April 2001, in anticipation of the publication of the original 10-66 GHz IEEE 802.16 specifications. WiMAX is to 802.16 as the WiFi Alliance is to 802.11

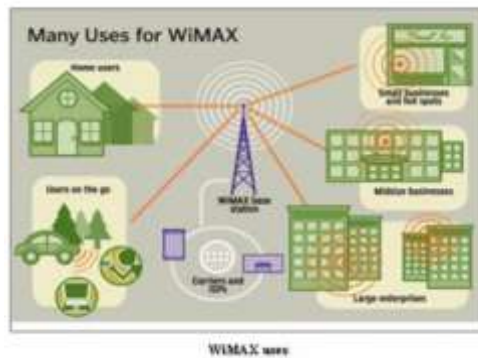


Fig: How WIMAX can be used.

Wireless and its Next Generation 5G Tehnology

Wireless Technology amending day to day like 2G,3G,4G, and 5G . 5G Generation Mobile Network or simply 5G is the forthcoming revolution of mobile technology. The features and its usability are much beyond the expectation of a normal human being. With its ultra-high speed, it is potential enough to change the meaning of a cell phone usability. With a huge array of innovative features, now your smart phone would be more parallel to the laptop. You can use broadband internet connection; other significant features that fascinate people are more gaming options, wider multimedia options, connectivity everywhere, zero latency, faster response time, and high quality sound and HD video can be transferred on other cell phone without compromising with the quality of audio and video.

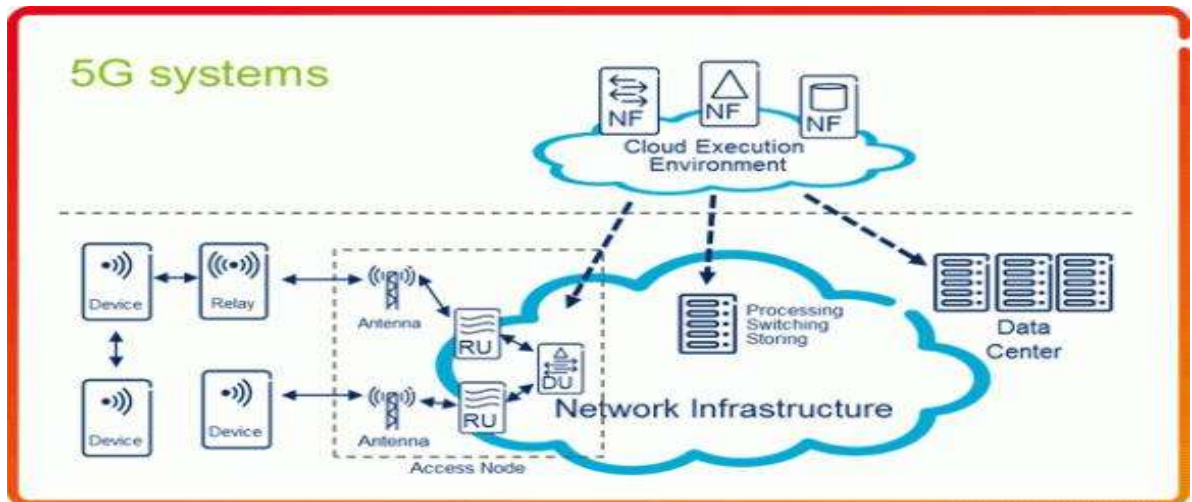
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5G Tehnology

The 5G technology is expected to provide a new (much wider than the previous one) frequency bands along with the wider spectral bandwidth per frequency channel. As of now, the predecessors (generations) mobile technologies have evidenced substantial increase in peak bitrate. Then — how is 5G different from the previous one (especially 4G)? The answer is — it is not only the increase in bitrate made 5G distinct from the 4G, but rather 5G is also advanced in terms of –

4. High increased peak bit rate
 5. Larger data volume per unit area (i.e. high system spectral efficiency)
 6. High capacity to allow more devices connectivity concurrently and instantaneously
 7. Lower battery consumption
- Better connectivity irrespective of the geographic region, in which you are
 - Larger number of supporting devices
 - Lower cost of infrastructural development
 - Higher reliability of the communications

□ **Architecture of 5G Tehcnology**
□



Radio Acss Technology

5G radio access technology will be a key component of the Networked Society. It will address high traffic growth and increasing demand for high-bandwidth connectivity. It will also support massive numbers of connected devices and meet the real-time, high-reliability communication needs of mission-critical applications. 5G will provide wireless connectivity for a wide range of new applications and use cases, including wearables, smart homes, traffic safety/control, critical infrastructure, industry processes and very-high-speed media delivery. As a result, it will also accelerate the development of the Internet of Things.

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5G specification

Although the standards bodies have not yet defined the parameters needed to meet a 5G performance level yet, other organisations have set their own aims, that may eventually influence the final specifications.

Typical parameters for a 5G standard may include:

Suggested 5G Wireless Performance

Parameter	Suggested Performance
Network capacity	10 000 times capacity of current network
Peak data rate	10 Gbps
Cell edge data rate	100 Mbps
Latency	< 1 ms

These are some of the ideas being put forwards for a 5G standard, but they are not accepted by any official bodies yet.

Conclusion

5G technology is the upcoming technology and the bandwidth for this is very high and was having higher data transfer rate. However, now we are using the 3G technology efficiently and in some countries the people are using the 4G but in future we can use the 5G technology. Many big countries are investing huge amount of money on this project as it was having high demand in the future. It will altogether manufacture flexibility, limit, degree, comparability and meeting. Thusly, it will satisfy the growing solicitations of rising big-data, cloud, machine-to-machine, and diverse applications.

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