

A Study of Wireless Network: 6G Technology

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Abstract: Wireless communications is the transferring of information between two or more points which are not physically connected. Wireless mobile communication is being used from many years, but day by day Need of facilities on mobile is increasing, so time to time next integrated Versions of network is introduced. Distances can be short, which is used for television remote control and even far distance which is used for deep-space radio communications. Latest version is 5G, but only some countries are using 5G wireless network.

5G network is strong and very fast wireless communication network, it is and it will fulfill most of the requirement of users. But it is not end of the desires, the paper deals with the evolutions of technologies and its advantages and meet desires of user next generation of mobile network also introduced 6G. This paper is about introduction and advancement of 6G & 7G for future.

Keywords: 1G, 2G, 3G, 4G, 5G, 6G, Handover, TDMA, CDMA, GSM, smart antenna.

I. INTRODUCTION

Today the whole world is aware of the revolutionary changes in cell phone communication field. Wireless communication has brought in the new innovation in this field. In the context of present scenario the 3G experienced better internet experience. Later on 3g has been improvised. It has been felt the urgency to have a better communication networks then 5g has come which can be a complete wireless communication without any hindrance and limitations. It is completely advanced in terms of wireless communication. In 5G system each and every cell phone will have a permanent home "IP address and care of address". Now awaiting future will experience 6G. In present time cell phones have everything and are compact, with high memory and high speed with low power consumption. Today Bluetooth technology and other technology are just like a child's play. 6G wireless cell phone communication network shall meet world class standard covering the whole world under its communication just like Global covering system has been devised by some companies. The 6th generation (6G) wireless mobile communication networks shall integrate satellites to get global coverage. The global coverage systems have been developed by four countries. The global position system (GPS) is developed by USA. The COMPASS system is developed by China. The Galileo system is developed by EU, and the GLONASS system is developed by Russia [3]. These independent systems are difficulty for space roaming. The task of 7th generation (7G) wireless mobile communication networks are going to Unite.

2. 6G TECHNOLOGIES

Cutting edge technology:

6G internet use a combination of the latest in radio and fiber optics technology. We deliver through line of sight. Which means we don't have to rely on the copper cable or base our speed on how far your business is away from the exchange.

How does 6G compare with traditional broadband?

6G has the benefit of the blooding a brand a new network in compassing the latest state of the art technology .so we do not suffer the any of the legacy essay the other provide do 6G air fiber id deferent future reroof wireless solution id using technology pioneer by the military to communicate with unmanned Arial vehicle for critical matter during sever condition. Now refuse and available for bushiness 6g offer faster moor secure and cost effective and brood band.

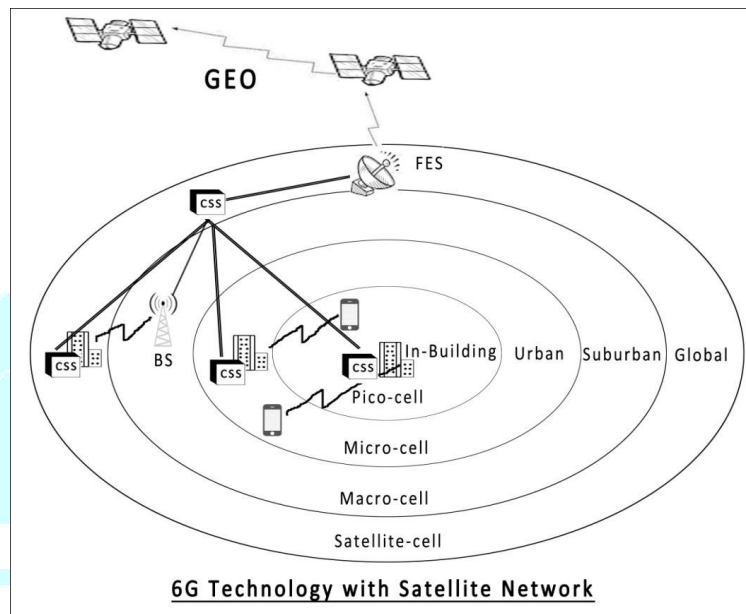
WISDOM – Wireless innovative System for Dynamic Operating Mega communications concept, 6th generation (with very high data rates Quality of Service (Quos) and service applications) and 7th generation (with space roaming). This paper is focused on the specifications of future generations and latest technologies to be used in future wireless mobile communication networks. However keeping in view the general poor masses of India, some of the future generation technologies will be embedded with 2and 2.5G so that general masses may get the advantage of internet, multimedia services and the operators may get proper revenues with little extra expenditure in the existing mobile communication networks.

6G Mobile communication system:

The 6G mobile system for the global coverage will integrate 5G wireless mobile system and satellite network. These satellite networks consist of telecommunication satellite network, Earth imaging satellite network and navigation satellite network.

The telecommunication satellite is used for voice, data, internet, and video broadcasting; the earth imaging satellite networks is for weather and environmental information collection; and the navigational satellite network is for global positional system (GPS). The

four different countries which developed these satellite systems are; the GPS by USA, the COMPASS system developed by China. The Galileo system by EU, and the GLONASS system developed by Russia. In 6G handoff and roaming will be the big issue because these satellite systems are different networks and 6G has four different standards. So the handoff and roaming must take place between these 4 networks but how it will occur is still a question.



Handover (handoff) - When a mobile user travels from one area of coverage or cell to another cell within a call's duration the call should be transferred to the new cell's base station. Handoffs are expensive to execute, so unnecessary handoffs should be avoided. Unreliable and inefficient handoff procedures will reduce the quality and reliability of the system.

Generation	Started At	Technology	Data Rates	Main Network	Handover	Sub Generation
1G	1980	Analog Wireless	2kbps	PSTN	Horizontal	1G Only
2G	1991	Digital Wireless, GPRS, EDGE	10kbps to 500 kbps	PSTN,GSM,C DMA	Horizontal	2.5 G, 2.75G
3G	2001	Broad Band IP Tech	400kbps to 30 Mbps	Packet, GSM, WCDMA	Horizontal and Vertical	3.5G, 3.75G
4G	2008	LTE, Wi-max	200kbps to 1Gbps	Internet	Horizontal & Vertical	4G Only
5G	Will start by 2020	IPv4	Higher than 1Gbps	Internet	Horizontal & Vertical	5G Till now

COMPARISON BETWEEN 5G AND 6G TECHNOLOGES:-

Features	5G	6G
Year	2015	After 5G Onwards
Speed	1Gbps and Higher	10 to 11Gbps
Technology	4G+www	5G+Satellite
Standards	Wi-max LAS, WCDMA, OFDM, UWB, Network-LMDS, IPv6	GPS, COMPASS, GLONASS, Galileo System
Core Network	Internet	Internet
Handwork	Horizontal & Vertical	Horizontal & Vertical

CONCLUSION AND FUTURE WORK:-

We can say that, present wireless technology (1G to 4G) is meeting all the requirements of users. But present generation wants everything should be fast that's why we are thinking about broad and fast across all the boundary of requirement and efficiency. That's why we are thinking about next generation of wireless network 6G. 6G will fulfill most of the demand of the present and next generation user. The 7G will be the most advance generation in mobile communication but there will be some research on demanding issues like the use of mobile phone during moving condition from one country to another country, because satellite is also moving in constant speed and in specific orbit, the standards and protocols for cellular to satellite system and for satellite to satellite communication system. The dream of 7G can only be true when all standards and protocols are defined. May be this is possible in next generation after 7G and can be named as 7.5G.

REFERENCES

- [1] International Journal of Electronics and Computer Science Engineering 1265 Available Online at www.ijecse.org ISSN-2277-1956 ISSN 2277-1956/V2N4-1265-1275 5G Technology of Mobile Communication.
- [2] System Multimedia Wireless Sensor Networks: Perspectives S j l K D and Future Directions Sajal K. Das National Science Foundation Center for Research in Wireless Mobility and Networking.
- [3] Spectrum Trading in India and 5G Purnendu S. M. Tripathi and Ramjee Prasad.
- [4] Global ICT Standardisation Forum for India (GISFI) and 5G Standardization Prasad, Ramjee.
- [5] Generations of Mobile Wireless Technology: A Survey Future broadband mobile communication technology.
- [6] 5G WIRELESS TECHNOLOGIES-Still 4G auctions not over, but time to start talking 5G Future Generations of Mobile Communication Networks Engr. Muhammad Farooq, Engr. Muhammad Ishtiaq Ahmed, Engr. Usman M Al.
- [7] What India wants from 5G Kumar N Sivarajan Chief Technology Officer.
- [8] ITU/BDT Arab Regional Workshop on "4G Wireless Systems" LTE Technology.
- [9] The FP7 RAS cluster in the ignition phase of 5G research © 2014, IJCSMC All Rights Reserved 1080 Available Online at www.ijcsmc.com
- [10] 5G Technology-Evolution and Revolution Meenal G. Kachhavay[1] Ajay P.Thakare[2]
- [11] 5G Ultra-High Capacity Network Design With Rates 10x LTE-A Protocols and Algorithms for the Next Generation 5G Mobile Systems Aleksandra Tudzarov