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5g Mobile Technology

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Abstract: 5G wireless network technologies is one of the most important leading technologies in mobile telecommunications standards beyond the 4G/IMT- Advanced standards. The generations From 1G to 5G the world has seen a lot of technology developments including improved performance and constant growth with day to day. This paper is about preceding generation technology. 5g technology services like Documentation, supporting electronic transactions and etc. In 5G researches are being made on the improvement of World Wide Wireless Web (WWWW).5g technology offers a many features, which are beneficial for all groups of people. It has some disadvantages like a radio signal problems.

I. INTRODUCTION

Wireless communication has started in early 1970s. In next four decades, a mobile wireless technology has evolved from 1G to 5G generations. Fifth generation technology offer very high bandwidth that user never experienced before. The Fifth generation technologies offer various new advanced features which makes it most powerful and in huge demand in the future. Now days different wireless and mobile technologies are present such as fourth generation mobile networks. Fifth generation technology provide facilities like camera, MP3 recording, video player, large phone memory, audio player etc. that user never imagine and for children rocking fun with Bluetooth technology and Pico nets. The fifth generation wireless mobile multimedia internet networks can be completely wireless communication without limitation, which makes perfect wireless real world – World Wide Wireless Web (WWWW). Fifth generation is based on 4G technologies.

II. EVOLUVATION

Mobile communication has become more popular in last few years due to fast revolution in mobile technology. This revolution is due to very high increase in telecoms customers. This revolution is from 1G- the first generation, 2G- the second generation, 3G- the third generation, and then the 4G- the forth generation,5G-the fifth second generation.

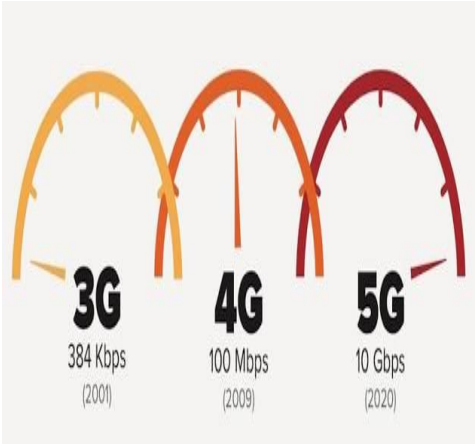


Fig.1: speed of 3g,4g,5g.

A. 1G:

1G emerged in 1980s. It contains Analog System and popularly known as cell phones. It introduces mobile technologies such as Mobile Telephone System (MTS), Advanced Mobile Telephone System (AMTS), Improved Mobile Telephone Service (IMTS), and Push to Talk (PTT). It uses analog radio signal which have frequency 150 MHz, voice call modulation is done using a technique called Frequency-Division Multiple Access (FDMA).It has low capacity, unreliable handoff, poor voice links, and no security at all since voice calls were played back in radio towers.

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Fig.2: 1g mobile phone

B. 2G

2G cellular telecom networks were commercially launched on the GSM standard in Finland by Radio linja in 1991. 2G technologies enabled the various mobile phone networks to provide the services such as text messages, picture messages and MMS (multimedia messages). 2G technology is more efficient.. It was planned for voice transmission with digital signal and the speeds up to 64kbps.2G technology holds sufficient security for both the sender and the receiver. All text messages are digitally encrypted. This digital encryption allows for the transfer of data in such a way that only the intended receiver can receive and read it



Fig.3: 2g mobile phone

C. 3G

It uses Wide Brand Wireless Network with which clarity is increased. The data are sent through the technology called Packet Switching. Voice calls are interpreted through Circuit Switching. Along with verbal communication it includes data services, access to television/video, new services like Global Roaming. It operates at a range of 2100MHz and has a bandwidth of 15-20MHz used for High-speed internet service, video chatting.3G uses Wide Band Voice Channel that is by this the world has been contracted to a little village because a person can contact with other person located in any part of the world and can even send messages too[3]. Transmission speeds from 125kbps to 2Mbps. In 2005,3G is ready to live up to its performance in computer networking (WCDMA, WLAN and Bluetooth) and mobile devices area (cell phone and GPS).Voice calls are interpreted using circuit switching. Access to Global Roaming and Clarity in voice calls. Fast Communication, Internet, Mobile T.V, Video Conferencing, Video Calls, Multi Media Messaging Service (MMS), 3D gaming,Multi-Gaming etc. are also available with 3G phone.

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Fig.4: 3g mobile phone

D. 4G

The basic feature of 3G Technology is fast data transfer rates. However this feature is not currently working. properly because, ITU 200 is still making decision to fix the data rates. Network authentication has won the trust of users, because the user can rely on its network as a reliable source of transferring data. . 4G is a conceptual framework and a discussion point to address future needs of a high speed wireless network. It is expected to emerge around 2010 – 2015. 4G should be able to provided very smooth global roaming ubiquitously with lower cost.



fig.5: 4g mobile phone

E. Some of the Applications Are

1) Mobile TV – a provider redirects a TV channel directly to the subscriber's phone where it can be watched.
2) Video on demand – a provider sends a movie to the subscriber's phone.
3) Video conferencing – subscribers can see as well as talk to each other.
4) Location-based services – a provider sends localized weather or traffic conditions to the phone, or the phone allows the subscriber to find nearby businesses or friends
5) Mobile ultra-broadband (gigabit speed) access and multi-carrier transmission.
6) Mobile WIMAX (Worldwide Interoperability for Microwave Access).

F. What is 5g Networks?

5G network is very fast and reliable. The concept of hand held devices is going to be revolutionized with the advent of 5G. Now all the services and applications are going to be accessed by single IP as telephony, gaming and many other multimedia applications. As it is not a new thing in market and there are millions of users all over the world who have experienced the wireless services wireless technology. It is not easy for them to shrink from using this new 5G network technology. There is only need to make it accessible so that common man can easily afford the profitable packs offered by the companies so that 5G network could hold the authentic place. There is need to win the customer trust to build fair long term relation to make a reliable position in the telecommunication field. To complete with the preceding wireless technologies in the market 5G network has to tender something reliable something more pioneering. All the features like telephony, camera, mp3 player, are coming in new mobile phone models. 4G is providing all these utility in mobile phone. By seeingthefeaturesof4G one can gets a rough idea about what 5G Networks

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could offer. There is messenger, photo gallery, and multimedia applications that are also going to be the part of 5G. There would be no difference between a PC and a mobile phone rather both would act vice versa.



Fig.6: 5g mobile phone

G. Why is There a Need For 5g?

The major difference, from a user point of view, between current generations and expected 5G techniques must be something else than increased maximum throughput; other requirements include:

1) Lower out age probability; better coverage and high data rates available at cell edge.
2) Lower battery consumption.
3) Multiple concurrent data transfer paths.
4) Around 1Gbps data rate in mobility.
5) More secure; better cognitive radio/SDR Security.
6) Higher system level spectral efficiency.
7) World Wide wireless web (WWWW).
8) More applications combined with artificial intelligent (AI) as human life will be surrounded by artificial sensors which could be communicating with mobile phones. Not harmful to human health.
9) Cheaper traffic fees due to low infra structure deployment costs

H. What 5g technology offers?

5G Technology going to be a new mobile revolution in mobile market. Through 5G technology now you can use worldwide cellular phones and this technology also strike the china mobile market and a user being proficient to get access to Germany phone as a local phone. With the coming out of cell phone alike to PDA now your whole office in your finger tips or in your phone. 5G technology has extra ordinary data capabilities and has ability to tie together unrestricted call volumes and infinite data broadcast within latest mobile operating system.5G technology has a bright future because it can handle best technologies and offer priceless handset to their customers. May be in coming days 5G technology takes over the world market. 5G Technologies have an extraordinary capability to support Software and Consultancy. The Router and switch technology used in 5G network providing high connectivity. The 5G technology distributes internet access to nodes within the building and can be deployed with union of wired or wireless network connections. The current trend of 5G technology has a glowing futures.

I. Features of 5g

According to some research papers on 5G technology, the main features the technology might have are as follows:

High speed, high capacity, and low cost per bit. It Support interactive multimedia, voice, streaming video, Internet, and other broadband services, more effective and more attractive, Bidirectional, accurate traffic statistics.

Introduction of a new radio system is possible in which different radio technologies will share the same spectrum. This can be done by finding unused spectrue and then adapting to the technology of the radio technology with which the spectrum is being shared.

Every mobile in a 5G network will have an IP address (IPV6) according to the location and network being used.

The technology is expected to support virtual private networks and advanced billing interfaces.

With 5G Enabled phone, you might be able to connect your phone to your laptop to get access to broadband.

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5G technology is providing large broadcasting of data in Giga bit which supporting almost 65,000 connections.
The traffic statistics by 5G technology makes it more accurate and it also support virtual private network.

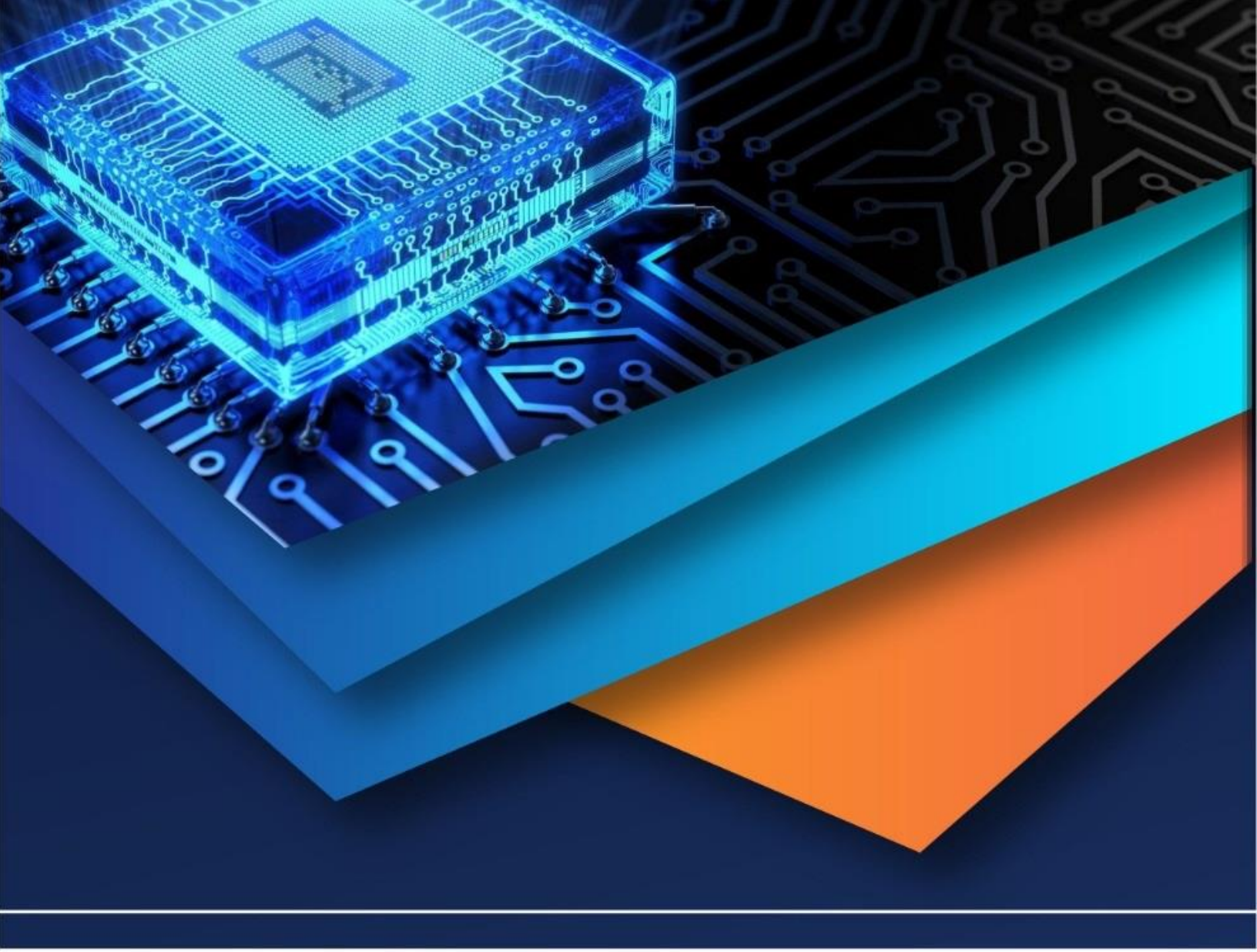
III. CONCLUSION

The development of the mobile and wireless networks is going towards higher data rates and all-IP principle. Mobile terminals are obtaining each year more processing power, more memory on board, and longer battery life for the same applications. 5g include latest technologies such as cognitive radio, SDR, nanotechnology, cloud computing and based on All IP Platform. It is expected that the initial Internet philosophy of keeping the network simple as possible, and giving more functionalities to the end nodes, will become reality in the future generation of mobile networks, here referred to as 5G.

REFERENCES

[1] "5G Mobile Phone Technology" from www.pediain.com
[2] "5G Technology – Redefining wireless Communication in upcoming years" by Akhilesh Kumar Pachauri 1 and Ompal Singh published in International Journal of Computer Science and Management Research Vol 1 Issue 1 Aug 2012 ISSN 2278 – 733X
[3] Vasavi Bande, Mounika Marepalli, Leepika GudurEvolution of 4G-Research Directions Towards FourthJournal of Computer Science and Information Technologies|,Vol. 2 (3) , 2011, 1087-1095.
[4] Toni Janevski , 5G Mobile Phone Concept , ConsumerCommunications and Networking Conference, 2009 6thIEEE.
[5] Mishra, A. (2004). Fundamentals of Cellular Network Planning and Optimisation. John Wiley & Sons 2004.
[6] Parikh, J. and Basu, A. (2011). LTE Advanced: The 4G Mobile Broadband Technology International
[7] http://www.scribd.com/doc/22050811/5g-Wireless-Architecture-v-1.

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