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5G Technology

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Abstract:

Here various research papers on 5G are reviewed. Here the 5G is discussed in simple way. One can easily understand what is 5G. Evolution process from 1G to 5G has been described in details in this paper. The advantages and disadvantages have been discussed here. This review paper is helpful for those who will work in the field of 5G technology.

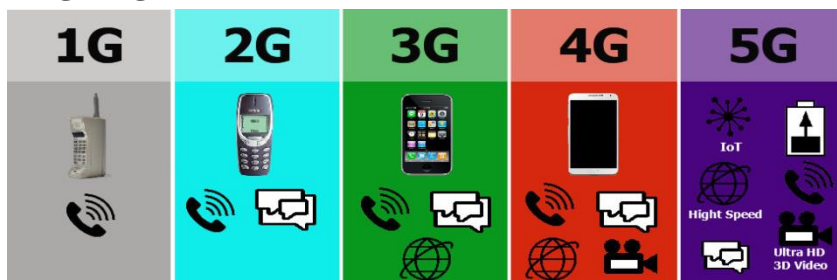
Key Words: Gbps, Mobile communication, 4G, Technology.

Introduction: One of the goals of science is to help people live comfortably and helping to do more in less time with less effort. Earlier people used to give any news through letter or going somewhere. Now it has become much easier after the invention of wireless communication. 5G technology has been thought of for better communication. 5G technology is the 5th generation mobile network.



Source- <https://www.iastoppers.com/articles/5g-rollout-mains-article>

Evolution from 1g to 5g



Source: <https://www.linkedin.com/pulse/mobile-wireless-communication-technology-journey-0g-mutabazi>

1G technology: 1G stands for first generation. 1G was launched by Nippon Telegraph and Telephone in 1979. It was first introduced to the citizens of Tokyo. It offers download speed up to 2.4 kbps. It has low capacity.

2G technology: 2G (Second Generation) introduced on the Global System for Mobile Communications (GSM) in Finland in 1991. Digital signals for voice transmission have been used in this technology. It has the speed of 64 kbps. By using this technology users can send sms and email.

3G technology: 3G stands for third generation. 3G allows speeds from 125kbps to mbps. By this technology users can see videos and satellite based programme. Video streaming, video conferences, and live video chat, Emails etc are done by this technology.

4G technologies: 4G technology is known as fourth generation technology. It provides speed of 150 Mbit/s download and 50 Mbit/s upload. It is comfortable for HD video calling, live streaming and online gaming. It offers high internet speed.

5G technology: 5G is known as the fifth generation of mobile technology. It is planned after 1G, 2G, 3G and 4G networks. 5G technology has high downloading speed. It provides high-speed internet connectivity. It offers greater bandwidth and Ultra HD streaming videos. It provides low latency.

5G versus 4G:

- 1) Download speed of 5G is higher than 4G
- 2) Latency rate of 5G is lower than 4G.
- 3) The ability of supplying data is higher than 4G

Application Places of 5G: 5G can be used in enhanced mobile broadband, Ultra Reliable Low Latency Communications and Massive Machine Type Communications.

Advantages of 5G: It is easily manageable with previous generations and more efficient. 5G technology has the ability to support more than 60,000 connections with huge broadcasting data. It operates more quickly on phones and other devices than 4G and 4G LTE. Data rates of this technology can be 10 Gbps or more. It provides high security. It offers high resolution. It supports multimedia, and internet with high downloading speed.



Source-internet

Disadvantages of 5G: The infrastructure of this technology is highly expensive. TO use 5G technology we need to replace old devices and requires new one. It requires more antennas to keep uniform network coverage than 4G. When we connect cellular devices with 5G it consumes the batteries very quickly so it is not possible to operate the devices for long period of time.



Source- <https://hellofuture.orange.com/en/extreme-5g-coverage/>

Conclusion: There are many advantages of 5G technology. Communication system will become stronger with the help of 5G. We can download large files easily. Students will get uninterrupted live video classes. 5G will help in conducting Smart classes, audio visual meetings and so on.

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