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**Division**: CE-2 Batch-1

**Subject**: MCWN

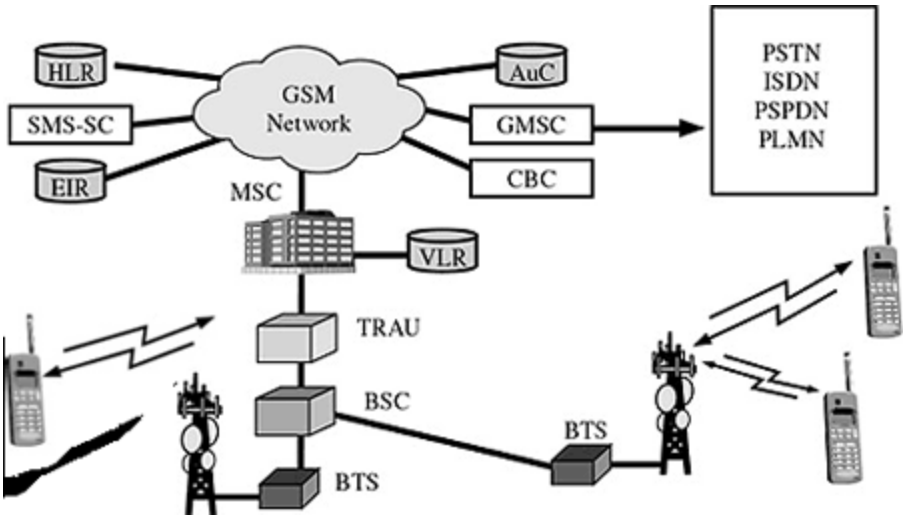
**Topic**: Practical-1 [Study of evaluation of mobile generation.(2G,3G,4G,5G)]

## 2G Technology:

- 2G, or the Second Generation of wireless technology, was a revolutionary leap forward compared to 1G. It was introduced in the early 1990s and allowed data transfer speeds up to 64 Kbit/s. 2G also enabled the first digital mobile phones and text messaging. 2G allowed users to make voice calls and send text messages, but it was limited to those two features.

## Features of 2g Technology:

- 2G technology was based on GSM (Global System for Mobile Communications) which allowed for digital encryption of communications.
- 2G also made it possible for phone networks to track the exact location of a user and allowed roaming between different networks.
- 2G also allowed for the development of mobile internet and mobile commerce.
- 2G technology was instrumental in the development of the modern mobile phone and although it has been largely replaced by 3G and 4G technologies, it is still used in some parts of the world.
- Many people still find the 2G network more reliable than the more modern networks.

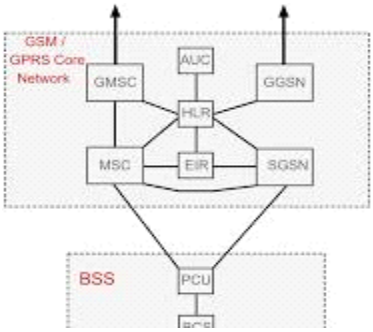



**3G Technology:**

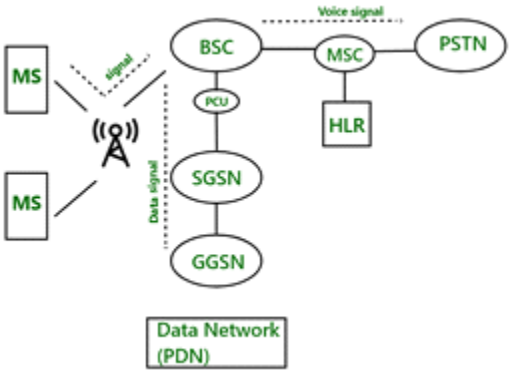
- Third Generation (3G) technology is an improved version of wireless communication technology which was released in the late 1990s. This technology provided significant enhancements over the 2G systems, such as increased data transmission speeds and improved multimedia capabilities. With the introduction of 3G technology, the main focus is on data speeds, allowing users to access the Internet, stream multimedia, and make video calls.

**Features of 3g Technology:**

- The main features of 3G technology are that it allows users to access high-speed data services, such as streaming audio and video and making video calls.
- It also offers improved coverage, allowing users to stay connected in areas where 2G service may be poor.
- In addition, 3G technology allows for higher data transfer speeds, making it ideal for accessing the Internet, downloading large files, and streaming multimedia content.
- Finally, 3G technology is more energy efficient than 2G systems, allowing for longer battery life.




Edge Architecture




GPRS Architeture

**4G Technology:**

- Fourth Generation (4G) was designed to provide higher data rates and increased bandwidth to users. It is the successor to 3G and is a huge leap forward in terms of speed and capability. 4G technology offers much faster data speeds than 3G, providing users with speeds up to 100 Mbps. This means downloading a movie file will take just seconds.

**Features of 4g Technology:**

- 4G offers a much more reliable signal and connection when compared to previous generations.
- Its improved signal strength and data transfer speeds allow users to enjoy faster browsing and streaming experiences.
- Moreover, 4G technology allows for a better quality of voice calls, as it uses a different type of voice codec to compress audio signals.
- In addition, 4G networks are better equipped to handle data-intensive activities like gaming, streaming videos, and sending large documents. It also supports a variety of services, including Location-Based services (LBS), Mobile TV, and VoIP.

**5G Technology:**

- 5G technology is the latest generation of wireless technology and is currently being rolled out. It is capable of handling data transmissions of up to 10Gb/s, which is 100 times faster than 4G technology. This technology will enable users to access the internet more quickly, stream videos in ultra-high definition, and access virtual and augmented reality applications.

**Features of 5g Technology:**

- The main features of 5G technology are its incredibly fast speeds, low latency, massive capacity, and improved reliability.
- 5G can provide speeds of up to 10 Gbps, which is up to 100 times faster than the average home broadband connection. This means that users can enjoy high-quality streaming services without any buffering or lag.
- It also offers low latency, which is important for applications such as gaming and virtual reality.
- 5G is also capable of supporting a massive number of devices and users simultaneously.