**Mobile Computing**

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**GPRS**

**Characteristics Of GPRS:**

* Mobility: The ability to maintain constant voice and data communications while on the move
* Immediacy: Allows subscribers to obtain connectivity when needed, regardless of location and without a lengthy login session.
* Localization: Allows subscribers to obtain information relevant to their current location.

**Applications Of GPRS:**

GPRS (General Packet Radio Service) is a mobile data service that enables wireless communication and transmission of data over cellular networks. Some applications of GPRS include:

1. Mobile Internet: GPRS allows mobile devices to access the Internet and browse web pages, check email, and access various online services.
2. Multimedia Messaging Service (MMS): GPRS enables the sending and receiving of multimedia messages, including pictures, videos, and audio files.
3. Location-Based Services: GPRS enables location-based services, such as GPS navigation and tracking services, by providing a way to transmit location data over the cellular network.
4. Machine-to-Machine (M2M) communication: GPRS is used in M2M communication, which enables devices to communicate with each other and exchange data without human intervention. This includes applications such as remote monitoring and control of machinery and equipment.
5. Mobile Payment and Banking: GPRS enables mobile payment and banking services, allowing users to conduct financial transactions securely over the cellular network.
6. Mobile Virtual Private Network (VPN): GPRS can be used to establish secure connections between mobile devices and a corporate network, enabling remote access to company resources and services.

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**LTE (Long Term Evolution) :**

* LTE stands for Long Term Evolution and it was started as a project in 2004 by telecommunication body known as the Third Generation Partnership Project (3GPP).
* SAE (System Architecture Evolution) is the corresponding evolution of the GPRS/3G packet core network evolution. The term LTE is typically used to represent both LTE and SAE. LTE evolved from an earlier 3GPP system known as the Universal Mobile Telecommunication System (UMTS), which in turn evolved from the Global System for Mobile Communications (GSM).

**Goals Of LTE:**

* A rapid increase of mobile data usage and emergence of new applications such as MMOG (Multimedia Online Gaming), mobile TV, Web 2.0, streaming contents have motivated the 3rd Generation Partnership Project (3GPP) to work on the Long-Term Evolution (LTE) on the way towards fourth-generation mobile.
* The main goal of LTE is to provide a high data rate, low latency and packet optimized radio access technology supporting flexible bandwidth deployments.
* Same time its network architecture has been designed with the goal to support packet-switched traffic with seamless mobility and great quality of service

**LTE History And Development:**

● There was no global standard for wireless broadband until the advent of LTE.

● Major milestones in LTE's development include the following:

○ 2004. NTT DoCoMo, a Japanese mobile phone operator, proposed making LTE the next international standard for wireless broadband, and work on the LTE standard started.

○ 2006. During a live demonstration, Nokia Networks simultaneously downloaded HD video and uploaded a game via LTE.

○ 2007. Ericsson, a Swedish telecommunications company, demonstrated LTE with a bit rate of 144 Mbps.

○ 2008. Ericsson demonstrated the first LTE end-to-end phone call, and LTE was finalized.

○ 2009. TeliaSonera, a Swedish mobile network operator, made LTE available in Oslo and Stockholm.

○ 2011. LTE-Advanced was finalized in 3GPP Release 10.

○ 2016. 3GPP engineers began developing the 5G standard that will eventually succeed LTE.

○ 2017. The first NSA 5G specification was released, becoming widely available in 2018-2019.

○ 2021. 5G specification work is ongoing