PLMN- PUBLIC LAND MOBILE NETWORK

PUBLIC LAND MOBILE NETWORK (PLMN)

WHAT IS PLMN ?

A PLMN is the wireless communication network provided by a mobile operator.
It includes all components needed to deliver voice, data, SMS, and roaming services.

COMPONENTS OF PLMN

1. Mobile Station (MS)
The user's device along with the SIM card.
It communicates with nearby network towers for calls and data.

2. Base Transceiver Station (BTS)
The cellular tower that sends and receives radio signals.
It provides wireless coverage to mobile users in that area.

3. Base Station Controller (BSC)
Controls and manages multiple BTS towers.
Handles handovers, frequency allocation, and radio resources.

4. Mobile Switching Center (MSC)
The central switching unit of the mobile network.
It connects calls, routes SMS, and manages mobility functions.

5. Home Location Register (HLR)
A permanent database storing subscriber and SIM details.
It keeps track of authentication info, services, and user's home network.

6. Visitor Location Register (VLR)
Temporary database for users roaming in another area.
It stores location and service permissions of visiting subscribers.

7.Authentication Center (AUC)
Provides security keys for SIM verification.
Ensures secure communication and prevents unauthorized access.

8. Equipment Identity Register (EIR)
Database containing IMEI status of all devices.
It blocks stolen, blacklisted, or unauthorized mobile phones.

9. Gateway MSC (GMSC)
Acts as the connection point to external networks like PSTN.
It routes incoming calls to the correct MSC inside the PLMN.

10. SGSN (Serving GPRS Support Node)
Handles mobile data sessions and user authentication.
Manages packet delivery, mobility, and QoS for data users.

11. GGSN / PGW (Gateway GPRS Support Node / Packet Gateway)
Connects the mobile network to the internet.
Provides IP addresses and handles data routing to online services.

12. OSS (Operations Support System)
Used by operators to monitor, manage, and optimize the network.
Ensures smooth operation, fault detection, and performance analysis.

THE END....