5G NSA Architecture

What is this Architecture :

1. Leverages existing 4G LTE infrastructure for certain functions while introducing new 5G elements.
2. allows network operators to deploy 5G services more quickly and cost-effectively by using their existing 4G core network.

Key Components:

1. **Dual Connectivity**: In NSA mode, devices are connected to both 4G LTE and 5G NR (New Radio) networks simultaneously.
2. **4G Core Network (EPC)**:The Evolved Packet Core (EPC) of the 4G LTE network is used for network management and control functions.
3. **5G New Radio (NR)**: The 5G NR is the new radio access technology introduced with 5G.

4. eNodeB and gNodeB: The 4G LTE base station, known as eNodeB, continues to play a central role in the network. It is complemented by the 5G NR base station, known as gNodeB, which provides the new 5G radio interface.

5. Enhanced Mobile Broadband (eMBB): One of the primary use cases for 5G NSA is to deliver enhanced mobile broadband services, providing users with faster internet speeds and improved overall performance.

How it works?

1. **Control Plane**: Managed by the 4G LTE network (eNodeB and EPC), which handles tasks such as signaling, session management, and mobility management.

2. **User Plane**: Handled by the 5G NR (gNodeB), which provides high-speed data transmission for user applications.

1. **Anchor Point**: The 4G eNodeB acts as an anchor point, allowing the device to maintain a continuous connection as it moves between different 4G and 5G cells.

2. **Carrier Aggregation**: The technology allows the combination of multiple frequency bands across 4G and 5G to enhance data throughput and network performance.