1. N1/S1 Mode:

N1 mode: Refers to the initial registration and mobility management between a User Equipment (UE) (like a mobile phone) and the 5G Core Network (5GC). It involves procedures such as registration, authentication, and location management.

S1 mode: Refers to the interface and procedures used for communication between the LTE (Long Term Evolution) evolved NodeB (eNB) (base station) and the Evolved Packet Core (EPC) in LTE networks. It handles functions like bearer establishment, handover, and session management.

2. N1/N2/N8/N22/N26:

These numbers typically denote different interfaces and protocols within the 3GPP (3rd Generation Partnership Project) specifications, which standardize mobile telecommunications protocols:

- N1: Interface between UE and 5G Core Network (5GC).

- N2: Interface between 5GC and Access and Mobility Management Function (AMF).

- N8: Interface between 5GC and User Plane Function (UPF).

- N22: Interface between 5GC and Non-3GPP Interworking Function (N3IWF).

- N26: Interface between 5GC and Mobility Management Entity (MME) in LTE.

3. AMF/SMF/UPF/NSSF:

- These are functional entities within the 5G Core Network (5GC):

- AMF (Access and Mobility Management Function): Manages UE registration, authentication, and mobility management.

- SMF (Session Management Function): Handles session establishment, session modification, and release in the 5G network.

- UPF (User Plane Function): Routes and forwards user data packets, performs packet inspection, and applies quality of service (QoS) policies.

- NSSF (Network Slice Selection Function): Determines the appropriate network slice instance for a UE based on policy and subscription information.

These terms and functionalities are crucial for understanding how 5G networks operate, manage connections, and ensure efficient data transmission and user experience. Each plays a specific role in managing different aspects of the network and communication protocols.