**N1 Mode (Standalone Mode)**

* **Direct connection:** 5G UE connects directly to the 5G Core Network (5GC) using the NG interface.
* **Full 5G capabilities:** Leverages all features of the 5G core, including network slicing, advanced QoS, and unified authentication.
* **Independent of 4G:** Does not require a 4G core network for operation.
* **Core network functions:** Utilizes AMF, SMF, UPF, and other 5GC components.

**S1 Mode (Non-Standalone Mode)**

* **Reuses 4G core:** 5G UE connects to the 4G EPC core using the S1 interface.
* **Limited 5G capabilities:** Offers some 5G benefits but is constrained by the limitations of the 4G core.
* **Dependence on 4G:** Requires a 4G core network for operation.
* **Core network functions:** Utilizes MME, SGW, PGW, and other 4G EPC components in addition to some 5GC elements.

**In summary:** N1 mode represents the full potential of 5G, while S1 mode is a transitional step that allows for early 5G deployment while reusing existing 4G infrastructure.

**N1, N2, N8, N22, N26**

These are interface names used in 5G networks.

* **N1:** Interface between 5G RAN and 5G Core.
* **N2:** Interface between two 5G Core instances.
* **N8:** Interface between 5G Core and Packet Data Network (PDN).
* **N22:** Interface between 5G Core and other network functions (e.g., IMS).
* **N26:** Interface for QoS flow setup between 5G Core and 5G RAN.

**AMF, SMF, UPF, NSSF**

These are key functions in the 5G Core Network.

* **AMF (Access and Mobility Management Function):** Handles user registration, authentication, and mobility management.
* **SMF (Session Management Function):** Manages user sessions and data flows.
* **UPF (User Plane Function):** Handles user data forwarding.
* **NSSF (Network Slice Selection Function):** Selects appropriate network slices based on user requirements.