

Mobile Networks Acronyms

2G — Second Generation

Early digital cellular networks primarily supporting voice and SMS.

3G — Third Generation

Introduced mobile data alongside voice, enabling basic internet access.

4G — Fourth Generation

High-speed mobile data networks enabling streaming and modern apps.

5G — Fifth Generation

Advanced mobile networks with ultra-low latency, high speed, and massive device support.

6G — Sixth Generation

Emerging standard currently under research with target implementation post 2030.

AMF — Access and Mobility Management Function

A 5G core component responsible for mobility and connection management.

APN — Access Point Name

Defines how a device connects to external IP networks via the mobile network.

BSS — Base Station Subsystem

In 2G/3G, the part of the network handling radio communication with devices.

CN — Core Network

The central part of a mobile network managing data, services, and connectivity.

D2D — Device-to-Device

Direct communication between devices without passing through the core network.

DL — Downlink

Transmission of data from the network to the user device.

eNodeB (eNB) — Evolved Node B

The base station in LTE networks handling radio communication.

eSIM — Embedded SIM

A built-in SIM that can be remotely provisioned without a physical card.

FDD — Frequency Division Duplex

Uses separate frequency bands for uplink and downlink transmission.

gNB — Next Generation Node B

The base station used in 5G networks.

HSS — Home Subscriber Server

A database storing user profiles and authentication information in LTE.

IMEI — International Mobile Equipment Identity

A unique identifier assigned to each mobile device.

IMSI — International Mobile Subscriber Identity

A unique identifier for each mobile subscriber.

IP — Internet Protocol

The fundamental protocol for transmitting data across networks.

LTE — Long Term Evolution

A 4G wireless broadband technology for high-speed data.

MIMO — Multiple Input Multiple Output

Uses multiple antennas to increase data throughput and reliability.

MME — Mobility Management Entity

Manages signaling and mobility in LTE core networks.

MSC — Mobile Switching Center

Handles circuit-switched voice calls in legacy networks.

NAS — Non-Access Stratum

Protocol layer handling signaling between the device and core network.

NFV — Network Functions Virtualization

Runs network functions as software on virtualized hardware.

NR — New Radio

The air interface used in 5G networks.

NSA — Non Stand Alone

Initial use standard to allow 5G NR radio to operate using 4G core and signalling.

OFDM — Orthogonal Frequency Division Multiplexing

Splits signals across multiple frequencies for efficient transmission.

OSS — Operations Support System

Systems used by operators to manage and monitor networks.

PGW — Packet Data Network Gateway

Connects mobile users to external IP networks like the internet.

QoS — Quality of Service

Controls prioritization and performance of different traffic types.

RAN — Radio Access Network

Connects user devices to the core network via base stations.

RF — Radio Frequency

Electromagnetic waves used for wireless communication.

SA — Stand Alone

5G network architecture which operates entirely on dedicated 5G infrastructure, independent of 4G LTE core networks.

SGW — Serving Gateway

Routes and forwards user data within LTE networks.

SIM — Subscriber Identity Module

Stores subscriber identity and authentication credentials.

SMF — Session Management Function

Manages sessions and IP address allocation in 5G core.

TDD — Time Division Duplex

Shares the same frequency for uplink and downlink at different times.

UE — User Equipment

Any device used by an end user (e.g., smartphone, modem).

UL — Uplink

Transmission of data from the user device to the network.

UMTS – Universal Mobile Telecommunications System

A 3G cellular technology, often called Wideband CDMA (W-CDMA)

UPF — User Plane Function

Handles user data routing and forwarding in the 5G core.

VoLTE — Voice over LTE

Enables voice calls over LTE data networks.

VoNR — Voice over New Radio

Enables voice calls over 5G networks.

vRAN — Virtualized Radio Access Network

A software-based implementation of RAN functions.

W-CDMA – Wideband Code Division Multiple Access

A 3G technology deploying CDMA in wider frequency bands.

Wi-Fi — Wireless Fidelity

A local wireless networking technology often integrated with mobile networks.

Xn — Xn Interface

Interface between 5G base stations for coordination and handover.