Deconstructing the 5G Core

What makes 5G really 5G? This infographic explores how 5G is different and what makes the 5G core critical to making 5G speeds as fast as promised.

The 5G Core (5GC) looks different from the LTE Evolved Packet Core

The 5GC network has decomposed functional elements offering specific network services and is decomposed into several Service-Based Architecture (SBA) elements

With 5G the user plane routing occurs at the User Plane Function (UPF)

This new architecture enables network capabilities exposure for fast service creation by separating the control plane from the user plane

The control plane and user plane are moved into a cloud-based environment, this improves:

Scalability

Flexibility

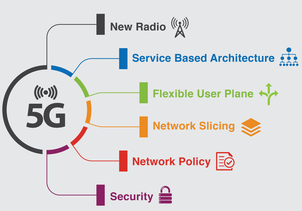
Time to market

Security credentials are now separated from the session management function, resulting in:

Improved data consistency

Reduced network complexity

What's New in 5G?



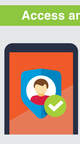
Understanding the 5G Core User Plane Function

Enhanced Security with the 5G Non-Access Stratum

Includes procedures related to the Mobility Management Entity and SMF

Key Network Functions

Access and Mobility Function (AMF)



Provides authentication and authorization from the end-user equipment

Is limited to the connection and mobility management services

Security Anchor Function (SEAF)

Serves as an anchor key

Allows for re-allocation of devices when subscribers move between different access networks

Separating the AMF from SEAF reduces the signaling load on the home network

Service Management Function (SMF)

Manages session management and mobility

Network Registry Function

A key network function of SBA

Provides network function service registration and discovery

Enables network functions to identify appropriate services in one another

Network Slice Selection Function (NSSF)

Supports multiple virtual networks atop a shared physical infrastructure

Each slice is devoted to logical, self-contained and partitioned network functions

Uses common architecture resources

Network Exposure Function (NEF)

Enables secure communications with services and capabilities provided by 3GPP network functions

Protects the network borders

Transaction Network Services