



5G Terminology

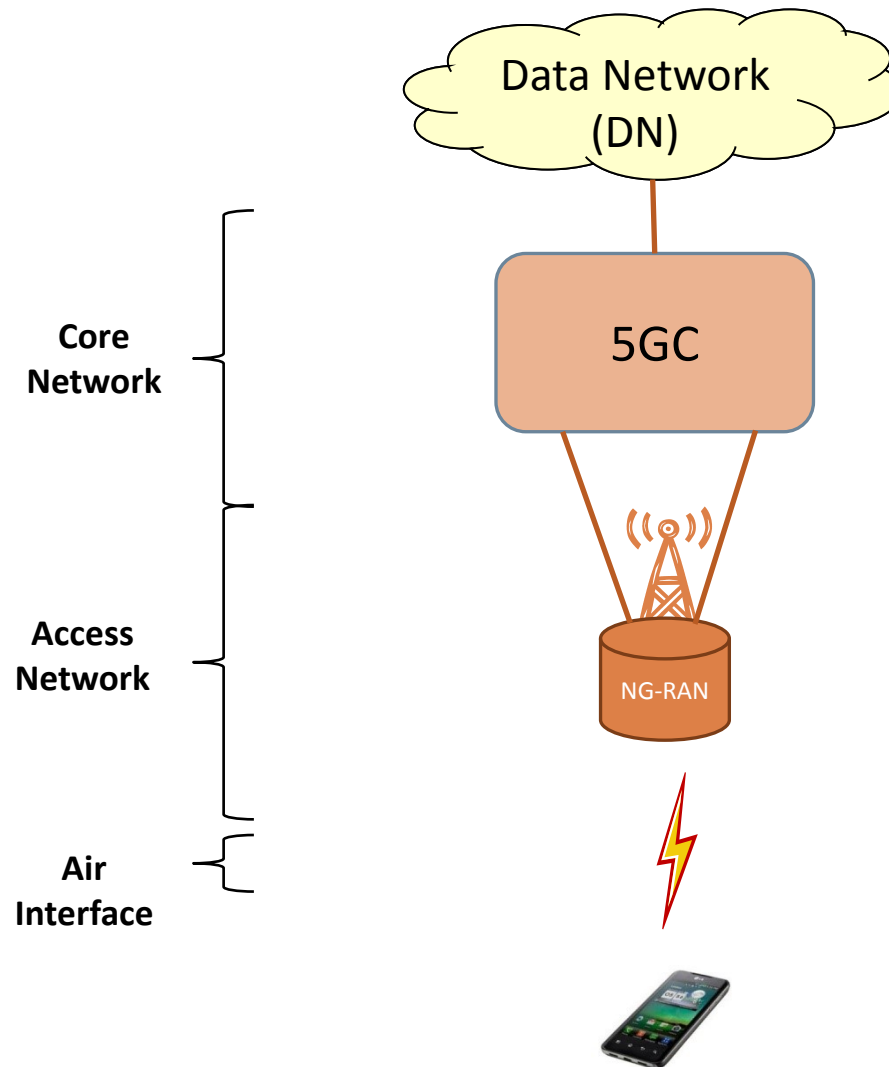


5G System (5GS) – Simplified

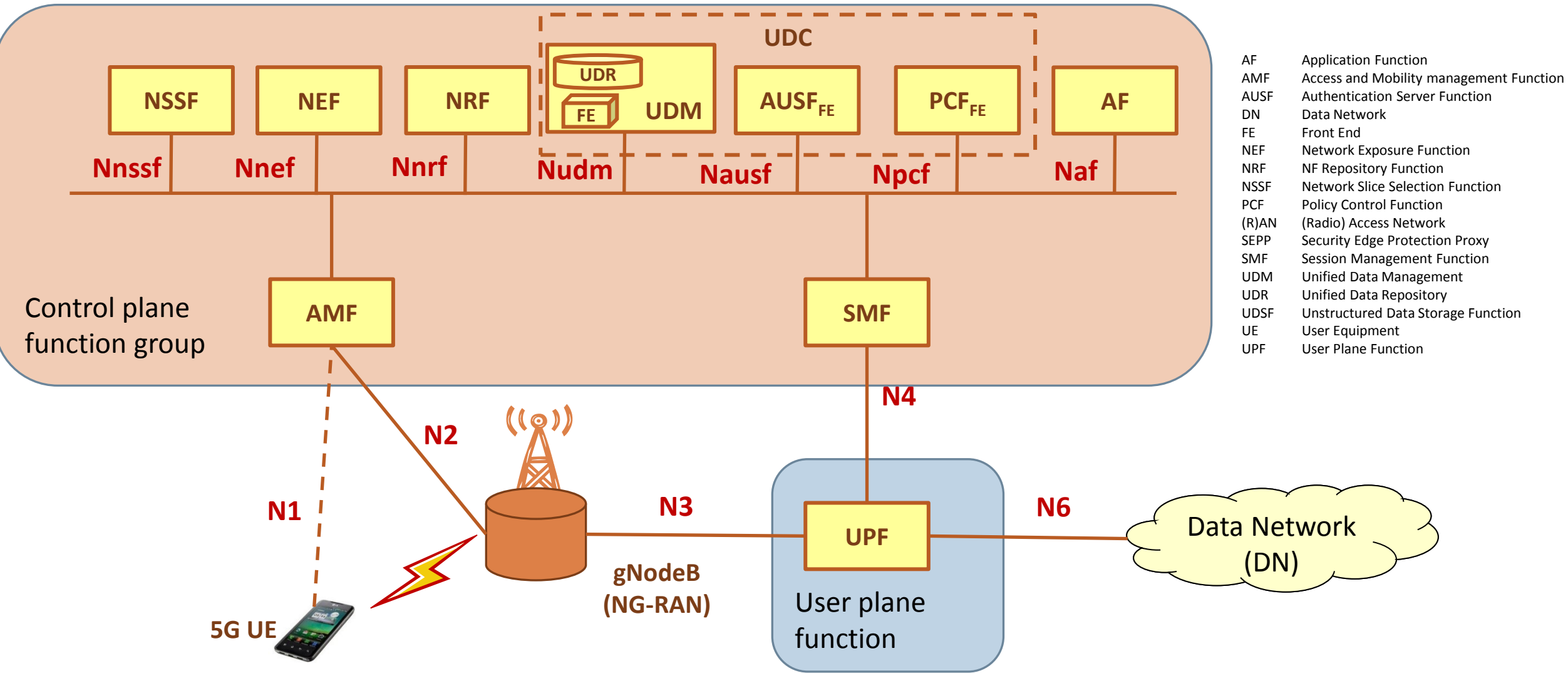
5G System is defined as 3GPP system consisting of 5G Access Network (AN), 5G Core Network and UE. The 5G System provides data connectivity and services.

3GPP TS 23.501: System Architecture for the 5G System; Stage 2

3GPP TS 23.502: Procedures for the 5G System; Stage 2



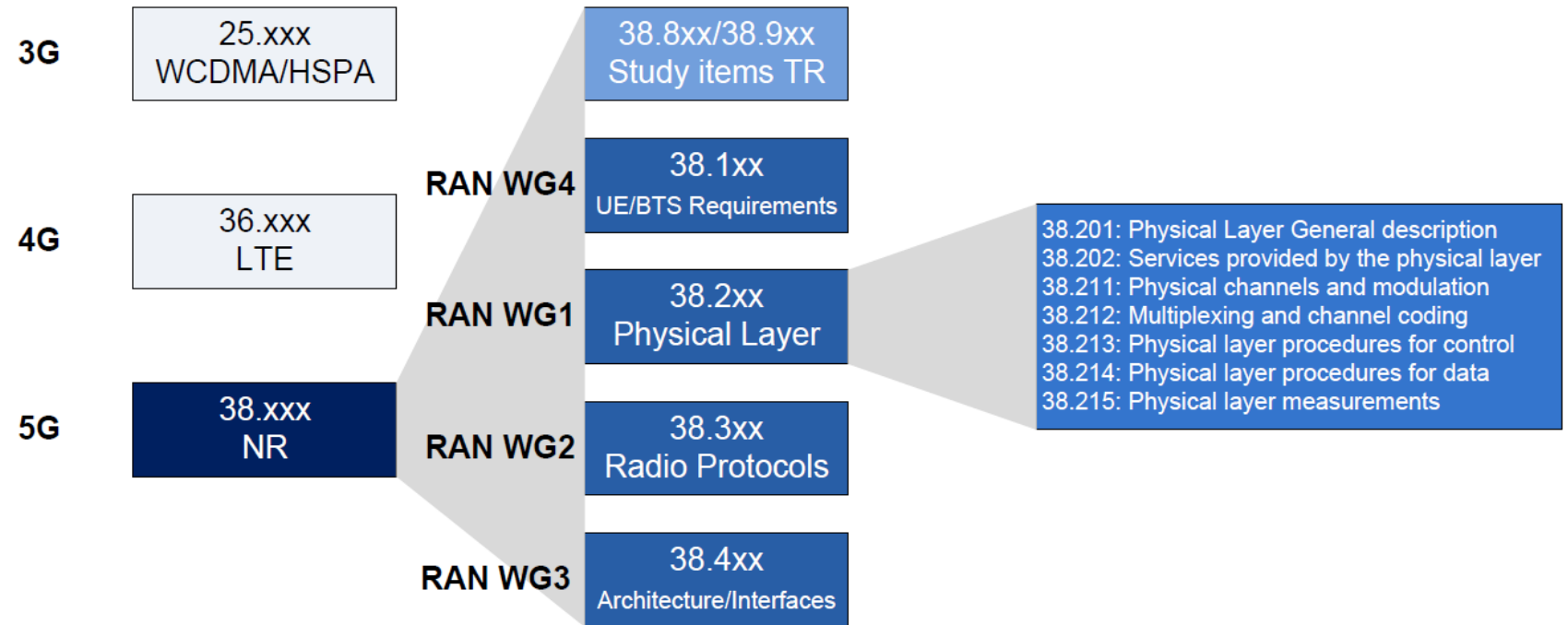
5G System (5GS) – Actual



5G New Radio (NR)

A new 5G-specific radio communication system called New Radio (NR) has been defined with no backward compatibility with the existing LTE and LTE-Advanced systems.

5G RAN Specifications

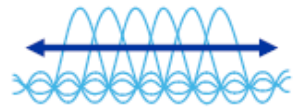


5G New Radio (NR)

3GPP Rel-15 establishes the foundation for 5G NR

For enhanced mobile broadband and beyond

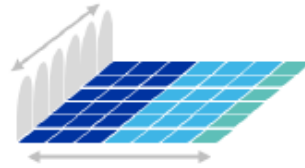
Scalable OFDM-based air interface



Scalable OFDM numerology

Efficiently address diverse spectrum, deployments and services

Flexible slot-based framework



Self-contained slot structure

Key enabler to low latency, URLLC and forward compatibility

Advanced channel coding



ME-LDPC and CA-Polar¹

Efficiently support large data blocks and a reliable control channel

Massive MIMO



Reciprocity-based MU-MIMO

Efficiently utilize a large # of antennas to increase coverage / capacity

Mobile mmWave



Beamforming & beam-tracking

Enables wide mmWave bandwidths for extreme capacity and throughput



Our technology inventions are driving Rel-15 specifications

Early R&D investments | Best-in-class prototypes | Fundamental contributions to 3GPP

1. Multi-Edge Low-Density Parity-Check and CRC-Aided Polar

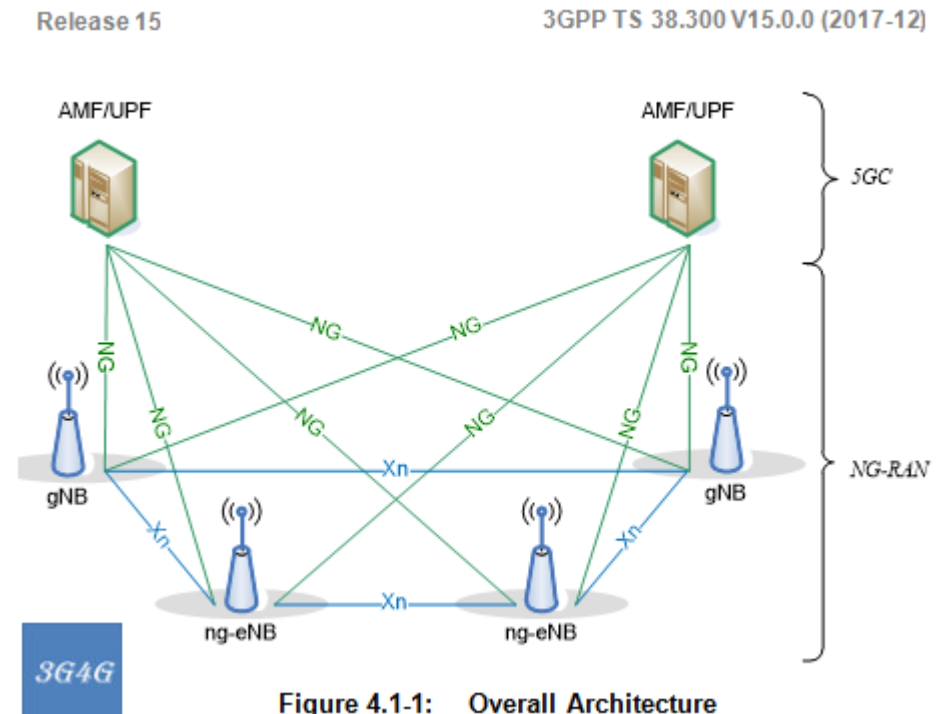
eNB, ng-eNB, gNB

- eNodeB (**eNB**) – LTE access network from 3GPP Rel-8 up to 3GPP Rel-14
- Next generation eNodeB (**ng-eNB**) – LTE access network from 3GPP Rel-15 onwards
 - node providing E-UTRA user plane and control plane protocol terminations towards the UE, and connected via the NG interface to the 5GC.
- Next generation NodeB (**gNB**) – 5G access network from 3GPP Rel-15 onwards.
 - node providing NR user plane and control plane protocol terminations towards the UE, and connected via the NG interface to the 5GC.

Next Generation Radio Access Network (NG-RAN)

An NG-RAN node is either:

- a **gNB**, providing NR user plane and control plane protocol terminations towards the UE; or
- an **ng-eNB**, providing E-UTRA user plane and control plane protocol terminations towards the UE.



5G Specifications

- 3G4G: 3GPP 5G Specifications – http://www.3g4g.co.uk/5G/5Gtech_0003_Standards.html
- 3GPP Specs Archive - <http://www.3gpp.org/ftp/Specs/archive/>

Thank You

To learn more, visit:

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