4G LTE Long Term Evolution  
Packet Switched – application are mainly data driven, rather than analogue (voice)  
3G – first packet switched focused architecture

Rel-99 UMTS  
Rel-5 HSDPA  
Rel-6 HSUPA  
Rel-7 VoIP  
Rel-8 LTE

LTE  
Packet domain services  
Higher peak data rate  
reduced delay (10Ms)

NodeB – Basestation  
Evolved Packet Core  
MME – Mobility Managemenet Entity  
S-GW – Serving Gateway  
P-GW – PDN-Gateway  
Data Plane – Connection channel between basestation and core

PHY layer  
OFDM, MIMO (OFDMA, SC-FDMA)

LTE OFDM

LTE MAC layer – Radio Resource Management (Allocation)  
Dynamic Resource Allocation  
-Allocated users to transport channels  
-Mobile users MOVe therefore channel needs to be dynamic  
DRM block constitute four processes  
-Link adaption: choosing modulation and coding scheme to maximise throughput  
-H-ARQ with Soft combining to ensure error-free transport  
-Scheduling policy (fairness vs max. Operator capacity)  
-Resource allocation policy: how to allocate the users to the available resources

Coverage vs Capacity

Allocation by: Distance (Maximising Efficiency), Time (Fairness)

Handover – User moving from one place to other connecting to different nodeBs.  
Event A3 – triggering event when a neighbour cell becomes an offset better than the servingcell.  
a3offset – 3GPP 36.331.

Power Control  
Closed Loop Power Control  
Open Loop Power Control  
Outer Loop Power Control