

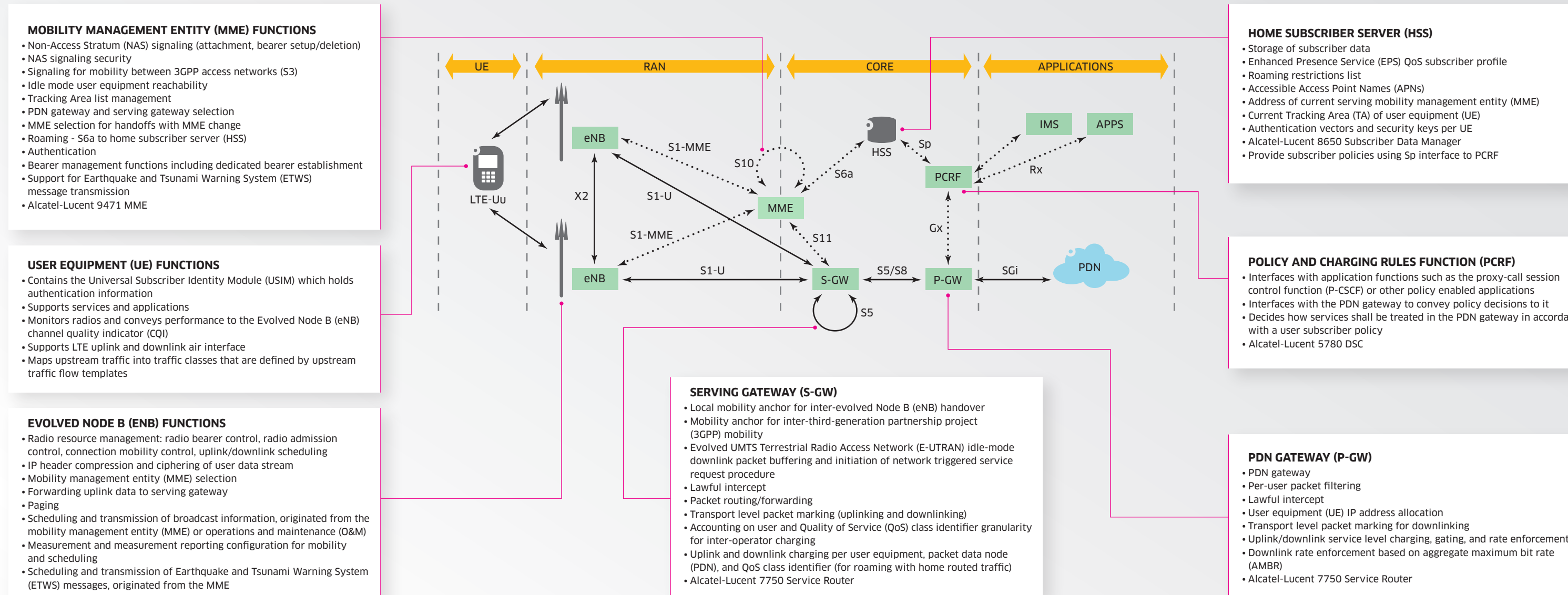
LTE Evolved Packet System Architecture



LTE COMES IN TWO FLAVORS – FDD AND TDD

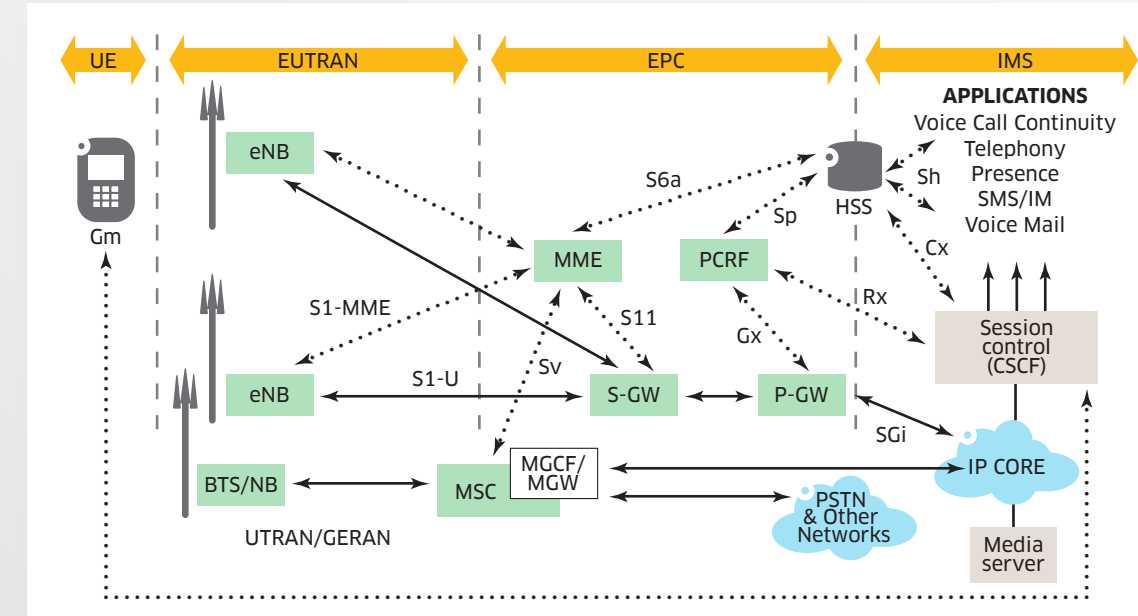
FDD BAND	IDENTIFIER	FREQUENCIES (MHz)	TDD BAND	IDENTIFIER	FREQUENCIES (MHz)
1	IMT Core Band	1920-1980/2110-2170	33	TDD 2000	1900-1920
2	US PCS (A-F)	1850-1910/1930-1990	34	Europe	2010-2025
3	GSM 1800	1710-1785/1805-1880	35	TDD 1900	1850-1910
4	AWS (US & Other)	1710-1785/2110-2155	36	AWS (US & Other)	1930-1990
5	850 (Cellular)	824-849/869-894	37	PCS CenterGap	1910-1930
6	850 (Japan #1)	830-840/875-885	38	IMT Extension Center Gap - EMEA	2570-2620
7	IMT Extension	2500-2570/2620-2690	39	China TDD	1880-1920
8	GSM 900	880-915/925-960	40	2.3 TDD	2300-2400
9	1700 (Japan)	1750-1785/1845-1880	41	ISM Coexistence	2496-3600
10	3G Americas	1710-1770/2110-2170	42	UMTS/LTE 3500	3400-3600
11	1500 (Japan #1)	1428-1448/1476-1496	43	UMTS/LTE 3500	3600-3800
12	US L700 (A,B,C)	698-716/728-746			
13	US U700 (C)	777-787/746-756			
14	US U700 (Pub Safety, D)	788-798/758-768			
17	US L700 (B,C)	704-716/734-746			
18	850 (Japan #2)	815-830/860-875			
19	850 (Japan #3)	830-845/875-890			
20	Digital Dividend	832-862/791-821			
21	1500 (Japan #2)	1448-1463/1496-1511			
23	MSS	2000-2020/2180-2200			
24	MSS	1626.5-1660.5/1525-1559			
25	US PCS 1900 (A-C)	1850-1915/1930-1995			

LTE BASIC NODES AND INTERFACES

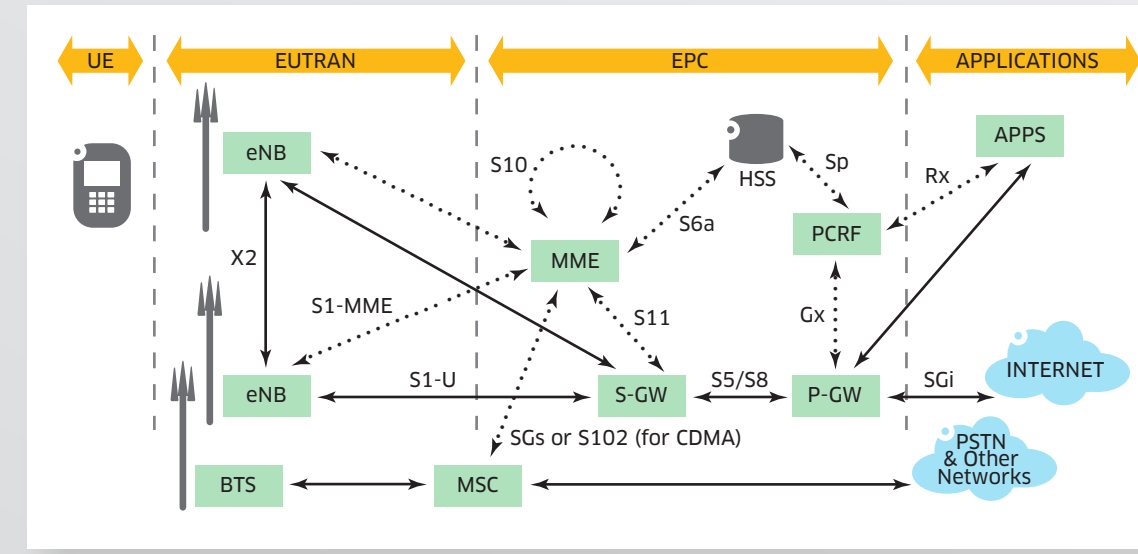


VOICE AND SMS INTERWORKING OPTIONS

IMS - INDUSTRY-STANDARD SERVICE ARCHITECTURE

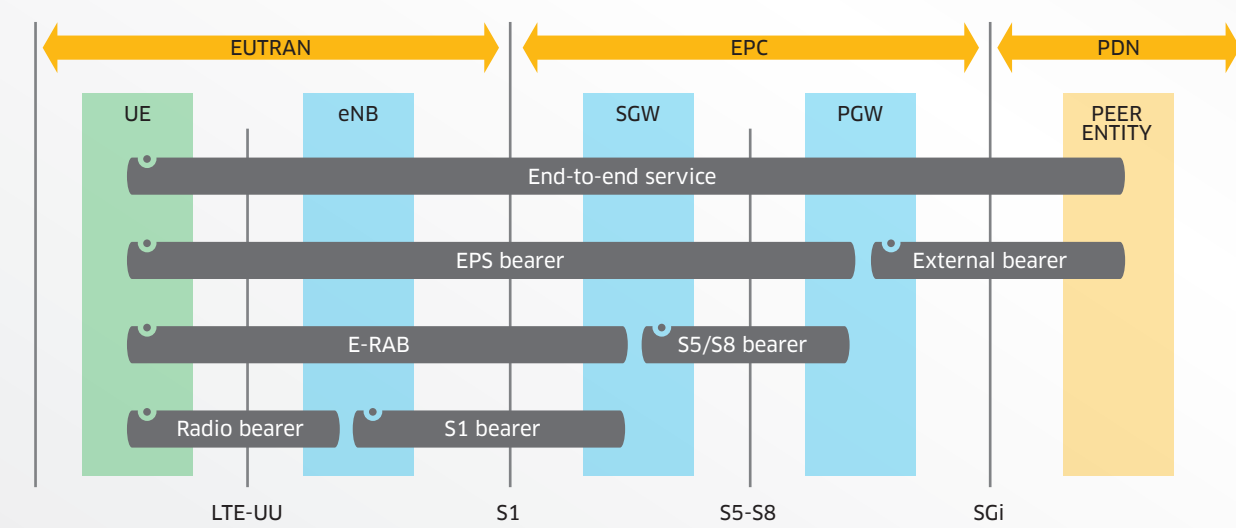


CIRCUIT SWITCHED FALL BACK (CSFB)

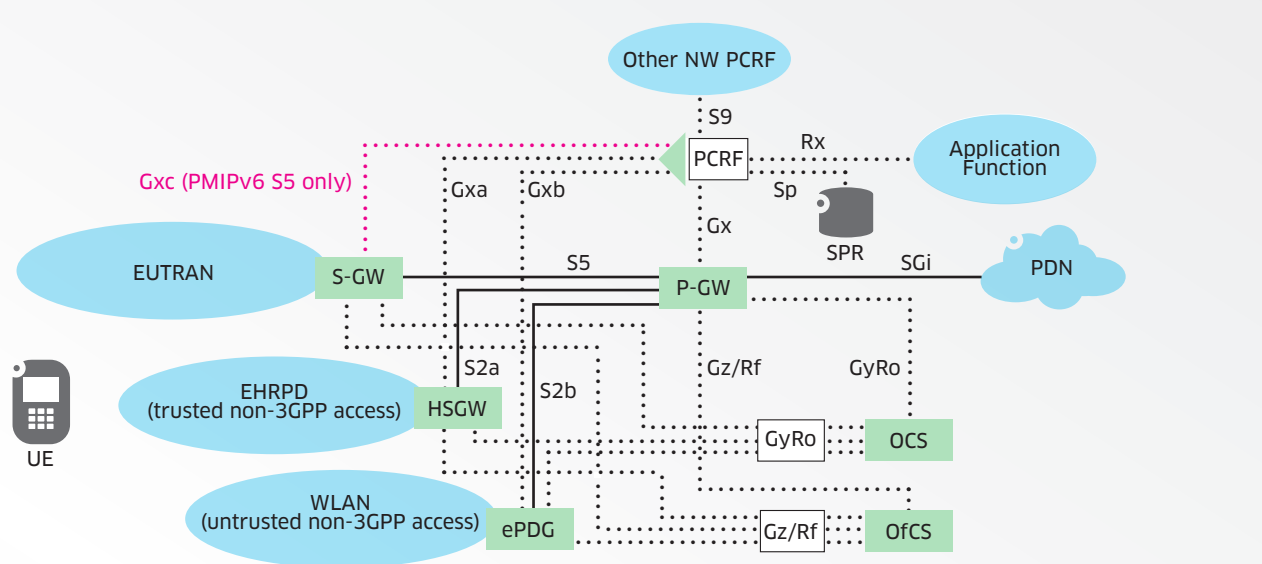


S1-MME: mobility management entity (MME); used for signaling between the Evolved Node B (eNB) and the MME	X2: used to support intra-MME handoff with no packet loss	S5: a signaling interface for establishing bearers between the serving gateway and the PDN gateway or between serving gateways for serving gateway changes (GTPv2). It also supports the user plane for bearers (GTPv1). Note there is a PMIPv6 version of the S5.	S-GI: the interface into the IP PDN. This is where the IP visibility into the UE IP address(es) is exposed.
S1-U: defines user plane between eNB and serving gateways	S11: used by the MME to control path switching and bearer establishment in the serving gateway and PDN gateway	Gx: used by the PCRF to convey policy enforcement to the P-GW, and also used to retrieve traffic flow data.	S8: analogous to the S5 except that it is used in roaming scenarios.
S10: used by MMEs to support MME changes	S6a: used by the MME to retrieve subscriber data from home subscriber server (HSS)	Rx: used by application functions, such as the IMS P-CSCF, to convey policy data to the PCRF.	

BEARER ARCHITECTURE



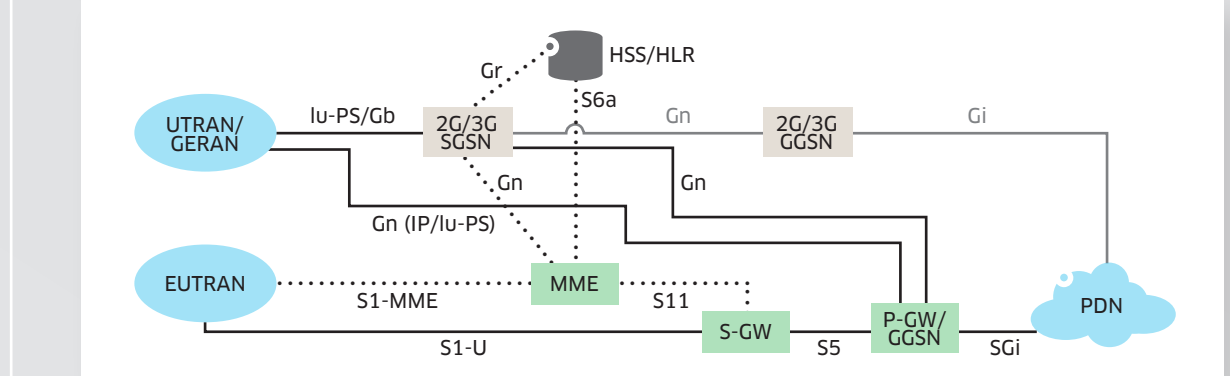
LTE POLICY CONTROL AND CHARGING



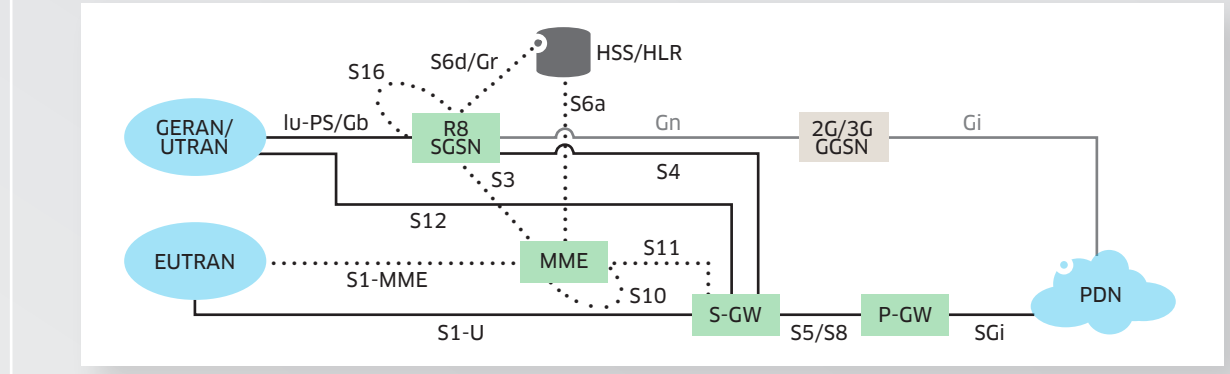
INTERFACE	PURPOSE	PROTOCOL	REFERENCE
Gx	Policy control	Diameter/SCTP	TS 29.212
Gxa, Gxb and Gxc	BBERF as defined in TS 23.402	Diameter/SCTP	TS 29.212
Rx	Application function to PCRF	Diameter/SCTP	TS 29.214
S9	Roaming interconnect for PCRF	Diameter/SCTP	TS 29.215
Sp	Retrieving per subscriber policy data	Not specified	Not defined in RB
Gy/Ro	On-line charging	Diameter/SCTP	TS 30.240 & TS 32.299
Gz/Rf	Off-line charging	Diameter/SCTP	TS 32.251 & TS 32.295
Ga	Off-line charging	GTP/UDP	TS 32.299

LTE INTERWORKING OPTIONS

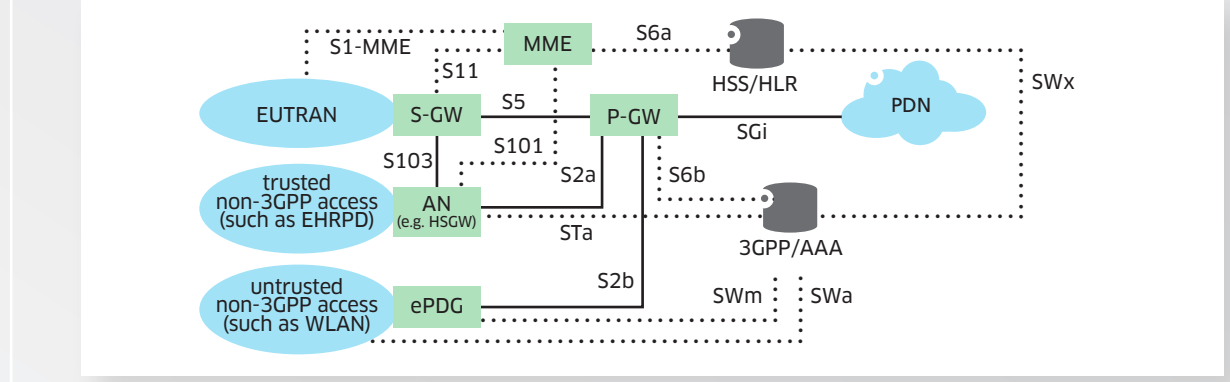
LTE WITH LEGACY 3GPP INTERWORKING (PRE-RELEASE 8)



LTE WITH LEGACY 3GPP INTERWORKING (RELEASE 8)



LTE WITH NON-3GPP INTERWORKING (RELEASE 8)



LTE SECURITY

