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Contents

Intellectual Property Rights	2
Legal Notice	2
Modal verbs terminology.....	2
Foreword.....	12
Introduction	13
1 Scope	14
2 References	14
3 Definitions and abbreviations.....	20
3.1 Public Land Mobile Network (PLMN)	20
3.2 Core Network (CN) and Access Network (AN).....	20
3.3 Circuit Switched (CS) and Packet Switched (PS) Domains	20
3.3.1 CS Domain.....	21
3.3.2 PS Domain	21
3.3a IP Multimedia subsystem (IMS).....	21
3.4 Location register.....	21
3.5 Cell	22
3.6 Base Station Controller (BSC) area.....	22
3.7 Radio Network Controller (RNC) area.....	22
3.8 Location Area (LA)	22
3.9 Routing Area (RA)	22
3.9a Tracking Area (TA).....	22
3.10 MSC area.....	22
3.11 VLR area	22
3.12 SGSN area	23
3.13 Zones for Regional Subscription	23
3.14 Service area	23
3.15 Group call area.....	23
3.15a MME Area.....	23
3.16 Pool-area.....	23
3.17 Serving GW Service Area	23
4 The basic entities of the mobile system.....	24
4.1 The Core Network (CN) entities	24
4.1.1 Entities common to the PS and CS domains.....	24
4.1.1.1 The Home Subscriber Server (HSS)	24
4.1.1.1.1 The Home Location Register (HLR)	25
4.1.1.1.2 The Authentication Centre (AuC)	25
4.1.1.1.3 HSS logical functions	26
4.1.1.2 The Visitor Location Register (VLR)	27
4.1.1.3 (void).....	28
4.1.1.4 The Equipment Identity Register (EIR)	28
4.1.1.5 SMS Gateway MSC (SMS-GMSC).....	28
4.1.1.6 SMS Interworking MSC (SMS-IW MSC)	28
4.1.1.7 Subscription Locator Function (SLF).....	28
4.1.2 Entities of the CS domain	29
4.1.2.1 The Mobile-services Switching Centre (MSC)	29
4.1.2.1.1 MSC Server	29
4.1.2.1.2 Circuit Switched - Media Gateway Function (CS-MGW)	30
4.1.2.2 The Gateway MSC (GMSC).....	30
4.1.2.2.1 Gateway MSC Server (GMSC Server).....	30
4.1.2.3 The Interworking Function (IWF).....	30
4.1.3 Entities of the GPRS PS domain.....	31
4.1.3.1 Serving GPRS Support Node (SGSN)	31
4.1.3.2 Gateway GPRS Support Node (GGSN).....	31

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4.1.3.3	Void.....	32
4.1.4	Entities of the EPC PS Domain	32
4.1.4.1	MME	32
4.1.4.2	Gateways.....	33
4.1.4.2.1	Serving GW	33
4.1.4.2.2	PDN GW	33
4.1.4.2.3	Local GW (L-GW)	34
4.1.4.3	SGSN	34
4.1.4.4	Trusted and Untrusted Non-3GPP Access Network	34
4.1.4.5	ePDG.....	35
4.1.4.6	3GPP AAA Server	35
4.1.4.7	3GPP AAA Proxy	35
4.1.4.8	ANDSF	35
4.1.5	Border Gateway (BG)].....	36
4.2	The Access Network (AN) entities.....	36
4.2.1	The Base Station System (BSS).....	36
4.2.1.1	Base Station Controller (BSC)	36
4.2.1.2	Base Transceiver Station (BTS)	37
4.2.2	The Radio Network System (RNS).....	37
4.2.2.1	Radio Network Controller (RNC)	37
4.2.2.2	Node B	37
4.2.3	Access Network elements for E-UTRAN	37
4.2.3.1	E-UTRAN Node B (eNodeB).....	37
4.2.3.2	Evolved UTRAN.....	37
4.3	The Mobile Station (MS)	37
4.4	User Equipment (UE)	38
4a	The specific entities of the 3GPP system	38
4a.1	The Group Call Register (GCR) entity.....	38
4a.2	(void).....	39
4a.3	The Location Services (LCS) entities.....	39
4a.3.1	Location Services (LCS) entities in RAN.....	39
4a.3.2	Gateway Mobile Location Centre (GMLC).....	40
4a.3.3	Location Measurement Unit (LMU).....	40
4a.3.4	Evolved Serving Mobile Location Centre (E-SMLC).....	40
4a.4	CAMEL entities.....	41
4a.4.1	GSM Service Control Function (gsmSCF).....	41
4a.4.2	GSM Service Switching Function (gsmSSF).....	41
4a.4.3	GSM Specialised Resource Function (gsmSRF)	41
4a.4.4	GPRS Service Switching Function (gprsSSF).....	41
4a.5	CBS-specific entities	41
4a.5.1	Cell Broadcast Centre (CBC).....	41
4a.6	Number Portability Specific entities	41
4a.6.1	IN-based solution: Number Portability Database (NPDB)	41
4a.6.2	Signalling Relay-based solution: Mobile Number Portability/Signalling Relay function (MNP-SRF).....	42
4a.7	IP Multimedia (IM) Core Network (CN) Subsystem entities.....	42
4a.7.1	Call Session Control Function (CSCF).....	42
4a.7.2	Media Gateway Control Function (MGCF).....	42
4a.7.3	IP Multimedia Subsystem - Media Gateway Function (IMS-MGW).....	42
4a.7.4	Multimedia Resource Function Controller (MRFC).....	43
4a.7.4a	Multimedia Resource Function Processor (MRFP)	43
4a.7.4b	Media Resource Broker (MRB).....	43
4a.7.5	Void.....	43
4a.7.6	Breakout Gateway Control Function (BGCF)	43
4a.7.7	Application Server (AS)	44
4a.7.8	Interconnection Border Control Function (IBCF).....	44
4a.7.9	Transition Gateway (TrGW).....	44
4a.7.10	Location Retrieval Function (LRF)	44
4a.7.11	Service Centralization and Continuity Application Server (SCC AS).....	45
4a.7.11a	Emergency Access Transfer Function (EATF).....	45
4a.7.12	Access Transfer Control Function (ATCF)	45
4a.7.13	Access Transfer Gateway (ATGW).....	45

4a.8	Signalling Gateway Function (SGW).....	45
4a.9	Global Text Telephony Specific entities	45
4a.10	Security Gateway (SEG)	45
4a.11	Application Function (AF)	46
4a.12	Void.....	46
4a.13	3GPP/WLAN Interworking entities	46
4a.13.1	WLAN UE	46
4a.13.2	3GPP AAA Proxy.....	46
4a.13.3	3GPP AAA Server	46
4a.13.4	WLAN Access Gateway (WAG).....	46
4a.13.5	Packet Data Gateway (PDG)	46
4a.13.6	Home Agent (HA)	46
4a.14	Multimedia Broadcast Multicast Service (MBMS) specific entities	46
4a.14.1	General.....	46
4a.14.2	Broadcast-Multicast Service Centre (BM-SC).....	47
4a.14.3	MBMS-GW	47
4a.14.4	Multi-cell/multicast Coordination Entity (MCE).....	47
4a.15	Void.....	47
4a.16	GUP Server	47
4a.17	Policy and Charging Rules Function (PCRF).....	47
4a.18	Policy and Charging Enforcement Function (PCEF)	48
4a.19	Support of Short Message Service over generic 3GPP Internet Protocol access (SMSIP) specific entities.....	48
4a.19.1	General.....	48
4a.19.2	IP-Short-Message-Gateway (IP-SM-GW)	48
4a.20	Subscription Profile Repository (SPR).....	48
4a.21	Service Data Flow Based Credit Control Function	48
4a.22	Offline Charging System (OFCS)	48
4a.23	Online Charging System (OCS)	48
4a.24	Bearer Binding and Event Reporting Function (BBERF)	48
4a.25	Home (e)NodeB entities	49
4a.25.1	Home NodeB Subsystem (HNS)	49
4a.25.2	Home eNodeB Subsystem (HeNS).....	49
4a.25.3	CSG List Server	49
4a.25.4	CSG Subscriber Server (CSS)	49
4a.26	Application Front Ends (AFE)	50
4a.27	User Data Repository (UDR)	50
4a.28	Traffic Detection Function (TDF)	50
4a.29	Specific entities to facilitate communications with packet data networks and applications.....	50
4a.29.1	Machine Type Communication-InterWorking Function (MTC-IWF).....	50
4a.29.2	Machine Type Communication- Authentication, Authorization and Accounting (MTC-AAA)	50
4a.29.3	Service Capability Exposure Function (SCEF)	51
4a.30	TCP Proxy Function.....	51
4a.31	Specific entities for Packet Switched Streaming (PSS) Service.....	51
4a.31.1	Packet Switched Streaming Service Server (PSS Server).....	51
4a.32	Specific entities for Group Communication System Enablers for LTE (GCSE_LTE).....	51
4a.32.1	Group Communication Service Application Server (GCS AS)	51
4a.33	Specific entities for Proximity-based Services (ProSe).....	51
4a.33.1	ProSe Function.....	51
4a.34	RAN Congestion Awareness Function (RCAF).....	52
4a.35	Traffic Steering Support Function (TSSF)	52
4a.36	Specific entities for mission critical communication services.....	52
4a.36.1	Mission Critical Push To Talk Application Server (MCPTT AS)	52
4a.37	Packet Flow Description Function (PFDf)	52
4a.38	5G System architecture	52
5	Configuration of a Public Land Mobile Network.....	52
5.1	Basic configuration.....	52
5.2	Configuration of LCS entities	57
5.2.1	Configuration of LCS entities for GERAN.....	57
5.2.2	Configuration of LCS entities for UTRAN.....	58
5.2.3	Configuration of LCS entities for E-UTRAN.....	58
5.3	Configuration of CAMEL entities.....	59

5.4	Configuration of CBS entities	60
5.5	Configuration of IM CN Subsystem entities	60
5.5.1	IM CN Subsystem functional entities	60
5.5.2	IM CN Subsystem Service layer	61
5.5.3	Service Centralization and Continuity	63
5.5.4	WebRTC access to IMS	64
5.6	Configuration of Signalling Gateway Function	65
5.7	Configuration of 3GPP/WLAN Interworking	65
5.8	Configuration of Presence service	66
5.9	Configuration of MBMS entities	66
5.10	Configuration of Short Message Service over generic 3GPP Internet Protocol access (SMSIP) entities	68
5.11	Configuration of Policy Control and Charging entities	68
5.12	Configuration of CSFB(CS Fallback)	71
5.13	Configuration of Single Radio Voice Call Continuity (SRVCC)	72
5.13.1	E-UTRAN/UTRAN (HSPA) to UTRAN or GERAN SRVCC architecture	72
5.13.2	UTRAN/GERAN to E-UTRAN or UTRAN (HSPA) SRVCC architecture	73
5.14	Configuration of Security	75
5.15	Configuration of Lawful Intercept related entities	75
5.16	Configuration of Charging related entities	76
5.17	Configuration of Home (e)NodeB entities	77
5.17.1	Configuration of the Home NodeB Subsystem	77
5.17.2	Configuration of the Home eNodeB Subsystem	78
5.18	Configuration for facilitating communications with packet data networks and applications	79
5.19	Configuration of Packet Switched Streaming (PSS) Service	79
5.20	Configuration of Proximity-based Services	80
5.21	Configuration for RAN user plane congestion detection and reporting	80
6	PLMN basic interfaces and reference points	81
6.1	Interfaces between Mobile Station and the Fixed Infrastructure	81
6.1.1	Interface between Mobile Station and Base Station System (Um-interface)	81
6.1.2	Interface between User Equipment and Radio Network System (Uu-interface)	81
6.1.3	Interface between User Equipment and Evolved UTRAN (E-UTRAN Uu-interface)	81
6.2	Interface between the Core Network and the Access Network	81
6.2.1	Interfaces between the CS domain and the Access Network	81
6.2.1.1	Interface between the MSC and Base Station System (A-interface)	81
6.2.1.2	Interface between the MSC and Base Station System (Iu-CS interface)	82
6.2.1.3	Interface between the MSC and RNS (Iu-CS interface)	82
6.2.2	Interfaces between the PS domain and the Access Network	82
6.2.2.1	Interface between SGSN and BSS (Gb-interface)	82
6.2.2.2	Interface between SGSN and BSS (Iu_PS-interface)	82
6.2.2.3	Interface between SGSN and RNS (Iu_PS-interface)	82
6.2.3	Interfaces between the Evolved Packet Core and the Access Network	83
6.2.3.1	Interface between MME and E-UTRAN (S1-MME-interface)	83
6.2.3.2	Interface between S-GW and E-UTRAN (S1-U-interface)	83
6.3	Interfaces internal to the Access Network	83
6.3.1	Interface between BSC and BTS (Abis-interface)	83
6.3.2	Interface between RNC and Node B (Iub-interface)	83
6.3.3	Interface between two RNCs (Iur-interface)	83
6.3.4	Interface between two eNBs (X2-interface)	83
6.3.5	Interface between HNB and HNB-GW (Iuh-interface)	83
6.4	Interfaces internal to the Core Network	83
6.4.1	Interfaces internal to the CS domain	83
6.4.1.1	Interface between the MSC server and its associated VLR (B-interface)	83
6.4.1.2	Interface between the HLR and the MSC server (C-interface)	84
6.4.1.3	Interface between the HLR and the VLR (D-interface)	84
6.4.1.4	Interface between MSC servers or MSC server and IP-SM-GW (E-interface)	84
6.4.1.5	Interface between MSC server and EIR (F-interface)	84
6.4.1.6	Interface between VLRs (G-interface)	85
6.4.1.7	Reference point (G)MSC server - CS-MGW (Mc Reference Point)	85
6.4.1.8	Reference Point MSC Server - GMSC Server (Nc Reference Point)	85
6.4.1.9	Reference Point CS-MGW - CS-MGW (Nb Reference Point)	85
6.4.1.10	Reference Point between the CSS and the VLR (Hv Reference Point)	85

6.4.2	Interfaces internal to the PS domain (GPRS).....	85
6.4.2.1	Interface between SGSN and HLR (Gr-interface)	85
6.4.2.2	Interface between SGSN and GGSN (Gn- and Gp-interface)	86
6.4.2.3	Signalling Path between GGSN and HLR (Gc-interface)	86
6.4.2.4	Interface between SGSN and EIR (Gf-interface)	86
6.4.2.5	Reference Point between the CSS and the Gn/Gp SGSN (Ghv Reference Point).....	86
6.4.3	Interfaces used by CS and PS domains	86
6.4.3.1	Interface between MSC/VLR and SGSN (Gs-interface) for GPRS	86
6.4.3.2	Interface between HLR/HSS and AuC (H-Interface).....	86
6.4.3.3	Interface between SGSN/IP-SM-GW and SMS-GMSC/SMS-IW MSC (Gd/Gdd-Interface) for GPRS.....	87
6.4.3.4	Interface between MSC/VLR and MME (SGs-interface) for EPC	87
6.4.3.5	Interface between 3GPP MSC Server and MME or SGSN (Sv-interface)	87
6.4.4	Interfaces internal & related to the Evolved Packet Core	87
6.4.4.1	Interface between MME and HSS (S6a-interface)	87
6.4.4.2	Interface between SGSN and HSS (S6d-interface)	87
6.4.4.3	Interface between MME and S-GW (S11-interface).....	87
6.4.4.4	Interface between MME and MME (S10-interface).....	88
6.4.4.5	Interface between S-GW and PDN GW (S5 and S8-interface)	88
6.4.4.6	Interface between MME and EIR (S13-interface).....	88
6.4.4.7	Interface between MME and SGSN (S3-interface).....	88
6.4.4.8	Interface between S-GW and SGSN (S4-interface)	88
6.4.4.9	Interface between S-GW and UTRAN (S12-interface).....	88
6.4.4.10	Interface between Trusted non-3GPP IP Access and S-GW/PDN GW (S2a-interface)	88
6.4.4.11	Interface between PDN GW/S-GW and ePDG (S2b-interface)	88
6.4.4.12	Interface between PDN GW and UE (S2c-interface)	88
6.4.4.13	Interface between PDN GW and 3GPP AAA Server/proxy (S6b-interface)	88
6.4.4.14	Interface between Untrusted non-3GPP IP Access and 3GPP AAA Server/proxy (SWa-interface)	89
6.4.4.15	Interface between Trusted non-3GPP IP Access and 3GPP AAA Server/proxy (STa-interface)	89
6.4.4.16	Interface between 3GPP AAA Server and 3GPP AAA proxy (SWd-interface)	89
6.4.4.17	Interface between ePDG and 3GPP AAA Server/proxy (SWm-interface)	89
6.4.4.18	Interface between ePDG and Untrusted non-3GPP Access (SWn-interface).....	89
6.4.4.19	Interface between ePDG and UE (SWu-interface)	89
6.4.4.20	Interface between HSS and 3GPP AAA Server (SWx-interface)	89
6.4.4.21	Interface between UE and ANDSF (S14-interface)	89
6.4.4.22	Reference point between HRPD AN and MME (S101-reference point)	89
6.4.4.23	Reference point between 3GPP2 1xCs IWS and MME (S102-reference point).....	90
6.4.4.24	Interface between HSGW and S-GW (S103-interface).....	90
6.4.4.25	Reference point between UE and CSG List Server (Uh reference point)	90
6.4.4.26	Reference Point between the CSS and the S4-SGSN (S7d Reference Point)	90
6.4.4.27	Reference point between the CSS and the MME (S7a reference point).....	90
6.4.4.28	Reference point between the MME and the SMS-GMSC/SMS-IW MSC/SMS Router (SGd reference point)	90
6.4.4.29	Reference point between the HSS and the SMS-GMSC/SMS-IW MSC/SMS Router (S6c reference point)	90
6.4.4.30	Reference point between HRPD AN and MME (S121-interface).....	90
6a	PLMN specific interfaces	91
6a.1	GCR-specific interface	91
6a.1.1	Interface between the MSC and its associated GCR (I-interface).....	91
6a.2	(void)	91
6a.3	LCS-specific interfaces	91
6a.3.1	LCS interfaces using MAP	91
6a.3.2	(void)	91
6a.3.3	(void)	91
6a.3.4	(void)	91
6a.3.5	Interface between BSC and SMLC (Lb-interface).....	91
6a.3.6	Interface between Peer SMLCs (Lp-interface)	91
6a.3.7	Interface between BTS and LMU (Um-interface)	92
6a.3.8	Interface between GMLC and External LCS Client (Le-interface)	92
6a.3.9	Interface between RNS and Stand-Alone LMU, UE (Uu-interface).....	92
6a.3.10	Interface between SRNC and SAS (Stand-Alone SMLC) (Iupc-interface)	92

6a.3.11	Interface between GMLC and GMLC (Lr-interface).....	92
6a.3.12	Interface between GMLC and MME (SLg-interface).....	92
6a.3.13	Interface between MME and E-SMLC (SLs-interface).....	92
6a.3.14	Interface between GMLC and HSS (SLh-interface).....	92
6a.3.15	Interface between GMLC and SGSN (Lgd-interface).....	92
6a.4	CAMEL-specific interfaces.....	93
6a.4.1	GMSC - gsmSSF interface.....	93
6a.4.2	gsmSSF - gsmSCF interface.....	93
6a.4.3	MSC - gsmSSF interface.....	93
6a.4.4	gsmSCF - HLR interface.....	93
6a.4.5	gsmSCF - gsmSRF interface.....	93
6a.4.6	MSC - gsmSCF interface.....	93
6a.4.7	SGSN - gprsSSF interface.....	93
6a.4.8	gprsSSF - gsmSCF interface (Ge Reference Point).....	93
6a.5	CBS-specific interfaces.....	93
6a.5.1	Interface between the CBC and RNS (Iu_BC Interface).....	93
6a.5.2	Interface between the CBC and MME (SBc Interface).....	94
6a.5.3	Interface between the CBC and BSC.....	94
6a.6	Number portability specific interfaces.....	94
6a.6.1	IN-based solution.....	94
6a.6.1.1	NPDB to MSC interface.....	94
6a.6.2	Signalling Relay-based solution.....	94
6a.6.2.1	GMSC to MNP-SRF interface.....	94
6a.6.2.2	MNP-SRF to HLR interface.....	94
6a.7	IM Subsystem Reference Points.....	94
6a.7.1	Reference Point HSS - CSCF (Cx Reference Point).....	94
6a.7.2	Reference Point CSCF - UE (Gm Reference Point).....	95
6a.7.3	Reference Point MGCF - IMS-MGW (Mn Reference Point).....	95
6a.7.4	Reference Point MGCF - CSCF (Mg Reference Point).....	95
6a.7.5	(void).....	95
6a.7.5a	Reference Point AS-MRFC for media control (Cr Reference Point).....	95
6a.7.5b	Reference Point AS-MRFC for session control (Mr' Reference Point).....	95
6a.7.6	Reference Point CSCF - MRFC (Mr Reference Point).....	96
6a.7.6a	Reference Point MRFC - MRFP (Mp Reference Point).....	96
6a.7.7	Reference Point CSCF - CSCF (Mv Reference Point).....	96
6a.7.8	(void).....	96
6a.7.8a	Reference Point CSCF - MRB (ISC Reference Point).....	96
6a.7.9	(void).....	96
6a.7.9a	Reference Point AS - MRB (Rc Reference Point).....	96
6a.7.10	Reference Point CSCF - BGCF (Mi reference point).....	96
6a.7.11	Reference Point BGCF - MGCF (Mj reference point).....	96
6a.7.12	Reference Point BGCF/IBCF - BGCF (Mk reference point).....	97
6a.7.13	Reference Point CSCF- SLF (Dx Reference Point).....	97
6a.7.14	Reference Point to IMS media plane (Mb reference point).....	97
6a.7.15	Reference Point S-CSCF - AS (ISC Reference Point).....	97
6a.7.15a	Reference Point E-CSCF - EATF (I4 Reference Point).....	97
6a.7.15b	Reference Point I-CSCF - EATF (I5 Reference Point).....	97
6a.7.16	Reference Point HSS - SIP AS or OSA SCS (Sh Reference Point).....	97
6a.7.17	Reference Point HSS - CAMEL IM-SSF (Si Reference Point).....	97
6a.7.18	Reference Point UE - AS (Ut Reference Point).....	97
6a.7.19	Reference Point AS- SLF (Dh Reference Point).....	98
6a.7.20	Reference Point CSCF/BGCF - IBCF (Mx Reference Point).....	98
6a.7.21	Reference Point IBCF - TrGW (Ix Reference Point).....	98
6a.7.22	Reference Point I-CSCF - AS (Ma Reference Point).....	98
6a.7.23	Reference Point P-CSCF - IMS Access Gateway (Iq Reference Point).....	98
6a.7.23a	Reference Point E-CSCF - LRF (Ml Reference Point).....	98
6a.7.24	Reference Point IBCF - IBCF (Ici Reference Point).....	98
6a.7.25	Reference Point TrGW - TrGW (Izi Reference Point).....	98
6a.7.26	Void.....	99
6a.7.27	Reference Point MSC Server - CSCF (I2 Reference Point).....	99
6a.7.28	Reference Point MSC Server - TAS (I3 Reference Point).....	99
6a.7.29	Reference Point ICS UE - SCC AS (I1 Reference Point).....	99

6a.7.30	Reference Point IBCF - Application Server (AS) (Ms Reference Point).....	99
6a.8	Void.....	99
6a.9	Reference Points for 3GPP/WLAN Interworking	99
6a.9.1	Reference point 3GPP AAA Server - HLR (D/Gr' Reference Point).....	99
6a.9.2	Reference point WLAN access network - 3GPP AAA Proxy/Server (Wa Reference Point)	100
6a.9.3	Reference point 3GPP AAA Server - 3GPP AAA Proxy (Wd Reference Point)	100
6a.9.4	Reference point 3GPP AAA Server/Proxy - WAG (Wg Reference Point).....	100
6a.9.5	Reference point PDG - packet data networks (Wi Reference Point)	100
6a.9.6	Reference Point 3GPP AAA Server/Proxy - PDG (Wm Reference Point).....	100
6a.9.7	Reference Point WAG - WLAN access network (Wn Reference Point).....	100
6a.9.8	Reference Point WAG - PDG (Wp Reference Point)	100
6a.9.9	Reference point WLAN UE - PDG (Wu Reference Point).....	100
6a.9.10	Reference point WLAN UE - WLAN access network (Ww Reference Point).....	101
6a.9.11	Reference point 3GPP AAA Server - HSS (Wx Reference Point)	101
6a.9.12	Reference point 3GPP AAA Server - SLF (Dw reference point)	101
6a.10	MBMS specific reference points for GPRS	101
6a.10.1	Reference point GGSN - BM-SC (Gmb Reference Point)	101
6a.10.2	Reference point BM-SC - BM-SC (Mz Reference Point).....	101
6a.10.3	Reference point GGSN - RNS (or BSS Iu mode) (Gmc Reference Point)	101
6a.11	MBMS specific reference points for EPS.....	102
6a.11.1	Reference point MBMS-GW - BM-SC (SGmb Reference Point)	102
6a.11.2	Reference point MBMS-GW - BM-SC (SGi-mb Reference Point).....	102
6a.11.3	Reference point MBMS-GW - MME (Sm Reference Point).....	102
6a.11.4	Reference point MBMS-GW - SGSN (Sn Reference Point)	102
6a.11.5	Reference point MBMS-GW - E-UTRAN/UTRAN (M1 Reference Point).....	102
6a.11.6	Reference point MME - MCE (M3 Reference Point).....	102
6a.11.7	Reference point MCE - eNodeB (M2 Reference Point).....	102
6a.11.8	Reference point Content Provider/SCF - BM-SC (xMB Reference Point)	102
6a.12	Reference Points for 3GPP Generic User Profile (GUP)	102
6a.12.1	Reference Point GUP Server - Applications (Rg Reference Point)	102
6a.12.2	Reference Point GUP Server - HSS and Applications - HSS (Rp Reference Point).....	103
6a.13	Reference Points for Policy and Charging Control	103
6a.13.1	Reference Point PCRF - PCRF/H-PCRF/V-PCRF (Gx Reference Point)	103
6a.13.2	Reference Point PCRF - Application Function (Rx Reference Point)	103
6a.13.3	Reference Point SPR - PCRF (Sp Reference Point)	103
6a.13.4	Reference Point OCS - PCRF (Gy Reference Point)	103
6a.13.5	Reference Point OFCS - PCRF (Gz Reference Point)	103
6a.13.6	Reference Point Trusted non-3GPP IP Access and PCRF/VPCRF (Gxa Reference Point)	103
6a.13.7	Reference Point ePDG and PCRF/VPCRF (Gxb Reference Point)	103
6a.13.7a	Reference Point ePDG and PCRF/VPCRF (Gxb* Reference Point)	104
6a.13.8	Reference point between S-GW and PCRF/VPCRF (Gxc-interface).....	104
6a.13.9	Reference Point PCRF/VPCRF - BBERF (Gxx Reference Point).....	104
6a.13.10	Reference Point HPCRF - VPCRF (S9- interface)	104
6a.13.11	Reference Point UDR - PCRF (Ud Reference Point)	104
6a.13.12	Reference Point TDF - PCRF/H-PCRF/V-PCRF (Sd Reference Point)	104
6a.13.13	Reference Point OCS - PCRF/H-PCRF (Sy Reference Point).....	104
6a.13.14	Reference Point HNB GW - PCRF/V-PCRF (S15 Reference Point)	104
6a.13.15	Reference Point BPCF - PCRF/v-PCRF (S9a Reference Point)	104
6a.13.16	Reference Point OCS - TDF (Gyn Reference Point)	105
6a.13.17	Reference Point OFCS - TDF (Gzn Reference Point)	105
6a.13.18	Void	105
6a.13.19	Reference Point TSSF - PCRF/H-PCRF (St Reference Point)	105
6a.13.20	Reference point between PFDF and PCEF (Gw reference point).....	105
6a.13.21	Reference point between PFDF and TDF (Gwn reference point).....	105
6a.14	SMSIP specific reference points	105
6a.14.1	Reference point IP-SM-GW - HSS (J Reference Point)	105
6a.15	User Data Convergence specific reference points.....	105
6a.15.1	Reference point Application Front Ends - UDR (Ud Reference Point).....	105
6a.16	Specific reference points for facilitating communications with packet data networks and applications.....	105
6a.16.1	Reference point MTC-IWF - SCS (Tsp reference point).....	105
6a.16.2	Reference point MTC-IWF - HSS/HLR (S6m reference point)	106
6a.16.3	Reference point MTC-AAA - HSS/HLR (S6n reference point)	106

6a.16.4	Reference point MTC-IWF - SMS-SC (T4 reference point)	106
6a.16.5	Reference point between the HSS and the SCEF (S6t reference point).....	106
6a.16.6	Reference point between the MME and the SCEF (T6a reference point).....	106
6a.16.7	Reference point between the SGSN and the SCEF (T6b reference point).....	106
6a.16.8	Reference point between the RCAF and the SCEF (Ns reference point)	106
6a.16.9	Reference point between the PCRF and the SCEF (Nt reference point).....	107
6a.16.10	Reference point between the PFDF and the SCEF (Nu reference point).....	107
6a.17	GCSE_LTE specific reference points.....	107
6a.17.1	Reference point GCS AS - BM-SC (MB2 Reference Point)	107
6a.17.2	Reference point GCS AS - UE (GC1 Reference Point).....	107
6a.18	ProSe specific reference points	107
6a.18.1	Reference point UE - ProSe Application Server (PC1 Reference Point).....	107
6a.18.2	Reference point ProSe Function - ProSe Application Server (PC2 Reference Point).....	107
6a.18.3	Reference point UE - ProSe Function (PC3 Reference Point).....	107
6a.18.4	Reference point HSS - ProSe Function (PC4a Reference Point)	108
6a.18.5	Reference point SLP - ProSe Function (PC4b Reference Point)	108
6a.18.6	Reference point UE - UE (PC5 Reference Point)	108
6a.18.7	Reference point ProSe Function - ProSe Function in different PLMNs (PC6 Reference Point)	108
6a.18.8	Reference point ProSe Function in HPLMN - ProSe Function in VPLMN (PC7 Reference Point).....	108
6a.19	Reference points for RAN user plane congestion detection and reporting.....	108
6a.19.1	Reference Point RCAF - PCRF/ V-PCRF (Np Reference Point)	108
6a.19.2	Reference point between MME and RCAF (Nq reference point).....	108
6a.19.3	Reference point between SGSN and RCAF (Nq' reference point)	108
7	Reference points between the PLMN and other networks	109
7.1	Reference point fixed networks - MSC	109
7.2	Reference point GGSN - packet data networks (Gi reference point)	109
7.2a	Reference point PDN GW - packet data networks (SGi reference point)	109
7.3	Reference point GMLC - external LCS Client (Le reference point)	109
7.4	Reference Point CSCF/IBCF - Multimedia IP networks (Mm Reference Point).....	109
7.5	(void).....	109
7.6	Reference point PDG - packet data networks (Wi reference point)	109
7.7	Reference Point WAG - WLAN access network (Wn reference point)	110
7.8	Reference point MTC-IWF - SCS (Tsp reference point).....	110
Annex A (informative):	Description for GLR-related entities and interfaces	111
A.1	Normative references	111
A.2	Definitions related to Gateway Location Register (GLR).....	111
A.2.1	Gateway Location Register (GLR).....	111
A.2.2	Intermediate Mobile-services Switching Centre (IM-MSC)	111
A.2.3	Intermediate GPRS Serving Node (IM-GSN)	111
A.3	The entities of the mobile system.....	111
A.3.1	Gateway Location Register (GLR).....	111
A.3.2	Intermediate Mobile-services Switching Centre (IM-MSC)	112
A.3.3	Intermediate GPRS Serving Node (IM-GSN)	112
A.4	Configuration of a Public Land Mobile Network.....	112
A.4.1	Basic configuration with GLR introduction	112
A.5	PLMN interfaces	113
A.5.1	Interface between the HLR and the GLR (GLa-interface)	113
A.5.2	Interface between the VLR and the GLR (GLb-interface)	113
A.5.3	Interface between the SGSN and the GLR (GLc-interface)	113
A.5.4	Interface between the GLR and the IM_MSC (GLd-interface).....	113
A.5.5	Interface between the GLR and the IM_GSN (GLE-interface)	113
A.5.6	Interface between the SMS-GMSC and the GLR (GLf-interface)	114
A.5.7	Interface between the SMS-GMSC and the IM_MSC (GLg-interface)	114
A.5.8	Interface between the MSC and the IM_MSC (GLh-interface)	114
A.5.9	Interface between the GMLC and the IM_MSC (GLi-interface)	114
A.5.10	Interface between the GGSN and the IM_GSN (GLj-interface)	114
A.5.11	Interface between the SGSN and the IM_GSN (GLk-interface)	114

Annex B (informative): **Change history**115

History116

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Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
 - 1 presented to TSG for information;
 - 2 presented to TSG for approval;
 - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

In the present document, modal verbs have the following meanings:

- | | |
|------------------|---|
| shall | indicates a mandatory requirement to do something |
| shall not | indicates an interdiction (prohibition) to do something |

The constructions "shall" and "shall not" are confined to the context of normative provisions, and do not appear in Technical Reports.

The constructions "must" and "must not" are not used as substitutes for "shall" and "shall not". Their use is avoided insofar as possible, and they are not used in a normative context except in a direct citation from an external, referenced, non-3GPP document, or so as to maintain continuity of style when extending or modifying the provisions of such a referenced document.

- | | |
|-------------------|--|
| should | indicates a recommendation to do something |
| should not | indicates a recommendation not to do something |
| may | indicates permission to do something |
| need not | indicates permission not to do something |

The construction "may not" is ambiguous and is not used in normative elements. The unambiguous constructions "might not" or "shall not" are used instead, depending upon the meaning intended.

- | | |
|---------------|--|
| can | indicates that something is possible |
| cannot | indicates that something is impossible |

The constructions "can" and "cannot" are not substitutes for "may" and "need not".

- | | |
|-----------------|--|
| will | indicates that something is certain or expected to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document |
| will not | indicates that something is certain or expected not to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document |
| might | indicates a likelihood that something will happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document |

might not indicates a likelihood that something will not happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

In addition:

is (or any other verb in the indicative mood) indicates a statement of fact

is not (or any other negative verb in the indicative mood) indicates a statement of fact

The constructions "is" and "is not" do not indicate requirements.

Introduction

This document presents the possible architectures of the 3GPP System covering both UTRAN and GERAN radio access technologies. In addition, this document also includes the Evolved Packet System providing support for E-UTRAN radio access technology in addition to UTRAN and GERAN radio access technologies. As well as providing support for E-UTRAN, UTRAN and GERAN radio access technologies, the Evolved Packet System also provides support for non-3GPP access technologies making it possible for these technologies to interwork with the 3GPP specified Evolved Packet Core network. The configuration of non-3GPP access networks using EPS is not within the scope of 3GPP specification.

This document also presents the architecture for the IP Multimedia Subsystem common to 3GPP and other access systems such as Fixed Broadband and those specified by 3GPP2 and provide architecture for interworking and session continuity between IMS and Circuit Switched systems.

Clause 3 of the document contains the definition of the PLMN entities.

Clause 4 of the document contains the description of the basic entities of the PLMN, and clause 4a contains the description of the specific entities of the PLMN.

Clause 5 of the document contains the configuration of the PLMN.

Clauses 6, 6a and 7 of the document contain the PLMN's basic and specific interfaces and reference points and the PLMN's interfaces towards other networks.

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<https://standards.iteh.ai/catalog/standards/sist/f2c1d6e9-3996-402f-ae05-0684fa1a1f81/etsi-ts-123-002-v17-0-0-2022-05>

1 Scope

This document offers an overview of the 3GPP PLMN and its architectures and configuration. The configuration and the functional entities of the PLMN and the interfaces between them are described on a general level in order to cope with possible implementations. These descriptions include interfaces between and within the core networks, the access networks, the user equipment, different service platforms, different domains and subsystems, and functional entities within domains and subsystems.

This document covers different architectural aspects with varying level of detail. In general, other specifications shall be referred to for further details; these specifications enable the reader to acquire the full understanding of a system or service feature.

Note that this document does not cover, or even list, all features of PLMNs.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- | | |
|-------|--|
| [1] | Void. |
| [1a] | 3GPP TR 21.905: "Vocabulary for 3GPP Specifications". |
| [2] | 3GPP TS 22.016: "International Mobile station Equipment Identities (IMEI)". |
| [2a] | 3GPP TS 22.060: "General Packet radio Service (GPRS); Service description; Stage 1". |
| [2b] | 3GPP TS 22.071: "Location Services (LCS); Service description; Stage 1". |
| [2c] | 3GPP TS 22.078: "Customised Applications for Mobile network Enhanced Logic (CAMEL); Service description, Stage 1". |
| [3] | 3GPP TS 23.003: "Numbering, addressing and identification". |
| [4] | 3GPP TS 22.127: "Open Service Access (OSA)". |
| [5] | 3GPP TS 23.008: "Organization of subscriber data". |
| [6] | 3GPP TS 23.009: "Handover procedures". |
| [7] | 3GPP TS 23.012: "Location Management Procedures". |
| [8] | 3GPP TS 23.041: "Technical realization of Cell Broadcast Service (CBS)". |
| [9] | Void. |
| [9a] | 3GPP TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2". |
| [10] | Void. |
| [10a] | 3GPP TS 43.064: "Digital cellular telecommunication system (Phase 2+); General Packet Radio service (GPRS); Overall description of the GPRS radio interface; Stage 2". |
| [10b] | 3GPP TS 25.305: "Stage 2 Functional Specification of UE Positioning in UTRAN". |