

List of Abbreviations	
3GPP 5G-AN 5GC 5G-EIR 5G-GUTI 5GS 5G-S-TMSI 5QI AA	third-generation partnership project 5G access network 5G core 5G-equipment identity register 5G globally unique temporary identifier 5G system 5G-S-temporary mobile subscription identifier 5G QoS identifier antenna array
AAA	authorization, authentication, and accounting
AAS	active antenna system
ABS	almost blank subframe
AC	access class
ACIR	adjacent channel interference ratio
ACK	acknowledgement
ACLR	adjacent channel leakage ratio
ACS A-CSI ADC	adjacent channel selectivity aperiodic-CSI analog to digital converter
AF	application function
AKA	authentication and key agreement
AM	acknowledged mode
AMBR	aggregate maximum bit rate
AMC	adaptive modulation and coding
AMF	access and mobility management function
ANR	automatic neighbor relation
AoA	angle of arrival
AoD	angle of departure
AP	application protocol
APN	access point name
ARFCN	absolute ratio frequency channel number
ARP	allocation and retention priority
ARQ	automatic repeat request
AS	access stratum/angular spread
AUSF	authentication server function
AWGN	additive white Gaussian noise
BA	bandwidth adaptation

BC	broadcast channel (MU-MIMO)
BCCH	broadcast control channel
BCH	broadcast channel
xv	
BER	bit error rate
BPSK	binary phase shift keying
BS	base station
BSF	binding support function
BSR	buffer status report
BW	bandwidth
BWP C/I CA	bandwidth part carrier-to-interference ratio carrier aggregation
CACLR	cumulative ACLR
CAZAC	constant amplitude zero auto-correlation
CBC	cell broadcast center
CBE	cell broadcast entity
CBG	code block group
CBGTI	code block group transmission information
CBRA	contention based random access
CC	component carrier
CCE	control channel element
CDF	cumulative distribution function
CDM CD-SSB CFO	code division multiplexing cell defining SSB carrier frequency offset
CFRA	contention free random access
CGI	cell global identifier
CIF	carrier indicator field
CM	cubic metric
CMAS	commercial mobile alert service
CMC	connection mobility control
CoMP	coordinated multi-point
CORESET	control resource set
CP	cyclic prefix
CPE CP-OFDM CQI	common phase error cyclic prefix-OFDM channel quality indicator
CRB	common resource block

CRC	cyclic redundancy check
CRE	cell range extension
CRI C-RNTI CRS	CSI-RS resource indicator cell RNTI cell-specific reference signal
CSA	common subframe allocation
CSI CSI-IM	channel state information CSI interference measurement
CSI-RS	CSI reference signal
CSI-RS	CSI reference signal
CSI-RSRP	CSI reference signal received power
CSI-RSRQ CSI-SINR CW	CSI reference signal received quality CSI signal-to-noise and interference ratio codeword
CW	continuous wave
DAC	digital to analog converter
DAI	downlink assignment index
DCCH	dedicated control channel
DCI	downlink control information
DFT DFT-S-OFDM DL	discrete Fourier transform DFT-spread-OFDM downlink
DL TFT DL-SCH DM-RS DN	downlink traffic flow template downlink shared channel demodulation reference signal data network
DNN	data network name
DoA	direction of arrival
DRB	data radio bearer
DRX	discontinuous reception
DTCH	dedicated traffic channel
DTX	discontinuous transmission
DwPTS	downlink pilot time slot
EAB	extended access barring
ECGI E-CID ECM	E-UTRAN cell global identifier enhanced cell-ID (positioning method) EPS connection management
ECN eICIC EIRP	explicit congestion notification enhanced inter-cell interference coordination effective isotropic radiated power
EIS	equivalent isotropic sensitivity

EMM eNB EPC ePHR EPRE	EPS mobility management E-UTRAN Node B/evolved node B evolved packet core extended power headroom report energy per resource element
EPS E-RAB E-SMLC ETWS E-UTRA E-UTRAN EVM	evolved packet system E-UTRAN radio access bearer evolved serving mobile location centre earthquake and tsunami warning system evolved UTRA evolved UTRAN error vector magnitude
FBW	fractional bandwidth
FDD	frequency division duplex
FDM	frequency division multiplexing
FFT	fast Fourier transform
FQDN	fully qualified domain name
FR	frequency range
FR1	frequency range 1
FR2	frequency range 2
FRC	fixed reference channel
FTP	file transfer protocol
GBR	guaranteed bit rate
GFBR	guaranteed flow bit rate
GNSS	global navigation satellite system
GP	guard period
GPS	global positioning system
GPSI	generic public subscription identifier
GSCN	global synchronization channel number
GT	guard time
GTP	GPRS tunneling protocol
GUAMI	globally unique AMF identifier
GUMMEI	globally unique MME identifier
GUTI	globally unique temporary identifier
GW	gateway
HARQ HARQ-ACK HetNet	hybrid ARQ hybrid automatic repeat request acknowledgement heterogeneous network
HFN	hyper frame number
HO	handover

HSS	home subscriber server
HTTP	hypertext markup language
ICIC	inter-cell interference coordination
ICS	in-channel selectivity
ID	identity
IDC	in-device coexistence
IE	information element
IEEE	Institute of Electrical and Electronics Engineers
IETF	Internet Engineering Task Force
IFFT	inverse fast Fourier transform
IMD	inter-modulation distortion
IMS INT-RNTI IoT	IP multimedia sub-system interruption RNTI internet of things
IP	internet protocol
IQ	in-phase/quadrature
IRC I-RNTI ISI	interference rejection combining inactive RNTI inter-symbol interference
ISM ITU-R L1-RSRP LA	industrial, scientific, and medical radiocommunication sector of the international telecommunication union layer 1 reference signal received power local area
LCG	logical channel group
LCID	logical channel identifier
LDPC	low density parity check
LI	layer indicator
LLR	log likelihood ratio
LNA	low-noise amplifier
LTE MAC-I MAP	long term evolution message authentication code for integrity maximum a posteriori probability
MBMS	multimedia broadcast/multicast service
MBR	maximum bit rate
MBSFN	multimedia broadcast multicast service single frequency network
MCE	multi-cell/multicast coordination entity
MCS	modulation and coding scheme
MDBV	maximum data burst volume

MDT	minimization of drive tests
MFBR	maximum flow bit rate
MIB	master information block
MIMO	multiple-input multiple-output
MLD	maximum likelihood detection
MME	mobility management entity
MMSE	minimum mean-square error
MNO	mobile network operator
MRC	maximal ratio combining
MTC MU-MIMO N3IWF NACK	machine-type communications multi-user MIMO non-3GPP interworking function negative acknowledgement
NAI	network access identifier
NAS	non-access stratum
NCC	next hop chaining counter
NCGI	NR cell global identifier
NCR	neighbor cell relation
NCRT	neighbor cell relation table
NDS	network domain security
NEF	network exposure function
NF	network function
NGAP	NG application protocol
NGAP	next generation application protocol
NH	next hop key
NNSF	NAS node selection function
NCR	neighbor cell relation
NR NR-ARFCN NRF	new radio NR absolute radio frequency channel number network repository function
NRT	neighbor relation table
NSI ID	network slice instance identifier
NSSAI	network slice selection assistance information
NSSF	network slice selection function
NSSP	network slice selection policy
NWDAF	network data analytics function
OBUE	operating band unwanted emissions

OCC	orthogonal cover code
OFDM	orthogonal frequency division multiplexing
OFDMA OMC-ID OOB	orthogonal frequency division multiple access operation and maintenance centre identity out-of-band (emission)
OSDD	OTA sensitivity directions declaration
OTA	over-the-air
PA	power amplifier
PAPR	peak-to-average power ratio
PBCH	physical broadcast channel
PBR	prioritized bit rate
PCC	primary component carrier
PCCH	paging control channel
PCell	primary cell
PCF	policy control function
PCFICH	physical control format indicator channel
PCH	paging channel
PCI	physical cell identifier
PCRF	policy and charging rules function
PDCCH	physical downlink control channel
PDCP	packet data convergence protocol
PDN	packet data network
PDR	packet detection rule
PDSCH	physical downlink shared channel
PDU	protocol data unit
PEI	permanent equipment identifier
PER	packet error rate
PF	packet flow description
PGW	PDN gateway
PHICH	physical hybrid ARQ indicator channel
PHR	power headroom report
PHY	physical layer
PLMN	public land mobile network
PMI	precoding matrix indicator
PMIP	proxy mobile IP
PO	paging occasion
PPD	paging policy differentiation

PPF	paging proceed flag
PPI	paging policy indicator
PRACH	physical random-access channel
PRB	physical resource block
PRG P-RNTI PSA	precoding resource block group paging RNTI PDU session anchor
PSAP	public safety answering point
PSC	packet scheduling
PSS pTAG PT-RS PUCCH	primary synchronization signal primary timing advance group phase-tracking reference signal physical uplink control channel
PUSCH	physical uplink shared channel
PWS	public warning system
QAM	quadrature amplitude modulation
QCI	QoS class identifier
QCL	quasi co-location
QFI	QoS flow identifier
QoE	quality of experience
QoS	quality of service
QPSK	quadrature phase shift keying
RAC	radio admission control
RACH	random access channel
RAN	radio access network
RANAC	RAN-based notification area code
RAR RA-RNTI RAT	random access response random access RNTI radio access technology
RB	radio bearer
RB	resource block
RBC	radio bearer control
RBG	resource block group
RDN	radio distribution network
RE	resource element
REFSENS	reference sensitivity
REG	resource element group
RF	radio frequency
RI	rank indicator

RIB	radiated interface boundary
RIM	RAN information management
RIV	resource indicator value
RLC	radio link control
RLF	radio link failure
RM	rate matching/Reed-Muller (code)
RMS	root mean square (value)
RMSI	remaining minimum system information
RNA	RAN-based notification area
RNAU	RAN-based notification area update
RNL	radio network layer
RNTI	radio network temporary identifier
RoAoA	range of angles of arrival
ROHC	robust header compression
RQA	reflective QoS attribute
RQI	reflective QoS indication
RQoS	reflective quality of service
RRC	radio resource control
RRM	radio resource management
RS	reference signal
RSRP	reference signal received power
RSRQ	reference signal received quality
RSSI	received signal strength indicator
RTP	real-time transport protocol
RTT	round trip time
RU	resource unit/radio unit
RV	redundancy version
RX S1-MME S1-U SA NR	Receiver S1 for the control plane S1 for the user plane standalone new radio
SAE	system architecture evolution
SAP	service access point
SBA	service based architecture
SBI	service based interface
SCC	secondary component carrier
SCell SC-FDMA SCH	secondary cell single carrier-frequency division multiple access

	synchronization channel
SCM	spatial channel model
SCS	sub-carrier spacing
SD	slice differentiator
SDAP	service data adaptation protocol
SDF	service data flow
SDL	supplementary downlink
SDMA	spatial division multiple access
SDU	service data unit
SEAF	security anchor functionality
SEPP	security edge protection proxy
SFBC SFI-RNTI SFN	space-frequency block code slot format indication RNTI system frame number
SGW	serving gateway
SI	system information
SIB	system information block
SIC	successive interference cancellation
SIMO	Single-input multiple-output
SINR SI-RNTI SISO	signal to interference plus noise ratio system information RNTI single-input single-output/soft-input soft-output
SLA	service level agreement
SLIV	start and length indicator value
SMC	security mode command
SMF	session management function
SMS	short message service
SMSF	short message service function
SN	sequence number
SNR S-NSSAI SON	signal to noise ratio single network slice selection assistance information self-organizing network
SPID	subscriber profile ID for RAT/frequency priority
SPS SPS C-RNTI SR	semi-persistent scheduling semi-persistent scheduling C-RNTI scheduling request
SRB	signaling radio bearer
SRS	sounding reference signal

SS	synchronization signal
SSB SS-RSRP	SS/PBCH block SS reference signal received power
SS-RSRQ SSS SS-SINR SST	SS reference signal received quality secondary synchronization signal SS signal-to-noise and interference ratio slice/service type
sTAG S-TMSI SU	secondary timing advance group S-temporary mobile subscriber identity scheduling unit
SUCI	subscription concealed identifier
SUL SU-MIMO SUPI	supplementary uplink single-user MIMO subscription permanent identifier
TA	tracking area
TA	timing advance
TAB	transceiver array boundary
TAC	tracking area code
TAD	traffic aggregate description
TAE	time alignment error
TAG	timing advance group
TAI	tracking area identity
TAU	tracking area update
TB	transport block
TCI	transmission configuration indicator
TCP	transmission control protocol
TDD	time division duplex
TDM	time division multiplexing
TEID	tunnel endpoint identifier
TFT	traffic flow template
TI	transaction identifier
TIN	temporary identity used in next update
TM	transparent mode
TNL	transport network layer
TNLA	transport network layer association
TPC	transmit power control
TPMI	transmitted precoding matrix indicator
TrCH	transport channel
TRP	total radiated power
TSP	traffic steering policy

TTI	transmission time interval
TX	transmitter
UCI	uplink control information
UDM	unified data management
UDP	user datagram protocol
UDR	unified data repository
UDSF	unstructured data storage function
UE	user equipment
UEM	unwanted emissions mask
UL	uplink
UL TFT ULR-Flags UL-SCH UM	uplink traffic flow template update location request flags uplink shared channel unacknowledged mode
UPF	user plane function
UpPTS	uplink pilot time slot
URLLC	ultra-reliable and low latency communications
URRP-AMF	UE reachability request parameter for AMF
URSP V2X VLAN	UE route selection policy vehicle-to-everything virtual local area network
VoIP	voice over internet protocol
VRB X2-C X2-U XnAP Xn-C Xn-U ZC	virtual resource block X2-control plane X2-user plane Xn application protocol Xn-control plane Xn-user plane Zadoff-Chu
ZCZ	zero correlation zone
ZF ZP CSI-RS	zero forcing (receiver) zero power CSI-RS