Abbreviations and Acronyms

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About This Document

This document lists the most commonly used abbreviations and acronyms related to LTE in the fixed broadband and wireless services industry.

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Abbreviations and acronyms are listed in alphabetical order and described in the table below.

Acronym	Abbreviation	Description
1xEV-DO	1x Evolution for Data Optimized	1xEV-DO is a telecommunications standard for the wireless transmission of data through radio signals, typically for broadband Internet access.
2CA	2 Carrier Aggregation	In Carrier Aggregation (CA) mode, the eNB uses 2x2 MIMO on each carrier.
3GPP	Third-Generation Partnership Project	3GPP is a standards body that works within the scope of the International Telecommunications Union (ITU) to develop third-generation and later wireless technologies that build upon the base provided by Global System for Mobile Communications (GSM). The group is responsible for the Universal Mobile Telecommunications System (UMTS) standard, as well as High Speed Downlink Packet Access (HSDPA), High Speed Uplink Packet Access (HSUPA), Evolved High Speed Packet Access (HSPA+), and LTE.
3GPP2	Third-Generation Partnership Project 2	3GPP2 is a collaboration between multiple telecommunications associations to make a globally applicable third-generation (3G) mobile phone system specification within the scope of the International Telecommunications Union's (ITU) IMT-2000 project.
4G	Fourth-Generation Wireless Systems	4G Long-Term Evolution (LTE) is a mobile communications standard intended to evolve 3G technology, allowing wireless Internet access at a much higher speed.
5G	Fifth-Generation Wireless Systems	5G New Radio (NR) is a mobile communications standard intended to evolve 4G technology by providing even higher network capacities, data transmission speeds, and enhanced coverage while improving flexibility of wireless services. 5G technology uses a variety of frequency bands within ranges below 6 GHz (FR1) and above 24.250 GHz (FR2).
AAA	Authentication, Authorization, and Accounting	AAA is a framework for controlling access to computer resources, enforcing policies, auditing usage, and providing the information necessary to bill for services.
AAU	Active Antenna Unit	An active antenna unit combines the antenna, radio, tower mounted amplifier, feeder, and jumper functionalities in an antenna-integrated radio.
AC	Authentication Center	The AC validates any Subscriber Identity Module (SIM) card attempting network connection when there is a live network signal.
ACK	Acknowledge or	A flag used in the Transmission Control Protocol (TCP) to

Acronym	Abbreviation	Description
	Acknowledgement	acknowledge receipt of a data packet.
ALG	Application Layer Gateway	One or more application protocols may be used to augment a firewall by assigning a public address to a computer(s) inside a private network, or to filter Network Address Translations (NAT) used by a network device. Examples of application layer control data protocols are FTP, H.323 ALG, SIP, and PPTP.
AM	Acknowledged Mode	AM requires the receiver of information to send continuous notifications to the sender that indicate it has successfully received the information.
AMBR	Aggregate Maximum Bit Rate	AMBR is the maximum possible bit rate configured by the LTE operator for a particular LTE user.
AMC	Adaptive Modulation and Coding	AMC is used to denote the matching of the modulation, coding, and other signal and protocol parameters to the conditions on the radio link.
AN	Access Network	AN is the part of a telecommunications network that connects subscribers to their immediate service provider.
ANR	Automatic Neighbor Relation	ANR is a third-generation (3G) telecommunications specification for automating the identification of an eNB's neighboring cells regardless of which Universal Mobile Telecommunications System (UMTS) technology those eNBs are running. Having ANR capabilities relieves the operators of having to manually provision each neighbor cell.
APN	Access Point Name	An access point (AP) is an eNB gateway between a Global System for Mobile Communications (GSM), General Packet Radio Service (GPRS), third-generation (3G) or fourth-generation (4G) mobile network, and another computer network, frequently the public Internet. An AP name (APN) is an identifier for a specific AP/eNB.
ARP	Address Resolution Protocol	ARP is a telecommunication protocol used for resolution of Internet layer addresses into link layer addresses, a critical function in multiple-access networks.
ARP	Allocation and Retention Priority	Priority level assigned to bearer traffic. In a mobile network, ARP decides whether to accept a request to establish a bearer or reject the request when resources are limited.
ARQ	Automatic Repeat reQuest	ARQ is an error-control method for data transmission that uses acknowledgements and timeouts to achieve reliable data transmission over an unreliable service.
AS	Access Stratum	The AS is a functional layer in the Universal Mobile Telecommunications System (UMTS) and LTE wireless telecom protocol stacks between radio network and user equipment.
AS	Application Server	An AS is a component-based product that resides in the middle

Acronym	Abbreviation	Description
		tier of a server-centric architecture. It provides middleware services for security and state maintenance, along with data access and persistence.
BBF	Broadband Forum	The Broadband Forum is a non-profit industry consortium dedicated to developing broadband network specifications. Members include telecommunications networking and service provider companies, broadband device and equipment vendors, consultants and independent testing labs.
BBU	Building Baseband Unit	A Building Baseband Unit (BBU) is a device that transports a baseband frequency, usually from a Remote Radio Unit (RRU) or Active Antenna Unit (AAU) to which it may be tied through optical fiber. BBUs are used to route data to user endpoints, and in 5G technology, the BBU usually includes the Central Unit (CU) and Distributed Unit (DU).
BCCH	Broadcast Control Channel	BCCH is a logical broadcast channel used by the eNB in a Global System for Mobile Communications (GSM) network to send information about the identity of the network. This information is used by a mobile station to get access to the network.
BCH	Broadcast Channel	A BCH is a downlink channel in a Global System for Mobile Communications (GSM) that is used by the eNBs to provide signaling information to the mobile stations.
BER	Bit Error Rate	A BER is the percentage of bits that have errors relative to the total number of bits received in a transmission, usually expressed as ten to a negative power.
BLER	Block Error Rate	BLER is used in LTE/4G technology to identify the in-sync or out-of-sync status during radio link monitoring. It is a measure of how successful a data transmission is over the air at the Physical/MAC layer level.
BOSS	Business and Operation Support System	BOSS is a Baicells CloudCore application that enables operator administrators to add, modify, and delete subscriber information and service plans. Administrators also use BOSS to activate each Subscriber Identity Module (SIM) card, a chip that the end-user inserts in the UE to uniquely identify that subscriber and UE.
BPSK	Binary Phase Shift Keying	BPSK is a digital modulation scheme that conveys data by changing, or modulating, two distinct phases of a reference signal (the carrier wave).
BW	Bandwidth	BW refers to the range of frequencies within a given band used for transmitting a signal.
BWP	Bandwidth Part	The BWP concept is introduced in 5G New Radio (NR) as a means to reduce power consumption of devices using a bandwidth

Acronym	Abbreviation	Description
		adaptation strategy. A BWP may include all common Resource Blocks (RBs) within the channel bandwidth, or a subset of common RBs. A device can be configured with up to 4 DL and 4 UL BWP per carrier, but only a single BWP per carrier can be active in each direction. BWP selection occurs during UL grant by PDCCH.
CA	Carrier Aggregation	A wireless technology used in a two-carrier eNodeB that allows operators to aggregate contiguous and non-contiguous channels in order to provide one wider channel and more capacity per cell.
CBRS	Citizens Broadband Radio Service	A 150 MHz wide channel of the 3.5 GHz (3550-3700 MHz) band in the United States that was only recently made available to enterprises by the Federal Communication Commission (FCC). A new Spectrum Access System (SAS) technology is in development using highly automated methods to dynamically allocate the prized CBRS spectrum on a tiered, priority, licensed basis, while minimizing interference with other CBRS and incumbent users.
CBSD	CBRS Service Devices	The equipment certified to provide CBRS services.
CDMA	Code Division Multiple Access	CDMA is a wireless technology where several transmitters can send information simultaneously over a single communication channel.
CE	Customer Edge	The CE is the router at the customer's premises that is connected to the edge of a service provider's Internet Protocol (IP) / Multiprotocol Label Switching (MPLS) network. MPLS is a type of data-carrying technique for high performance telecommunications networks.
CEU	Common Equipment Unit	Generic term describing devices that share resources, in this case spectrum. The term is used in relation to Inter-Cell Interference Coordination (ICIC), a technique that applies restrictions to the radio resources to improve channel conditions that would otherwise cause interference.
CFI	Channel Format Indicator	In LTE, the CFI value defines the time span, in Orthogonal Frequency Division Multiplexing (OFDM) symbols, of the physical dedicated control channel transmission (the control region) for a downlink subframe.
CG	Charging Gateway	An open system that formats and integrates charging data records between standard and non-standard systems.
CINR	Carrier-to-Interference-plus-Noise Ratio	CINR is a measurement of multiple subcarriers; it reflects the signal quality of the LTE carrier system.
CN	Core Network	A CN is the central part of a telecommunications network that provides various services to customers who are connected

Acronym	Abbreviation	Description
		through the access network.
CoA	Care-of Address	The CoA identifies a mobile node's current point of attachment to the Internet and makes it possible to connect from a different location without changing the device's home address.
CP	Control Plane	The control plane defines the topology of a network and is responsible for establishing signaling links between routers. The control plane also exchanges routing protocol information used for optimal network data transfer and communication paths between network nodes.
CP	Cyclic Prefix	CP refers to the prefixing of a symbol with a repetition of the end. As a guard interval, it eliminates the inter-symbol interference from the previous symbol.
CPE	Customer Premise Equipment	CPE, also called User Equipment (UE), is the equipment used by a network subscriber to connect to the backhaul carrier network through the access network.
CPI	Certified Professional Installer	An installer who is trained and certified to install radio equipment for the Citizens Broadband Radio Service (CBRS) band.
CPRI	Common Public Radio Interface	CPRI is a high-speed proprietary serial interface used to translate radio signals from Remote Radio Units (RRUs) to the computing function in the Building Baseband Unit (BBU).
CQI	Channel Quality Indicator	The Channel Quality Indicator is a value that indicates how good or bad the communication channel quality is. The UE sends measurements (a combination of SNR, SINR, and SNDR) to the eNB which determine the Modulation and Coding Scheme (MCS) value that will be used in the downlink. The higher the value, the better the channel quality. The maximum value is 15.
CRC	Cyclic Redundancy Check	CRC is an error-detecting code commonly used in digital networks and storage devices to detect accidental changes to raw data.
C-RNTI	Cell Radio Network Temporary Identity	C-RNTI is a unique temporary identification used for identifying Radio Resource Control (RRC) connection and scheduling dedicated to a particular subscriber.
CS	Circuit-Switched	CS is a type of network in which a physical path is obtained for and dedicated to a single connection between two end-points in the network for the duration of the connection.
CSCF	Call Session Control Function	The CSCF is responsible for the signaling that controls the communication of Instant Messaging Service (IMS) user equipment with IMS enhanced services across different network accesses and domains.
CS-CN	Circuit Switched Core	In a CS-CN, the bit delay is constant during a connection. No

Acronym	Abbreviation	Description
	Network	circuit can be degraded by competing users because it is protected from use by other users until the circuit is released and a new connection is set up.
CSI	Channel State Information	CSI refers to known channel properties of a communications link. The information describes how a signal propagates from the transmitter to the receiver.
CU	Central Unit	The CU controls gNB functions such as user data transfer, mobility control, radio access network sharing, session management, and any other functions not allocated exclusively to the Distributed Unit (DU). In 5G technology, the Building Baseband Unit (BBU) contains the CU and DU.
DC	Dual Carrier	A wireless technology used in a two-carrier eNodeB that allows operators to configure the eNodeB as two independent carriers.
DCCH	Dedicated Control Channel	The DCCH is a single timeslot on a radio frequency (RF) carrier that is used to convey eight stand-alone dedicated control channels.
DCI	Downlink Control Information	In LTE, DCI is based upon a process defined as a blind decoding, which depends on several decoding attempts on several Physical Dedicated Control Channels (PDCCH) candidate locations for several defined DCI formats.
DFT	Discrete Fourier Transform	The DFT converts a finite sequence of equally-spaced samples of a radio signal into an equivalent length sequence of equally-spaced samples of the discrete-time Fourier transform (DTFT), which is a complex-valued function of frequency.
DHCP	Dynamic Host Configuration Protocol	DHCP is a network protocol that enables a server to assign an IP address automatically to a computer from a defined range of numbers configured for a given network.
DL	Downlink	DL is the direction of traffic flow from the eNB transmitting to one or more subscribers. Uplink (UL) is the opposite direction, traffic flowing from the subscriber's customer premise or user equipment to the eNB.
DL-SCH	Downlink Shared Channel	The DL-SCH is the main data bearing channel, which is allocated to users on a dynamic and opportunistic basis.
DNS	Domain Name System	A directory of Internet domain names that are translated into IP addresses.
DP	Domain Proxy	An Internet service used to protect your domain registrant details.

Acronym	Abbreviation	Description
DRA	Dynamic Resource Allocation	DRA is an essential technique to exploit the time-space-frequency variation in wireless channels by distributing precious radio resources, such as spectrum and power, either to maximize or minimize the network performance metrics.
DRX	Discontinuous Reception	DRX is a method used in communications to conserve energy use. The user equipment and the network negotiate phases in which data transfer occurs. At other times the device enters a low power state.
DS	Direct Spread	DS systems transmit the message bearing signals using a bandwidth that is more than the bandwidth actually needed by the message signal.
DSCP	Differentiated Service Code Point	DSCP is a field in an IP packet that enables various levels of service to be assigned to network traffic. This is achieved by marking each packet on the network with a DSCP code and appropriating to it the corresponding level of service.
DST	Daylight Saving Time	Originally started to conserve energy, DST is the practice of advancing clocks (usually one hour) during summer months so that evening daylight lasts longer.
DTCH	Dedicated Traffic Channel	A DTCH is an uplink or downlink communication channel that is only accessible by one device to transfer user data.
DU	Distributed Unit	In 5G technology, the Building Baseband Unit (BBU) contains the Central Unit (CU) and DU. The gNB functions that the DU manages are allocated and controlled by the CU.
DTX	Discontinuous Transmission	DTX is a method of momentarily powering down a wireless device when there is no data throughput.
EARFCN	E-UTRA Absolute Radio Frequency Channel Number	A unique number given to each radio channel in Global System for Mobile Communications (GSM). The EARFCN is used to calculate the exact frequency of the radio channel.
ECM	Evolved Packet System (EPS) Connection Management	ECM is the process of identifying, setting up, controlling, and removing a transmission path between two or more points in the Universal Mobile Telecommunications System (UMTS) evolved packet system.
eCPRI	enhanced Common Public Radio Interface	eCPRI is a high-speed standards-based interface that allows higher network throughput with less optical fiber to meet 5G requirements for bandwidth by assigning to the Remote Radio Unit (RRU) some functionality that was traditionally performed by the Building Baseband Unit (BBU). eCPRI is a standards-based interface and plays an essential role in Open Radio Access Networks (O-RANs).
EIRP	Effective Isotropic Radiated	EIRP is the product of transmitter power and antenna gain in a

Acronym	Abbreviation	Description
	Power	certain direction relative to an isotropic antenna. You could use the EIRP value, for example, to determine if the radio is within regulatory values.
EMM	Enterprise Mobility Management	EMM refers to the people, processes, and technology focused on managing devices, wireless networks, and other computing services in a business context.
eNB	E-UTRAN Node B	In LTE, the eNB is a base station that manages radio resources and mobility in the cell and sector to optimize all the user communications in a flat radio network structure.
EPC	Evolved Packet Core	EPC is a framework for providing converged voice and data on a fourth-generation (4G) LTE network.
EPC-U	Evolved Packet Core (EPC) User Plane	As part of the 3GPP Standard Release 8, the user data (user plane) is separated from the signaling (control plane). EPC-U refers to the user plane.
EPS	Evolved Packet System	EPS, also called Evolved Packet Core (EPC), is the central network portion of the Universal Mobile Telecommunications System (UMTS) LTE mobile communication system. The packet system primarily transfers packet data between edge networks and the radio access network (RAN).
E-RAB	E-UTRAN Radio Access Bearer	The concatenation of an S1 bearer and the corresponding radio bearer. E-RAB transports the packets of an EPS bearer between a UE and the EPC, and allows the UE to be tracked as it moves.
ESP	Encapsulating Security Payload	ESP is a protocol within the Internet Protocol Security (IPSec) standard for providing authentication, integrity, and confidentiality of network packet data in IPv4 and IPv6 networks.
EUD	End User Device	Term used for CBRS certified user equipment.
E-UTRA	Evolved Universal Mobile Telecommunications System (UMTS) Terrestrial Radio Access	E-UTRA is the air interface of 3GPP's LTE upgrade path for networks.
E-UTRAN	Evolved Universal Mobile Telecommunications System (UMTS) Terrestrial Radio Access Network	E-UTRAN is the combination of E-UTRA, user equipment, and eNBs.
EV-DO	Evolution for Data Optimized	EV-DO is the third-generation (3G) telecommunications standard for the wireless transmission of data through radio signals, typically for broadband Internet access.
FA	Foreign Agent	An FA is a router serving as a mobility agent for a mobile node.
FDD	Frequency Division Duplex	FDD is a method for establishing a full-duplex communications link that uses two different radio frequencies for transmitter (Tx)

Acronym	Abbreviation	Description
		and receiver (Rx) operation.
FDM	Frequency Division Multiplexing	FDM is a technique for sending two or more signals over the same radio channel. Each signal is transmitted as a unique range of frequencies within the bandwidth of the channel as a whole, enabling several signals to be transmitted simultaneously.
FDMA	Frequency Division Multiple Access	FDMA is a channel access method used in multiple-access protocols as a channelization protocol. FDMA gives users an individual allocation of one or several frequency bands, or channels.
FEC	Forward Error Correction	FEC is a method of obtaining error control in data transmission in which the source (transmitter) sends redundant data and the destination (receiver) recognizes only the portion of the data that contains no apparent errors.
FFT	Fast Fourier Transform	The FFT is a mathematical method for transforming a function of time into a function of frequency. Sometimes the method is described as transforming from the time domain to the frequency domain.
FMC	Fixed Mobile Convergence	FMC is the trend towards seamless connectivity between fixed and wireless telecommunications networks.
FQDN	Fully Qualified Domain Name	Also known as an absolute domain name, FQDN is a domain name for a specific computer or host on the Internet that specifies its exact location in the tree hierarchy of the Domain Name System (DNS).
FR1	Frequency Range 1	One of two frequency ranges available for 5G technology. The bands in FR1 are intended to carry much of the traditional cellular mobile communications traffic. Networks operating on FR1 may not provide the optimum 5G performance, but they are able to provide a good balance between range and performance. The FR1 range is below 6 GHz.
FR2	Frequency Range 2	One of two frequency ranges available for 5G technology. The FR2 range is above 24.250 GHz, and the higher frequency bands are aimed at providing short range very high data rate capability for the 5G radio. With 5G wireless technology anticipated to carry much higher speed data, the additional bandwidth of these higher frequency bands will be needed.
GBIC	Gigabit Interface Converter	GBIC is a standard for transceivers, commonly used with Gigabit Ethernet and fiber channel. By offering a standard, hot swappable electrical interface, one gigabit port can support a wide range of physical media, from copper to long-wave, single-mode optical fiber, at lengths of hundreds of kilometers.

Acronym	Abbreviation	Description
GBR	Guaranteed Bit Rate	GBR is the minimum bit rate requested by an application. In LTE, minimum GBR bearers and non-GBR bearers may be provided.
GGSN	Gateway GPRS Support Node	A GGSN is part of the core network that connects Global System for Mobile Communications (GSM) based third-generation (3G) networks to the Internet.
GI	Guard Interval	GIs are used to ensure that distinct transmissions do not interfere with one another. These transmissions may belong to different users (as in Time Division Multiple Access, or TDMA) or to the same user (as in Orthogonal Frequency Division Multiplexing, or OFDM).
gNB	Next Generation Node B	In New Radio (NR) technology, the gNB is a base station that manages radio resources and mobility in the cell and sector to optimize all the user communications in a 5G wireless network structure.
GP	Guard Period	In Time Division Multiple Access (TDMA), each user's timeslot *ends* with a GP to avoid data loss and to reduce interference to the following user, caused by propagation delay. Thus, a user's timeslot is protected from interference from the preceding user.
GPRS	General Packet Radio Service	GPRS is a packet-oriented mobile data service on the second-generation (2G) and third-generation (3G) cellular communication system's Global System for Mobile Communications (GSM).
GPS	Global Positioning System	A satellite navigation system used to determine the ground position of an object.
GRE	Generic Routing Encapsulation	A tunneling protocol developed by Cisco Systems that can encapsulate a wide variety of network layer protocols inside virtual point-to-point or point-to-multipoint links over an Internet Protocol network.
GSM	Global System for Mobile Communications	A digital mobile telephony system which uses a variation of Time Division Multiple Access (TDMA) technology. GSM is the most widely used of the 3 digital wireless telephony technologies (TDMA, GSM, and CDMA) in Europe and other parts of the world.
GT	Guard Time	GT is the interval left vacant on a transmission channel that can be used for synchronization and/or compensating for a signal distortion.
GTP	General Packet Radio Service (GPRS) Tunneling Protocol	GTP is a group of IP-based communications protocols used to carry General Packet Radio Service (GPRS) within Global System for Mobile Communications (GSM), Universal Mobile Telecommunications System (UMTS), and Long-Term Evolution (LTE) networks.

Acronym	Abbreviation	Description
GTP-U	General Packet Radio Service (GPRS) Tunneling Protocol (GTP) User Plane	GTP-U is used for carrying user data within the General Packet Radio Service (GPRS) core network, and between the radio access network (RAN) and the core network (CN).
GUMMEI	Globally Unique MME Identity	The GUMMEI is constructed from the Mobile Country Code (MCC), Mobile Network Code (MNC), and Mobility Management Entity (MME) Identifier (MMEI).
GUTI	Globally Unique Temporary User Equipment (UE) Identity	GUTI is allocated to the user equipment (UE) by the Mobility Management Entity (MME) and has two components - the Globally Unique MME Identity (GUMMEI) and the MME temporary mobile subscriber identity (M-TMSI). While the GUMMEI identifies the MME, the M-TMSI identifies the UE within the MME.
GW	Gateway	A GW refers to a piece of networking hardware that is equipped for interfacing with another network that uses different protocols.
HA	Home Agent	An HA is a router on a mobile node's home network that maintains information about the device's current location, as identified in its care-of address.
HA	High Availability	HA indicates 100% operation, a never-failing component or system.
H-ARQ	Hybrid ARQ	H-ARQ is a combination of high-rate, forward error-correcting code and Automatic Repeat Request (ARQ) error control. In standard ARQ, redundant bits are added to data to be transmitted using an error-detecting code such as a cyclic redundancy check.
HDTV	High-Definition Television	HDTV is a television display technology that provides picture quality similar to 35mm film.
H-FDD	Half-Frequency Division Duplex	H-FDD requires that two communication parties take turns transmitting data over two separate frequency bands or channels.
HLR	Home Location Register	HLR is the main database of permanent subscriber information for a network. The HLR is an integral component of mobile networks.
HO	Handoff or Handover	HO refers to the process of transferring an ongoing call or data session from one channel (eNB 1) connected to the core network to another channel (eNB 2).
HPLMN	Home Public Land Mobile Network (PLMN)	The HPLMN identifies the public network in which the subscriber's profile is held. Users roaming to other networks will receive subscription information from the HPLMN.
HSDPA	High Speed Downlink	HSDPA is an enhanced third-generation (3G) communications

Acronym	Abbreviation	Description
	Packet Access	protocol which allows networks based on Universal Mobile Telecommunications System (UMTS) to have higher data speeds.
HSPA	High Speed Packet Access	HSPA is a telecommunications technology that allows for data transmission speeds up to 21 Mbps. HSPA+ (also called Evolved HSPA or 4G) is a further evolution of HSPA that offers data speeds of up to 42 Mbps.
HSS	Home Subscriber Server	HSS is the master user database that supports Internet Protocol Multimedia Subsystem (IMS) network entities that handle data sessions.
HSUPA	High Speed Uplink Packet Access	HSUPA is an amalgamation of two mobile protocols, High Speed Downlink Packet Access (HSDPA) and HSUPA, that extends and improves the performance of existing third-generation (3G) mobile networks utilizing Wideband Code Division Multiple Access (WCDMA) protocols.
ICD	Initial Commercial Deployment	Term used for the initial trials of CBRS/SAS.
ICI	Inter-Carrier Interference	ICI is an impairment known to degrade performance of Orthogonal Frequency Division Multiplexing (OFDM) transmissions. It arises from carrier frequency offsets (CFOs), from the Doppler spread due to channel time variation, and, to a lesser extent, from sampling frequency offsets (SFOs).
ICIC	Inter-Cell Interference Coordination	ICIC techniques apply restrictions to the radio resource management (RRM) block, improving favorable channel conditions across subsets of users that are severely impacted by the interference, and thus attaining high spectral efficiency.
IDFT	Inverse Discrete Fourier Transform	IDFT is a Fourier series, using the Discrete-Time Fourier Transform (DTFT) samples as coefficients of complex sinusoids at the corresponding DTFT frequencies. It has the same sample-values as the original input sequence.
IDU	Indoor Unit	Refers to indoor user equipment.
IEEE	Institute of Electrical and Electronics Engineers	The IEEE is a technical professional organization whose purpose is to educate and advance electrical and electronic engineering, telecommunications, computer engineering, and allied disciplines.
IETF	Internet Engineering Task Force	The IETF is the body that defines standard Internet operating protocols such as TCP/IP.
IFFT	Inverse Fast Fourier Transform	An IFFT algorithm computes the Discrete Fourier Transform (DFT) of a sequence, or its inverse.
IMEI	International Mobile Equipment Identity	IMEI is a 15- or 17-digit code that uniquely identifies mobile phone sets.

Acronym	Abbreviation	Description
IMS	Internet Protocol (IP) Multimedia Subsystem	The IMS or IP Multimedia Core Network Subsystem is an architectural framework for delivering IP multimedia services.
IMSI	International Mobile Subscriber Identity	An IMSI is used to identify the user of a cellular network and is a unique identification associated with all cellular networks.
IMT	International Mobile Telecommunication	IMT is a set of requirements issued by the International Telecommunication Union (ITU-R) in 2008 for what is marketed as fourth-generation (4G) mobile phone and Internet access service.
IN	Intelligent Networks	An IN is a telephone network architecture in which the service logic for a call is located separately from the switching facilities, allowing services to be added or changed without having to redesign the switching equipment.
IP	Internet Protocol	IP is the protocol by which data is sent from one computer to another over the Internet.
IPSec	Internet Protocol Security	IPSec is a protocol suite for secure Internet protocol communications that works by authenticating and encrypting each IP packet of a communication session.
IPv4	Internet Protocol Version 4	IPv4 is the fourth revision of the Internet protocol (IP) and a widely-used protocol in data communications over various kinds of networks. IPv4 is a connectionless protocol used in packet-switched layer networks, such as Ethernet.
ISI	Inter-Symbol Interference	ISI is a form of distortion of a signal in which one symbol interferes with subsequent symbols. This is an unwanted phenomenon, as the previous symbols have a similar effect as noise, thus making the communication less reliable.
ISUP	Integrated Services Digital Network (ISDN) Signaling User Part	ISUP is the protocol used to support the signaling necessary to provide voice and non-voice services in telephone communications. It is an extension of Signaling System 7 (SS7), used as the interface protocol for voice and data within, and for ingression or egression to/from, the Public Switched Telephone Network (PSTN).
ITU	International Telecommunication Union	The ITU is an agency of the United Nations whose purpose is to coordinate telecommunication operations and services throughout the world.
KBPS	Kilobits per Second	In the U.S., Kbps means thousands of bits per second and is a measure of bandwidth on a data transmission medium.
KHz	Kilohertz	KHz is a measure of frequency equivalent to 1,000 cycles per second.
KPI	Key Performance Indicator	In the context of a telecommunications network, a KPI is a quantifiable measure used to evaluate the success of network

Acronym	Abbreviation	Description
		performance (speed, quality). Typically, network operators will monitor several types of KPIs to determine whether changes may be needed to improve network performance.
L1	Layer 1	In the seven-layer Open Systems Interconnection (OSI) model of computer networking, the physical layer (PHY), or L1, is the first and lowest layer. The physical layer defines the means of transmitting raw bits rather than logical data packets over a physical link connecting network nodes.
L2	Layer 2	The data link layer, or L2, is the second layer of the seven-layer Open Systems Interconnection (OSI) model of computer networking. L2 is the protocol layer that transfers data between adjacent network nodes in a wide area network (WAN) or between nodes on the same local area network (LAN) segment.
L3	Layer 3	The network layer, or L3, is the third layer of the seven-layer Open Systems Interconnection (OSI) model of computer networking. L3 is responsible for packet forwarding, including routing through intermediate routers, since it knows the address of neighboring network nodes. It also manages quality of service (QoS), and recognizes and forwards local host domain messages.
LAC	Location Area Code	The geographical location of an eNB. Used by mobile devices in determining the best serving eNB.
LB	Load Balancing	In computing, LB distributes workloads across multiple computing resources, such as computers, a computer cluster, network links, central processing units, or disk drives. Load balancing aims to optimize resource use, maximize throughput, minimize response time, and avoid overload of any single resource.
LCR	Low Chip Rate	Universal Terrestrial Radio Access (UTRA) Time Division Duplexing (TDD) 1.28 Megachips per Second (MCPS) LCR, or UTRA-TDD LCR, is an air interface standard found in Universal Mobile Telecommunications System (UMTS) mobile networks in China as an alternative to Wideband Code Division Multiple Access (WCDMA).
LI	Lawful Intercept	LI describes obtaining communications network data pursuant to lawful authority for the purpose of analysis or evidence. Such data generally consists of signaling or network management information, or, in fewer instances, the content of the communications.
LTE	Long-Term Evolution	LTE is a standard for high-speed wireless communication for mobile phones and data terminals. It is based on the Global System for Mobile Communications (GSM) / Enhanced Data

Acronym	Abbreviation	Description
		Rates for GSM Evolution (EDGE) and Universal Mobile Telecommunications System (UMTS) / High Speed Packet Access (HSPA) network technologies. LTE increases the capacity and speed using a different radio interface together with core network improvements.
MAC	Medium Access Control	In the IEEE 802 reference model of computer networking, the media access control (MAC) layer is the lower sublayer of the data link layer (Layer 2) of the seven-layer Open Systems Interconnection (OSI) model.
MAC	Message Authentication Code	The MAC is used to authenticate devices based on their physical MAC addresses. It is an early form of filtering. MAC authentication requires that the MAC address of a machine must match a manually defined list of addresses.
MBMS	Multimedia Broadcast Multicast Service	MBMS is a point-to-multipoint interface specification for Third-Generation Partnership Project (3GPP) cellular networks. The specification is designed to provide efficient delivery of broadcast and multicast services, both within a cell as well as within the core network.
MBR	Maximum Bit Rate	The MBR is the maximum number of bits that can be conveyed or processed per unit of time.
MBSFN	Multimedia Broadcast Multicast Service (MBMS) Single Frequency Network	MBSFN is a transmission mode which exploits LTE's Orthogonal Frequency Division Multiplexing (OFDM) radio interface to send multicast or broadcast data as a multicell transmission over a synchronized single-frequency network.
MCC	Mobile Country Code	An MCC is used to uniquely identify the operator of a telecommunications network. MCC + MNC = PLMN.
MCCH	Multicast Control Channel	The MCCH is a sublayer of Layer 2 protocol of Radio Interface Protocol Architecture as per the Broadcast/Multicast Control Standard (BMC-STD). It exists in the user plane only and is located above the Radio Link Control, a Layer 2 function responsible for mapping logical channels.
MCH	Multicast Channel	An MCH (one-to-many or many-to-many distribution) is a group communication where information is addressed to a group of destination computers simultaneously.
MCM	Multi-Carrier Modulation	MCM is a method of transmitting data by splitting it into several components, and sending each of these components over separate carrier signals. The individual carriers have narrow bandwidth, but the composite signal can have broad bandwidth.
MCS	Modulation and Coding Scheme	MCS is a numerical index based on Orthogonal Frequency Division Multiplexing (OFDM) that represents the maximum data

Acronym	Abbreviation	Description
		rate that can be achieved over-the-air. The MCS index value comprises several variables, including channel width, modulation type, coding rate, and spatial streams. Link to MCS index for 802.11n and 802.11ac: *http://mcsindex.com/*
ME	Mobile Equipment	ME is the device that the customer uses to originate and receive calls in a wireless network, or a radio terminal used for radio communication over the Um* interface. *It is called Um because it is the mobile analog to the U interface of an Integrated Services Digital Network (ISDN).
MGCF	Media Gateway Control Function	The MGCF controls the resources in media gateways with an H.248 interface.
MGW	Media Gateway	An MGW is a translation device or service that converts media streams between disparate telecommunications technologies such as Plain Old Telephone Service (POTS), Signaling System 7 (SS7), Next-Generation networks (2G, 2.5G, and 3G radio access networks), or private branch exchange (PBX) systems.
MHz	Megahertz	A MHz is one million hertz, as a measure of the frequency of radio transmissions or the clock speed of a computer.
MIB	Master Information Block	MIB is a particularly important message or information that is broadcasted by the Long-Term Evolution (LTE) eNB, irrespective of any users' presence. The MIB is first among the other system information blocks (SIB), which are also broadcasted by the eNB.
MIMO	Multiple Input Multiple Output	MIMO is an antenna technology for wireless communications in which multiple antennas are used at both the source and the destination. The antennas at each end of the communications circuit are combined to minimize errors and optimize data speed.
MIP	Mobile IP	MIP is an Internet Engineering Task Force (IETF) standard communications protocol that is designed to allow mobile device users to move from one network to another while maintaining a permanent IP address.
MISO	Multiple Input Single Output	MISO is an antenna technology for wireless communications in which multiple antennas are used at the source (but not at the destination). The antennas are combined to minimize errors and optimize data speed.
MMD	Multimedia Domain	MMD is essentially a version of the Third-Generation Partnership Project (3GPP) Internet Protocol (IP) Multimedia Subsystem (IMS) architecture that has been adapted by 3GPP2. In Code Division Multiple Access (CDMA) networks, the terms IMS and MMD are often used interchangeably, even though, technically, IMS is a subset of MMD.

Acronym	Abbreviation	Description
MME	Mobility Management Entity	The Long-Term Evolution (LTE) MME is responsible for initiating paging and authentication of mobile devices.
MMEGI	MME Group Identity	A group of Mobility Management Entities (MMEs) is assigned an MMEGI, which works along with Mobility Management Entity Code (MMEC) to make an MME identifier (MMEI). An MMEI uniquely identifies the MME within a network.
MML	Man-Machine Language	MML is a standardized computing interface language for managing telecommunications network devices from a console.
MMS	Multimedia Messaging Service	MMS is a standard way to send messages that include multimedia content over a network.
MNC	Mobile Network Code	Uniquely identifies a mobile network operator (carrier) using the GSM (including GSM-R), UMTS, and LTE public land mobile networks.
MS	Mobile Station	An MS comprises all user equipment and software needed for communication with a mobile network.
MSC	Mobile Switching Center	The MSC is a second-generation (2G) core network element which controls the network switching subsystem elements. Alternatively, or adaptively, Maximum Segment Size (MSS) can be used in Global System for Mobile Communications (GSM) networks as well if the manufacturer has implemented support for GSM networks in the MSS.
MTCH	Multimedia Broadcast Multicast Service (MBMS) Traffic Channel	MTCHs are the channels used to transport multimedia content from one device to another.
MTU	Maximum Transmission Unit	The size of the largest network layer protocol data unit that can be communicated in a single network transaction.
MU-MIMO	Multi-User Multiple Input Multiple Output	Routers that can fairly distribute bandwidth amongst multiple devices connected to it to ensure each device receives data at the same time with equal priority and no impact to data transmission speeds. However, in order to communicate with one another, both the router and the receiving devices need to have full MU-MIMO compatibility in order to communicate with one another. Currently, MU-MIMO routers are only able to broadcast over the newer 802.11ac wireless protocol, a signal that many devices are currently unable to decode.
NACK	Negative Acknowledgement	NACK is a signal used in digital communications to ensure that data is received with a minimum of errors. Sometimes the NACK signal is called a rejection (REJ).
NAS	Non-Access Stratum	NAS is a functional layer in Universal Mobile Telecommunications System (UMTS) and Long-Term Evolution (LTE) wireless telecom

Acronym	Abbreviation	Description
		protocol stacks between the core network and user equipment. This layer establishes communication sessions and maintains continuous communications with the user equipment as it moves.
NBM	Network-Based Mobility	An alternate from host-based mobility, NBM requires no localized mobility management support on the mobile nodes and is independent of global mobility management protocol, resulting in modular mobility management architecture.
NFV	Network Function Virtualization	NFV is a network architecture concept that uses the technologies of information technology (IT) virtualization to virtualize entire classes of network node functions into building blocks that may connect, or chain, together to create communication services.
NG	Next Generation	Next generation radio access network being introduced with 5G wireless technology (also see OpenRAN).
NMS	Network Management System	An NMS is a set of hardware and/or software tools that allow an information technology (IT) professional to supervise the individual components of a network within a larger network management framework. In the context of a Baicells network, the Operations Management Console (OMC) is a network management application that may communicate with the LTE NMS through the northbound interface.
NR	New Radio	NR is a new Radio Access Technology (RAT) and global standard for air interface (radio access) of 5G wireless mobile networks.
NSA	Non-Stand Alone	5G New Radio (NR) deployment mode where 5G services are delivered through a combination of 4G and 5G networks. NSA requires an existing LTE infrastructure to perform control functions such as signalling to order to connect 5G devices where higher data delivery requirements are met.
NTP	Network Time Protocol	The network operator may use one or more NTP servers to provide correct time-of-day to the eNBs and other equipment.
ODU	Outdoor Unit	Refers to outdoor user equipment.
OFDM	Orthogonal Frequency Division Multiplexing	OFDM is a frequency division multiplexing scheme used as a digital multi-carrier modulation method. Many closely spaced orthogonal sub-carrier signals are used to carry data on several parallel data streams or channels.
OFDMA	Orthogonal Frequency Division Multiple Access	OFDMA is a multi-user version of OFDM. Multiple access is achieved in OFDMA by assigning subsets of subcarriers to individual users.
OMC	Operations Management Console	The Baicells OMC is a Cloud-based network management application with a graphical user interface (GUI) that enables

Acronym	Abbreviation	Description
		operator administrators to configure and manage the Baicells eNBs and UEs.
OPC	Object Linking and Embedding (OLE) for Process Control	Open Platform Communications (OPC) and OLE for Process Control is a series of standards for industrial telecommunications, which enable real-time plant data between control devices from different manufacturers.
O-RAN	Open Radio Access Network	O-RANs are standardized by the O-RAN Alliance, and are radio access networks that use open and standards-based interfaces so that operators can source the radio, baseband, and software from different vendors with plug-and-play interoperability. An open network disaggregates software applications from the underlying hardware infrastructure and uses standards-based eCPRI interfaces.
O-RAN	O-RAN Alliance	The O-RAN Alliance was formed in 2018 as a worldwide carrier-led effort that seeks to define new radio architectures and focuses on vendor interoperability.
OSS	Operations Support System	An OSS is a set of programs that help a communications service provider monitor, control, analyze, and manage a telephone or computer network. The Baicells OSS, or BOSS, allows operators to manage mobile subscriber information.
PAPR	Peak-to-Average Power Ratio	PAPR is the relationship between the maximum power of a sample in a transmitted Orthogonal Frequency Division Multiplexing (OFDM) symbol and its average power.
PBCH	Physical Broadcast Channel	The PBCH carries system information for user equipment requiring access to the network. It only carries what is termed Master Information Block, or MIB, messages.
PCC	Policy and Charging Control	Network function that enables application servers to dynamically control the QoS and charging requirements of the services they deliver. Also improves roaming services. PCC is necessary for operators to differentiate and monetize LTE services.
PCC	Primary Carrier Component	In Carrier Aggregation (CA), the primary component carrier is complemented with one or several secondary component carriers (SCC). The PCC handles all the control signaling while the SCC is used to increase the data throughput.
PCCH	Paging Control Channel	PCCH is a downlink channel that transfers paging information. This channel is used when the network does not know the location cell of the user equipment (UE), or the UE is in the cell connected state but utilizing UE sleep mode procedures.
PCEF	Policy and Charging Enforcement Function	A serving gateway (SGW) function that enforces gating and QoS for individual IP flows.

Acronym	Abbreviation	Description
Pcell	Primary Cell	Carrier 1 of a two-carrier eNodeB. The primary cell operates on the primary frequency, in which the UE performs the initial connection establishment, initiates the connection re-establishment procedure, or is used in a handover state.
PCFICH	Physical Control Format Indicator Channel	The PCFICH is one of the control channels that works at Layer 1, the physical layer. It is used to dynamically indicate the number of symbols to be used for the Physical Dedicated Control Channel (PDCCH).
PCH	Paging Channel	The PCH is the downlink transport channel in Universal Mobile Telecommunications System (UMTS) that carries the Paging Control Channel (PCCH). It is used to broadcast paging and notification messages in a cell. The PCH is transported in the Secondary Common Control Physical Channel (S-CCPCH).
PCI	Physical Cell Identifier	PCI, or Layer 1 identity, is an essential configuration parameter of a radio cell that uniquely identifies each cell site in the wireless network. PCI planning is crucial for quality of service (QoS) and somewhat similar to scrambling code allocation in Wideband Code Division Multiple Access (WCDMA) air interface standards.
PCRF	Policy and Charging Rule Function	PCRF is the software node designated in real-time that provides policy control and flow-based charging control decisions.
PDCCH	Physical Dedicated Control Channel	The PDCCH carries a message called Downlink Control Information (DCI), which includes resource assignments for user equipment.
PDCP	Packet Data Convergence Protocol	PDCP is specified by the Third-Generation Partnership Project (3GPP) in TS 25.323 for Universal Mobile Telecommunications System (UMTS) and TS 36.323 for Long-Term Evolution (LTE) networks. The PDCP is in the radio protocol stack in the UMTS and LTE air interface on top of the Radio Link Control (RLC) layer.
PDN	Packet Data Network	The PDN is specified and identified by the Access Point Name (APN), or eNB, to allow a mobile data user to communicate with the network.
PDP	Packet Data Protocol	PDPs are network layer (Layer 3) addresses. General Packet Radio Service (GPRS) systems support both X.25 and Internet Protocol (IP) network layer protocols. Therefore, PDP addresses can be X.25, IP, or both.
PDP	Policy Decision Point	PDP is a point in the network which evaluates digital access requests against authorization policies before issuing access decisions.
PDSCH	Physical Downlink Shared Channel	The PDSCH is the main data bearing channel which is allocated to users on a dynamic and opportunistic basis. The PDSCH also is

Acronym	Abbreviation	Description
		used to transmit broadcast information not transmitted on the Physical Broadcast Channel (PBCH) which includes System Information Blocks (SIB), paging, and Radio Resource Control (RRC) signaling messages.
PDU	Protocol Data Unit	A PDU is information that is delivered as a unit among peer entities of a network and that may contain control information, such as address information or user data.
P-GW	PDN Gateway	The P-GW communicates with the outside world, i.e., packet data networks (PDN), using a Silicon Graphics International (SGI) interface. Each PDN is identified by an access point (AP), or eNB, name.
PHICH	Physical Hybrid Automatic Repeat Request (ARQ) Indicator Channel	The PHICH in the downlink carries Hybrid ARQ acknowledgements/negative acknowledgements (ACK/NACK) for uplink data transfers. PHICHs are in the first Orthogonal Frequency Division Multiplexing (OFDM) symbol of each subframe.
PHY	Physical Layer	The PHY layer is the first layer of the Open Systems Interconnection (OSI) Model, or Layer 1. The physical layer deals with bit-level transmission between different devices and supports electrical or mechanical interfaces connecting to the physical medium for synchronized communication.
PLMN	Public Land Mobile Network	A PLMN is any wireless communications system intended for use by terrestrial subscribers in vehicles or on foot. Such a system can stand alone, but often it is interconnected with a fixed system such as the public switched telephone network.
PMCH	Physical Multicast Channel	The PMCH is a transmission channel that is used to transfer information from one source to one or more devices (multiple receiving points) that are operating within a radio coverage area. The PMCH carries the multicast channel (MCH).
PMIP	Proxy Mobile IP (MIP)	PMIP is a network-based mobility management protocol standardized by Internet Engineering Task Force (IETF) and specified in RFC 5213.
PN	Pseudo-Random Noise	PN is a signal noise which satisfies one or more of the standard tests for statistical randomness. Although it seems to lack any definite pattern, PN consists of a deterministic sequence of pulses that repeat after a certain period.
PRACH	Physical Random-Access Channel	PRACH is a Layer 1 channel used by wireless terminals to access the mobile network, e.g., Time Division, Frequency Division, or Code Division Multiple Access (TDMA, FDMA, CDMA based network) for call setup and bursty data transmission.

Acronym	Abbreviation	Description
PRB	Physical Resource Block	The PRB is an LTE specification that allocates users a specific number of subcarriers for a predetermined amount of time.
PRI	Primary Rate Interface	The PRI is a telecommunications interface standard used on an Integrated Services Digital Network (ISDN) for carrying multiple Digital Signal Zero (DS0) voice and data transmissions between the network and a user.
P-RNTI	Paging Radio Network Temporary Identity	The P-RNTI is used by the user equipment to receive paging messages, and is carried by the Paging Control Channel (PCCH) logical channel, which is mapped to the Paging Channel (PCH) transport channel. The PCH transport channel is mapped to the Physical Downlink Shared Channel (PDSCH) physical channel.
P-SCH	Primary Synchronization Channel	The P-SCH is a code that is repeated at the beginning of each time slot. The same code is used by all the cells and enables the user equipment to detect the existence of the Universal Mobile Telecommunications System (UMTS) cell and to synchronize on the time slot boundaries.
PSD	Power Spectral Density	Describes the distribution of power into frequency components of a signal. Any physical signal can be decomposed into a number of discrete frequencies, or a spectrum of frequencies, over a continuous range.
PSDU	Protocol Service Data Unit	The PSDU is referred to in the Institute of Institute of Electrical and Electronics Engineers (IEEE) 802.11 standard as the Media Access Control Packet Data Unit (MPDU) with an additional Physical Layer Convergence Procedure (PLCP) preamble and header. The term typically references physical layer operations.
PSTN	Public Switched Telephone Network	The PSTN is the aggregate of the world's circuit-switched telephone networks that are operated by national, regional, or local operators, providing infrastructure and services for public telecommunications.
PUCCH	Physical Uplink Control Channel	The PUCCH is used to carry Uplink Control Information (UCI). Long-Term Evolution (LTE) user equipment can never transmit both PUCCH and Physical Uplink Shared Channel (PUSCH) during the same subframe.
PUSCH	Physical Uplink Shared Channel	The PUSCH carries user data. It supports Quadrature Phase Shift Keying (QPSK) and 16 Quadrature Amplitude Modulation (QAM), with 64QAM being optional.
QAM	Quadrature Amplitude Modulation	QAM is both an analog and a digital signal modulation scheme. It conveys two analog message signals, or two digital bit streams, by modulating the amplitudes of two carrier waves, using the amplitude-shift keying (ASK) digital modulation scheme or

Acronym	Abbreviation	Description
		amplitude modulation (AM) analog modulation scheme.
QCI	Quality of Service (QoS) Class Identifiers	QCI is a mechanism used in Third-Generation Partnership Project (3GPP) Long-Term Evolution (LTE) networks to ensure bearer traffic is allocated appropriate quality of service (QoS).
QoS	Quality of Service	QoS refers to the capability of a network to provide better service to selected network traffic. Various technologies, including Frame Relay, Asynchronous Transfer Mode (ATM), Ethernet, 802.1 networks, Synchronous Optical Networking (SONET), and Internet Protocol (IP) routed networks are capable of providing various levels of QoS.
QPSK	Quadrature Phase Shift Keying	QPSK is a form of Phase Shift Keying (PSK) in which two bits are modulated at once, selecting one of four possible carrier phase shifts (0, 90, 180, or 270 degrees). QPSK allows the signal to carry twice as much information as ordinary PSK using the same bandwidth.
RACH	Random Access Channel	RACH is a shared channel used by wireless terminals to access the mobile network for call setup and bursty data transmission.
RAN	Radio Access Network	A RAN is part of a mobile telecommunications system. Conceptually, the RAN resides between a mobile device and the core network.
RAT	Radio Access Technology	RAT is the underlying physical connection method for a radio-based communication network.
RB	Radio Bearer	An RB is a channel offered by Layer 2 to higher Open Systems Interconnection (OSI) layers for the transfer of either user or control data. In other words, Layer 2 offers to upper layers the service of information transmission between the user's equipment and the Universal Terrestrial Radio Access Network (UTRAN) by means of the RBs and signaling RBs.
RB	Resource Block	An RB is a time and frequency resource that occupies 12 subcarriers (12×15 KHz = 180 KHz) and one slot (= 0.5 ms). RBs are allocated in pairs by the scheduler (then referred to as scheduling blocks).
RF	Radio Frequency	RF is any of the electromagnetic wave frequencies that lie in the range extending from approximately 3 KHz to 300 GHz, which include those frequencies used for communications or radar signals.
rHUB	Remote Radio Unit (RRU) Hub	An rHUB is a method used to connect multiple RRUs.
RLC	Radio Link Control	RLC is a Layer 2 protocol used on the air interface in Universal Mobile Telecommunications System (UMTS) and Long-Term

Acronym	Abbreviation	Description
		Evolution (LTE) networks.
ROCH	Robust Header Compression	ROCH is a standardized method to compress the Internet Protocol (IP), User Datagram Protocol (UDP), UDP-Lite, Real-Time Transport Protocol (RTP), and Transmission Control Protocol (TCP) headers of Internet packets.
RRC	Radio Resource Control	The RRC protocol is used on the air interface in Universal Mobile Telecommunications System (UMTS) and Long-Term Evolution (LTE) networks. RRC handles the control plane signaling of Layer 3 between the user equipment and the Radio Access Network (RAN) - either Universal Terrestrial Radio Access Network (UTRAN) or Evolved UTRAN (E-UTRAN) - as well as for the radio interface between a relay node and the E-UTRAN.
RRM	Radio Resource Management	RRM is the system level management of co-channel interference, radio resources, and other radio transmission characteristics in wireless communication systems. RRM functionality is used in cellular networks, wireless local area networks, and wireless sensor systems.
RRU	Remote Radio Unit	The Remote Radio Unit (RRU) transmits Radio Frequency (RF) signals and is connected to the Building Baseband Unit (BBU) through optical fibers. With advanced RF and antenna technologies, RRU enables high-rate and low-latency data processing and significantly enhances system capacity.
RSRP	Reference Symbol Received Power	The RSRP is the linear average over the power contributions for the resource elements that carry cell-specific reference signals within the frequency bandwidth. The signal strength reflects the user equipment's received Carrier Routing System (CRS) power of a Long-Term Evolution (LTE) cell.
RSRQ	Reference Signal Received Quality	The RSRQ reflects the relative ratio of signal and interference within the system. RSRQ = N×RSRP/(E-UTRA carrier RSSI), where: N is the number of resource blocks (RBs) of the Evolved Universal Terrestrial Radio Access Network (E-UTRAN) carrier Received Signal Strength Indicator (RSSI) measurement bandwidth, and RSRP is the Reference Symbol Received Power.
RSSI	Received Signal Strength Indicator	RSSI is the linear mean value of all the signals that the user equipment has received, including the intra-frequency signal and interference, the inter-frequency interference, and thermal noise.
RTO	Retransmission Timeout	An RTO occurs when a sender is missing too many acknowledgements and then takes a timeout or stops sending packets altogether. The sender usually starts sending again after this brief delay. Too many of these can cause delays on the

Acronym	Abbreviation	Description
		network for all users. Analyzing RTOs can help identify packet loss and to locate congested links.
RTT	Round Trip Time	The length of time it takes for a signal to be sent plus the length of time it takes for an acknowledgement of that signal to be received.
S1-U	Single 1 User Plane	The S1-U interface is the interface between the Long-Term Evolution (LTE) Radio Access Network (RAN) and the Evolved Packet Core (EPC) transport network layer's Mobility Management Entity (MME) interface built on the Internet Protocol (IP) transport eNB control plane. S1-U supports the tunneling of end-user packets between the eNB and the User Plane Entity (UPE).
SA	Stand-Alone	5G network deployment model that allows mobile operators to launch a full end-to-end 5G New Radio (NR) network without relying on 4G LTE infrastructure.
Uwnxw Vnsa ro swlicwe ulre-LOQ Lrwnxy NS Xn auuppoe	System Architecture Evolution	SAE is the core network architecture of the Third-Generation Partnership Project's (3GPP's) Long-Term Evolution (LTE) wireless communications standard.
SAS	Spectrum Access System	A shared spectrum access technology that facilitates the dynamic allocation of Citizens Broadband Radio Service (CBRS) spectrum on a tiered, priority basis, while minimizing interference with other CBRS and incumbent users. CBRS is a 150 MHz wide channel of the 3.5 GHz (3550-3700 MHz) band in the United States and was only recently made available to enterprises by the Federal Communications Commission (FCC).
SC	Single Carrier	An SC transmission means one radio frequency (RF) carrier is used to carry the information. Hence, information in the form of bits is carried by a single RF carrier.
SCC	Secondary Carrier Component	In Carrier Aggregation (CA), the primary component carrier (PCC) is complemented with one or several secondary component carriers (SCC). The PCC handles all the control signaling while the SCC is used to increase the data throughput.
Scell	Secondary Cell	Carrier 2 of a two-carrier eNodeB. The secondary cell, operating on a secondary frequency, may be configured once a Radio Resource Control (RRC) connection is established and may be used to provide additional radio resources.
SC-FDMA	Single Carrier Frequency Division Multiple Access	SC-FDMA deals with the assignment of multiple users to a shared communication resource. It is also called Linearly Pre-coded OFDMA (LP-OFDMA).

Acronym	Abbreviation	Description
SCH	Synchronization Channel	An SCH is a downlink control channel used in Global System for Mobile Communications (GSM) cellular telephone systems. It is part of the Unacknowledged Mode (Um) air interface specification. The purpose of the SCH is to allow the mobile device to identify a nearby cell quickly and synchronize to an eNB.
SCTP	Stream Control Transmission Protocol	The SCTP is a transport layer protocol, serving in a similar role to the popular Transmission Control Protocol (TCP) and User Datagram Protocol (UDP).
SDF	Service Data Flow	An SDF is an aggregate set of packet flows that match a set of service data flow filters in a Policy and Charging Control (PCC) rule.
SDMA	Space (or Spatial) Division Multiple Access	SDMA is a satellite communications mode that optimizes the use of radio spectrum and minimizes system cost by taking advantage of the directional properties of dish antennas.
SDU	Service Data Unit	An SDU is a unit of data that has been passed down from an Open Systems Interconnection (OSI) layer to a lower layer and that has not yet been encapsulated into a protocol data unit (PDU) by the lower layer.
SFP	Small Form-Factor Pluggable	An SFP is a small transceiver that plugs into the SFP port of a network switch and connects to fiber and Gigabit Ethernet (GbE) optical fiber cables at the other end. Superseding the Gigabit Interface Converter (GBIC) transceiver, SFP modules are also called "mini-GBIC" due to their smaller size.
SFR	Single Frequency Reuse	Frequency reuse is a general wireless concept that refers to spectrum sharing. The term here is related to Inter-Cell Interference Coordination (ICIC) that, when enabled, allows UEs that are at the same cell edge but attached to different eNodeBs to use different frequency resources (automatically assigned) and avoid interfering with each other.
SG	Signaling Gateway	An SG is a network component responsible for transferring signaling messages (e.g., information related to call establishment, billing, location, short messages, address conversion, and other services) between Common Channel Signaling (CCS) nodes that communicate using different protocols and transports.
S-GW	Serving Gateway	The S-GW resides in the user plane where it forwards and routes packets to and from the eNB and packet data network (PDN) gateway.
SI	System Information	The SI provides information to the user equipment about various

Acronym	Abbreviation	Description
		parameters of both the Access Stratum (AS) and Non-Access Stratum (NAS).
SI-1	System Information Message 1	SI messages inform mobile devices about all important parameters of how to access the network and how to find neighboring cells.
SIB	System Information Block	A SIB carries relevant information for the user equipment (UE), which helps the UE to access a cell, perform cell reselection, and obtain information related to intra-frequency, inter-frequency, and inter-Radio Access Technology (RAT) cell selections.
SIM	Subscriber Identity Module	A SIM card is an integrated circuit that stores a mobile subscriber's critical information securely.
SIMO	Single Input Multiple Output	SIMO is an antenna technology for wireless communications in which multiple antennas are used at the destination (receiver), but not at the transmitter. The antennas are combined to minimize errors and optimize data speed. The source (transmitter) has only one antenna.
SINR	Signal-to-Interference-plus-Noise Ratio	Signal-to-Interference-plus-Noise-Ratio (SINR), also known as the carrier-to-interference ratio (CIR or C/I), is a quantity (dB) used to give theoretical upper bounds on channel capacity. SINR is calculated based on the power of a certain signal of interest divided by the sum of the interference power from all the other interfering signals and background noise.
SIP	Session Initiation Protocol	SIP is a communications protocol for signaling and controlling multimedia communication sessions.
SIR	Signal-to-Interference Ratio	See "SINR".
SISO	Single Input Single Output	The use of only one antenna both in the transmitter and receiver.
SMS	Short Message Service	SMS is a text messaging service that uses standardized communications protocols to enable fixed line or mobile phone devices to exchange short text messages.
SN	Service Node	An SN is a switching point that comprises a point of end-user access to the network and network services.
SNR	Signal-to-Noise Ratio	The SNR is a measure that compares the level of a desired signal to the level of background noise. It is defined as the ratio of signal power to the noise power, often expressed in decibels.
SOFDMA	Scalable Orthogonal Frequency Division Multiple Access	SOFDMA refers to the air interface outlined for portable or mobile WiMAX systems by the Institute of Electrical and Electronics Engineers (IEEE), used in the IEEE 802.16e (2005) standard.
SON	Self-Organizing Network	SON refers to automation technology designed to make the planning, configuration, management, optimization, and healing

Acronym	Abbreviation	Description
		of mobile radio access networks (RANs) simpler and faster. SON functionality and behavior has been specified in generally accepted mobile industry standards.
SRNC	Serving Radio Network Controller	When a Radio Network Controller (RNC) has a Radio Resource Control (RRC) connection with user equipment (UE), it is known as the Serving RNC, or SRNC, for that UE. The SRNC is responsible for the user's mobility within the Universal Terrestrial Radio Access Network (U-TRAN) and is also the point of connection towards the core network.
STC	Space-Time Coding	STC is a technique used in wireless communications to transmit multiple copies of a data stream across several antennas and to exploit the various received versions of the data to improve the overall reliability of the data transfer.
SU-MIMO	Single-User Multiple Input Multiple Output	Routers in which only one device can receive data at any given time even though multiple devices are connected to it. When devices attempt to access data streaming at the same time, one device gets priority while the others have to wait until the first has buffered a few bits of data first, which impacts data transmission speeds.
TA	Tracking Area	A TA manages and represents the locations of user equipment. Through re-optimization, the network design is successively improved by reassigning some cells to TAs other than their original ones.
TAI	Tracking Area Identifier	The TAI is the identity used to identify tracking areas (TAs). The TAI is constructed from the Mobile Country Code (MCC), Mobile Network Code (MNC) and Tracking Area Code (TAC).
TDD	Time Division Duplex	TDD is a transmission scheme that allows asymmetric flow for uplink and downlink data transmission. TDD refers to duplex communication links where the uplink traffic is separated from the downlink traffic by allocating different time slots in the same frequency band.
TEID	Tunnel Endpoint Identifier	The separate tunnels between each set of end points are identified by a TEID in the General Packet Radio Service Tunneling Protocol for User Data (GTP-U) messages, normally a dynamically allocated random number.
TFT	Traffic Flow Template	The TFT is used by the Gateway General Packet Radio Service Support Node (GGSN) to discriminate between different user payloads. The TFT incorporates packet filters such as quality of service (QoS), Policy Decision Point (PDP) context, and security.

Acronym	Abbreviation	Description
TM	Transparent Mode	TM is one of the three modes used to transfer the upper layer Protocol Data Units (PDUs) via the Radio Link Control (RLC).
TSSI	Transmission Signal Strength Indicator	TSSI (also known as field strength) shows the signal strength level that is transmitting at the transmitter.
TTI	Transmission Time Interval	TTI is a parameter in Universal Mobile Telecommunications System (UMTS) and other digital telecommunication networks that refers to the duration of a transmission on the radio link. TTI is related to encapsulation of data from higher layers into frames for transmission on the Radio Link Layer (RLL).
UARFCN	Universal Mobile Telecommunications System (UMTS) Absolute Radio Frequency Channel Number	In short, this is the frequency point of a neighboring eNB's frequency.
UCI	Uplink Control Information	The UCI is a set of information that is carried by the Physical Uplink Control Channel (PUCCH). Depending on what kind of information the UCI in the Physical Dedicated Control Channel (PDCCH) carries, PDCCH is classified into various formations.
UDP	User Datagram Protocol	The UDP is one of the core members of the Internet Protocol (IP) suite. With UDP, computer applications can send messages, in this case referred to as datagrams, to other hosts on an IP network.
UE	User Equipment	In Long-Term Evolution (LTE) networks, UE (also referred to as customer premise equipment, or CPE) is any device used directly by an end-user to communicate via the network.
UL	Uplink	The UL path of a network connection is used to send data from the user equipment to the network.
UL-SCH	Uplink Shared Channel	A physical UL-SCH is a transmission channel that is used to transport user data from one or more mobile devices that can transmit on the channel.
UM	Unacknowledged Mode	UM is one of three modes used to transfer upper layer Protocol Data Units (PDU) in Radio Link Control (RLC) used on the air interface in Long-Term Evolution (LTE) networks.
UMA	Unlicensed Mobile Access	UMA is a technology that allows UMA-capable user equipment to switch back and forth seamlessly between networks and local wireless networks.
UMTS	Universal Mobile Telecommunications System	UMTS is a third-generation broadband, packet-based transmission of text, digitized voice, video, and multimedia at data rates up to and possibly higher than 2 megabits per second (Mbps).

Acronym	Abbreviation	Description
UP	User Plane	The user plane carries the network user traffic. The user plane performs its tasks as directed by the Control Plane (CP).
UPnP	Universal Plug and Play	UPnP is a set of networking protocols that permits devices such as personal computers, printers, Internet gateways, Wi-Fi access points, and mobile devices to discover each other's presence on the network and communicate. UPnP is intended primarily for residential users and not enterprise-class devices.
UpPTS	Uplink Pilot Time Slot	The UpPTS is one of the three fields that make up the 1ms special subframes that comprise the half-frames used in the Long-Term Evolution (LTE) Time Division Duplex (TDD) frame structure.
UpTS	Uplink Time Slot	In Time Division Long-Term Evolution (TD-LTE) networks, the UpTS allows the user equipment to transmit data to the receiver.
USIM	Universal Subscriber Identity Module	A SIM card is an integrated chip that securely stores a mobile subscriber's critical information for Global System for Mobile Communications (GSM) networks. A USIM provides enhanced features and allows a subscriber to access any Universal Mobile Telecommunications System (UMTS) network, including GSM and CDMA.
VoIP	Voice over Internet Protocol	VoIP is a service that enables people to make voice calls using only their computers connected to the network. With VoIP, the Internet is the transmission medium for telephone calls, sending voice data in packets using IP rather than by traditional circuit transmissions of the Public Switched Telephone Network (PSTN).
VoNR	Voice over 5G New Radio	VoNR is a basic call service which fully utilizes the Stand-alone architecture of 5G networks. Compared to other call services, VoNR provides significantly lower latency and improved sound and picture quality to elevate user experiences to new heights.
VPLMN	Visited Public Land Mobile Network (PLMN)	VPLMN is the network on which the mobile subscriber has roamed when leaving their Home PLMN (HPLMN).
VRB	Virtual Resource Blocks	Physical Resource Blocks (PRBs) and VRBs support various kinds of resource allocations. VRB supports both block-wise transmission (localized) and transmission on non-consecutive subcarriers (distributed) to maximize frequency diversity.
WCDMA	Wideband Code Division Multiple Access	WCDMA is a third-generation standard that employs the Direct Sequence CDMA (DS-CDMA) channel access method and the Frequency Division Duplexing (FDD) method to provide high-speed and high-capacity service.
Wi-Fi	Wi-Fi	Wi-Fi is the marketing name for a standard defined by the Institute of Electrical and Electronics Engineers (IEEE) called 802.11x. In the same way that a local area network (LAN)

Acronym	Abbreviation	Description
		describes the cabled connection of residential or business computing devices in the same geographical or logical domain, Wi-Fi describes the wireless connection of residential or business computing devices in the same geographical or logical domain. Wi-Fi also is referred to as wireless LAN (WLAN).
WiMAX	Worldwide Interoperability for Microwave Access	WiMAX is a family of wireless communication standards based on the Institute of Electrical and Electronics Engineers (IEEE) 802.16 set of standards, which provide multiple physical layer (PHY) and Media Access Control (MAC) options.
WInnForum	Wireless Innovation Forum	A non-profit organization that advocates spectrum innovation and advancing radio technologies.
WLAN	Wireless Local Area Network	See “Wi-Fi”.