

Glossary

Term	Description
3GPP (3rd Generation Partnership Project)	A project that was established to set third-generation (3G) mobile communications technology standards and LTE, LTE-Advanced (4G), and is now developing international standards for 5G.
5G-Advanced	This term is used for 3GPP defined 5G specification "Release 18" and beyond. This 5G extension standard employs some of 6G expected technologies so that it achieves even greater speed.
5G New RAT (5G New Radio Access Technology)	A new wireless communications technology for use with 5G. It can handle ultra-high speed communications in excess of 10Gbps.
6G (Six Generation)	Sixth-generation mobile communications technology. The name given to next-generation mobile communications technology which is being researched in various countries with the aim of launching services around 2030.
AOC (Active Optical Cable)	A cable that combines optical fibers with an electrical signal connector that has an embedded optical-electric converter.
C-band	5G services offered in the U.S. that use frequencies in the Sub6GHz band from 3.7GHz~4.0GHz; the FCC (U.S. Federal Communications Commission) called this band the C-band when auctioning frequencies.
CPRI (Common Public Radio Interface)	An interface specification used to realize communication between Base-Band Units (BBU) and Remote Radio Heads (RRH) in systems where these are separated.
C-RAN (Centralized Radio Access Network)	A radio access network architecture. The wireless base station is equipped with only a Remote Radio Head (RRH). The Base-Band Unit (BBU) is concentrated in the Housing Station, which is upstream on the network, and processes signals for communication.
GCF (Global Certification Forum) certification	A certification from GCF, an organization comprising telecommunications operators, mobile device manufacturers, and test houses, is recognized to conform with 3GPP standards for mobile devices and mobile device testing environments.
Hyperscalers	Major cloud companies with huge infrastructure facilities (hyperscale data centers) such as AWS (Amazon), Azure (Microsoft), and GCP (Google).
IOWN (Innovative Optical and Wireless Network)	New communication infrastructure using innovative technologies, including All-Optical Network IOWN Global Forum, is in the process of examining.
Local 5G	The system developed by the Ministry of Internal Affairs and Communications of Japan that builds communication environments utilizing the Non-Public Networks (NPN) introduced in the 3GPP Release16. This differs from private 5G, a system with a similar mechanism being studied overseas, as it requires licences for using radio waves.
NEMS (Nano Electro Mechanical Systems)	These devices have a nano-order machine structure and are even smaller than micro electro mechanical systems (MEMS), which are built with semiconductor processing technologies.
NB-IoT (Narrow Band-IoT)	An IoT communications system that uses mobile phone networks and has been standardized as an LTE standard by 3GPP.
NFV (Network Functions Virtualization)	A way to manage network communications functions as software on a virtual server OS.
NR-Light (New Radio-Light)	A specification that will be incorporated into 3GPP Release 17; it will allow for a narrower 5G band, lower peak data rate, and fewer antennas to better facilitate its use in wearable devices, surveillance cameras, industrial sensors, and other such devices. Sometimes referred to as RedCap.
O-RAN (Open-Radio Access Network)	The O-RAN Alliance is developing specifications for each unit that makes up a base station, as well as interface specifications between units. The goal is to standardize specifications that have differed from vendor to vendor.
OTN (Optical Transport Network)	An optical communications standard which enables WDM that was previously limited to one transmitter and one receiver to be used through a network. In addition to conventional telephone signals, it also enables signals such as IP and Ethernet to be processed in a unified manner.
PCI-E (Peripheral Component Interconnect Express)	An interface specification for PC expansion slots. It uses serial I/O interface standards set by Peripheral Component Interconnect Special Interest Group (PCI-SIG) in 2002. It is also referred to as PCIe and PCI Express.
Sidelink	A function that enables direct communication between pedestrians and vehicles without the need for a base station. This function enables communication even when base stations are not available, such as in the event of a disaster.
SDN (Software Defined Network)	SDN is the name for technologies that enable structure, configuration, and settings of computer networks to be altered in a flexible and dynamic manner by centrally controlling the communications devices that comprise the network through an individual piece of software.
Sub 6GHz (Sub6)	The name used for bands of 6GHz or less when referring to frequency ranges used in 5G systems. These are low band compared to millimeter wave bands. In 5G standards, bands of 6GHz or less have been defined as FR1, while millimeter wave bands have been defined as FR2.
SDH (Synchronous Digital Hierarchy)	International standards for signal multiplexing methods used in digital transmissions systems. These technologies enable low-speed signals, such as voice communications, to be multiplexed into and transmitted through predetermined high-speed signals.
Small Cell	A type of base station for mobile communications that have lower output power and are used to cover smaller areas. They are receiving attention for their potential application in 5G systems, which use high-frequency ranges and therefore require base stations to be established in high concentrations.
V2X (Vehicle to everything)	V2X is a specification that enables cars to communicate with any devices, and consists of those such as vehicle-to-vehicle (V2V), vehicle-to-infrastructure (V2I), and vehicle-to-pedestrian (V2P). Furthermore, one that realizes it with cellular communication is called C-V2X.
V-RAN (Virtualized Radio Access Network)	A virtualized wireless access network, in which the Base-Band Unit (BBU) is implemented by software in a base station system that separates the BBU and the Remote Radio Head (RRH).
WDM (Wavelength Division Multiplexing)	An optical communications technology for transmitting large-capacity signals.