# THE ALPHABET OF OPTICAL FIBER
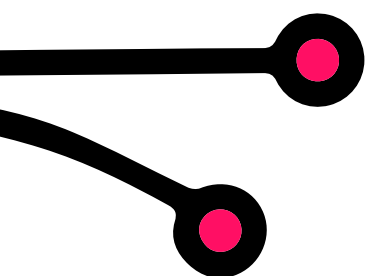
open fiber

open fiber

Our company from
A to Fiber

ABCDEFGHIL
MNOPRSTUVWX

## A&B and C&D Clusters

A study commissioned by the Italian Ministry of Economic Development and carried out by Infratel Italia divided the Italian territory into four sets called "Clusters", which are made up of Italian municipalities grouped by their characteristics (available infrastructure, population density, companies) to identify the type and cost of the work needed to bring ultra-broadband. The A&B cluster, where about 60% of the Italian population is located, already has infrastructure for fast connections (albeit with limited capacity). The C&D cluster, on the other hand, mainly covers White Areas covered by low-speed internet.

## ADSL

ADSL stands for **Asymmetric Digital Subscriber Line**, which is one of the broadband distribution technologies and uses a modem to transform a conventional telephone line into a high-speed digital connection over a normal twisted pair copper wire. This type of connection is called "asymmetric" because it allows two different speeds: a higher download speed to receive data, and a limited upload speed to transmit data. Operating in Italy since 2000, the quality of an ADSL connection depends on the consistency of the copper, the distance of

## Alternative Performance Indicators

Company performance is assessed through a number of alternative indicators, as described below:

- EBITDA (Earning Before Interest, Taxes, Depreciation and Amortization) – a summary indicator of gross profitability resulting from operational management, which is determined by adding depreciation, reversals/write-downs of non-current assets and actual profits/losses of non-current assets to the operating earnings. For the purposes of operating performance, guarantee fees are excluded from the operating earnings;
- Total Investments – includes all resources employed by the company to build its own network infrastructure and the leased network, excluding rights of use under IFRS 16, borrowing costs capitalised in accordance with IAS 23 and gross of the contribution share on the leased network;
- Net Financial Debt – is the indicator of an organisation's ability to meet its financial commitments such as non-current and current financial debts to credit institutions and shareholders, minus the liquid assets. Net Financial Debt does not include the market value of derivatives, trade debts, other liabilities and security deposits.

## As Built

This refers to the documentation of construction work, and specifically to the drawing that describes the work as it was actually built, following design changes made during construction or differences between the design and its implementation.

## Augmented Reality

This is a form of virtual reality in which information generated by a computer is superimposed on the actual scene perceived by a viewer. Augmented reality applications require the use of special glasses or camera-equipped devices such as smartphones so that figures, captions, or diagrams can be superimposed on the image of reality. Examples include applications that outline constellations by framing stars in the night sky, games that immerse characters in the everyday environment, interior design simulators that display furniture in empty homes, etc.

# bB
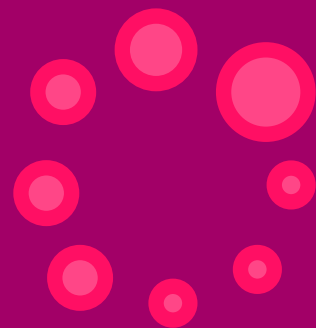
## Backbone

This refers to a very high-speed network that connects other networks together. For example, the Open Fiber backbone connects the cities covered by the service. Another example is the internet backbones that connect national networks and allow users in each country to see any site located in other parts of the world.

## Black Area

Black areas are competitive market areas where at least two different ultra-broadband network service providers operate, or will operate in the near future, in competition with each other.

## Broadband

In the telecommunications field, broadband usually refers to transmission and reception of information data at a connection speed faster than 144 kb/s. Broadband is organised into various channels, carrying different content in the form of data, such as internet radio, animations, audio files and high-definition video files.

## BRS

This stands for **Base Radio Station**, which is the mobile telephone system that receives and retransmits mobile phone signals, allowing them to function.

## BTP

This stands for **Building Termination Point**, which is the termination node of the horizontal network. It is generally located near the electrical meter room within each building, although alternative scenarios are possible.

## BTS

This stands for **Base Transceiver Station**, which is the mobile telephone system that receives and retransmits mobile phone signals, allowing them to function.

## Buffering

A buffer is an area of computer memory that can temporarily handle information while it is transferred to another computer. When streaming multimedia content, buffering involves pre-loading a certain amount of data (typically a few seconds worth) before showing a video or playing a music track in order to prevent "hiccup" effects due to transitory network congestion.

## Buried network

This is a portion of a telecommunications network that is routed through pipes that are laid in ground excavations.

A  B  C  D  E  F  G  H  I  L  M  N  O  P  R  S  T  U  V  W  X

# cC

## Cloud Computing

This is the new name for a practice as old as computer networks: using computational resources from a computer that is geographically far away as if it were our own PC. The first and longest-running example of this is email. The technological evolution of computers and the speed of ultra-broadband networks allows this approach to be pushed to the extreme: remote data centres that house thousands of servers storing our documents, photos and music, and running programs that appear to be on our laptops or smartphones.

## CPE

This stands for **Customer Premises Equipment**, which is the electronic device used as a user-end terminal that can connect directly to the geographical transmission network.
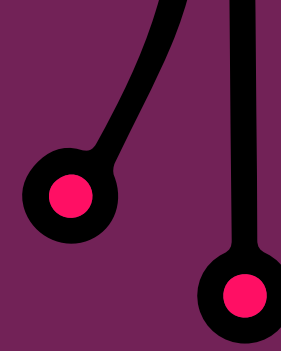
# dD

## Dark Fiber

This refers to optical fiber that has been laid but is not yet illuminated by data transmission equipment. Operators always install more cables than they intend to use at the time in order to anticipate future demand for that type of network. This is feasible because the cost of the optical fiber is a fraction of the total cost of infrastructure construction (excavations, construction sites, etc.). The dark fiber can then be rented and bought by organisations that will connect their transmission equipment to it.

## Definitive Project

This refers to the project drafted on the basis of the approved preliminary draft and contains all the elements needed for the required construction permits, proof of urban conformity or any other equivalent act; it consists of a report describing the project elements accompanied by drawings, surveys and preliminary calculations on the specifications of the work, structures and systems, an analysis of the expected quantities and costs, and an itemised estimate.

A  B  C  D  E  F  G  H  I  L  M    N  O  P  R  S  T  U  V  W  X

## Digital Agenda for Europe

The **first digital agenda** (2010-2020) proposed exploiting the potential of information and communication technologies (ICT) to promote innovation, economic growth and progress by improving access to digital goods and services for consumers and businesses across Europe. The **second European digital agenda** (2020-2030) focuses on the profound changes brought by digital technologies and the creation of secure digital markets and services. Gigabit connectivity, 5G and 6G, and European data infrastructures are among its priorities. In 2021, the strategy was complemented by **Digital Compass 2030** with a strong focus on connectivity. Visit the official website of the European Commission for more information.

## Digital Compass 2030

Through the Digital Compass 2030, the European Union has set the four macro-targets for Member States to achieve in the areas of skills, business, infrastructure and public services. Regarding **Gigabit connectivity**, this plan states that all European homes will have a fixed ultrafast network (at least 1 Gbps) and a mobile network (5G) in all populated areas of the continent by the end of 2030. Visit the European Parliament website to find out more about the Digital Compass 2030.

## Digital Divide

This term describes the gap between those who can use new information and communication technologies and those who, for technical, economic or social reasons, are unable to use them. Read the news "Digital divide and social inequality: Open Fiber's role" to find out more.

## Download

This is the action of getting data from the network.

## EAFRD

The **European Agricultural Fund for Rural Development** supports the European rural development policy and, to this end, finances rural development programmes in all Member States and regions of the Union. The programmes are drafted in cooperation with the European Commission, and the Member States consider the strategic guidelines for rural development adopted by the Council, as well as the priorities set out in national strategic plans.

## ERDF

The **European Regional Development Fund** is one of the EU's main financial instruments, intended to contribute to correcting the principal regional imbalances within the European Union. The fund pursues this goal by supporting development and structural adjustment in regions whose development is lagging, and by restructuring declining industrial regions.

eE
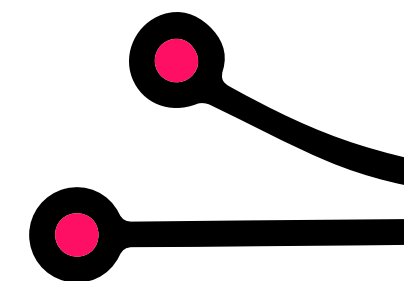
## E-Commerce

This is an abbreviation of "Electronic Commerce", which is purchasing and selling goods and services directly on the web or via email without going to shops or department stores.

## E-Government

This is an abbreviation of "Electronic Government", better known as digital administration, and is the combined use of computers, mobile devices and the internet so that public administrations can offer services to citizens or other public and private organisations.

## E-Learning

This is an abbreviation of "Electronic Learning", also known as online or remote learning, and is the use of **multimedia technology** and **internet** to improve the quality of **learning** by facilitating access to resources and services, and offering the possibility of remote exchanges and collaborations.

## Ethernet

The term **Ethernet** means all technologies used to implement LANs, both physical and structural, so that devices can exchange data.

## Executive Project

This refers to the project drafted in accordance with the definitive project. It establishes the details of the work to be carried out and its expected cost, and must be developed with sufficient definition to identify the form, type, quality, size and price of each element.

# fF

## Feeder Section

This is the portion of the installation infrastructure or optical fiber connecting the first cable pit or room of the access network located on public ground near the building to the point where the vertical wiring in the building begins.

## Fiber Core

A fiber optic cable consists of two very thin glass tubes, one inside the other. The inner tube, the **"core"**, is made of silicon oxide (a glassy material), which lets light pass and transmits it.

## Flex-Grid Network

To improve the utilization of optical resources and increase data transmission speeds in an optical fiber backbone, the total capacity is divided into a number of adjacent channels, each capable of carrying from 10 Gigabits to 40 Gigabits, up to a maximum of 100 Gigabits. This approach is known as Fixed-Grid. In a network based on Flex-Grid technology, adjacent channels can be combined to achieve arbitrary transmission capacities of up to 1 Terabit. This means that the backbone capacity can be increased dynamically according to the bandwidth demand of the end users.

## FTE

This stands for **Full Time Equivalent**, which is the number of full-time resources to perform a given activity, or available in the company, in relation to the total number of resources. It is obtained by calculating the equivalent number of hours, including part-time and other kinds of contract with fewer hours per day than full-time.

## FTTB

This stands for **Fiber To The Building** or "Basement", depending on interpretation. In this scenario, the optical fiber is laid as far as the threshold of a building or into a common space, such as a cellar or basement. The connections to the individual apartments then continue with other technologies, typically copper.

A B C D E F G H I L M    N O P R S T U V W X

## FTTC

This stands for **Fiber To The Cabinet**, which is a network architecture consisting partly of copper ADSL cable and partly of optical fiber. The former covers the shortest section connecting the user's modem to the distribution cabinet, and the latter, the fiber, completes the route up to the exchange.

## FTTH

This stands for **Fiber To The Home**, which is the technology that uses optical fiber to connect POPs, sites in the exchanges, to end-user real estate units.

## FTTH Council

This is a European organisation founded in 2004 by the major industries in the sector to accelerate the uptake of fiber connectivity across the continent. It has more than 150 members including FTTH operators, equipment manufacturers and academic institutions. The FTTH Council aims to spread Fiber to the Home as a key to driving local economic development and building a prosperous and sustainable future.

## Future Proof

Optical fiber is called "future proof" because it is the only solution that can evolve and support increasing transmission capacities, which may reach **up to 40 Gbps** in the future, handling the most advanced services and the potential of the new technologies to come in the next few years.

## FWA

This stands for **Fixed Wireless Access**, also known as "**Wireless Local Loop**" (WLL), which refers to the use of radio solutions to cover the last mile to real estate units that are spread out in sparsely populated areas. A main antenna, typically connected to the network by optical fiber, covers a more or less large area in which an antenna is installed on each real estate unit. Each antenna is equipped with a device to convert the radio signal for connection to the CPE (Customer Premises Equipment), the electronic device used as an user-end terminal.

## Gbps/Mbps

These abbreviations refer to transmission speeds in computer networks; Gps stands for Gigabits per second, while Mbps stands for Megabits per second. One Gigabit is a billion bits, while one Megabit is a million bits. FTTH connections have speeds in the order of 1 Gbps, but can already be increased to much higher values.

## Gigabit

Gigabit is the measurement unit that corresponds to one billion bits and is abbreviated to Gbit or Gb. Along with the megabit and kilobit, this measurement unit is often used in relation to time (in seconds) to express the transmission speed of digital signals, especially to calculate the speed of a given download. Nowadays, Gbit/s is a widely used measurement unit for data transmission speeds in computer networks.

## GPON

This stands for **Gigabit Passive Optical Network**, which s an active access technology for providing connectivity over FTTH PON infrastructures. It is

## g G

called active because it is implemented using active network elements such as OLT in the exchange and ONT in user's homes. The underlying network infrastructure is passive (Passive Optical Network) because it uses only elements that do not need power, such as splitters that separate the optical fiber into multiple connections branching out to different buildings in order to reduce the amount of fiber and network equipment needed. GPON provides unprecedented bandwidth (up to 2.5 GB/s downstream and 1.25 Gbps upstream speeds) and greater distances from the exchange, allowing service providers to enable bandwidth-intensive applications.

## Grey Area

Grey areas are where there is a single network operator providing ultra-broadband services, and it is unlikely that another network will be installed.

# hH

## Home Automation

Home automation is the discipline that studies technologies to improve the quality of home life and to automate home management as much as possible. It requires a strongly interdisciplinary approach since it combines architecture, construction engineering, energy, electronics, information technology and telecommunications. Home automation can be used to build smart homes in which, for example, lighting, opening of doors and shutters, climate management, security systems and communication systems can dialogue with each other or externally, including via mobile phones, smartphones and the internet.

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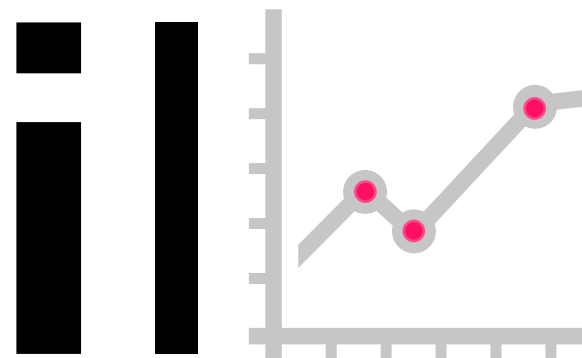
## ICT

This stands for **Information and Communication Technologies**, which is the set of technologies that provides access to information through telecommunications. Unlike information technology, ICT is more focused on communication technologies, such as the internet, wireless networks, mobile phones, and other means of communication.

## Industry 4.0

This refers to the fourth industrial revolution and describes a manufacturing process based on connecting physical and digital systems, complex analytics through big data, and real-time adaptation. In other words: exploiting web-connected machinery, analysis of information from the network and the possibility of more flexible production cycle management. Enabling technologies range from 3D printers to robots programmed for certain functions, through cloud data management and data analysis to identify manufacturing weaknesses and strengths. It is IoT applied to industrial production.

## Infratel

This refers to **Infratel Italia S.p.A.**, an in-house company of the Italian Ministry of Economic Development, which is responsible for implementing the government's broadband and ultra-broadband plans. Visit the website www.infratelitalia.it for more information.

## Internet

This term stems from merging the words **International and Network**. It refers to the worldwide computer network that users around the world can access using a computer to transmit and share data and information

## IoT

This stands for **Internet of Things**. The idea behind the Internet of Things is to connect any device that has a power button to the network. Paradoxically anything: mobile phones, coffee machines, washing machines, refrigerators, vacuum cleaners, headphones, lamps, wearable devices. This also applies to internal components of machines, such as the sensors in a vehicle. This vast network of connected objects could improve many aspects of our lives. Imagine a refrigerator reading the bar codes of the products it stores, telling us what is about to expire or what is finished, and then suggesting a shopping list. A coffee machine that switches on at the right time because it knows the alarm time set on your smartphone, a car that suggests the road to take based on traffic information sent by other cars.

## IT

This stands for **Information Technology**, which is the technology used to manage and process information. This includes the use of any computer, storage system, networking system and other physical device, infrastructure and process to create, process, store, protect and exchange electronic data in any format.

## Italian Ultra-broadband Strategy

This aims to **develop an ultra-broadband network** in Italy and **accelerate** Italy's digital transition, in line with the European targets set out in the Digital Compass. It consists of seven interventions: Piano Italia 1 Giga (Italian 1 Giga Plan), Piano Aree Bianche (White Area Plan), Piano Voucher (Voucher Plan), Piano Italia 5G (Italian 5G Plan), Piano Scuole Connesse (Connected Schools Plan), Piano Sanità Connessa (Connected Health Service Plan), Piano Isole Minori (Small Islands Plan). The Italian government launched Piano Italia 1 Giga, which aims to ensure a connection speed of at least 1 Gbps download and 200 Mbps (Megabits per second) upload across the country by 2026.

## IRU

This stands for **Indefeasible Right of Use**, which is a kind of contract that covers the purchase of exclusive, non-restricted and non-revocable use of part of a telecommunications system, usually in the long term. Considering technological obsolescence, IRU is therefore for all practical purposes equivalent to owning the physical infrastructure.

## LAN

This stands for **Local Area Network**, which is a computer network that covers a limited area such as a single room, a building (e.g. a school), or a set of adjacent buildings (a university campus or a company).

## Latency

This indicates the time interval between stimulating a system and observing the resulting effect. By extension, in telecommunications it means the time a data packet takes to travel from the source computer to the destination computer.

## LTE

This stands for **Long Term Evolution**, which is the standard for high-speed wireless networks dedicated to mobile devices, based on GSM/EDGE and UMTS/HSPA technologies.

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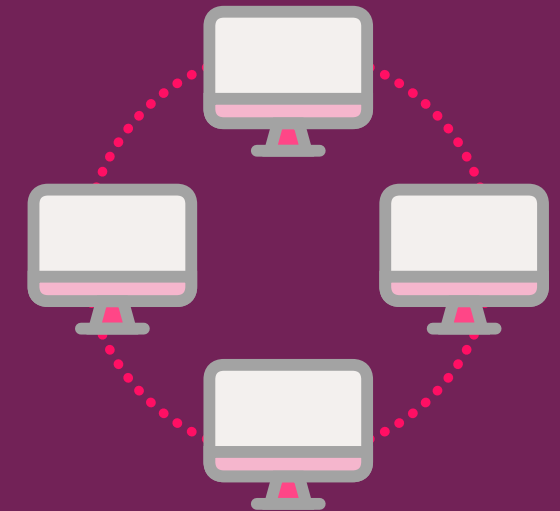
# mM

## *Megabit*

This measurement unit corresponds to one million bits, and is used to specify transmission speeds in computer networks: Mb per second (Mb/s). It should not be confused with the Megabyte (MB), which is one million bytes, each composed of 8 bits. One Megabyte is eight times bigger than one Megabit. It takes 8 seconds to transmit 1 Megabyte at a speed of 1 Megabit per second.

| Content | Approximate size in Megabytes | ADSL 7 Mb/s | ADSL 20 Mb/s | FTTC 30 Mb/s | FTTC 50 Mb/s | FTTC 100 Mb/s | FTTH 300 Mb/s | FTTH 500 Mb/s | FTTH 1Gb/S |
|---|---|---|---|---|---|---|---|---|---|
| MP3 audio file | 10MB | 12 seconds | 4 seconds | 3 seconds | 2 seconds | 1 second | 0.3 seconds | 0.2 seconds | 0.1 sec |
| 720p film | 3 GB | 57 minutes | 20 minutes | 14 minutes | 8 minutes | 4 minutes | 1.3 minutes | 49 seconds | 24 sec |
| 1080p film | 6GB | 2 hours | 40 minutes | 27 minutes | 16 minutes | 8 minutes | 2.7 minutes | 1.6 minutes | 48 sec |
| 4k film | 160 GB | 60 hours | 17 hours | 12 hours | 7.5 hours | 3.5 hours | 1.2 hours | 43 minutes | 22 min |

# nN

## NCN

This stands for **Network Completion Notification**, which is the notification at the end of the work identifying the municipalities in which the work has been completed.

## NCN Municipalities

This refers to the municipalities in which the work has been completed and for which a Network Completion Notification has been issued.

## NDP

The **NDP** or **Neutral Delivery Point** is the network node that allows all operators to access infrastructure built by providers such as Open Fiber. All fibers laid in the area of the reference municipality and that serve to bring the ultra-broadband connection to the user end in the NDP.

A B C D E F G H I L M          N O P R S T U V W X

## Network

In computer jargon, the term network defines a set of hardware devices and software that, when linked together, allow resources, data or information to be exchanged and shared. The devices that generate, route, and terminate data in a computer network are called network nodes.

## Network Interface Card

The network interface card (NIC) is an electronic device installed in the PC to allow it to interface with the network. It performs all of the logical processing functions needed to connect a device and to transmit and receive data.

## Neutral Host

Neutral host is a model intended to optimise the cost of providing cellular signal coverage in large buildings or for temporary events such as trade shows or gatherings. In such cases, each operator would have to set up their own infrastructure (towers, antennas, power, etc.). On the other hand, with a neutral host solution, a single infrastructure could be set up and access sold to all interested operators.

## NGA/NGN

**Next Generation Access/Network** – next generation networks with speeds above 30 Mbps.

## NGN

This stands for **Next Generation Network**, which is the next generation access network based on optical fiber and capable of enabling broadband and ultra-broadband access services.

## ODF

This stands for **Optical Distribution Frame**, which is an essential component for network wiring in buildings that use the FTTH architecture, and is the separation point between the distribution network and the user network.

## OLO

This stands for **Other Licensed Operators**, which refers to all telecommunications network operators other than the company that owns the telephone lines. Operators must be licensed in order to be recognised as OLO. Authorised operators are identified by an operator code and carrier selection code. The license granted to operators allows them to set up telecommunications networks and to provide telephone and internet services.

## OLT

This stands for **Optical Line Terminal**, which serves to deliver data to the end customer and is used to connect optical fiber trunk lines. It performs two essential functions: upstream, it completes the upstream PON access; downstream, it sends and distributes the acquired data to all terminal devices.

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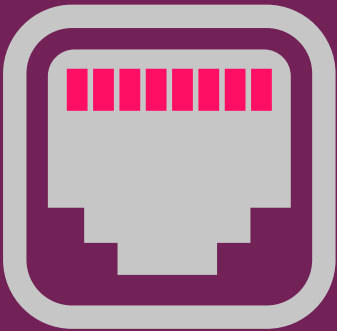
## ONC

This stands for **Optical Node Centre**, which is the equipment that enables an optical connection on a multi-operator passive network supporting point-to-point and multipoint technologies. It provides the ability to patch between cables from a primary concentration element and cables going to individual real estate units.

## Optical Fiber

This is a cable made of a glass fiber, through which a light signal is transmitted to provide access to broadband networks, even over long distances. Optical fibers can transmit signals much faster than copper cables, up to 40 Gigabits per second. They are therefore ideal when large amounts of data have to be transferred quickly, and are also insensitive to external interference (electromagnetic interference, temperature variations, etc.). While data transmission speed, quality and security are undoubtedly benefits of optical fiber, the high installation cost is a limiting drawback for those constructing networks. Read the news to find out more: "Optical fiber, what it is and how it works".

## Optical Wall Socket Box

The optical wall socket box is a passive element in a building that defines the fiber termination point used to link the REU to the Open Fiber access network. The wall socket box is connected to the ONT (Optical Network Termination) and router, through which the user will be able to benefit from all optical fiber connectivity services.

## OTDR

This stands for **Optical Time Domain Reflectometer**. It is an optoelectronic test instrument used to perform fault analysis and diagnosis in optical fibers.

## Overhead Network

This is a portion of a telecommunications network that is routed over poles or suspended from one building to another.

## pP

## P2P

This is an abbreviation of **Peer-to-Peer**. In telecommunications, this term refers to a logical computer network architecture model in which nodes can act as both clients and servers to other terminal nodes (hosts) in the network.

## PD

This stands for **Point of Distribution** and is the node that gathers the fibers from each building.

## PFP

PFP stands for **Primary Flexible Point**, which is the node at which the first level of splitting occurs.

## Piano Italia 1 Giga

The Italian Government launched **Piano Italia 1 Giga** (Italian 1 Giga Plan) with the aim of promoting investment in ultra-broadband networks to ensure that everyone has a connection speed in line with the targets of European Gigabit Society and Digital Compass 2030. Through this plan, Italy aims to ensure a connection speed of at least 1 Gbps download and 200 Mbps (Megabits per second) upload across the country by 2026.

## Point-to-Point Connection

This is a communication line connecting only two geographically separate sites. It typically consists of an optical fiber link.

## PON

This stands for **Passive Optical Network**, which describes all types of optical network that do not have active equipment between the start point and the end point. One type is that used to bring the optical fiber link to the end user using a point-to-multipoint architecture, in which unpowered optical splitters allow a single optical fiber to reach multiple users.

## POP

This stands for **Point of Presence**, which is located in Enel's primary substations, but not only; it also acts as a meet-me-room for operators. It contains each operator's OLT equipment, as well as the OTDR monitoring equipment.

## Provider

The term "provider" is often used to identify what is known as the **Internet Service Provider** (ISP), which is the organisation that offers users internet access via a dial-up connection using a telephone line or via broadband.
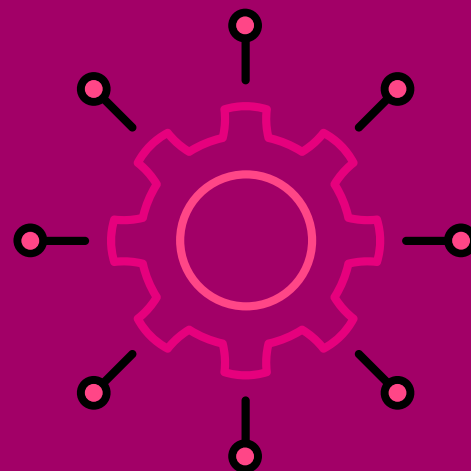
## Resilience

This term originates from the metallurgical field, and refers to the ability of a metal to withstand the forces applied to it, the inverse of which is the index of fragility. In computer systems and telecommunications networks, resilience is the ability to continue operating within predefined acceptable parameters even after a fault or other destructive event. Optical fiber networks are resilient as they are often constructed in the form of redundant loops, which allow data to flow in one direction or the other, thereby compensating for cable breaks.

## REU

Stands for **Real Estate Unit**.

## R.O.C.

**Registro degli Operatori di Comunicazione (Italian Register of Communications Operators).** This is a register of telecommunications operators in Italy. It serves to ensure that ownership is transparent and published, allow application of anti-monopoly rules, protect information pluralism, and ensure compliance with the limits for shareholdings of foreign companies. Refer to the ROC page for more information.
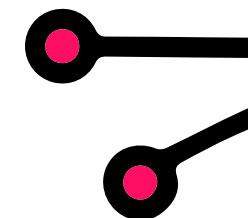
## Roll-out

This means progressively releasing all the elements of a complex infrastructure such as an optical fiber network according to a plan.
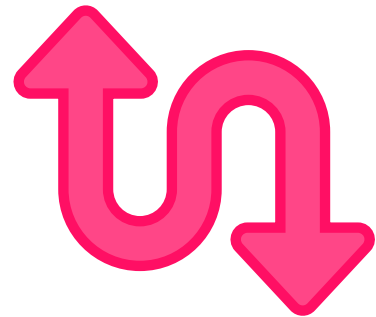
## Router

This is a network device that routes data packets between different networks or subnets on the same network. Large carrier routers establish traffic routes on the internet backbones, while the more familiar home routers simply exchange packets between the home and operator networks, from where they are then routed into the worldwide internet.

rR

# sS

## Scalability

Scalability is the ability of a system to "grow" or diminish according to requirements and availability. For software or hardware, it means being able to adapt to an increase in demand or workload. It therefore indicates whether a system is able to grow or not. For telecommunications networks, it means being able to cope with unexpected traffic spikes.

## SFP

SFP stands for **Secondary Flexible Point**, which is the node at which the second level of splitting occurs and client lines are patched to the various operators.

## Shelter

This is a prefabricated building suitable for housing operating equipment for telecommunications networks scattered throughout the territory. Some OF POP equipment is housed in one or more shelters.

## SOC

This stands for **Service Operation Center.** This is the operation centre that control the Open Fiber network, and is divided into 5 large departments: Delivery, Assurance, Network Monitoring, Specialist Support and Master Control Room. Delivery ensures that end users are activated on the basis of requests from Partner Operators that have purchased active and passive services. Assurance is responsible for locating any faults and repairing them. This monitoring and support is guaranteed 24/7. Network Monitoring monitors the status of individual active fibers, equipment and systems, and detects faults very quickly with the aim of eliminating or minimising the perception of disruption to end users. Specialist Support and the Master Control Room support Delivery, Assurance and Network Monitoring, and provide them with all the tools, training and organisation needed to carry out their jobs properly. A distinctive factor that makes the Open Fiber SOC unique is the fact that it is located in the Rome POP, which will serve the capital and form the beating heart of our network.
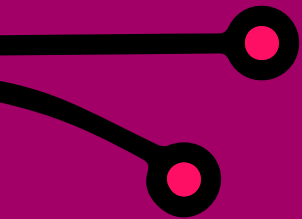
## Splitter or Optical Splitter

This is a passive (i.e. unpowered) device used in PON technology to split and combine light wave energy. A splitterreplicates the optical signal from one fiber in a predefined number of other fibers (1 to 8, 1 to 4 splitter and so on) and combines optical signals from different clients.
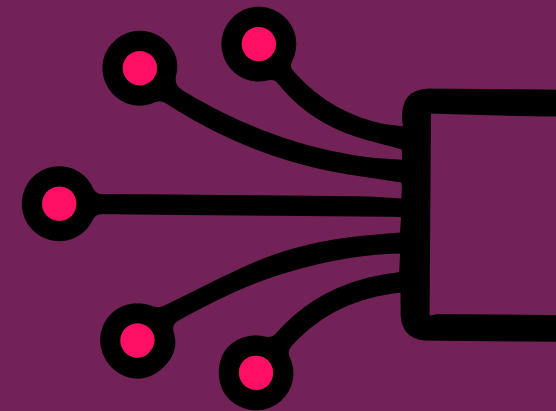
# tT

## Termination Segment

This is the segment of an NGA network that connects the end-user real estate unit to the first distribution point. The termination segment therefore consists of the vertical wiring within the building and, if necessary, the horizontal wiring up to an optical splitter located in the building basement or in a nearby cable pit.

## Twisted Pair

This is a cable consisting of two insulated copper wires that have been twisted together, and has been used in telephone systems since the end of the 19th century. During the 20th century, all public telephone networks were based on this technology, and even today, the so-called "last mile" – the cable that actually goes into homes – is a twisted pair. The only exception is FTTH (Fiber To The Home), in which the optical fiber finally enters straight into homes.

# uU
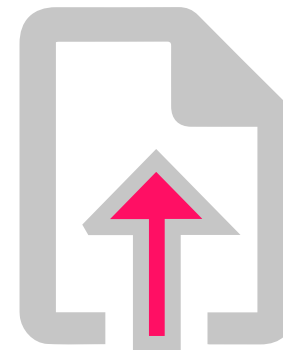
## UBB

The term ultra-broadband refers to an effective download speed of at least **30 Mb/s**. Networks are generally referred to as "ultrafast networks" when connection speeds reach or exceed 1 GB/s. To allow these speeds, optical fibers must be used instead of conventional copper cables, which is why these networks are called optical access networks (NGAN) or simply optical networks (NGN).

## Ultra-Broadband (UBB)

This term is used in reference to actual download connection speeds of at least 30 Mbp.

## Ultrafast

This refers to download connection speeds above 100 Mbps, and includes FTTC (Fiber to the Cabinet), FTTH/B (Fiber to the Home/Building) and Cable Docsis 3.0 (Data Over Cable Service Interface Specification) technologies.

## Upload

This means loading data from the network.

A    B    C    D    E    F    G    H    I    L    M    N    O    P    R    S    T    U    V    W    X

# vV

## VoIP

This stands for **Voice Over Internet Protocol**, which is the technology that allows telephone calls to be made using the internet as a carrier in place of the conventional telephone network built over the last 100 years with copper cables and dedicated exchanges. It is because of VoIP that a telephone connected to an optical fiber network can call any other user who is still connected to the conventional telephone network.

# wW

## White Area

White areas are defined as areas where private operators did not find it convenient to invest and therefore have no broadband and ultra-broadband infrastructure.

## Wholesale

Open Fiber is a **"wholesale only"** operator, which means that it only operates on the wholesale market, offering all interested operators on the market access on fair and non-discriminatory terms.

## Wimax

This stands for **Worldwide Interoperability for Microwave Access**, which is a family of wireless communications standards. It was conceived to replace the notorious last mile with radio transmissions where the use of laid cables is too expensive and impractical. It is one of the possible technologies that can be used to implement FWA.

## Wireless

Wireless connections transmit data via radio waves (electromagnetic waves) and can therefore also be used in remote areas. Examples of wireless broadband connections are HiperLAN, WiMAX, satellite connections, or mobile networks.

## Wireless broadband

Wireless connections transmit data via radio waves (electromagnetic waves) and can therefore also be used in remote areas. Examples of wireless broadband connections are HiperLAN, WiMAX, satellite connections, or mobile networks.

## WLAN

This stands for **Wireless Local Area Network**, which means a local area network that connects hosts together using wireless technology. Wi-Fi and Bluetooth are the most frequently used wireless network protocols.

## Work Order

This is the paper or digital document providing all the information about a service, and is the first step to take after receiving a service request or when following a pre-determined preventive maintenance schedule.

## XG-PON

This stands for **10 Gigabit Passive Optical Network**, which is the technology used for providing ultra-broadband services on FTTH PON infrastructure, supporting downstream access speeds of up to 10 Gigabits per second (as indicated by the first two letters "XG") and up to 2.5 Gigabits per second upstream. It is an evolution of GPON technology, which is currently the most widely used and robust access technology on FTTH PON networks. A subsequent evolution is XGS-PON technology, which provides identical maximum downstream and upstream speeds of up to 10 Gigabits per second (as specified by the "S" for *Symmetric*).

## XGS-PON

This stands for **10 Gigabit Passive Optical Network**, which is an evolution of GPON technology that provides downstream and upstream connection speeds of up to 10 Gigabits per seconds, as specified by the "S" for *Symmetric*. This is the most important evolutionary step from GPON after the XG-PON, which achieves a maximum upstream speed of 2.5Gbps upstream and a maximum speed of 10Gbps downstream only.
Increasing maximum upload capacity is one of the most important features of XGS-PON, which is set to become mainstream technology in the coming years.

A   B   C   D   E   F   G   H   I   L   M   N   O   P   R   S   T   U   V   W   X

open fiber