

Glossary of terms

Access/Interconnection level

There is a fourth level: at the distribution point (FTTH) or street cabinet (FTTx).

Backhaul (network)

Backhaul technologies include also access fibre technologies such as xPON and P2P.

Bitstream Access

Virtual Unbundling (VU) partly virtualizes the line by terminating the subscriber line on the equipment (DSLAM or OLT) of the Access Provider. The Access Seeker can connect directly to this equipment at the Cabinet or Central Office level, thus avoiding the Access Provider's aggregation network. Although the physical lines themselves are not under control of the access seeker, VU offers a high level of control over the connections in terms of transparency (for IP configuration and Ethernet transport), QoS, and multicasting capabilities. While in principle (limited) control of physical layer parameters is possible, this would result in significant operational complexity.

Next Generation (NG) Bitstream access virtualizes the line further by pushing the Points of Interconnect (Pols) to the edges of an aggregation network operated by the Access Provider. Connectivity to subscriber lines is aggregated into bigger pipes and offered to the Access Seekers at different aggregation levels (at metro, regional, national POPs). NG Bitstream offers a lot of flexibility from a comprehensive level of control for the Access Seeker (with exception of first-mile settings), to having the Access Provider taking up some responsibilities on behalf of the Access Seeker in terms of service management or subscriber management (e.g. IP configuration of the end-user devices).

Legacy Bitstream (BS) has already been applied for quite a while but is only a basic and limited form of wholesaling. It is typically PPP-based, requiring a BRAS at the Provider or the Seeker. Only unicast traffic is possible. It only applies to High Speed Internet (HSI), which by definition is Best-Effort. With legacy BS, the customer chooses the HSI service from a single wholesale provider.

Contention ratio

Contention ratio is only one factor which can affect data transfer rates on FTTx, DSL and HFC networks.

In the control of ISPs, these include:

- any limits on data transfer rates imposed by an ISP based on the broadband plan purchased by the consumer;

- the number of customers sharing the local fibre or coax (i.e. the 'customer split ratio') in a passive optical network configuration;
- the access equipment (or aggregated equipment) split ratio (from hardware, software and architecture);
- the 'contention ratio' adopted by the ISP;
- the backhaul (transmission) capacity available.

In the control of end-users, these include:

- the number of end-users at a household using the broadband connection at the same time;
- the end-user's hardware, software and respective configurations;
- the connection method within the premises (wireless or fixed);
- the type of service or content the end-user is accessing to and how it is delivered;
- the source of the service or content (including any server limitations and Internet routes).

DSLAM Digital Subscriber Line Access Multiplexer

Equipment which allows full copper, full fibre or a mix of fibre and copper lines to support broadband access and mobile backhaul.

Ethernet

OSI Data Link layer 2.

It is now the widely-installed access technology for FTTx, DSL and HFC broadband and wireline/wireless LAN home networks. *Is it important to talk about speed here?*

FTTx

Definitions should match what the ones from the FTTH Council Europe for FTTH and FTTB. See http://www.ftthcouncil.eu/documents/Reports/FTTH_Definition_of_Terms-Revision_2011-Final.pdf

FTTN - ...(e.g. VDSL2, Bonding, Vectoring)...

In-house wiring

It should include a pre-connectorised ODF for operators to connect to (requirement in some countries for new buildings).

IP

OSI Network layer 3.

Ladder of investment

There is a dilemma with the ladder of investment. Though infrastructural competition remains the cornerstone of the EU framework, in certain zones, there are more benefits for competition and consumers with a bitstream with enhanced performances by vectoring than with an unused possibility to climb the ladder of investment (SLU). Next-Generation Bitstream and Virtual Unbundling should in some cases be considered as alternatives to infrastructural competition, flexible enough to foster investment and to allow deployment take-off.

Local loop

The local loop includes the in-house wiring, the terminating segment, the distribution point and the feeder segment – independently of the access technology.

Topologies should be defined in a separate definition.

A point-to-multipoint topology allows a cost reduction of the passive infrastructure by sharing the cost of the distribution point, the terminating segment and the in-house wiring.

Any broadband access network has at least a point-to-point topology on the terminating segment.

The figures confuse the reader by mixing topologies and technologies.

Point-to-point technology can be rolled out on a point-to-point topology as well as on a point-to-multipoint topology (Active Ethernet). The same goes with xPON technologies.

Future TWDM-PON technology does not require a point-to-point topology from the central office.

ODF Optical Distribution Frame

The reference to P2P FTTH technology is incorrect. It is not related to a particular technology. ODF is also not only at the MPoP.

ODF can be at the basement of a building, at the distribution point, at the local exchange/central office and/or at the MPoP. It is used to connect the OLT to a customer or a group of customers but also to connect segments of the access network.