

Open Fiber answer to the public consultation on the “BEREC Guidelines on Common Approaches to the Identification of the Network Termination Point in different Network Topologies”

Open Fiber would like to highlight some concerns about the draft BEREC Guidelines (“Draft”) designed in accordance with article 61(7) of EECC. The Draft focuses on how to identify the location of the network termination points (NTP) in different networks.

First, Open Fiber believes that it would be appropriate that BEREC clarifies its interpretation of the NTP definition as given in the EECC. According to the EECC (Article 2 (14)), the term NTP means *“the physical point at which an end-user is provided with access to a public communications network; in the case of networks involving switching or routing, **the NTP is identified by means of a specific network address**, which may be linked to an end-user's number or name.”*

In our view, it is crucial to understand what the expression *“a specific network address”* means in order to properly locate the NTP in the case of fibre networks. Actually, in the Draft there is no clear distinction between the different kinds of technologies that could be adopted by operators. On the contrary, the NTP will be different depending on the technology chosen (fibre, copper, coax).

By examining the Draft, it seems that such definition is not clear for BEREC either (see points 18 and 19). Indeed, according to BEREC, *“it is not necessary for the specific network address to be implemented in the NTP itself”*. Moreover, BEREC raises a further question: *“in case of access networks without involving switching and routing e.g. access networks based on a shared medium (e.g. passive optical networks, coax based access networks), the network is not able to establish a clear link between a network address and a defined physical point at customer premises”*.

Open Fiber agrees with such observation, since in the case of a PON network the location of the NTP at point A seems technically unsustainable.

In the definition of NTP, the EECC refers to the access to a public network, so that the specific network address should be an IP one. If that is the case, it is clear that the NTP cannot be other than the modem itself. Considering all IP technologies developed so far, a network address should be connected to electronic devices. Therefore, it is difficult that such address could be a point after the modem.

If then it is assumed that the '*specific network address*' is an IP address, Open Fiber would like to explain how its FTTH network works, so that it will be clearer to understand why the scenario of NTP at point A is not feasible.

In particular, Open Fiber is deploying a mainly passive FTTH access network (PON) multi-operator besides point-to-point technologies. There is no mention of such architecture in the Draft.

The GPON architecture provides interconnection between the equipment in the central and a multiplicity of users through a single shared transmission optical means. As a result, there is a continuous exchange of information between the active apparatus in the exchange, called Optical Line Termination (OLT), and the device installed at the user's site, called Optical Network Termination (ONT). Both devices (OLT and ONT) therefore belong to the GPON Network.

In a GPON network, two interfaces must correctly inter-work to allow connection:

1. OLT - ONT interface: the operator who provides the access service has the responsibility to guarantee its correct functioning.

To date, the solutions adopted have not allowed the use of OLT and ONT of different vendors. It is important to note that in case of XDSL systems, the use of generic CPE allows data usage with at most the loss of "remote control" and VOIP, while in GPON networks an incorrect communication between ONT and OLT causes the total degradation of the line.

2. ONT - CPE interface: the interface between the ONT and the modem/router and in general the CPE (provided by the Operator or purchased/already used by the end user) presents two possible assembly solutions:

- the ONT and the CPE are two separate devices: in such cases the CPE must be compatible with the installed ONT;
- the ONT is integrated into the CPE (it is assembled together). In this case, the NTP (or ONT) is within the CPE and inextricably joined to it.

Therefore, in Open Fiber GPON network the ONT constitutes the NTP, with which the final customer's CPE interfaces. Moreover, if the ONTs are integrated within the CPEs, the latter are to be considered as themselves the NTP and as such pertaining to the Operator's control (and responsibility).

Nevertheless, according to the EECC definition, the ONT cannot be the NTP as it is not identified by an IP public address, but it is a terminal point of connection identified only by an ID Resource useful to be coded in the GPON it belongs to.

In conclusion, for fibre optic networks (especially PON-based), if the NTP must be associated to an IP public address, this can neither be point A, nor point B, but at least a point beyond the modem and before the router (point B or C depending on whether modem and router are physically separated).

The three options proposed by BEREC (point A, B and C) provide NTP location from a user's or retail operator's point of view and not from a network perspective. Conversely, it should be the position of the NTP to determine the choices of equipment on the operator side and the user side and not vice versa.

In addition to what we said above, we would like to stress another point about the EECC definition. It is not clear who the "end user" is for a wholesale operator. In particular, in case of wholesale-only operator as Open Fiber, even if we define an NTP at a certain point, the retail operator who offers the service to the end user can insert an additional demarcation point downstream.