Response to the consultation on the BEREC Guidelines on Common Approaches to the Identification of the Network Termination Point in different Network Topologies

.

21 November 2019

Introduction and comment

The FTTH Council welcomes these Draft BEREC Guidelines on "Common Approaches to the Identification of the Network Termination Point in different Network Topologies" document and the opportunity to give further comments.

The FTTH Council is an industry organisation with a mission to accelerate the availability of fibre-based, ultra-high-speed access networks to consumers and businesses. The Council promotes this technology because it will deliver a flow of new services that enhances the quality of life, contributes to a better environment and increased competitiveness. The FTTH Council consists of more than 150 member companies. Its members include leading telecommunications companies and many world leaders in the telecommunications industry (additional information is available at www.ftthcouncil.eu).

In general terms the FTTH Council found the document well written and clear. There are nevertheless some specific comments that should be made especially concerning FTTH networks becausee our analysis concerning the favourable NTP differs significantly from the BEREC analysis.

The FTTH Council Europe will participate fully in the consultation underway, appreciates the level of consultation being undertaken and is happy to respond further if required.

Specific Comments

1. **Use Case**

The FTTH Council believes that there may be one use case missing and that it may complicate the description of the boundary for the location of the NTP set out in section 2.2.

This alternative use case arises because there are some modems used by operators on the market which have a public as well as a private network function inside. In these "boxes", what is effectively happening is that the network operator is able to provide typical services to the subscriber (Video, telephony, Internet, local (private) WiFi) in a separated service section of the cable modem box, as well as a "public" WiFi, to complement the operator's ability to offer cloud based WiFi services to all its subscribers who happen to walk by the neighbourhood within a local range. It may not always be a real complementary service due to the range from inside the dwelling to the outdoor street, but it is nevertheless activated i.e. the cable modem is stipulated by the operator to be always on (supplied with power) as a part of the contract with the subscriber, so that the public WiFi can be maintained as well.

This implies that such a modem could be both point A or B at the same time. The effective separation of the network is a hopefully proper functioning firewall inside the modem (virtual NTP) that divides public and private entities. This may also affect the definitions in section 3.1.3 and paragraph 25 on ownership of equipment.

2. **Relevant NTPs for FTTH infrastructures**

Point A

BEREC analysis misses some crucial points for fibre infrastructures. It disregards standardization and innovation issues with optical transport technologies (see 3.3.1.1). Technological progress in optical transport technologies is quite fast. For correct functioning of the network and services, complete interoperability between the OLT and the ONT ("modem") has to be achieved. In addition, the ONT ("modem") is the element allowing the active network operator to differentiate between different (parallel) retail services provided to the customers over its fibre connection by third-party retail operators. To those retail operators quality of service obligations by the network operator do exist but cannot be fulfilled, if the ONT (modem) is under the operational control of the customer.

Standardization issues:

Combining modem and router in one box does make sense in mature networks like copper and HFC. In fibre optic transport systems, existing standards are still tweaked by manufacturers to gain operational and performance advantages over competing manufacturers equipment. This is to the detriment of interoperability across all functions between ONTs and OLTs of different manufacturers, even though all adhere to the same standards.

In addition, technological progress leads to a variety of optical transport systems (or at least different generations of them) being implemented, as fibre networks are being constructed all over Europe and within its Member States. So fibre network operators will have a variety of OLTs in their different local networks, leading to a very complicated and – in the extreme – address-based system of ONT specifications. As it is currently unforeseen to have an integrated modem/router having complete interoperability with all existing different optical transport systems and its relevant tweaks by different manufacturers, Point A and therefore combined Modem/routers for fibre networks will severely limit competition in TTEs for consumers.

BERECs mistaken analysis at this point stems from the disregard of the tweaks in (especially PON variants) standards implementation. In addition, differentiated business models in fibre networks (for example multiple parallel retail services from different suppliers via different VLANs) necessitate a nuanced analysis differentiating between transport infrastructures.

Fixed NTP at Point B

Based on the analysis above, for fibre optic networks (especially PON-based), the results described by BEREC are not accepted. In our view, Point B is the only NTP for fibre networks, where the results described for Point A will actually happen.

Usually the ONT (modem) exhibits a standardized Ethernet interface at the CPE side, allowing for a variety of CPE developments irrespective of the particular optical transport standard interpretation of the manufacturer of the OLT or the optical transport system (GPON, NG-PON or XGPON) used by the active network operator.

Fixed NTP at Point C

We agree with BEREC analysis for this scenario. In case Point A is applied as the NTP for fibre networks, the results in the TTE market place will match those described correctly for Point C.

So the Conclusions under 3.2.4. are misleading in a policy sense for FTTH networks.

3. Innovation

In the event that the NTP is set in such a way that the CPE is considered part of the network, this does not imply that there may be a lower level of innovation as suggested at paragraph 41 (d). The restricted number of customers in this instance will be the network operators themselves and while the implication is that there would be far fewer individual customers for TTE, those users will be highly sophisticated, challenging and potentially more likely to drive innovation than a wider, non-specialised customer base. The net result may well be a higher level of innovation than would otherwise be the case.

4. Other Comments

Item 3.3.3.1 (Paragraphs 92 -94) it is worrisome that operators may disconnect the TTE in a context where many end-users may not even be technically inclined enough to realise that their equipment is under attack & causing harm, let alone defend against such cases. In this case at least a specified notification process should be in operation to prevent unannounced disconnections.

The modem/router/media box manufacturer is at least as important to prevent exploitation of their devices in a context where most subscribers do not have the skillset to defend an incident (and very often will not even be aware of a problem) and will have to revert to the "updates" of the Hardware manufacturers. Reversing the "blame" in this day and age will be unhelpful.

From the FTTH Council Europe perspective, paragraph 114 would seem to be one of the key considerations which should outweigh the other aspects.

Local loop 3.1.2 (no. 21)

"The definition of the fixed NTP location, therefore, has an impact on whether a piece of equipment at the customer premises is part of the local loop. For example in the case of an internet access service, if modem and router are part of the public network both devices also form part of the local loop, if they are TTE they do not form part of the local loop."

This is not such a simplified example in practice since the fibre local loop can be utilized with different technologies – so the NTP needs to change access. to the OLT of the network operator (in this case of the active components). In case of the use of the unbundled fibre loop, the operator using the unbundled loop should not be restricted in the choice of its network equipment by the passive operator or the consumer (through the use of a specific ONT).

Regulation 2015/2120 3.1.3.

No. 25

"Therefore, in case of an internet access service, NRAs should consider whether there is an objective technological necessity for equipment which the end-users are not able to replace with own equipment to be considered as part of the public network when defining the fixed NTP location (see section 3.2)" .

Here the additional "if the choice of terminal equipment is limited" is missing. In FTTH, setting the NTP at point A will severely limit the choice of terminal equipment due to different interpretation of GPON and other standards by various equipment manufacturers. Interoperability between ONT and OLT from different manufacturers cannot be guaranteed. NTP at Point B will establish a standardized interface irrespective of the underlying transport infrastructure (copper, HFC or fibre (PON variants or active Ethernet) and therefore grant maximum choice in TTE.