Deutsche Glasfaser

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

- Response by Deutsche Glasfaser -

Deutsche Glasfaser welcomes these Draft BEREC Guidelines on “Common Approaches to the Identification of the Network Termination Point in different Network Topologies” document and appreciates the opportunity to give further comments.

Deutsche Glasfaser plans, builds and operates open access FTTH networks for retail and business customers throughout Germany. Deutsche Glasfaser has pioneered rapid construction state-of-the-art FTTH networks in rural areas through innovative and cost-efficient planning and construction methods. As a private investor, Deutsche Glasfaser is an independent and cooperative partner of municipalities and carriers throughout Germany. For remote areas, Deutsche Glasfaser combines private investment with targeted state subsidies.

In general we found the document clear and with a lot of significant insights. There are nevertheless some specific comments that should be made. Especially concerning FTTH networks, our analysis differs significantly from the BEREC analysis, wherever the best location of the NTP is concerned.

We are happy to elaborate further if required by BEREC.

Topics for specific comments

3.1.2 Local loop (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, as the fibre local loop can be utilized with different technologies – so the NTP needs to change acc. to the needs 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 ULL 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).

3.1.3 Regulation 2015/2120 (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 fibre optics, setting the NTP at point A will severely limit the choice in terminal equipment due to different interpretation of GPON and other optical transport standards by various equipment manufacturers. Interoperability between ONT and OLT from

different manufacturers cannot be guaranteed. Having the 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.

3.2 Impact on TTE market

In this part, BEREC analyses different locations of the NTP, but only in relation to the impact on the TTE market. As explained below, different choices for an NTP in full fiber networks do not have an impact on the TTE market, but also on wholesale markets and availability of services.

BEREC analysis misses some crucial points for full 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 providing the corresponding wholesale service do exist but cannot be fulfilled, if the ONT (modem) is under the operational control of the customer.

Coming back to standardization issues: Combining modem and router in one box does make sense in technologically 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. This detrimental effect is more than offset though through operational efficiency gains and an enhanced capability envelope ultimately beneficial to all network users alike.

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.

Fixed NTP at Point A

Taking the technological realities explained above into consideration, Point A and therefore combined Modem/routers for fibre networks will severely limit competition in TTEs for consumers, 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. So the supposed positive effects associated with A will not happen for full fiber networks.

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 to be accepted. In our view, Point B is the only NTP for fibre networks, where the positive 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 the BEREC analysis for this scenario. In case Point A is applied as the NTP for full fibre networks, the results in the TTE market place will match those described correctly for Point C.

So the Conclusions described in **3.2.4.** are not representing the full set of parameters and carry a more than very high risk of misleading NRAs and policy makers in case of NTPs for full fibre networks.

3.3.3 Network Security

We think BEREC needs to differentiate between Point A and B concerning network security. In Point B fibre network operators are guarded against attack on the network transport layer, especially from individual CPEs. So the level of network security at Point B is much higher – without detrimental effects on other features.