

**MEO's response to the public consultation on the draft BEREC Guidelines
on Very High Capacity Networks**

30/04/2020

MEO – Serviços de Comunicações e Multimédia, S.A. (MEO) welcomes the opportunity to contribute to this public consultation.

QoS parameters and data collection

It is our understanding that the definition of the QoS parameters (chapter 4.5) and the data collection (chapter 4.6) on the draft guidelines on VHCN are the most crucial points.

BEREC adopted a three phase process necessary to collect the data needed for the determination of the performance thresholds 1 and 2 (criterion 3 and 4), according to the following calendar:

- First phase: March 2019
- Second phase: May 2019
- Third phase: August 2019

In the first phase, BEREC invited the stakeholders to provide initial inputs for the development of the draft guidelines, based on providing comments to the draft questionnaire itself.

In the second phase, BEREC asked the stakeholders to fill in the final questionnaires, but not for FTTH networks.

On the third and last phase, BEREC decided to collect the data questionnaires for fixed network operators with FTTH networks.

Since the first phase, the QoS parameters defined by BEREC were divided into four groups:

- Downlink and uplink bandwidths
- Latency and its variation [Round-trip IP packet delay (RFC 2681); IP packet delay variation (RFC 3393)]
- Error-related parameters [IP packet error ratio (Y.1540); IP packet loss ratio (Y.1540)]
- Resilience [IP service availability (Y.1540)]

There was no intermediate BEREC report and operators had no other opportunity for commenting the followed approach and the results obtained.

Therefore, some of the results achieved and some of the statements in the Draft BEREC Guidelines on VHCN about the QoS parameters are, in our view, inconsistent and may raise many other questions that still need to be answered.

We believe two major points still need further clarification:

1. Are the proposed QoS parameters the most appropriate for the purpose intended?
2. Are the proposed QoS parameters available and/or can the proposed QoS parameters be obtained (without prior definition and consideration of network implementation scenarios, so that they can be comparable and representative)?

It seems that BEREC decided to define the QoS parameters thresholds without settling with the stakeholders all the doubts the latter raised in the three phases mentioned above, namely in what concerns the information that is not available nor is easily obtainable according to the existing recommendations and standards proposed on the current draft guidelines.

BEREC mentions that stakeholders did not provide clear indications that different parameters could be more appropriate (paragraphs 49 and 50).

We disagree with these statements because (at least some of) the stakeholders, including ourselves, raised a set of doubts about the approach and the methodology BEREC was following and suggested there was the need for additional clarifications.

The Draft BEREC Guidelines on VHCN also present evidence about the questionnaires collected from network operators and the ones taken into account by BEREC.

The amount of questionnaires not considered is significantly high, raising doubts about the sample representativeness, especially when several countries were not taken into account, particularly for fixed networks (paragraphs 108 to 115).

Regardless, the methodology followed by BEREC and the threshold values of the parameters now presented also raise a lot of concerns given the fact that some FTTH networks, “natural” VHCN networks, might not meet the defined performance criteria 3, especially for GPON networks (just P2MP XG(S)-PON and P2P 10 GbE networks were considered, according to paragraphs 260 to 263), the same happening with LTE-A networks and criteria 4.

In order to correct these issues and address the two points mentioned above, we believe that:

1. BEREC should conduct an assessment of the available performance tools operators have for measuring QoS parameters (and the available/existing/used performance parameters).

Today, our best practices rely on (i) field test equipment for client service acceptance and (ii) on network test equipment for performance network parameters acquirement for technical and operational purposes and also to support the commercial response in bespoke and tender procedures. We base the latter on probes located in our network. These equipment are programmed with clear and specific test plans based on RFC 2544 and Y.1564 recommendations, so that we can expect replicable and auditable results.

In our opinion, Y.1540, RFC 2681 and RFC 3393 do not establish a clear and precise way to define a test plan that can be used to achieve the recommended BEREC network performance parameters.

We expect that the BEREC assessment that we propose on the recommendations and standards Y.1540, RFC 2681 and RFC 3393, as the framework for obtaining the suggested Layer 3 performance parameters, reveals a set of certified suppliers and equipment, namely a central platform to program and monitor the test plans and also to support the distributed probes mechanisms.

2. BEREC should define a framework for the application of the several existing recommendations on QoS to each VHCN implementation scenario.

As previously stated, we consider it very difficult to obtain in Y.1540, RFC 2681 and RFC 3393 a methodology to implement and measure the specific parameters in real networks.

It is our understanding that an effort from BEREC should be made in order to define a precise test plan, derived from those recommendations, including also the following aspects on which these measurements are to be taken:

- a) a clear definition of the reference measurement points and criteria to identify them in real operator networks (e.g.: service PE, gateway PE, core routers, Customer Premises Equipment)
- b) the specification of the measurement points service characteristics (access type, network service provisioned, QoS classes/policies/parameters, routing capabilities: point-to-point/mesh)
- c) the measurement conditions itself (how many times, test duration, synchronization and timing, IP flow characteristics: packet sizes/payload patterns)

We find this very important because all the operators should have the same common base methodology to measure and compare performance results in similar test conditions.

Fixed Wireless Access (FWA)

Although BEREC recognizes that wireless networks providing services that compete in the same market with services provided by fixed networks should be considered equivalent (paragraph 20), it is not clear how a network that meets criteria 2 or 4, or both, can also meet the performance thresholds of criterion 3 and be also considered a Fixed Wireless Access (FWA).

It is necessary to guarantee that the definition of criterion 3 allows fixed wireless access networks and services to be also included on VHCN (regarding the threshold parameters definition).

Microwave backhaul connections

Criterion 1 considers that the entire network is based on fiber. However, with criterion 3, any other network providing a fixed-line connection with a certain quality of service, can also qualify as VHCN.

The same happens with criterion 2, that consider wireless networks should have a fiber rollout up to the base station.

However, some of these wireless networks have microwave backhaul connections that ensure and guarantee the implementation of 1 to 10 Gbps links and, therefore, should also be considered as an implementation scenario for VHCN.



It is necessary to guarantee that the definition of criterion 4 allows wireless networks with microwave backhaul to be also included on VHCN (regarding the threshold parameters definition).