



Liberty Global response to BEREC's draft Guidelines on Geographical surveys – Verification of information

Introductory remarks

Liberty Global welcomes the opportunity to comment on BEREC's draft Guidelines on Geographical surveys – Verification of information (draft Guidelines).

Liberty Global has previously responded to the call for input in July 2019 and public consultation in November 2020 on BEREC's draft Geographical survey guidelines. We have also provided substantial input to various consultations regarding the criteria for very high capacity networks (VHCN). We continue to urge BEREC to take sufficient time and effort to review and discuss with stakeholders their input to such consultations, to ensure that it takes into account the full range of industry experiences and views; and that BEREC's activities are appropriate, necessary and proportionate. We are generally concerned that if BEREC fails to do this, it may create legal uncertainty resulting in court cases putting a high and unjustified burden on commercial operators.

Liberty Global has raised concerns in several BEREC forums regarding the inconsistencies between declaring performance/VHCN status based on theoretical capability of the technologies deployed and real-life testing of services provided over these networks. It is clear that these inconsistencies have not been resolved by BEREC in the draft Guidelines. Whilst we continue to hold significant concerns in relation to BEREC adopting a 'best technology' approach to defining VHCN (and how this discriminates against non-FTTB/H operators, in direct contradiction to the key Electronic Communications Code (Code) principle of technological neutrality), we do not propose to repeat our previous submissions on this topic.¹ We will however reiterate that HFC operators such as Liberty Global have been leaders in deployment of and investment in VHCN at scale across Europe and, as a result, millions of customers are now benefiting from Gigabit services on our DOCSIS 3.1 upgraded networks. That being said, the performance characteristics actually offered to customers depends on a range of decisions, including customer demand, commercial investment optionality and operational design options — independent of the technical capability of the network.

Despite assurance by BEREC that reporting will be based on network capability, the draft Guidelines appear to propose various ways for authorities to use real-life network performance to verify this information (this is a clear contradiction), and in a manner that fails to recognise differences between network technologies.

¹ For more information on Liberty Global's concerns – see our response to BEREC's VHCN guidelines dated 30 April 2020, BoR PC 02 (20) 13 (https://berec.europa.eu/eng/document_register/subject_matter/berec/public_consultations/9482-contribution-by-liberty-global-to-the-draft-berec-guidelines-on-very-high-capacity-networks)



Specific comments on the draft Guidelines

Step 2 – Use of third parties to find inaccuracies in data

Third party information likely to lead to higher administrative burden for operators

We strongly disagree that end-users can be a source of accurate information regarding the theoretical capability of our networks, particularly where end-user services have not been designed to utilise the full capability of the network at this stage. Moreover, even if the services have been designed to deliver the relevant performance, there are many other factors (as recognised in relation to QoS-3 parameters) that affect in-home performance (such as customer equipment, in-home wiring). The same can be said for other operators who will not have sufficient oversight over the equipment we deploy etc. Rather, this will merely serve to create unwarranted doubt regarding the accuracy of information provided by operators — and may eventually result in misleading information — which will inevitably result in higher administrative burden on operators (particularly on non-FTTB/H operators) having to demonstrate that the information provided is indeed correct.

As noted above, information provided by such third parties is likely to be of limited utility, particularly where the capability of the network is higher than the service performance being offered to end-users. Whilst BEREC recognises in paragraph 25 that information provided by end-users is inconclusive, we ask BEREC to more clearly recognise in the guidelines that the information available to end-users pursuant to the geographic surveys is based on theoretical capability (see below) and may therefore be irreconcilable with end-user experience. Broadband maps provided by authorities, based on information provided by operators under the geographical surveys, are likely to lead to end-user confusion (and potentially customer dissatisfaction) — particularly if they fail to disclose the nature of the information being disclosed.

For this same reason, we disagree with encouraging end-user declarations in the mapping tool. End-users that wish to check the performance of their provider (or alternative providers) should instead be referred to the relevant Net Neutrality measurement tools.

Speed information provided under Open Internet rules are not same as under Geographical Surveys

Speed information provided for the purposes of the geographic surveys will be based on network capability (rather than on the particular services being offered). It is therefore not the same information as is provided under the Open Internet Regulation.² The Core Guidelines make clear that the speed information provided should ‘describe the [actual] capability of the network (equipment, technology and medium) and not be related to any particular retail service offered at the address/grid’.³ Conversely, the Open Internet Regulation (and related BEREC Guidelines) clearly

² Regulation (EU) 2015/2120 of the European Parliament and of the Council of 25 November 2015 laying down measures concerning open internet access and retail charges for regulated intra-EU communications and amending Directive 2002/22/EC and Regulation (EU) No 531/2012 (Open Internet Regulation).

³ BEREC Guidelines on Geographical surveys of network deployments BoR (20) 42, 5 March 2020 (Core Guidelines), paragraph 22 (definition “maximum achievable speed” and “expected peak time speed”)



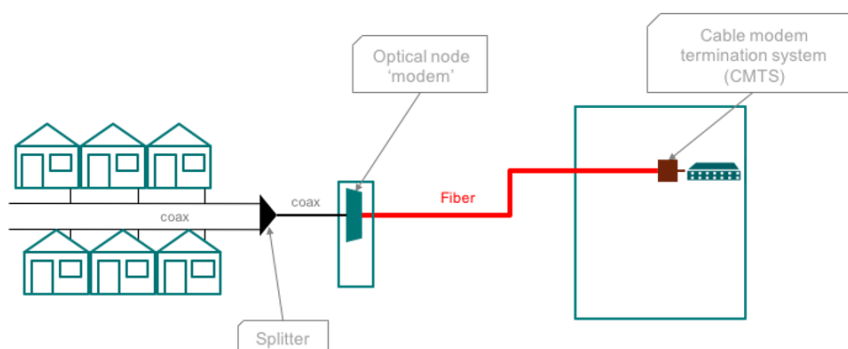
specify that the speed information provided will be based on the Internet Access Service being contractually provided to the end-user (and not about the infrastructure capability). This is however contrary to paragraph 53 of the draft Guidelines which suggest that the Open Internet definitions are the same as specified under the Core Guidelines. Such a statement would result in an unjustified discrepancy – and legal uncertainty – between the draft Guidelines and the Core Guidelines, by suggesting that the Core Guidelines have adopted the same definitions as in the Open Internet Regulation when this is not the case. We encourage BEREC to recognise these differences in the final Guidelines.

Step 3 – Verification of data by authorities

There are significant differences between the various networks technologies (fibre, xDSL, HFC) that affect both performance and how it can be tested. In our view, the Guidelines are largely written with DSL networks in mind and disregard the specificities of HFC networks. We have expressed this concern before, not only in relation to geo-surveys but also for example regarding the Article 61(3) Guidelines, and are worried BEREC is not taking this seriously. One of the cornerstones of the Code is technology neutrality and BEREC should live up to it. For example, HFC networks do not experience service degradation (via signal attenuation) across distances in the same way as DSL networks. Typically, a HFC customer will experience similar quality of service with distances of 5km as with distances of 100km due to the use of signal amplifiers (though today, the total cable length from the CMTS to the end-user is usually less than 25km).

For Liberty Global, it is important that BEREC and relevant national authorities understand how HFC networks are designed. A HFC network consists of fibre which connects our last point of presence (the 'Hub', where the CMTS is located) to the optical node where the optical signal is converted into an electrical signal, travelling over coaxial cable to the end-user. All the customers within the area share the capacity of the node. As the coax cable is a shared medium, the achievable performance in practice depends on actual instantaneous utilization of the network. Whilst our current maximum end-user products on the DOCSIS 3.1 network are 1Gbps services, the provisioned capacity is well above that and the network capability is even higher still.⁴ Liberty Global, through its local operating entities, closely monitor and provision the capacity of these nodes; timing investments in network capacity so as to minimize over-investment (or stranded capital) while delivering service performance that exceeds demand.

⁴ Note that Liberty Global has previously outlined the future capabilities of HFC networks in our response to the VHCN Guidelines (see footnote 1)



We disagree with BEREC's suggestion in paragraphs 34 and 36 of the draft Guidelines that knowledge of the geographical coordinates of active access nodes (CMTS for HFC networks) and, in particular, the distance between the node and each premise can be used to carry out quality assurance. As noted above, the distance is only potentially relevant for DSL technologies (along with other factors), not for HFC networks. It would not be possible to test quality of service parameters (speed, latency, jitter or packet loss) with this information. Whilst latency is affected by distance, the burden of providing this information is much higher than its utility, as such measurements will not provide insight on the wider range of internal and external factors that affect latency. Accordingly, requiring operators to provide such information, and reliance on such information, would not be appropriate, necessary or proportionate. Moreover, this information is both highly commercially sensitive, and highly sensitive from a network security perspective.

Widespread testing of the network would require access to end-user homes or the creation of test service (replicating the end-user home service) which would ultimately only be capable of recreating a 'real life' service. As HFC networks are a shared medium, it is not possible for testing of HFC networks to be conducted at the CMTS or the optical node in a manner independent of other users on the network and — more importantly — of the commercial and operational decisions that have been made by the HFC operator. Whilst it would be possible to create a test node that is capable of testing the capability of HFC networks in a controlled environment, such nodes are costly and replicating them in many locations across Europe would be a hugely costly and difficult process. In our view, this would not be appropriate, necessary nor proportionate for the aims.

An alternative from a HFC network perspective, particularly for verifying status as VHCN, may be for HFC operators to declare that the active equipment in a particular area has been upgraded to DOCSIS 3.1 or that they are offering 1Gbps services in the relevant area.

QoS-2 Measurements

For the reasons outlined above, Liberty Global does not agree with the use of QoS-2 (active service) information to verify QoS-1 (network capability) information, including whether QoS-1 estimates are within a reasonable margin of the active network measurements. It is not clear whether BEREC is suggesting that authorities should require operators to offer services within a reasonable margin of the technical capabilities of the network. If that were the case, it would not only go against the spirit,



purpose and wording of the provisions — it would also potentially require operators to make commercial and operational design decisions and investments that are not (yet) demanded by end-users, in a manner inconsistent with sound investment principles, leading to distortion of the market. It is worth also mentioning in this context that not all spectrum on the coax cable is currently used for internet traffic flows — other services such as DVB-C and analogue TV/radio (although the latter is being switched off gradually) are consuming spectrum as well. It is imperative that BEREC does not encourage authorities to implement policies which restrict operators' commercial and operational freedom. Again, doing so would not be appropriate, necessary nor proportionate for the aims.

QoS-3 Measurements

Liberty Global agrees with BEREC that authorities should be careful when extrapolating measurements of broadband user experiences for verification purposes. We strongly doubt that such tests can be used as a tool to potentially signal inaccuracies in the data.

Mobile coverage simulation

Liberty Global also sees difficulties with the proposal that national authorities simulate theoretical mobile network coverage, as suggested in section 5.1.2 of the draft Guidelines. Firstly, the information that is required to be exchanged in order for authorities to simulate coverage (e.g. site configuration, power settings, antenna types) would be enormous and highly burdensome for operators — contradicting the principles of appropriateness and proportionality. Secondly, there are likely to be large discrepancies between the mapping data used by the various mobile operators (e.g. terrain heights, terrain classifications and building vectors). Propagation models used for these simulations are developed and tuned by, and varies between, operators. It takes significant expertise and resources to develop these models and simulations; for this reason, in our experience, national regulators request coverage maps for validation, rather than developing the maps themselves. We consider that greater confidence can be placed in coverage maps provided by the individual operators than in theoretical coverage simulations developed by national authorities. We therefore ask that BEREC does not encourage national authorities to perform theoretical network coverage simulations in the draft Guidelines and rather to engage closely with operators to validate the coverage maps (and models) developed by the operators.

Transparency and accountability

Liberty Global agrees that authorities should be transparent with the methods for verification. In this regard, we ask BEREC to encourage authorities to engage closely with operators — across the entire range of different network technologies — in designing the process so that it does not favour, or place disproportionate burden on, particular technologies/operators. We would also wish to be closely informed of any pilot studies (as foreshadowed in paragraph 63).



About Liberty Global

Liberty Global is one of the world's leading converged video, broadband and communications companies, with operations in six European countries under the consumer brands Virgin Media, Telenet and UPC. We invest in the infrastructure and digital platforms that empower our customers to make the most of the digital revolution.

Our substantial scale and commitment to innovation enable us to develop market-leading products delivered through next generation networks that connect 11 million customers subscribing to 25 million TV, broadband internet and telephony services. We also serve 7 million mobile subscribers and offer WiFi service through millions of access points across our footprint. In addition,

Liberty Global owns 50% of VodafoneZiggo, a joint venture in the Netherlands with 4 million customers subscribing to 10 million fixed-line and 5 million mobile services, as well as significant investments in ITV, All3Media, ITI Neovision, Lionsgate, the Formula E racing series and several regional sports networks