Joint Cable Europe – ETNO – GSMA Response to BEREC Consultation BoR (18) 33

Evaluation of the application of Regulation (EU) 2015/2120 and the BEREC Net Neutrality Guidelines

25 April 2018

Executive Summary

The GSMA, ETNO and Cable Europe welcome the opportunity to respond to the BEREC consultation on the application of Regulation (EU) 2015/2120 and the BEREC Net Neutrality Guidelines. We hope the following detailed comments can serve as a constructive contribution to BEREC's deliberations on the application of Net Neutrality rules and the transparency provisions with a view of amending the Guidelines to align with the objectives and the spirit of the Regulation.

With the current pace of innovation and new technologies emerging, including onset of 5G, having both the confidence in the regulatory environment and the freedom to explore new deployment scenarios, service offers and commercial models for consumers and businesses across sectors is going to be the cornerstone of European competitiveness in the digital ecosystem. Our members (network operators) are not only building the connectivity infrastructure that underpins the digital economy, but also are driven to serve the variety of customers with the services they demand, as well as providing the quality they require. Operators should have the flexibility to dynamically configure their networks to meet the variety of use cases and the ability to manage the allocation of network resources. Flexible and efficient networks should be encouraged and the Regulation should be interpreted in the Guidelines and by the NRAs with this view rather than a too restrictive approach that extends beyond the regulatory objectives. The Guidelines should not create uncertainty and BEREC should signal its support for next generation networks by interpreting the Open Internet Regulation in a reasonable and predictable way to encourage innovative network capabilities and product propositions.

We are supportive of the aim of an open and transparent internet which encourages innovation, competition and choice for end users. The Regulation is not put into question, however its interpretation and application should not hinder European operators' ability to innovate and become frontrunners in the international context. BEREC should not disregard future network or service developments, such as network slicing and new deployment configurations like 5G or any other, which require sufficient flexibility in terms of interpretation in order to leave enough room for innovation.

The Regulation anticipated the network and market changes by granting the freedom to offer different types of services and commercial propositions aligned with the principles of Open Internet. However, we are concerned that in some areas, BEREC 's Guidelines has gone beyond the objectives and requirements in the Regulation by adding new expectations / requirements, rather than providing guidance for NRAs on how to implement the obligations in the Regulation. This introduces further complexity and uncertainty for new technologies and services. As a result, innovative commercial offers that create value for consumers might not reach the market, and uncertainty is unduly built into the business case for technological innovations that aim to make the networks more intelligent and efficient. It is of utmost importance that NRAs, when interpreting the Open Internet Regulation, take on board all regulatory objectives that include fostering investment, an efficient use of networks and spectrum frequencies, protecting end user interests and safeguarding competition.

We request BEREC to align the Guidelines with the original intention of the Regulation. We note that the objective and *ratio legis* of the Regulation has been sometimes lost, due to too much focus on technical criteria, instead of facilitating innovation and the opportunities offered by network standard developments for the benefit of EU citizens and businesses, while safeguarding competition. Indeed, the Guidelines should guide NRAs to interact only where there is a market failure, instead of focusing on prior set technical parameters, which contradict the facts-based approached sought by the Regulation. This approach also sets the burden of proof on BEREC and its members, and not the other way around.

Our concerns regarding the Guidelines are especially the case when looking at the guidance on commercial offers. Commercial practices should be analysed on a case by case basis, leaving room for an ex-post more future-proof regulatory approach, that fits better with the high dynamism of the market. In this regard, we firmly believe that the preservation of end-user´s choice is the key element to inform Open Internet policies, in such a way that, where there is effective competition and users are clearly informed, there is no need for further intervention.

In relation to network management, efficient use of network resources should be the overriding objective and the Guidelines should encourage the deployment of innovative network features, taking network slicing in a 5G context as an example but without foreclosing any other innovative technologies and networks. Traffic management (TM) should be considered from technical, commercial, demand and network configuration perspectives. The Regulation acknowledges this multi-faceted nature of TM and provides the flexibility to providers of IAS to implement reasonable TM (Article 3(3)) and providers of ECS to offer services other than IAS optimised for specific content, application or service where such optimisation is necessary to meet a specific level of quality (Article 3(5)). We are of the view that the Guidelines are too restrictive in their interpretation of the Regulation in relation to operators' ability to manage network traffic and offer Services other than IAS (SoIAS).

As acknowledged by the Regulation, reasonable traffic management is necessary and should not be considered as secondary to network investment. Network investment decisions and dimensioning of networks should be left to operators and the Guidelines should be adapted in such a way that it includes neither additional network architecting requirements on operators nor guidance on NRAs in relation to assessments how networks are dimensioned. Efficient use of network resources should be an overriding objective. The Guidelines should also make clear, to avoid ambiguity of interpretation, that multiple IASs van be offered to end-users.

Since the objective of the Open Internet Regulation is to define the requirements in relations to IAS, there should not be over prescriptive and detailed assessment of each and every service other than IAS, as long as the impairment rule is respected. We are of the view that the Guidelines introduce unnecessary additional criteria and requirements in the assessment of these types of services. It should be clarified that SoIAS are as such out of the scope of the Regulation and legislators did not aim at defining the rules for them. Therefore, the text in the Guidelines going beyond the Regulation should be removed. Ex-ante assessment of the myriad of SoIAS use cases and deployment configurations to verify whether they are objectively necessary and will not detrimentally impair IAS is a practically complex process that is neither beneficial nor necessary to meet the objectives of the Regulation. The guidance that the SoIAS should be assessed on a continuous basis creates significant uncertainty in designing and deploying these services and the supporting network capabilities.

At times, BEREC's arbitrary interpretation of the transparency and redress provisions does not ensure reliable indication of quality parameters, thus unnecessarily undermining consumers' trust. It is important to ensure that the Guidelines would support reliable quality parameters, in a technology neutral manner. In that respect the Guidelines do not accurately reflect the provisions of the Regulation, but rather go beyond and are overly prescriptive where text provides flexibility, hence it unreasonably undermines consumers' trust. Moreover, ISPs face legal uncertainty and negative reputation, even if they deliver what has been agreed. Therefore, reliable information on speed is key, produced from proper measurement systems that should have to ensure minimum quality criteria. Additionally, some of BEREC's specification of KPIs are not justified and of no use to consumers. Finally, some targeted adjustments are required, avoiding an overhaul (since ISPs also require some planning security with regard to other provisions already implements).

Overall, we believe that there is no need to re-open the Regulation. Instead, BEREC should focus on the reasonable implementation and provide a pragmatic solution by clarifying the existing BEREC Guidelines on Open Internet, where needed.

A. General experience with the application of the Regulation and BEREC NN Guidelines

As a general remark, European Regulation tries to ensure the openness of the Internet by imposing strict requirements only on Internet Access Service (IAS) providers, without considering that other players of the internet value chain play an important role in this regard.

Generally speaking, the Guidelines have formulated a too restrictive interpretation of the Regulation. While acknowledging the need of the greater legal certainty when it comes to implementation of the Regulation, regulators should be extremely cautious when shaping the rules for IAS, because too restrictive interpretation could result in long term damage to European citizens and businesses. We also consider that Guidelines in a number of aspects go beyond their legal boundaries and BEREC's mandate therefore is exceeded. The attempts to clarify the areas under the jurisdiction of NRAs (commercial practices, services offered in parallel to IAS) have deviated from the original spirit of the Regulation - which confirmed the freedom to provide such services and focuses on protecting end-user choice. We believe that the single most important aspect while assessing the Guidelines is to go back to the initial intention of the legislators and verify **if each provision serves the goal of open internet** and safeguards related end-user rights. The current way the Regulation is being interpreted raises concerns regarding the potential creation of an 'innovation by permission' environment, as well as creating a barrier to efficient investment. It would also be important that rights and freedoms enshrined in Article 3 are treated in a consistent way by NRAs and these do not attribute significantly higher weight to one or another. In order to achieve the goals of the Regulation it is important to recognize that end-user's choice allows users to select services and speeds, that limit the offer in certain categories or prioritise it in others. The right to consume contents, services and applications of choice also includes the right not to consume specific contents, services and applications.

Also with regards to transparency and measurement of speed, the Guidelines have been defined too narrow, often interpreting what was supposed to be flexible regulatory provisions in a very restrictive way. For example, the very specific definition of "normally available" speed and the recommendation that any measurement system that is supplied by a NRA is automatically certified without any guidance as to what such a measurement system should include. Another example is the application of Art. 4 to contracts concluded prior to the date of the Regulation coming into force, which are not foreseen in the text of the Regulation.

Regarding the burden of proof - there are number of provisions in the Guidelines which imply that the burden of proof lies with ISPs. For instance, Services other than Internet Access Services (SoIAS) are allowed to be provided by the Regulation and it is NRAs that shall demonstrate when a practice will be in breach of the Regulation (as appears clearly from recital (17)). But the Guidelines go the other way around and reverse the burden of proof; as an example in §54 of the Guidelines, IAS provider should justify that it is not violating the rules: *"In assessing whether a traffic management measure is reasonable, NRAs should assess the justification put forward by the ISP"*.

Finally, when updating the Guidelines, BEREC should also consider that undertakings require legal certainty and a reliable economic environment.

1. **In your view – have the Guidelines helped NRA´s apply the Regulation in a consistent, coherent and correct way? Please explain.**

   The Guidelines create significant legal uncertainty, since they are not fully consistent with the regulatory obligations listed in the Regulation.

   Our key areas of concerns are:

   - The "innovation by permission" approach to quality differentiation.

   - Restrictions on operators ability to propose differentiated and innovative services.

   - Limitations on commercial offers and restrictions on customer's freedom to choose, in some cases causing harm to consumers themselves as a result – for example forcing them to restart their general purpose data packs in order to continue to use unlimited data for specific services

- The constraints on traffic management which reduce operator's ability to manage their networks efficiently and in a user centric way (e.g., provision of the so-called specialised services in addition to IAS).

- Assessment of proportionality should be improved. Regulatory intervention in the market should only be considered if there is an apparent risk of harm against a specified end-user interest.

- Informal steering of national decisions through discussion/coordination with BEREC's Expert working group is understandable and certainly welcome in terms of consistency or harmonisation. However, this should not make the decision intransparent and should not cause unnecessary delays (e.g. individual NRAs are not able to make statements before consulting with the working group). These exchanges should also not lead to a "de-facto" BEREC approach without further engagement with stakeholders.

- Measurement systems that generate non reliable performance indications undermine trust and lead to unjustified complaints and legal disputes about contractual compliance

The Guidelines go beyond the Regulation, specifically in the following cases:

- The way the Guidelines identify and/or define concepts and practices that are deliberately not identified or defined as such by the legislator; e.g. 'zero rating', 'specialised services', etc. In particular, the BEREC Guidelines make a special case of zero-rated offers which are not qualified by the Regulation itself as it only refers to commercial offers, calling for an ex-post and case-by-case assessment ensuring that user's ability to access services, applications and content of his/her choice is not restricted.

- The lawmakers made the choice not to positively define services other than IAS (SoIAS) and did not give a mandate to NRAs to do so. The reason why lawmakers refrained from defining those services in the Regulation is that the technical characteristics of future innovative SoIAS are by definition unpredictable. Moreover, the focus of the Regulation is on Internet Access Service and not on other different services; it sets the rules on how to safeguard the Open Internet but definitely is not aimed at regulating SoIAS. Therefore, mandating future SoIAS to comply with predefined technical characteristics is hindering innovation and inefficiently distort future technical choices. The Guidelines also wrongly attempt to elaborate criteria (logically distinct capacity, strict admission control) and requirements for SoIAS that were not mentioned in the Regulation. ISPs are permitted by the Regulation to provide services beside IAS on a commercial basis. As mentioned above, it is not up to the ISP to demonstrate that the criteria are met. It would on the contrary be up to the NRA to prove that the criteria are not met.

- The definition and prohibition of so-called 'sub-internet' (§17) is not addressed in the Regulation. The Guidelines consider this kind of offer, without any analysis of the effective adverse effect on customer choice, by definition as in violation of the Regulation. This may render more difficult the launch of innovative offers such as in the eHealth or eGovernment fields. In addition, the Guidelines risk creating discrimination by technology where limited access for "device-based" offers would be permitted whereas limited "network based" access is prohibited.

- The Guidelines consider that the practice of restricting tethering is likely in breach of the Regulation, whereas this is not explicit from the Regulation. The Guidelines thus go beyond the Regulation by suggesting the non compliance. A more proportionate approach, based on the facts of the case, should be taken.

2. Did the Guidelines provide additional clarity regarding how to apply the Regulation? Please explain.

In order to answer the question whether Guidelines have provided additional clarity, it is important to go back and assess what are the limits of BEREC´s mandate when it comes to the content and subject matter of the Guidelines[1].

The purpose of the Guidelines under the Regulation[2] is "to contribute to the consistent application of this Regulation" by "issuing the guidelines for the implementation of the obligations of NRAs". This means - no new rules on the substance of the Regulation, but focus on the implementation obligations of NRAs or in other words – the guidance by BEREC should be limited to clarifying the implementation of the Regulation. However, in a number of paragraphs within the Guidelines this is not observed. For example, what could be challenged as exceeding the limits defined by the Regulation is pre-defining certain commercial practices as *per se* contradicting the Regulation.

In a number of cases the approach taken by BEREC resulted in detailed description of the new rules on the substance. In addition they are not covering all breadth of problems and sometimes are mainly illustrative – this could have been avoided if BEREC would stick to the task of the guidance rather than creating new detailed rules and definitions.

3. On which subjects would you expect the Guidelines to be more explicit or elaborated? How should the text of the Guidelines be adapted on these points, in your view. Please explain.

As a general point, the purpose of the Guidelines is to provide guidance to regulators as to how to apply the Regulation. It should not expand the scope of the Regulation or alter its *ratio legis* (cf. remarks above). So, in general, these Guidelines should be a tool to support NRAs in their application of the Regulation, and not a prescriptive document on the outcome of such analysis (in line with the Regulation, the analysis is to be done ex post and on the merits of the case).

We believe the Guidelines as they exist today should be revised in the first place to become aligned and fully compatible with the Regulation and the mandate for the Guidelines comprised in there.

Additionally we would suggest some useful clarifications, for instance:

- Guidance and reference to the fact that terminal equipment must comply with the interfaces of public networks which network operators have to publish under EU law (Radio Equipment Directive 2014/53/EU).

- Businesses can obtain higher speeds/differentiated quality for their internet access service taking into consideration that agreements on commercial and technical conditions and the characteristics of Internet Access services are explicitly allowed by the Regulation (see art. 3(2)).3). Therefore the Guidelines should refrain from adding ambiguities.

- Considering the regulatory objective of ensuring that users derive maximum benefit in terms of choice, price, and quality (art. 8(2) of the Framework Directive) and the principle of proportionality of the regulatory impositions, BEREC guidelines could further elaborate on the analysis that NRAs should carry out and the related justifications for any intervention, elaborating thus how NRA should observe the burden of proof that rests upon it. A central element in this clarification of the Guidelines should be the necessity to establish the presence of harm as a necessary justification for intervention. Moreover the justification should be done, based on an impact assessment and proportionality test linked to the specific merits of the case. The Guidelines should not prejudge or suggest the outcome of such assessment and evaluation.

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[1] Note: Regulation as the legal instrument is designed to ensure uniform application of EU law in all Member States. Regulation shall be sufficiently precise and unconditional with no discretion being left to the national authorities for implementation. Since the purpose of the regulation as the legal instrument is its direct effect into each Member State, no discretion is left for Member States.
[2] Article 5(3)
[3] This service is even defined as a wholesale market susceptible to *ex ante* regulation in the 2014 EU Recommendation (i.e. Market4 in the wholesale market).

- Adjust unreasonable definition of "normally available speed" in para 147-149, which at the moment overly restricts the Regulation's provisions outlined in Art. 4.

- Measurement systems used to assess contractual compliance need to ensure reliable measurement results. This particularly refers to systems that are officially certified and, thus, are considered by Courts. This also and particularly refers to measurement systems provided by NRAs. The Guidelines need to clarify that also systems provided by NRAs have to be based on a specific set of minimum quality criteria in order to be officially certified – currently the Guidelines clarify that NRA systems are automatically certified, which is not justified at all through the Regulation's text.

- Page 20 of the BEREC consultation report[4] mentions « In response to some stakeholders' requests for the Guidelines to allow differentiated traffic management between different IAS subscriptions, BEREC considers that the Regulation does allow for such differentiation to some extent, for example to fulfil contractual agreements on data volumes and speeds". This should be clearly stated in the text of the Guidelines.

- Clarify that adaption of traffic management cannot always be a reason to end subscription under general consumer protection rules (changes to contract negatively impacting end-users). Traffic management is performed to ensure the well-functioning of the networks. This is a dynamic activity that requires continuous monitoring and timely adaptations. Such adaptations are thus deeds of service continuity and are thus by nature not changes that could lead to a discontinuation of the contract. Clarification could avoid confusion in relation to this matter.

4. For ISPs: Did you discontinue certain products or services following the adoption of the Regulation and/or the Guidelines?

Yes, ISPs discontinued indeed certain offers, while these were at the benefit of the end-user. In many cases this was the result of a general or too far reaching presumptions about harm made in the abstract, which goes against end user´s choice.

Some offers in the operators' portfolio have been blocked or changed following the Net Neutrality rules regardless of the impact on the users. This is the case for example of some zero-rated offers giving the possibility to the users of always reaching their preferred zero rated applications or some offers including the use of tethering with different prices. Below we provide a non-exhaustive list of examples of discontinued offerings.

- In Austria, to continue a VoD offer, A1 had to move it in best effort mode (which is a change that impacts the quality of the service).

- In Germany, an existing single service zero rating offer had to be modified.

- In Sweden, certain zero-rated services were either adjusted as the result of the intervention by the NRA, or the decision by the regulator was challenged in the court.

- In Hungary, Telenor changed the terms of its MyChat and MyMucis offers as a result of enforcement measures of the NRA.

In practice operators, if in doubt, have preferred to stop zero-rated offers or largely limit them in order to be sure not to enter into never ending discussions with the NRAs or being blocked. Such approaches will eventually harm consumers as there will be less innovation in the market and less choice of new products/applications.[5]

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[4] BEREC Report on the outcome of the public consultation on draft BEREC Guidelines on the Implementation by National Regulators of European Net Neutrality rules (BoR (16) 128)
[5] Zero-rated offers are often a first attempt from operators to apprehend unlimited offers (zero-rated apps have indeed the characteristic of unlimited offers but then limited to a certain selection of apps).

5. Did the application of the Regulation, or the implementation of the Regulation by the Guidelines, prevent you from launching certain products or services?

Yes, certain products or services were prevented from launching.

As a general point the Guidelines provided quite some uncertainties and prohibitions for the ISPs which in general have caused ISPs to refrain from formulating certain offers (with an obvious negative effect on experimenting and product innovation). Below we provide some general indications and a non-exhaustive list of examples:

- Recent negative developments observed in the analysis of the treatment of the video traffic optimisation in a few member states has held back a number of operators in implementing such offers. This prevents ISPs from using their network resources efficiently and limits the choices for customers. This is dangerous interpretation since it prevents everyone - from end-users to operators to use the resources most effectively.

- In the German market, there is the NRA's decision on "StreamOn" (a zero rating tariff option offered by Telekom Deutschland GmbH) free of charge for the customers and the participating Content Providers. The decision, if confirmed by court, would render the offer economically unviable and hence force Telekom Deutschland GmbH to stop an offer that is highly valued by consumers and Content Providers.

- The Guidelines prohibit ISP's from providing end-users with opt-in services to block unwanted content, such as ad-block services or parental controls, although such facilities actually increase end-users' choice and are delivered by other providers of the internet value-chain. The demand from customers is high and cannot be met by the ISP. In another country, a fully zero rated customer service applications could not be launched because the presence of a customer loyalty program in the same app was considered as a problematic discrimination vis-à-vis other apps containing a customer loyalty program, even though no proof of any (material) impact on market or 'competitive apps'. Consumers were thus deprived of a real benefit based on perceived - yet unproven - 'problem'.

- In the Netherlands, the data free music service is still being challenged by private organisation, after being introduced almost two years ago. Other providers may see this as a blocking (financial) issue to provide such services and therefore will not start innovative products of services.

- Overall, the Guidelines render uncertain the possibility of Virtualization of the CPE (customer premise equipment) and more globally the deployment of SDN/NFV functionalities in the network (main example : firewall)

6. Do you have any additional comments on the application of the Regulation and Guidelines?

We do not have additional comments beyond those outline above.

B.   Definitions (article 2 of the Regulation)

7. Do you think that the Guidelines should provide further clarification in relation to the definitions in the Regulation? If yes, please provide concrete suggestions.

We recommend BEREC to refrain from further clarification in relation to definitions as the Regulation is sufficiently clear, in order to maintain regulatory certainty. On several points the Guidelines provide undue definitions beyond the Regulation (e.g. specialised services and CAP – Content and Application Provider in para 2, sub-internet services in para 17; zero-rating in para 40, etc.), that were used by BEREC with the objective to add further measures and requirements not laid down in the Regulation.

BEREC should also refrain from considering that "end-user" also includes CAPs (para. 4).

C. Commercial practices such as zero-rating (articles 3(1) and 3(2))

8. Does the current assessment of zero-rating as recommended in the Guidelines, offer sufficient protection of end-users' rights as referred to in article 3(1) of the Regulation? Please explain.

9. How could the assessment methodology for commercial practices in the Guidelines (ref. in particular to paras 46-48) be improved? Is there a need for more simplification, flexibility and/or more specification? Please provide concrete suggestions.

10. In your view, did the assessment methodology for commercial practices in the Guidelines influence the development of new content and applications offered on the internet? Please explain.

11. Do you think that the current application of the Regulation and the Guidelines concerning commercial practices, such as zero-rating, sufficiently takes account of possible long term effects of such practices? If not, how could BEREC further facilitate this?

General remarks on commercial practices

When looking into commercial practices, regulators should bear in mind that to foster the growth and innovation potential of European digital markets, the ability of markets and market players to innovate on business models is a prerequisite. The more that all players in the value chain can differentiate themselves, the more competitive markets become. This corresponds with enhanced choice for the end-user.

Choice is a key concept throughout the Open Internet Regulation; Under Article 3(1) end users have the right to use the content/applications/services of their choice, choose their terminal equipment and negotiate the conditions of their service and under Article 3(2) to choose different prices, speeds, data caps, QoS and other commercial and technical requirements to meet their individual needs.

The Guidelines acknowledge that users can agree to "commercial and technical conditions and the characteristics of the internet access services", inter alia, data caps and different speeds for their services. However, they do not provide clarity on whether users can also decide to block specific services (e.g. via parental controls) or choose specific speeds for their services (e.g. better latency if they know they are likely to be using their internet access service for gaming, SD quality for video to reduce buffering) or address the basis for allowing data caps/different speeds, but not different quality. Users should be free to choose the quality that they want and operators will then have more freedom to provide a range of offers, to suit every customer need. In fact, the "protection" as interpreted in the Guidelines limits, rather than improves, end-users' rights. The Guidelines also restrict the possibilities of the providers to answer certain requests from the end-users which is not the purpose of the Regulation.

A particular concern in this context is that the BEREC Guidelines put limitations on commercial practices or impose prerequisites beyond what the Regulation prescribes. As mentioned before, commercial practices must be analysed on a case-by-case basis based on their effect on end-users rights as defined under article 3(1). At several places the Guidelines present examples of commercial practices that are likely to be acceptable or on the contrary that are to be forbidden, without any such analysis. Finally, as mentioned above, BEREC Guidelines should not reverse the burden of proof.

In this particular context BEREC often refers to the 'equal treatment' principle of article 3(3), erroneously linking this with article 3(2):

- The Regulation under Art. 3(2) stipulates that ISP are allowed to define commercial and technical conditions as far as it does not limit the exercise of the rights of end-users to access and distribute information, irrespective of the location, via the IAS. In this article there is no reference to Art.3(3). Article 3(3) only relates to technical traffic management practices and does not forbid the application of different commercial and technical conditions (differentiation in terms of pricing, data volumes, speed, etc.), otherwise it would effectively be in contradiction with art 3(2). Instead, Art 3(2) refers rightly to Art. 3(1), i.e. end user rights on an open Internet.

- There is no case to link Art. 3(2) to any form of non-discrimination either (nor thorough considerations based on art 1 or art 3(3)). Art 3(2) does not impose any such conditions, but only looks that there is no limitation of the exercise of the rights of end-users.

- Moreover, the Guidelines reference to Art. 3(3) also suffers from an erroneous interpretation of the first sub paragraph of that article. Article 3(3) contains a qualified ban on discriminating between different types of internet traffic. The structure of Art. 3(3) is that an ISP acts lawfully if either it brings itself within the second subparagraph ("reasonable traffic management measures") or it brings itself within one of the specific exceptions. As confirmed by recital (12) of the Regulation, these are alternative, not cumulative, requirements.

"Zero rating" offers and sponsored data

We refer to earlier remarks regarding the undue use and definition of zero rating in the context of the Guidelines, and the overly focus of BEREC on this allowed commercial practice.[6] The restrictive interpretation of the regulation by the BEREC Guidelines (if applied as it is) regarding zero-rating limits the possibilities for the operators to offer innovative services encouraging new usages (e.g. testing new applications, including operator applications) that will eventually result in limitation of end-user rights not allowing them to have access to innovative products.

The European Commission report by DG Competition "Zero Rating Practices in Broadband Markets", shows Zero Rating can have multiple benefits for customers, as reducing cost of access, providing "peace of mind" and fostering heavier use of the Internet if zero rating remains active once data cap is reached. Thus BEREC's interpretation assessing this practice in breach of Net Neutrality Regulation limits customers ability to enjoy services they positively value, hence limiting customer choice which is the fundamental principle Net Neutrality aims to protect.

Once the data cap is reached, zero rating should not be banned outright. Commercial practices should only be rejected when it leads to an undue restriction of end-user choice, which should be assessed on a case by case basis. General presumptions about harm made in the abstract not only exceed the scope of the Regulation, but also go against user´s choice

This is supported in recent academic work:

- An economic analysis of Laure JAUNAUX & Marc LEBOURGES (2017) shows that in the short term, zero rating offers tend not to restrict end-users' choice increasing both zero rated and non-zero rated usages. However, in the longer term, zero rating may in principle have a negative impact on non-zero rated services' usage, if the zero rated traffic is financed by the ISP. However, in practice any such negative effects of zero rating are diluted or compensated by competitive forces in the absence of dominance in the ISP and CAP markets or if the volume of zero rated traffic is limited. A contrario, in the case of sponsored data, the corresponding traffic cost is covered by the CAP. It prevents any need for cross-subsidies and therefore protects end-users' freedom of choice, to the extent that the ability to sponsor data is opened to all content and application providers on equivalent terms. [i]

- Another paper by Bruno JULLIEN and Wilfried SAND-ZANTMANZ (2018) considers zero-rating by Internet service providers. It analyzes the implications of offering sponsored data plans that allow content providers to pay for traffic on behalf of their consumers. These plans boost consumption of high-value content and decrease the networks' incentives to exclude low-value content. The welfare effect of allowing this price discrimination depends on the proportion of content targeted and the value of contents. Our analysis is extended to various cases (one-sided pricing, competing network, heterogeneous cost, paid content).[ii]

The Guidelines also do not distinguish between "sponsored data" offers and the practice of "zero rating" offers, although these two practices are different. In the analysis of the effect of commercial

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[6] We note that all question in the commercial practice questions of the BEREC consultation paper are about or refer to zero rating.

practice, BEREC should specifically identify the case of "sponsored data". Because it confuses "sponsored data" with other practices, BEREC Guidelines appear to consider that such practices may be either neutral or negative on end-users choice but tend to overlook all the cases when sponsored data will have a positive impact on end-users choice. The para. 42 of the guidelines should explicitly mention that in cases like sponsored data offers, when all CAPs have the same rights and ability to conclude commercial agreements with ISPs in order to support the cost of the service, then the practice should be considered as compliant with the Regulation.

There is a real need to review the whole chapter of the Guidelines regarding the assessment of zero rating offers (34-48).

- The examples provided in the Guidelines para. 35, 42 and 45 are very restrictive and if interpreted as written they limit any possibility of offering zero rating for one or only several applications. As per the Guidelines, any zero rating or price differentiation is only likely to be acceptable, if it is application-agnostic. In reality this is not what the Regulation provides for (refers to a case by case analysis based on market share of the operator and the application). In this context, it should be noted that putting in place a zero rating offer for the whole category of the application is not always technically feasible and thus in practice could be problematic (it is not always possible to include all applications available in the market in the same category of service).
- In para. 46 of the Guidelines there is a real need to respect the recital 7 of the Regulation, which clearly indicates that commercial practices could only be problematic if end-user choice is "materially" reduced and when the practice undermines the essence of the end-user rights. To us, this means that when the Guidelines para. 46 proposes effect-based analysis, they should insist on the fact that the assessment should not be theoretical but rather based on the real effects of the commercial practice and any restriction or limitation should be material and proven by the NRA.
- It is positive to see that some European regulators on zero rating offers do not follow the Guidelines approach and do not find problematic zero rating offers per se (whether for one, several or category of applications). It is important for the Guidelines to take into consideration this aspect aspect which has derived from real practice.
- Finally, we think that the chapter on zero rating practices needs to be revaluated taking into consideration the development of data offers of operators. The data bundles become more generous which limits the risk of discrimination of zero rated application versus non zero rated once. On the contrary, zero rating of certain applications leaves more data to be used for other applications and as data offers are generous, the customer could have a comfortable usage of non- zero rated applications of their choice.

D. Traffic management (article 3(3))

- Traffic management (TM) should be considered from technical, commercial, demand and network configuration perspectives. The Regulation acknowledges this multi-faceted nature of TM and provides the flexibility to providers of IAS to implement reasonable TM (Article 3(3)) and providers of ECS to offer services other than IAS optimised for specific content, application or service where such optimisation is necessary to meet a specific level of quality (Article 3(5))
- We are of the view that the Guidelines are also on this point too restrictive in their interpretation of the Regulation in relation to operators' ability to manage network traffic. For example, §55 restricts per se the ability of providers to offer certain types of plans to consumers and businesses that enhance their choice without a case by case analysis; also see the TNO study[7] that provides some examples.
- As the range of use cases expand with increasing digitalisation of the economy, innovative offers and services addressing specific demand characteristics should not be prohibited by the Guidelines. The Guidelines should rather recognise that a number of services other than mass market consumer internet access services will be offered and providers should have the flexibility

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[7] "5G and Net Neutrality: a functional analysis to feed the policy discussion", Dr P.A. Nooren, Dr N.W. Keesmaat, A.H. van den Ende, A.H.J. Norp, April 2018

to innovate with such types of services (for example Ultra Reliable and Low Latency Communications for e-health or public safety scenarios).

- The amount of traffic carried over networks[8] continues to increase and innovative technologies create opportunities to deliver this traffic efficiently; for example, video optimisation technologies can achieve significant efficiencies in network capacity while providing sufficient quality levels to meet the expectations of consumers and CAPs. The Guidelines should not impede such technical innovations that improve the efficiency of networks and enable operators to meet the increasing demands on their infrastructure. The TNO report also illustrates that evolution.

- As previously mentioned in Question 3 above, BEREC Guidelines should be clearer on the fact that differentiated traffic management between different IAS subscriptions is allowed.

- BEREC needs to recognise that Article 3(1) guarantees end-user rights and Article 3(2) explicitly states what ISPs may contractually agree with their customers. In practice NRAs disrespect these rights and freedoms by attributing a significantly higher weight to the provisions in Article 3(3). In order to achieve the goals of the Regulation it is important to recognize, that end-user choice allows users to choose services and speeds, that limit the offer in certain categories or priorities others. The right to consume contents, services and applications of choice also includes the right not to consume specific contents, services and applications.

- With network technology evolutions, interpretations by BEREC on how capacity can and should be managed risk overregulation. BEREC guidelines should not prevent or obstruct the emergence of network evolutions.

- As acknowledged by the Regulation, reasonable traffic management is necessary and should not be considered as secondary to network investment; network investment decisions should be left to operators. It is simply wrong to consider that more investments in capacity would be the best answer in all cases to traffic management as implied by §93 (for instance the latency needs cannot be addressed simply by adding more capacity). Efficient use of network resources should be an overriding objective.

12. Is there a need for improvement of the Guidelines concerning reasonable traffic management (ref. in particular to paras 49-75)? If yes, how could this text be improved? Please provide concrete suggestions.

- As indicated previously, we consider that the Guidelines go beyond the Regulation on several aspects which can notably hinder the efficient use of network resurces thorough reasonable traffic management measures.

- It should be more explicit that traffic associated to a business access may also be considered as a specific traffic category with specific quality requirementsIt should be understood that future services and technologies will require sound understanding of regulators that variations in QoS do not violate the principles of the Regulation.

- While the regulation prohibits commercial discrimination of traffic management between applications and services within an IAS, it explicitly supports segmentation of IAS offers proposed to end-users and therefore segmentation between end users, which should be acknowledged by the Guidelines. The wording "*Not based on commercial considerations*" in the second subparagraph should therefore be read in its context and not as an absolute standalone rule. §68 (in particular the especially first and last sentence) should therefore be adapted accordingly. This is confirmed in the conclusion of para. 5.4 of the aforementioned TNO study:*'In the remainder of this study, we assume that the intention of the Regulation is best reflected in the majority interpretation. We thus assume that it is allowed to have multiple IASs with different traffic management for a given end user.'*

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[8] See Cisco White Paper of June 7, 2017 "The Zettabyte Era: Trends and Analysis" indicating that: global IP traffic will increase nearly threefold over the next 5 years; globally, mobile data traffic will increase sevenfold between 2016 and 2021 growing twice as fast as fixed IP traffic; IP video traffic will be 82 percent of all IP traffic by 2021.

- Likewise, the wording "*shall not be maintained for longer than necessary*" should also be read in context and not considered an absolute prohibition as stated in §71 of the Guidelines.

- In relation to traffic monitoring, BEREC introduces new conditions (§69) explicitly indicating the prohibition of the monitoring of transport layer protocol payload. The provision goes beyond what is laid down in the Regulation.

- §78 should mention the case where the end user requests a specific function, as follows: "By way of example, ISPs should not block, slow down, alter, restrict, interfere with, degrade or discriminate advertising when providing an IAS, **unless this it requested by the end user with an opt in function**, **and** unless the conditions of the exceptions a), b) or c) are met in a specific case. In contrast to network-internal blocking put in place by the ISP, terminal equipment-based restrictions put in place by the end- user are not targeted by the Regulation."

13. Is there a need for improvement of the Guidelines concerning traffic management measures going beyond reasonable traffic management measures (ref. in particular paras 76-93)? If yes, how could this text be improved? Please provide concrete suggestions.

- In the event of a cell congestion, the operators are to decide the order of prioritization of the traffic (for example hospital vs. police).

   When considering the traffic management measures to prevent network congestion BEREC requires NRAs to monitor that ISPs properly dimension their network (§93 of the Guidelines). BEREC exceeds its mandate in making such a request absolutely not mentioned in the Regulation. NRAs should not be empowered to have a say in investment decisions of network operators but should only monitor that rules set in the Regulation are not infringed.

- Similarly, BEREC indication against application-specific congestion management constitutes a new regulatory condition not present in the Regulation. Such an indication unduly interferes with operator's technical choices and limits the technical solutions for the network management in case of congestion.

14. Does the text of the Guidelines concerning traffic management influence the development of network technologies offered on the market? Please provide concrete examples.

- Too restrictive regulatory interpretations regarding traffic management may impact on the development of network technologies and solutions and may influence the operator's technical choices.

- Every traffic management measures acting on a specific traffic and producing an optimization on the overall network resources management and on the overall quality of user experience, without being to the detriment of the availability or general quality of IAS, should be explicitly allowed.

- A recent study by TNO clearly illustrates that services of the future need a 'reasonable' interpretation of the Regulation regarding traffic management, which is something that can be achieved at the level of the implementation. The Guidelines could be adapted in that respect.

15. Do any terms used in article 3(3) concerning traffic management need further explanation in the Guidelines? If yes, please specify.

The Guidelines should be further aligned with the terms of the Regulation; see answers to previous questions.

E. Specialised services (article 3(5))

- The Regulation gives operators the freedom to offer services other than internet access services optimised for specific characteristics where such optimisation is considered to be objectively necessary. These types of services, optimised to meet specific use cases - for example Internet of Things, connected cars, virtual reality will become more prevalent as many sectors embrace digitalisation and connectivity.

- The Regulation recognised the importance of allowing operators to innovate with new technologies and services by granting this freedom to offer SoIAS and restricting the requirements to IAS with ex-post assements where required.

- We are of the view that the Guidelines introduce unnecessary additional criteria and requirements in the assessment of these types of services; for example, §110 introduces "do not provide connectivity to the internet" and "logically separated from the traffic of IAS" as part of the assessment criteria for NRAs. This extends beyond the intent of the regulation and will stifle the innovation in the digital economy. It should be clarified that SoIAS are as such out of the scope of the Regulation and legislators did not aim at defining the rules for them. Therefore text in the Guidelines that go beyond the Regulation should be removed.

- It is extremely important to underline that next generation networks will include, for example, network virtualisation as a core network feature. A virtualised network will create logical functions and services over the same network infrastructure; in some configurations, a virtual network can include both access to full or a subset of the internet and connections to end-points optimised for certain characteristics. Connected cars act as an illustrative use case where it may be configured to connect to only certain end-points (servers) due to the specific characterictics of the usage environment. While connected to a subset of the internet end-points, this is a service other than IAS. Guidelines, for example para 110, should be modified to recognise the deployment of SoIAS in this configuration. This configuration should not be interpreted as not aligned with the Regulation.

- Operators should have the flexibility to dynamically configure their networks to meet the variety of use cases and the ability to manage the allocation of network resources. A flexible network should be encouraged over a too restrictive regulatory view of the logical architecture of the network so that the technological opportunities can be exploited and enjoyed.

- Operators should not be expected to partition their network between IAS and SoIAS under the no impairment expectation. This would be contrary to the efficient use of network resources, and would ultimately have a negative impact on users of the IAS, who would not be able to use extra capacity that is not being used SoIAS at a particular time. NRAs should therefore make an interpretation of the "non-impairment" principle that is flexible and does not force operators to do an inefficient use of their network and spectrum resources.

16. Is there a need for improvement of the Guidelines concerning specialized services (ref. in particular paras 99-127)? If yes, how could this text be improved? Please provide concrete suggestions.

- While the requirements established by the Regulation are clear, the Guidelines set specific additional details unduly broadening the discretion of the NRA's in this area. The result is that ISPs – confronted with such detailed prescriptions - experience high uncertainty unless that could only be eventually resolved by validating every use case ex ante, before launching a service, with the NRA, which is not the objective of the Regulation. This scenario, is also not desirable as it would create a large burden for both ISPs and NRAs. In paragraphs 108, 110 and 111 BEREC focuses its attention on the control of all SoIAS, independently of their impact on IAS, indicating the obligation for their provision to demonstrate the necessity of levels of quality not assured over a IAS. Such paragraphs need to be modified in order to allow the exploitation of technological opportunities for the provision of innovative services rapidly evolving on the basis of market's needs.

- BEREC should adapt the Guidelines to reflect no regulatory check if there is no detrimental impact on general availability of IAS. Moreover if network resources are used by IAS and other services

without being to the detriment of IAS, the technical modalities should be considered compliant without checks on the need of specific quality levels. Ex-ante assessment of the myriad of SoIAS use cases and deployment configurations to verify whether they are objectively necessary and will not detrimentally impair IAS is a practically complex process that is neither beneficial nor necessary to meet the objectives of the Regulation. The focus on assessing objective necessity in all cases creates signficant complexity and uncertainty to all parties and will hinder the development of innovative services between different entities in the digitial ecosystem undermining the objectives of the Open Internet.

- In addition, as referred in para. 112, the general standard of IAS will change over time. In the face of it, para. 112, creates the expectation that there will be an ongoing evaluation of whether the SoIAS being provided at any given time could in fact be provided over the IAS, and that eventually ISPs could be required to discontinue a SoIAS if the general standard of the IAS improves. This obviously discourages the development of SoIAS, and is in our view an unnecessarily strict interpretation of the Regulation. An evolving regulatory qualification of services will cause regulatory uncertainty not allowing a timely exploitation of technological challenges. Therefore, paras. 112, 114, 119, 120 etc. should be taken out of the Guidelines or appropriately amended.

- Consequently it is up to the NRAs to demonstrate, if necessary, that these services jeopardize IAS.

- Due to their expected quality specificities, it should be confirmed that VOD services, as well as public interest services like those offered to police or hospital and B2B services are part of SoIAS. Moreover, the path taken by the Austrian NRA on the provision of VOD on fixed networks is a growing concern because of the potential impact on (i) the way services are designed and (ii) legal certainty and regulatory predictability. ISPs should remain free to innovate; it would not appear proportionate to block an offer that would not hinder end user choice due to a restrictive approach on some technical treatments.

- With regard to traffic measurements, i.e., the analysis of quality of service parameters (such as latency, jitter, packet loss), referred in Recital 17 of the Regulation, it seems that the proposed interpretation of the Guidelines seeks to identify every possible way ISPs may try to circumvent those, which resulted in several conditions that lack touch with the reality.

    For example,

    o   (i) the reference to measurements to be performed with SoIAS switched on and off (§121) is not reasonable: this cannot be actually done (e.g. certain services like, emergency services, cannot be disconnected; in addition this will obstruct customer experience and trigger liability on service providers side – the customers expect continuous availability of SoIAS.

    o   (ii) the requirement in §116, according to which the IAS must not be deteriorated cannot be demonstrated, as "*empty network*" and "*network with specialised services*" will definitely show different results. §116 should be amended in the following way: *"Specialised services shall only be offered when the network capacity is sufficient **to provide them in addition to IAS** ~~such that the IAS is not degraded (e.g. due to increased latency or jitter or lack of bandwidth) by the addition of specialised services.~~ Both in the short and in the long term, specialised services shall not lead to a deterioration of the **general** IAS quality for end- users".* §121 should be substantially revised: a more appropriate approach would be to validate the differentiation based on whether the degradation is severe and whether the end-user might actually experience it instead of demanding there must be no degradation in technical parameters

    o   (iii) When assessing how the detriment to IAS is established, the focus should not only be on the technical parameters, but also on perceived customer experience: "*123. Furthermore, as stated in Recital 17, in mobile networks - where the number of active users in a given cell, and consequently traffic volumes, are more difficult to anticipate than in fixed networks - the general quality of IAS for end-users should not be deemed to incur a detriment where the aggregate negative impact of specialised services is*

*unavoidable **and is not severe, i.e. NRA should focus whether the end-user actually can experience the difference,** minimal and limited to a short duration. By contrast, such unforeseeable circumstances related to the number of users and traffic volumes should not normally occur in fixed networks."*

- The overly detailed information on traffic management restrict required flexibility and impose burdens with regard to the development of new innovative services (Para 135-136).

17. Does the text of the Guidelines concerning specialized services influence the development of specialised services offered on the market? Please provide concrete examples.

- Technology such as network slicing and beam forming allow consumers to receive the best quality of experience that matches their expectations and choices. These technologies and use cases are at the early stages of development (and usually they are mostly confidential at this stage). The Guidelines should be future proof and not tailored to address specific cases, because all possible use cases are impossible to estimate and technology anyway is always developing faster than legislation.

- BEREC should not develop a system of 'innovation by permission' where players in the market feel they must take their strategy and commercial plans for approval to regulators. The worst case scenario would be when companies do not even begin to innovate with new partnerships or products due to the uncertainty of this new process.

- As mentioned, the Guidelines' tendency is to reduce ISPs freedom in this domain, in contradiction with the approach taken by the Regulation.

- All the prescriptive measures introduced by BEREC on NRA control and verifications for all services will unavoidably hinder a flexible provision of new and different services that will be enabled by the deployment of new technological opportunities.

- As mentioned above, the statement on § 112 regarding the continuous assessment of whether a specialised services qualifies does not provide any certainty for ISPs, because what is deemed to be a SoIAS today may not qualify tomorrow. This introduces high uncertainty when launching a SoIASand may hinder the innovation and investments in the development of such services, on the risk of becoming non-compliant.

- Overall, we would like to emphasize that it is and will continue to be problematic to mention concrete services that will not be developed, due to the confidential nature of such information. Moreover, uncertainty on the outcome of potential (ex-post) NRA control as such is already a large disincentive for investment. Many innovations will require specific QoS requirements, such as described recent study report on 5G and Net Neutrality provided by TNO[9],. These requirements should not be tested against detailed individual criteria, but rather against the overall quality of (remaining) internet access development.

18. Do any terms used in article 3(5) concerning specialised services need further explanation in the Guidelines? If yes, please specify.

No, the Regulation is clear and does not require further explanation. On the contrary, as detailed above, the Guidelines, should refrain from elaborating on services other than IAS, which are clearly kept outside the scope of the Regulation. The Guidelines – for the application of the Regulation – suffice to consider whether or not such other services – whatever they are – are not to the detriment of the general availability and quality of the IAS provided for under the Regulation or are not a mere replacement of the IAS (i.e. the effective scope of the art. 3(5) of the Regulation).

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F. Transparency (article 4)

19. What has been your experience regarding the application of the transparency measures in the Regulation and the Guidelines, particularly in relation to speed of mobile internet access services? Is there a need for improvement? If yes, how could this be improved by BEREC? Please provide concrete suggestions.

- Concerning Art. 4, several recommendations in the Guidelines significantly diverge from the regulatory obligations or the Guidelines are too specific in an unjustified way.

- This refers for example to the random specification that information on broadband should be indicated on a map (para. 155) or the overly detailed and arbitrary specification of the problematic information requirements on "*normally available speed*" (para. 147-149).

- Also one should be careful not to overload consumers with information and technical requirements they are not necessarily interested in.

20. How could BEREC further assist consumers, ensuring that they get the internet access service that they pay for?

- The question is misleading and gives impression that IAS providers are not compliant with their contractual obligations. Such a general assumption is wrong.

- Already before the TSM Regulation was adopted, any customer of IAS had the possibility to demand the provider to deliver the service as agreed in the contract, in case of breach, e.g. through mediation, court decisions or contacting a NRA.

- The TSM adds the explicit right of consumers to demand for redress in case the measured bandwidth diverges from the contractually agreed bandwidth.

- In European markets consumers have the possibility to demand the NRA/other competent authorities for dispute resolution.

- BEREC's Guidelines do not always assist consumers in understanding the delivered performance. BEREC does not oblige NRAs to ensure reliable measurement systems in order to get a certification – but any system provided by a NRA is supposed to be automatically certified, which is not foreseen in the TSM's text (para 161). Also, the notion that measurement systems should only be reliable much as possible is not helpful (para 164). Only reliable measurement systems enable consumers to assess whether the delivered performance is in line with the contractual agreement. With regard to mobile measurements, the specific characteristics of this shared medium has to be considered, which has per se a high fluctuation of performance, depending on the amount of users in a cell and the specific location of the customer.

- Advertised speed that is possible in the scope of specific contracts must not be confused with contractual agreed speed or speed that is usually available. Ensuring that customers get the speed they pay for, always has to refer to the contractually agreed speed, which is a range between minimum and maximum available speed.

G. New technologies (horizontal)

21. Do you think the Regulation and the Guidelines provide sufficient flexibility to adopt new technologies which are likely to be used in 5G? Please explain, preferably with examples.

The current Guidelines were written with a view of technologies and propositions experienced in the years preceding it. Industry is now at the cusp of deploying next-generation networks, like 5G as well as others, that will require support for new network features and product offers.

Network slice is one such feature to be deployed as part of 5G networks. Network slice is an end-to-end logical network that runs on shared infrastructure, capable of providing specific characterisation of

network capabilities. The customisable network capabilities include data throughput, latency, reliability, security and service optimisation. Network slicing is integral to unlocking the enterprise opportunity for the 5G era. Network slicing will enable operators to create products for different verticals that can be customised by the clients. This opportunity will evolve over time to automatically and dynamically re-package network capabilities for different end users needs.

Network slicing enables operators to meet the variety of demands in the most efficient manner. Efficiency of resource usage is a key objective of regulatory frameworks, especially the use of spectrum resources. It is within this context that the application of the Regulation should be considered, in a technology neutral way, in order to avoid conflict with other regulatory objectives.

In next generation networks with network slices, a slice can carry either IAS, SoIAS or a mix of IAS & SoIAS depending on the use case and deployment model of the slice. The Guidelines should not prescribe or assume specific types of deployments; for example, paras 110 - 111 are not required and should be deleted as the Regulation sets out the requirements on IAS and allows operators to offer SoIAS subject to not impairing the IAS aspects of the Regulation. Since the objective of the Open Internet Regulation is to protect IAS, there should not be over prescriptive and detailed assessment of each and every service other than IAS, as long as the impairment rule is respected. The Guidelines should make it clear that network slicing and different deployment models of slices are allowed subject to the requirements placed by the Regulation in relation to IAS.

This question of network slicing has been framed in the context of 5G but we believe that other networks and technologies require the same consideration and, therefore, our response shall be extrapolated to any other technologies and networks with similar requirements.

If BEREC believes that NRAs should interpret the Regulation as overriding their statutory objectives under the Framework then the investment case for 5G as well as for other next generation network technologies may well be diminished.

The Guidelines should not declare limited options and comprehensive lists, instead there must be clear acknowledgement that technology and methods for providing the services are changing continuously.

22. **Considering the rules for traffic management and specialized services in the Regulation, are the Guidelines providing sufficient clarity to the adoption of new network technologies such as "network slicing" and "edge computing"? Please explain in detail.**

- In the consultation report page 20 it is written" BEREC recalls that the Regulation is technology-neutral and applies to 5G just as it does to any other network technology. Therefore, if an ISP wishes to use network-slicing, or any other technologies, in a 5G, or any other network, environment, it could offer a specialised service in accordance with Article 3(5) or an IAS in accordance with Article 3(1) - (4), including the traffic management rules in Article 3(3). To clarify that 5G services, or any other access networks and network technologies, can be delivered over specialised services, for instance, using network slicing, BEREC added a new footnote 26 to the final Guidelines: "Therefore, ISPs are free to offer new services and business models in the environment of a 5G network whilst adhering to the principles laid down in the Regulation." This statement should be clearly included into the guidelines and not only as a footnote.

- 5G networks with network slicing will contain multiple IASs within a single network archicture. These IASs might differ in their technical characterisations. BEREC implementation of the Regulation should acknowledge that traffic on each IAS can be managed as distinct services while meeting the requirements set out in the Regulation.

- In order to allow the full exploitation of new network technologies and architectural solutions, a balanced approach is needed so that, on the one hand, an Open Internet for end-users is ensured and on the other hand enough flexibility is left to IAS providers to manage their IP network and to provide services other than IAS, avoiding hampering innovation and innovative technologies, that will be fundamental for Europe digital transformation towards the Gigabit society.

- The "network slidicing" methodologies and their problematic is also analysed in detail by a recent study report on 5G and Net Neutrality provided by TNO[10]. Any other technologies and access networks that may be impacted in similar way as described by TNO report, shall also be taken into account, within the spirit of technology neutrality, by BEREC guidelines and Net Neutrality regulation.

23. If not, which specific points are unclear in the Guidelines and how could BEREC improve this? Please provide concrete suggestions.

Rather than further specification and improvement of the Guidelines, it would be of interest to align the Guidelines better on the purpose of the Regulation and allow for all innovation that does not contradict these purposes. This is the true spirit of the Regulation in the first place (as already elaborated on above). Further detailing and improving Guidelines on criteria and control mechanisms will be counterproductive for the technological innovation that drives our digital societies and investment.

H. Other comments

24. Do you want to share any additional comments?

- In the interest of transparency and increased clarity, the industry strongly encourages BEREC to consider providing qualified English translations of all national decisions made by National Regulatory Authorities on the implementation of the Regulation. Additionally, we would encourage BEREC to dully reply to requests received asking for information on the BEREC net neutrality working group.

- Regulatory predictability is of major importance for the next generation networks' deployment, the EC is advocating for it and Open Internet Regulation should be applied in a flexible and predictable way to foster it. BEREC should signify its support to next generation networks' technologies by concentrating on the strict scope of the Regulation.

- Virtualisation of networks, network slicing and other future technologies will become a standard way of providing services and operators need predictability on the rules applied to their services.

- It is of critical importance for the future of European economy that business grade access to software and virtualised networks located within the internet can be guaranteed when implementing the Regulation. It is all the more important not to deprive European businesses from this possibility compared to providers from other part of the World.

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[10] "5G and Net Neutrality: a functional analysis to feed the policy discussion", Dr P.A. Nooren, Dr N.W. Keesmaat, A.H. van den Ende, A.H.J. Norp, April 2018