Cable Europe comments on BEREC's Report on differentiation practices and related competition issues in the scope of net neutrality

31 July 2012

I.   General comments

Cable Europe welcomes BEREC's consultation on its draft report on differentiation practices and related competition issues in the scope of Net Neutrality.

Generally speaking, Cable Europe considers that BEREC has a correct assessment of current problematic situations and possible corrective tools at hand.

As rightly argued by BEREC along all this report, there are few situations where electronic communication providers (ECPs) might see justification for the practice of blocking or throttling applications.

Also the likelihood of a "two-speed internet" is far from clear nowadays, as most content and applications benefit from a best-effort delivery on ECPs networks. Differentiation practices seem to be unlikely in a competitive market. ECPs should have the possibility, in a non-discriminatory basis, to manage their networks to increase efficiency, minimising the resources needed to provide the service and assuring the best deal to end-users. Traffic management has positive effects when the market is competitive.

In the case competition is not rightly enhanced, NRAs have the tools necessary to correct this situation with the provisions included in the current regulatory framework. This combined with ex post competition rules, enough transparency of measures used and the possibility for consumers to switch to a competitive operator should suffice to solve any problematic situation.

Imposing minimum quality requirements should only come though after a thorough analysis of the practices and their situation in the context of a market, which are detailed in BEREC's Guidelines for Quality of Services in the scope of Net Neutrality.

Our comments are therefore closely interlinked with the comments made on the consultation of the latter Guidelines.

II. Specific comments

a. Comment on the suggested conflict between best effort Internet Access Services (IAS) and specialized services with the risk of leading to a "Dirt Road Internet"(expressed e.g. in para. 4 and 283)

The BEREC draft report suggests that premium-priced services or other differentiation could reduce best effort internet to a so called "dirt road". There is no conflict between best effort IAS and specialized services as there is nothing that points in the direction of Internet access services not being provided with adequate network resources. Reflecting upon the developments during the past 10 years, one can conclude that cable operators have been able to increase both the network resources dedicated to IAS and the network resources dedicated to digital TV for example. It is important to note that those TV services are typically provided over dedicated, ring fenced capacity, using the DVB-C standard. They are not, therefore, relevant to the consideration of degradation of internet access services Thanks to the technical properties of the hybrid fiber coax networks (HFC networks), the continuous development of standards, the improvements of active equipment and the foreseeable development of consumer demand, Cable Europe is confident that cable operators will be able to continue to improve and strengthen their IAS. Hence, the "Dirt road Internet" is not a relevant scenario.

b. Comment on the suggested criterion of relative equality between differentiated services and best effort IAS offered by ECPs to CAPs

In paragraph 298 (p. 60), BEREC notes that operators offering CAPs greater quality at a certain price in fact could have positive effects for both CAPs and end users. However – at the same time – BEREC highlights that differentiated services offered to CAPs could also create entry barriers for innovators and application providers (APs) who want to access the Internet platform "in good conditions".

This warning put forward by BEREC is based upon the same notion of "relative equality" as the one forming an important part of BEREC's draft guidelines on QoS ("Draft Guidelines"). In the Draft Guidelines, BEREC suggests that improvements of specialized services and prioritized IAS, e.g. by increases in the dedicated capacity, could pose a net neutrality problem if equivalent improvements were not applied on the best effort IAS, thus leading to a *relative* degradation of best effort IAS in comparison with specialized services.

In the paragraph cited above, BEREC seems to suggest in a similar manner that improved delivery conditions by ECPs for certain CAPs (who are willing to pay for such improvements) would create entry barriers for innovators and APs (not willing to pay for such improvements) since the delivery

services offered to them would be *relatively* degraded in comparison with the prioritized delivery services.

In Cable Europe's view, both of these assertions are flawed. The relevant question is whether the best effort IAS answers to a certain level of expectations – measured for example by low level of congestion and little discrepancy between marketed and actual speeds. This in turn would imply that applications running over the best effort IAS would also answer to the same level of expectations. The performance of specialized services or differentiated IAS or improved delivery services should be of no relevance to this assessment. If innovators and APs are offered best effort delivery services answering to their expectations, no entry barriers are created.

c. *Comment on the suggested superiority of application-agnostic traffic management methods*

In paragraph 327, with regard to traffic management and congestion mitigation methods, BEREC notes that "alternative and less distortive practices achieving the same objectives could be preferable, in particular when they can be content and application agnostic". In the Draft Guidelines, BEREC refers to this Draft Report and notes that "practices that restrict or prioritize traffic should, in general, be application-agnostic" (see p. 52 in Draft Guidelines).

This position is not consistent with the other parameters that should be taken into account when assessing whether a traffic management method in fact leads to a degradation of quality.

We can refer to chapter 4 of the Draft Guidelines and to the suggested parameter "quality as perceived by end users" (see p. 43), as well as to the fact that BEREC itself notes that that "the effect of the practice is also of great importance" (see p. 52).   We can also highlight BEREC's own conclusion that "[even] under heavy congestion when an application that is relatively insensitive to delays is throttled extensively this may be almost unperceivable as long as the overall functionality is not affected (e.g. a P2P file sharing application may be throttled temporarily to very low throughput without the end user being aware of it)" (see p. 49).

So BEREC itself concludes that an application-specific method (temporary throttling of P2P file sharing application) can be applied. In comparison with the application-agnostic alternative (random throttling of all applications), the conclusion could very well be that an application-agnostic method would lead to *more perceivable* and *more negative effects* on the consumer experience than the application-specific method. The quality of a service or application as experienced by the user is important. But different services and applications respond differently to latency, jitter and packet-loss. When trying to keep the user-experience at a high level in a congested network, it's best to prioritize those services that are most affected by this congestion. That for instance means prioritizing VoIP

(strongly affected by congestion) over P2P file sharing (lightly affected by congestion).

Therefore application-agnostic methods cannot, with reference to the effects of the practice and in particular to the quality as perceived by end users, generally be preferred over application-specific methods.

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Cable Europe comments on BEREC's Guidelines for Quality of Service in the scope of Net Neutrality

31 July 2012

I.   General comments

Cable Europe welcomes BEREC's consultation on its draft Guidelines for Quality of Service in the scope of Net Neutrality.

Generally speaking, Cable Europe considers that BEREC has a correct assessment of current problematic situations and possible corrective tools at hand.

In the case competition is not rightly enhanced, NRAs have the necessary tools to correct this situation with the provisions included in the current regulatory framework. This combined with ex post competition rules, enough transparency on measures used and the possibility for consumers to switch to a competitive operator should suffice to solve any problematic situation.

As rightly argued by BEREC along all this report, there are few situations which will require the imposition of minimum QoS requirements. As BEREC also recognises, a mandated QoS requirement is an intrusive remedy. It should therefore be viewed as a measure of last resort. NRAs must accordingly take full account of the burden that it can place on ISPs and network operators. This is particularly important in the context of the Digital Agenda targets: an onerous obligation to ensure a minimum level of capability or performance would very likely detract from operators' efforts to meet those targets and would quite probably disincentivise further investment in networks.

Imposing minimum quality requirements should therefore only come after a thorough analysis of the practices and their situation in the context of the market, which are detailed in these Guidelines.

Before going into specifics, Cable Europe would like to emphasise that in the last 20 years cable operators have been developing Modern large-scale hybrid fibre-coax (HFC) networks ultimately bringing fibre to every street corner in densely cabled areas. From networks which were 100% coax, the industry has moved to a position where the coax part of the network is restricted to the last few hundred metres.

The Modern Hybrid Fibre-Coax Powered Network
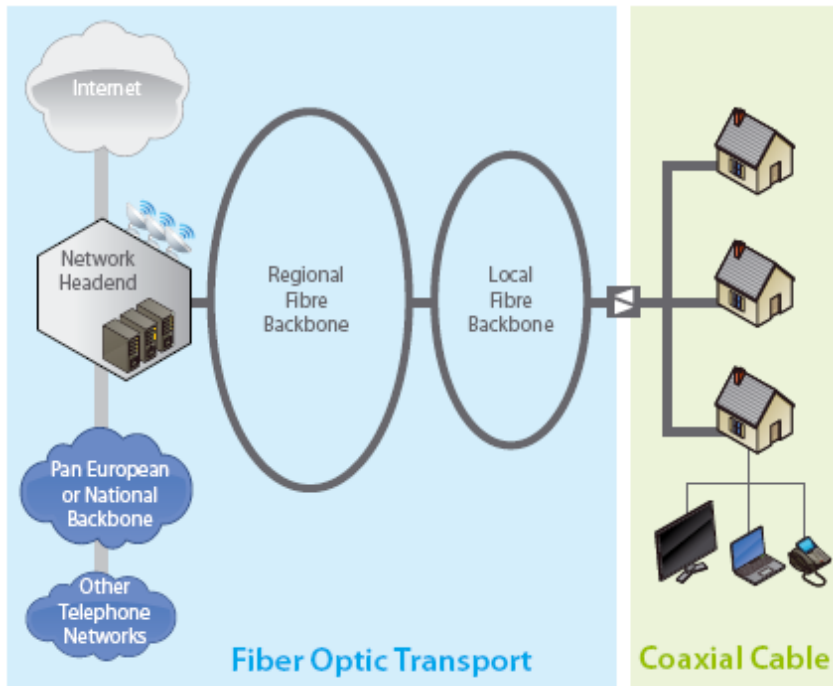
With the upgrading of existing coaxial networks, cable operators have been able to offer a new range of services such as high-speed data and (separate/non-internet based) TV services which require a two-way capability. With the introduction of the latest standard for data over cable, EuroDOCSIS 3.0, very high speeds can be reached (120 Mbps is now a mass-market offering by Cable operators, and this latest standard is scaleable to speeds significantly beyond that). And further evolution is planned. Recent trials showed the possibility of even higher speed levels in the range of 4-5 Gbps.

DOCSIS 3.0 rollout of European cable operators
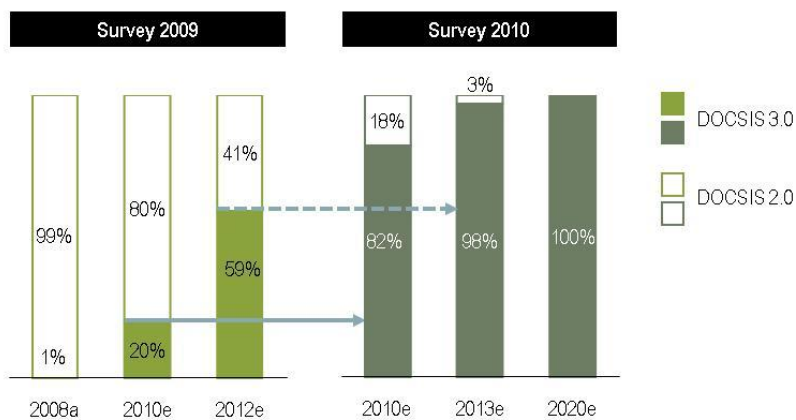
Source: Solon

Cable operators are thus constantly working on the evolution of their network and by no means are looking for restricting the capacity for IAS.

II.   Specific comments

1. *The criteria proposed for the assessment of degradation of Internet access service as a whole* (Ref. chapter 4)

a) <u>General comments</u>

Broadly speaking, Cable Europe considers that BEREC's reasoning for the assessment of degradation of Internet access service (IAS) as a whole is a correct one. The main rule is that there is no need for intervention where there is good availability of IAS offers with satisfying quality at a reasonable price, when the information on the service provided is clear and the ease of switching is sufficient.

Cable Europe believes that this main rule will prevail in the current highly competitive electronic communications market where players such as cable operators are investing in such a way that they are driving fierce competition on others like the incumbents by forcing them to invest further in their network.

More specifically, BEREC proposes four different groups of assessment criteria: (i) quality of IAS over time (p. 37-38); (ii) IAS speed and congestion (p. 39-40); (iii) IAS vs. specialized services (p. 40) and (iv) prioritized IAS (p. 40-41).

Cable Europe considers however that BEREC's reasoning and suggestions in relation to criteria (iii) and (iv) are inconsistent and would risk resulting in disproportional regulatory intervention, and thus need revision. These major comments are presented below under the heading "Relative vs. absolute degradation", while the more detailed comments are presented under the heading "Other comments".

b) <u>Relative vs. absolute degradation</u>

For both classifications (iii) and (iv), BEREC seems to propose a criterion of *relative equality* between specialized services and prioritized IAS on the one hand and IAS and best effort IAS on the other hand. In the summary of chapter 4, BEREC suggests that monitoring should include "performance of IAS *compared* to specialized services" (p. 43). Also, BEREC notes, in relation to prioritized IAS and traffic classes, that the "*relative performance* of these classes needs to be monitored and evaluated" (p. 41). Taking into account the "appropriate requirements" suggested by BEREC in chapter 6 ("similar increase in speed of IAS as of specialized services"), one can get the impression that BEREC is of the opinion that the quality of IAS as well as

changes in the quality of IAS (improvements or degradations) must be assessed *in relation* to the quality of specialized services and prioritized IAS and to the changes in the quality of specialized services and prioritized IAS.

Cable Europe believes that there are *no grounds* for such a notion of relative equality. As is noted by BEREC several times in the Draft Guidelines (with reference to Art. 22(3) USD), NRAs have been granted the competence to set minimum QoS in order to *prevent degradation of service*. The policy objective is to ensure that *services and applications dependent on the network are delivered at a minimum quality standard* (with reference to recital (12), USD).

In line with this policy objective, degradation can be assumed to occur when "Internet access services have inadequate performance most of the time due to a high degree of overbooking" (see scenario A – The "Dirt road Internet" – in section 3.2.1 of the Draft Guidelines on p. 24).

Hence, the relevant question to be asked when assessing whether degradation of service (with regard to IAS as a whole) has occurred, should be whether Internet access services (and best effort IAS) have adequate network performance, which most likely corresponds with whether adequate network capacity has been dedicated to IAS and best effort IAS. If services and applications run over the Internet access service function as expected – measured for example by *low level of congestion* and *little discrepancy between marketed and actual speeds* – there can be no assumptions of degraded service. The performance of specialized services and prioritized IAS and the network capacity dedicated to these services should be of *no relevance* to the assessment. Hence, **what should be measured with regards to IAS as a whole is *absolute degradation* and not *relative degradation*.**

As an example, if an operator has *doubled* the offered IAS speed from 100 Mbit/s to 200 Mbit/s in three years' time, and these IAS are perfectly suited to carry the applications delivered over the Internet at that time, it should not be a net neutrality issue if the network capacity dedicated to specialized services has *quadrupled* during the same time period. The relevant issue is, with reference to recital (12) USD, *that services and applications dependent on the network can be delivered with adequate quality*. And cable operators, given their strong HFC network with high capacity, certainly can meet this requirement of not degrading the IAS even if developing specialized services.

Therefore Cable Europe suggests that the proposed quality parameter "performance of IAS compared to specialized services" is deleted.

c) <u>Other comments</u>

With regard to quality of IAS over time (criteria (i)), Cable Europe would want to support BEREC's point that measurement platforms which allow users to carry out quality tests of their IAS themselves are good sources of information (p. 38). Many cable operators provide this tool to their

customers. For example, Telenet has put in place a "speed test". Unitymedia Kabel BW offers to its clients a so called "Speed promise". In Sweden the national regulatory agency *Post- och Telestyrelsen* ("PTS") has introduced the web based platform *Bredbandskollen* (Eng. "Broadband Control"), with which users can check and control the actual speed of their IAS at a specific moment. This platform is well known and widely used by both consumers and operators, which often use the results of the platform as part of their marketing.

As regards IAS speed and congestion (criteria (ii)), BEREC notes that significant lower performance than the contractually agreed speed should be an indication of degradation, which in turn could warrant setting QoS standards. Here, Cable Europe would want to highlight that discrepancy between marketed and delivered speeds could – at least in part – be handled by other regulatory frameworks and measures, such as marketing and consumer protection regulation.

2. ***The criteria proposed for the assessment of issues regarding individual applications run over the Internet access service*** **(Ref. chapter 5)**

a) <u>General comments</u>

In the sections on issues regarding individual applications on the Internet access service, BEREC focuses on traffic management measures. BEREC rightly recognizes the importance of traffic management measures for an efficient Internet and interesting offers to consumers. Nevertheless, BEREC analyzes in what situations certain traffic management measures can constitute a *degradation of service* (with reference to Art. 22(3) USD). In assessing whether certain practices lead to degradation or not, BEREC proposes that three factors should be taken into account: (i) motivation for the practice; (ii) implementation and effect and (iii) practice at market level. Cable Europe considers however that BEREC's reasoning and suggestions on the relation between these factors and the use of application-specific and application-agnostic measures are inconsistent and would risk resulting in disproportional regulatory intervention, and thus need revision. These major comments are presented below.

b) <u>Theoretical degradation vs. actual degradation</u>

In outlining the important factors that should be taken into account when assessing whether a traffic management practice restricts the IAS, BEREC notes, with reference to its draft report on competition issues related to net neutrality that "practices that restrict or prioritize traffic should, in general, be application-agnostic" (see p. 52). BEREC also notes that "ISPs should not be able to claim the use of congestion management as a reason to degrade a specific application if application-agnostic methods can be used instead" (see p. 51). Taking into account the "appropriate requirements" suggested by

BEREC in chapter 6 (prohibition of application-specific restrictions), one can get the impression that BEREC is of the opinion that application-specific methods constitute degradation *per se*.

Cable Europe considers that this position is not consistent with the other parameters which should be taken into account when assessing whether a traffic management method in fact leads to a degradation of quality.

We refer to chapter 4 and to the suggested parameter "quality as perceived by end users" (see the summary on p. 43), as well as to the fact that BEREC itself notes that "the effect of the practice is also of great importance" (see p. 52). We can also highlight BEREC's own conclusion that "[even] under heavy congestion when an application that is relatively insensitive to delays is throttled extensively this may be almost *unperceivable* as long as the overall functionality is not affected (e.g. a P2P file sharing application may be throttled temporarily to very low throughput *without the end user being aware of it*)" (see p. 49).

So, BEREC itself concludes that an application-specific method (temporary throttling of P2P file sharing application) can be applied. In comparison with the application-agnostic alternative (random throttling of all applications), the conclusion could very well be that an application-agnostic method would lead to *more perceivable* and *more negative* effects on the consumer experience than the application-specific method. The quality of a service or application as experienced by the user is important. But different services and applications respond differently to latency, jitter and packet-loss. When trying to keep the user-experience at a high level in a congested network, it's best to prioritize those services that are most affected by this congestion. That for instance means prioritizing VoIP (strongly affected by congestion) over P2P file sharing (lightly affected by congestion).

When suggesting that "practices that restrict or prioritize traffic should, in general, be application-agnostic", BEREC puts greater focus on *theoretical degradation* (degradation in relation to the theory of how the Internet ecosystem should work) than on *actual degradation* (degradation in relation to what the user expects and experiences).

Cable Europe believes that application-specific methods cannot, with reference to the effects of the practice and in particular to the quality as perceived by end users, be assumed to constitute degradation of service *per se*.

Therefore Cable Europe proposes that BEREC brings greater nuance to its assessment of application-specific and application-agnostic methods and that greater focus is put on *actual degradation as experienced by consumers*. **As a consequence, the proposed conclusion that "practices that restrict or prioritize traffic should, in general, be application-agnostic" should be deleted.**

3. The aspects proposed regarding the conditions and process for regulatory intervention (Ref. chapter 6)

As rightly mentioned by BEREC, regulation will only be necessary where there is a competition failure and that market mechanisms will not allow for consumers to switch providers.

Proportionality is the right criterion for NRAs to evaluate the possibility to impose any QoS requirement. Cable Europe believes that as far as cable operators are concerned there is nowadays no *objective justification* for NRAs having to impose any QoS requirement on cable operators. Indeed, as stated supra, cable operators are constantly working on a good capacity of their network and there should be no worry of its degradation. In any case, we believe that transparency and competition tools would suffice to remedy the situation.

As regards the concrete examples of minimum QoS requirements, Cable Europe stresses that these examples should be evaluated in the light of the comments made above.

Hence, Cable Europe would *disapprove* the suggested requirement that ISPs could be required to provide a similar increase in speed of the IAS as has been provided to the specialized services (see p. 59). As explained above, this suggested requirement is based upon a flawed criterion of relative equality between IAS and specialized services, for which there is no support in the regulatory framework.

Similarly, Cable Europe would *disapprove* the suggested requirement that ISPs could be prohibited to apply application-specific restrictions (see p. 59). Indeed, this suggested requirement is based upon a flawed focus on theoretical degradation which does not take into account the actual effects of the traffic management method applied or the quality as perceived by end users.

4. To what extent are the scenarios described in these guidelines relevant with respect to your concerns/experiences? Are there additional scenarios that you would suggest to be considered?

a) Comments on described scenarios

From a cable operator's view, scenario A: The "Dirt road Internet" is not a relevant scenario as there is nothing that points in the direction of Internet access services not being provided with adequate network resources. Reflecting upon the developments during the past 10 years, one can conclude that cable operators have been able to *increase* both the network

resources dedicated to IAS and the network resources dedicated to digital TV services. It is important to note in this context that Cable TV services are typically provided via separate, ring fenced capacity in the network using the DVB-C (as opposed to IP) standard. Thus internet access products and Cable TV services do not compete for capacity. While some Cable operators have recently started to offer hybrid TV services which combine DVB-C delivery with audiovisual content delivered over the internet, these products are characterized by the provision of a dedicated, ring fenced internet stream that is used only to deliver that content. Again, it does not compete for capacity with a subscriber's internet access product. Thanks to the technical properties of the hybrid fiber coax networks (HFC networks), the continuous development of standards, the improvements of active equipment and the foreseeable development of consumer demand, Cable Europe is confident that European cable operators will be able to continue to improve and strengthen their IAS.

As regards Scenario B: The "Cable TV Internet", Cable Europe urges BEREC to change the name of this scenario as it has completely misleading as to what cable operators are doing compared to other networks.
First, if the scenario refers to Comcast throttling of peer to peer networking applications in the US and FCC's formal order in this respect, Cable Europe believes that this reference should not come into a BEREC document as European regulators should refer to European situations following European rules. The US situation should not be taken as an analogy point of reference as US regulation is based on principles only and do not have a strong regulatory framework for electronic communications as is the case in Europe. And moreover, no cable operator in the EU has been alleged of uncompetitive practice based on this alleged scenario.
Second, if the analogy with Cable TV refers to the circumstances where Cable TV packages are predefined by the operator and that consumers might not be able to compose the TV packages of their choice, it must be underlined that TV packages, regardless of the fact that they are provided via IPTV networks, terrestrial networks, satellite networks or cable networks, always are predefined by the operator. Hence, the characteristic of a predefined selection of content has nothing to do with specifically "*cable TV*", but rather with how the TV market functions as a whole. In any event, Cable TV services are typically provided via separate, discreet capacity, using the DVB-C standard, so are not relevant to the consideration of degradation of end users' internet access products.
Therefore Cable Europe considers that it is definitively not clear as to the reason why such a scenario is referred to as "the Cable TV Internet" scenario and in any case urges BEREC to change the name of this scenario as it disproportionally refers to cable operators and could be completely misleading as wrongly suggesting that cable operators are constantly engaged in uncompetitive practices.

b)   <u>Comments on additional scenarios</u>

With reference to the importance of the ability of end users to switch to an appropriate offer (see e.g. p. 42), Cable Europe would like to stress the difference between infrastructure-based competition and service-based competition. Infrastructure-based competition implies that customers can choose between ISPs that act on different access infrastructures and/or control their own active equipment. Since traffic management is carried out in the active equipment on infrastructure level, infrastructure-based ISPs are capable of choosing different traffic management practices and can thus compete with traffic management policies. Infrastructure-based competition makes it rational for ISPs to use reasonable traffic management since such a strategy can lead to a greater market share. Consequently, infrastructure-based competition raises the risks for operators that use traffic management techniques that customers could perceive as undue, since customers can choose a competing ISP that employs different traffic management practices.

On the contrary, service-based competition, which e.g. takes place in so called "open FTTH/FTTB networks", implies that customers have to choose between ISPs that act on the same access infrastructure and use the same active equipment. Control over infrastructure and active equipment is vested in another operator than the ISP. In the business model for open networks developed in Sweden, active equipment is controlled by a so called communication operator, with which the end-user in many instances does not have a contractual relationship.

Because of the technical aspects explained above, a development towards greater service-based competition at the expense of infrastructure-based competition would risk leading to a scenario in which competition between ISPs would not have as great and positive effect on net neutrality as it has today. Policymakers and regulators, with the ambition to promote an open Internet, should therefore prioritize and encourage infrastructure-based competition.

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