

SFR's response to the BEREC's public consultations on Net neutrality

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1. General comments

SFR thanks BEREC for giving it the opportunity to express its opinion on its last three consultations with regards to Net Neutrality. In general, BEREC has now published many different papers linked to the Net Neutrality topic and it would be very useful to limit the number of final reports and ensure a perfect consistency between all pieces of work.

The multi-face nature of the Internet and the high degree of access competition are two characteristics of the broadband market that force operators to offer ever more services and contents to their end users. Therefore, we agree that competition at retail level and transparency are key to delivering net neutrality.

Maintaining a good quality for the "Internet Access Service" is in the strategic interest of operators themselves. It is in our interest to keep the majority of users satisfied and avoid losing them to the competition.

BEREC rightly points out that when looking at evolutions in the market it will be necessary to take into account the whole value chain, including content and application providers (CAPs) and device manufacturers (whose technical choices may have a major impact on consumers' ability to access content and applications), as well as technical intermediaries, such as transit providers or providers of content delivery networks (CDNs). Still current works are mainly focusing on the operator responsibilities and do not sufficiently address the rest of the value chain.



2. Draft report on differentiation practices and related competition issues in the context of Net Neutrality

We broadly support the paper on Differentiation Practices which focuses on users and the need to make sure that they can make informed choices about the services that they are buying and the quality they requested.

Differentiation practices: what are we talking about?

Differentiation practices are not only technical ones. Indeed, most of them are commercial practices and have almost nothing to deal with the Net Neutrality debate as such (volume capping of a specific subscription, differentiation in terms of maximum speeds, inclusion of certain contents or services, CAPs paying for the Mo consumption rather than users...).

When describing specialised services and their potential effects, BEREC is mainly raising major objections. First of all, it could give an unfair advantage to one CAP amongst its competitors. Then, smaller CAPs will not have the resources needed to benefit from those services. Lastly, the cost of reaching an agreement with the majority of broadband providers will be too high for smaller or new CAPs (increased entry cost and barriers). As a consequence, innovation in the internet would be put at risk. Negative potential impacts are overestimated and positive impacts not sufficiently supported.

We believe that regulators should focus on guarantying non-discriminatory treatments between two different CAPs in analogue situations as well as efficient transparency policies for end-users to be able to choose the right bundle and operator. As a consequence, if one specialised service targeting CAP is offered to all interested parties on reasonable terms, the competitive issues will fade away.

Also, the negative effect on small innovative players should be mitigated. The internet world of the first years has already changed substantially. As in all markets, larger companies enjoy economies of scale not available to new entrants. Larger CAPs can invest in more powerful servers, CDNs, advertising, or even starting rolling out their own infrastructures, in a way a small application developer cannot afford. Excessively prescriptive rules on service differentiation at the operators' level could advantage bigger players who are already able to invest in their own specialized services to the detriment of smaller CAPs who can only rely on network operators to offer enhanced QoS. Indeed, innovation in the network will be key to ensure that each service can be delivered with the right features (latency, speeds, caching...).

For all these reasons, SFR is willing to offer a catalogue of specialised services in a completely transparent way to all interested CAPs. The aim is to make all of network's capacity accessible on a non-discriminatory basis and thereby to improve the commercial propositions of the interested service providers. It can be guaranteed service for HD TV or VoIP but also optimised latency for network gaming and guaranteed routing for sensitive alerting services (security, e-health, etc.). SFR hopes to be able to develop a genuinely new upstream market capable of contributing to the funding of growth in both fixed and mobile capacity, so the addressable market will have to be opened up as much as possible rather than being restricted.



With regards to prioritised services, BEREC should recognise that it is not a zero sum game. In competitive retail markets, any negative effect on non-prioritised uses is likely to result in a loss of market share and revenues. Operators will invest more to guarantee better service to the limited number of prioritised customers; decreasing the best-effort quality is not an option. The same should be acknowledged for price differentiations that aim at reducing the consumption of the most important users (e.g. fair use policies) or at shifting traffic out of the busy hour. These practices will reduce the risks of congestions and enhance a fair repartition of the capacity to the benefit of all users.

What kind of regulatory intervention, if needed at all?

We believe that the very rapid move of technologies and markets make it very difficult for regulators to develop a comprehensive and up to date list of what should be allowed and what should be forbidden.

We agree that more than the specific practices in themselves, regulators should look at the effects of each practice in a specific context. Doing so, they should not look at the potential effects in a static way, but they should look at the market outcomes and understand the overall competitive dynamics.

Innovation has flourished without regulation in the internet and we do believe that the same hands-off approach should continue to prevail. The market should be allowed to experiment new pricing innovations targeting both the retail and the upstream end-users. This seems to be recognised by BEREC "In such situations our initial position would be that such arrangements would be a commercial matter between parties and ISPs and CAP providers should be free to explore new business models".

As recommended by BEREC, a more careful approach should be adopted only with providers that have a dominant position in the relevant access market that is not already corrected and balanced by specific existing ex-ante rules. SFR would also like to remind BEREC that general competition rules apply and would be the only relevant tool to address any potential collusion cases.



3. Draft guidelines for Quality of Service in the scope of Net Neutrality

The Directives of 2009 introduced the new possibility for NRA to impose minimum QoS requirements "in order to prevent the degradation of service and the hindering or slowing down of traffic over networks". This provision should be seen as a last resort power to be used in very limited cases. This means that the level of threshold for intervention should be set higher than currently proposed in the draft guidelines.

The aim of the article 22-3 is to protect consumers and maintain a good quality for internet as a whole. QoS measurement should therefore be based on the end consumer experience and not on one specific CAP interest. The objective of the new framework was not to address competition issues or preserve a level playing field among different CAPs. Assessing individual applications quality would be very complex to put in place – if at all possible – and we can question the legitimacy of such an assessment. This is clearly out of scope. Chapter 5 should therefore be deleted.

Minimum QoS requirements should be imposed only when there is clear evidence that all or most of ISPs in the specific national market do not offer a sufficient level of QoS for the Internet Access Service and only if:

- the degradation of the QoS persists,
- transparency is not delivering sufficient incentive to maintain a high level of QoS,
- the switching procedures are not easy enough to make sure that competitive pressure is working.

As rightly acknowledged in the draft report, the principle of proportionality is key in the current regulatory framework. Nonetheless, some proposals would imply significant costs and resources from the operator perspective and their impacts should be further assessed.

QoS is not only of the responsibility of ISPs. BEREC rightly proposes to focus on the quality of service (and not on the QoE) delivered by the network operator. CAPS decisions and investments could also have a great impact on the quality offered to the end users.

The draft report also refers to differentiation practices and even elaborates on the ones which would be legitimate and under which conditions. We do believe that this question regarding differentiation practices should be strictly separated from the one on QoS. Potential issues with differentiation practices should be addressed through competition and transparency improvement, not through QoS regulation. As a consequence, the whole part dealing with this issue should be removed from the draft report.

As far as specialised services are concerned, the draft guidelines raise several issues. First, the concept of "closed" network, unknown to the regulatory framework, would require further explanation – were it to be kept in the final version. The draft guidelines seem to consider specialised services only from the end user perspective; this should first be made clearer. Following the same idea, we do not agree that prioritized IAS shouldn't be considered as specialized services. Moreover, we do not agree with the sentence according to which specialized services "only encompasses the underlying electronic communication service component, and excludes the application layer". This is defined at the level of the service agreement.

Also, the draft QoS guidelines shouldn't be the place to discuss repartition of costs and value amongst players. This would ensure a greater consistency between the different reports. Therefore the paragraphs related to those questions should be deleted from this paper and should only be addressed in the IP interconnection one.



Last but not least, any reflections on QoS regulation should apply to all market players. A solution focusing only on operators would not be efficient and could distort competition.

<u>Question 1</u>: The criteria proposed for the assessment of degradation of Internet access service as a whole (chapter 4)?

Monitor/identify: Are there situations that need attention?

According to BEREC, it would be necessary for the monitoring to "cover all relevant aspects of the IAS for which ISPs are responsible" and this should include "access and interaction". If the objective is to assess the quality of the IAS offered by one ISP to its retail consumer, monitoring should indeed only cover the network part which is of the responsibility of the ISP, but this might not cover the interconnection leg.

As BEREC rightly points to the fact that it is not always the fault of the local access provider that a degradation of the IAS occurs, sometimes interconnection partners and other players in the value chain have an adverse effect (overload of a service platform due to a temporary increase in traffic or a lack of investment...). Guidelines should therefore clearly exclude the interconnection leg as it will be very difficult to assess in practice if the degradation is due to the operator or to another player. This could undermine current negotiations between operators and big CAPs.

As regards comparison between advertised and actual speeds, this is mainly a transparency issue which should be addressed through the transparency work stream and should therefore be removed from the draft guidelines. It is also worth pointing out that many other parameters could be more relevant than speed to assess potential degradation of the service as well as to inform consumers on the features of the service (vs eligibility to one specific service for instance).

NRAs must keep in mind that a lot of these issues are competitive differentiators in the market for operators.

When considering the issue of specialised services, many points raised by BEREC seem to be questionable. In general, we do not think that improved performance for some service would necessarily result in a degradation of the remaining services offered. Specialised services should not be seen as completely different services requiring capacities from the IAS. Each kind of application has its own characteristics and may require very distinct features from another one. The fact that over-time bandwidth used by IAS would decrease compared to bandwidth used by specialized services would not necessarily mean that IAS has been degraded. The same comments apply to prioritised IAS which should be included in the specialised services.

As regards prioritised services, we do not believe in the potential negative effects pointed out by BEREC. We consider that, for prioritisation to make sense, operators will have to limit the number of customers taking benefits of it, thus limiting the effect on the rest of the users. In general, and in competitive market especially, operators are not interested in losing the rest of their customer base. We can also consider that higher QoS or performance for some customers will be rather the result of additional investments than a reduced QoS of non-prioritised services.

In general, the metrics to be used in assessing the internet QoS are not sufficiently analysed by BEREC. A balance should be found between having a sufficient numbers of KPI so as to provide representative data for the wide range of services, and still being proportionate in terms of costs.



Some NRAs are currently trying to define a list of relevant KPI, this work would be usefully reported and shared at the EU level.

Assess situation: Is regulatory intervention needed?

Regulators need to take a long term view when considering how and where to intervene in the market. Today's situation shouldn't be defined as the optimal situation to preserve. Regulators should be open to experimentation in the market for new products and services.

Data on the ability for users to switch should be analysed carefully. A low rate of switching does not necessarily mean that users are not able to switch easily and we do not see how an optimal level of switching rates could be set and therefore, why it should become a goal to reach for NRAs.

The draft guidelines do not say much on the way NRAs should set the levels (for the different KPIs chosen). This depends on the main objectives and one should keep in mind that art. 22-3 is supposed to protect end-users and not one - or several - specific CAP or business model. We believe that the final document should make clear that QoS levels should be set at the lower of the performance necessary to make sure that applications deemed to be essential are working (which in turn asks the questions of which applications are really essential and efficient).

<u>Question 2</u>: the criteria proposed for the assessment of issues regarding individual applications run over the Internet access service (chapter 5)?

This analysis of the evolution of QoS should be based on the end-user experience and not on specific CAPs interest. Therefore the application of minimum QoS requirements on operators in relation to specific applications would be illegitimate, not proportional and practically unfeasible due to the huge number of CAPs, the very distinct characteristics of each application, the various possible sources of quality degradation of a service...

The appreciation of differentiation practices should be considered within a competition analysis. It is clearly not a QoS problem and it cannot be solved via minimum QoS requirements. This part should therefore be deleted.

The issue of network effects where the value of an application increases as the number of users grows is overestimated by BEREC. We believe that network effects alone cannot justify the imposition of prescriptive rules preventing operators from offering differentiated tariffs and services. This effect only applies to a limited number of applications relying on a two-way communication (therefore it does not include streaming or VOD services).

<u>Question 3:</u> The aspects proposed regarding the conditions and process for regulatory intervention (chapter 6)?

SFR supports GSMA's response.



<u>Question 4:</u> to what extend are the scenarios described in these guidelines relevant with respect to your concerns/experience? Are there additional scenarios that you would suggest to be considered?

The scenarios and examples described in the draft guidelines are very extreme and do not necessarily reflect the reality, which is far more nuanced. It should also be noted that we are only at the very beginning of the possible developments of specialized services and it is not that easy to assess the potential negative or positive impacts.

Last but not least, the very recent survey published by BEREC showed that services like VoIP are blocked by all operators in only ONE European market. We can also acknowledge the fact that the situation is positively moving quite fast in mobile markets and has always been satisfactory in the fixed ones.



4. Draft report "assessment of IP interconnection in the context of Net Neutrality"

SFR shares most of the hypotheses/conclusions put forward at the end of the draft report. Some of them as well as other statements of the document are nonetheless raising more nuanced comments.

- Traffic is growing tremendously and is likely to continue to do so in the short/medium term particularly due to the generalization of video contents.
- These trends represent a huge challenge for operators that will have to take different measures to cope with it, and at least:
 - o Significant investments to increase capacity in the network
 - Network management to handle temporary congestion
- At the same time, retail markets appear to become mature and there is limited willingness to pay for very high speeds or for different level of quality whilst customers do not really control their consumption (do not control the advertising videos, no information on the volume required by the different contents...)
- FAC are far from being non-profitable. On the opposite, FAC potentially involved in the evolution of interconnection models are global actors, most of them enjoying a quasi-monopoly on their segment. It is worth noting that whereas CAPs are contributing to all other distribution costs of their services, they do not provide any revenues to local networks.
- FAC are not contributing to the investments needed to increase local networks capacities and do not have any incentive to use network resources more efficiently.
- SFR wants to offer a whole range of different services so as to provide an answer to the demand for more QoS of different players whilst at the same time managing the QoS offered to everyone.
- Standardization will be key for specialized services to emerge. Indeed the European telecommunication markets are very fragmented compare to other segments of the value chain. Without common standards of QoS interconnection or catalogue of specialized services, we won't achieve big scale solutions. Some initiatives are already being launched and should be incentivized and supported by the Commission.

Also, we can only regret that BEREC almost bases its costs analysis on studies commissioned by CAPs (i.e. WIK-Consult 2011, Plum Consulting 2011). It would however by legitimate for BEREC to consider more seriously the view of other parties.

Question 1 (Chapter 2): Are any other important players and/or relationships missing?

Devices manufacturers could be usefully mentioned by BEREC as they can also have a crucial role in the internet ecosystem.

<u>Question 2</u> (Chapter 2): Do you agree with the classifications of CAPs as outlined above?



<u>Question 3</u> (Chapter 2): Do you agree with the classifications of CAUs as outlined above?

Question 4 (Chapter 2): Do you agree with the classifications of ISPs as outlined above?

<u>Question 5</u> (Chapter 2): Do you agree with the classifications of CDNs as outlined above?

No specific comments.

Question 6 (Chapter 3): To what extent are requirements regarding traffic ratios still important in free peering arrangements?

Traditionally, access to the entire internet has taken place (and still does) through transit agreements. Peering agreements were only concluded for direct relations between operators (peers) exchanging balanced traffic. The decision whether to establish this type of direct inter-connection with another player like a service provider, whether free of charge or not, should lie exclusively with the operator.

Historically, peering was put in place between operators with relatively symmetrical traffic flows in order to reduce the costs of all the players and improve the quality of the services delivered to the end user. The policy was then extended to inter-connections between operators and CAPs via agreements based on symmetrical traffic between the two parties. In recent years the policy has become increasingly unsustainable for operators because of traffic imbalances with certain Internet players. The asymmetry levels initially set by peering agreements (often a ratio of two to one between incoming and outgoing) have long since been overtaken in the relations between operators and CAPs. This trend is likely to continue, as the growth in network consumption is estimated at nearly 40% per year, essentially in incoming traffic at first.

Traffic ratios are key to determine when the agreement should be considered as content distribution service provided by the network operator which should in that case be able to recover its costs.

Provided that both parties honour their respective commitments, these agreements are perfectly acceptable and appropriate for the development of the Internet.

When it comes to the costs of peering (described page 21), it should be noted that content distribution costs on a local network are not only related to interconnection costs but also to backbone costs, access costs (bitstream)...

Question 7 (Chapter 3): To what extent does the functioning of the peering market hinge on the competitiveness of the transit market?

As stated by BEREC, peering agreements contribute to an improved performance compared to transit services. Indeed, peering implies a dedicated link between the two peers whereas transit offers a mutualised connection. The choice between peering and transit is therefore not only a matter of price but also of QoS.

Question 8 (Chapter 3): Does an imbalance of traffic flows justify paid peering?



<u>Question 9</u> (Chapter 3): Does paid peering increase (number of contracts and volume handled under such contracts)?

<u>Question 10</u> (Chapter 3): To what extent does regional peering increase in relevance and affect transit services?

As previously stated, peering agreements have always been granted provided traffic flows were symmetrical. There is a huge increase in traffic sent to local network with no incentive at all for CAPs to deliver this traffic more efficiently so as to consume fewer resources. This means significant incremental costs are currently not recovered for local networks, whereas any other distribution service is able to charge for its service. This situation is in favor of big global CAPs and internet intermediaries.

Page 48, BEREC is stating that "CAPs make substantial payments for hosting and connectivity. Furthermore they pay for CDN services that bring content closer to the CAU. Therefore different from what is sometimes alleged by some telcos in the Net Neutrality debate there seems to be no free-riding problem". This shows how much local network operators are the last to benefit from this situation as they face significant costs and are the only one not to be paid.

Question 11(Chapter 3): Are any important services missing from the list of services provided by IXPs?

Question 12 (Chapter 3): Are there any further developments regarding IXPs to be considered?

Question 13 (Chapter 3): Should in future Europe evolve to have more decentralised IXps closer to CAUs?

From our point of view, IXP are a relevant solution for small internet players only. Private peering remains the most relevant solution for bigger players.

Question 14 (Chapter 3): Will traffic classes ever become available in practice on a wide scale?

Question 15 (Chapter 3): Will interconnection for specialised services be provided across networks?

Question 16 (Chapter 3): Will other solutions for improving QoE like CDNs become more successful rather than traffic classes?

We do believe that traffic classes are only one piece of what could be done in terms of specialized services. Different services have different needs (as shown in the frame below, issued from an Idate document).



Applications	Delay ¹	Jitter ²	Bandwidth consumption
Email	+	+	+
File sharing (file transfer)	+	+	++
Web browsing	++	+	++
Online Gaming	+++	++	+
VoD	+	+++	+++
VoIP call	+++	+++	+
Video conferencing	+++	+++	+++

+: low sensitive +++; high sensitive

We would mitigate the following assertion "Given the high cost of implementation possibly lower cost "best-effort" capacity up to now has shown to be the strategy of choice". Even for the best effort distribution only, our costs are significantly high. Operators should therefore be able to differentiate between best effort internet and specialized services.

Unlike in the USA, the EU market is characterized by a multitude of network operators, none of them having a pan European footprint. This means that interconnection and standardization will be key in developing credible specialized services for CAPs in the EU (who are on the opposite on very concentrated markets). The European commission should dedicate more time on this crucial issue together with standardized body. To ensure end to end cross network QoS and to avoid a situation where CAPs would have to negotiate agreements with all network providers, it will be necessary to standardize the different classes of quality at the level of interconnection (so as to allow interconnection of CDN as well). Also, designing a common catalogue of specialized services could facilitate their adoption by CAPs.

CDNs are an interesting way of improving QoE but are not the only way of doing so. Traffic classes and CDNs are not really in competition with each other, for example CDN are in no way capable of improving VoIP communications. They are pertinent for some applications, and specialized services can widen the range of applications being improved by the network.

Question 17 (Chapter 4): Which of the factors impacting on the regionalisation of traffic is most important: language, CDNs, direct peering? Question 18 (Chapter 4): Are any further issues missing?

We do not believe that the fact that "the rate of growth shows a slight decline" is the most relevant conclusion to draw in terms of trends in traffic. Indeed the figures also show that there is still an important annual growth in absolute terms. We can only notice that the general trends in internet traffic are widely recognized by BEREC in the competition aspects paper.

Traffic is growing substantially and it is likely to continue to do so in the near/medium term. According to our internal estimations, the annual growth of traffic will still be about 40% as far as mobile is concerned and about 35% for fixed for the next 5 years, with almost no change in the number of retail subscribers in those two markets in France.



This trend is likely to continue in the future with mobile traffic changing toward smartphones and tablets and with connected TV and other video usages generalizing in the fixed network.

Question 19 (Chapter 4): Given the cost reductions and the economies of scale and scope observable in practice, why do network operators call for compensation?

The increase in traffic growth implies very important investments from network operators not all of them been compensated by costs reductions or covered with economies of scale. Those investments in network capacities are needed at different levels of the network and not on potential specific bottleneck and they have nothing to do with traditional investment such as investments in 4G or in fibral.

On the fixed side, the cost of the incremental Mbps is the only one that is decreasing. Each year, the incremental traffic represents from 50 to 100 million € for an operator like SFR (around 1€/month/consumer), mainly to be able to fulfill the needs of the biggest CAPs. This covers the replacement of DSLAM, the upgrade of the backbone and the backhaul costs (bitstream to be paid to France Telecom). We therefore recommend the following assertions to be deleted "Overall. in fixed networks the decrease in unit-costs is not overcompensated by the increase in volume implying that there is no substantial increase in overall costs" and "Unit costs declines are mainly relevant in core/aggregation networks and in mobile net-works". Indeed, transit costs are only a very limited part of operators' incremental costs.

Also, BEREC is missing the fact that most European markets are becoming mature and that operators cannot count on the "growth in the number of fixed broadband subscribers" anymore.

On the mobile side, incremental capacity costs are even more important (from 100 to 1000 times more). As far as LTE is concerned, incremental costs might not be the right figure to take into account, especially on a short to medium term perspective. LTE means a lot of money in terms of investments in the roll out, the spectrum... with potentially very little willingness to pay on the consumer side (no new retail market compare to 3G services).

According to BEREC, "an increase in traffic does not increase revenues for ISPs. However, customers upgrade their connections. Furthermore, an increase in penetration leads to an increase in revenue by new CAUs". On the one hand, it is true that retail markets appear to become mature and this constrains the increase in revenues for ISPs. On the other hand, the fact that there is only limited willingness to pay for very high speeds or for different level of quality would imply that even if they upgrade their connection it would not mean new revenues for operators. Finally, we do agree that the main beneficiaries of the increase in network capacities might be the CAPs.

It is also worth pointing out the fact that customers do not really control their consumption (they cannot control the advertising videos, have no information on the volume required by the different contents...) and it is therefore not sure that they should bear all the costs linked to the increase of their consumption. Moreover, even if they had to bear those costs, operators are not the only actors that can recover that money: the business model of the CAPs can also take those costs into account.



They could as well make the customers pay: for example, if a customer wants an HD video instead of an SD video, wouldn't it be possible for the CAP to make him pay for it?

To be able to recover their costs, network operators are calling for compensation from the first beneficiaries of the increase in capacities, the CAPs.

Question 20 (Chapter 4): Do you subscibe to the view that CDNs lead to improvement of QoS without violating the best effort principle?

Question 21 (Chapter 4): Is there a trend for CDNs to provide their own networks (i.e. integrating backwards)?

CDNs are indeed a way to improve QoS with no QoS guaranties.

BEREC is quoting the example of Google who is operating its own networks. This raises very relevant questions for the future of the internet. The current situation allows some service providers who have invested in their own private infrastructure to deliver services to end users with a better quality than competing services relying primarily on the public internet. At the end, better quality could be reserved to big CAPs operating their own network to the detriment of smaller one having no choice but to use the IAS. We feel that this has not been explored enough when considering the ability of operators to offer varied QoS on the wholesale side of the market and would require some further thoughts.

We do not see a specific trend of integrating backwards but we can see transit providers becoming more and more CDN providers.

Question 22 (Chapter 4): Is there a general tendency for eyeball (CAU) ISPs to deploy their own transit capacities and long distance networks or even to become Tier-1 backbones?

Question 23 (Chapter 4): If an eyeball ISP becomes Tier-1 provider, does this increase the eyeball's market power on the interconnection market because there are no alternative Tier-1 providers to reach the customers of this eyeball ISP?

The principles of transparency and non-discrimination will be key in this type of situations.

Google just announced he will launch an IAS in Kansas City, proving that big CAPS are likely to become ISPs. That other kind of vertical integration should raise concerns at the EU level.

Question 24 (Chapter 5): Will Art. 5 become more relevant as some large Eyeballs have equally qualified as Tier 1 providers not having to rely on transit anymore?

We do agree with BEREC that art. 5 is not imposing an obligation for operators to provide mandatory any-to-any peering and it does not provide a legal basis to set a specific price for interconnection.