Body of European Regulators for Electronic Communications

BEREC

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BEREC Report on the outcome of the Public Consultation on the draft BEREC Common Position on Layer 2 Wholesale Access Products

6 October 2016

Table of Contents

Executive Summary

BEREC published on its website the public consultation on the draft BEREC Common Position on Layer 2 wholesale access products (hereafter L2 WAP and consultation document) on 6 June 2016. The stakeholders were invited to send their views on the consultation document until 1 July 2016. In total BEREC received 11 contributions, two from associations (ETNO, ECTA), five from alternative operators (1&1, EWE TEL, Fastweb, QSC, Wind), three from incumbent operators (BT, KPN, Telefónica), and one from a vendor (Nokia).

BEREC welcomes all contributions and thanks all stakeholders for their submissions. The contributions received from stakeholders will be published on the BEREC website unless they are confidential.

This report has the objective to provide an overview of the received contributions and to present BEREC's view on them with regard to the need to change the consultation document (in *italic*). The report is structured according to the following two main topics covered by the contributions:

- General Comments;
- Specific comments to the Common Positions and other parts of the consultation document.

The contributions address all twelve Common Positions defined in the consultation document and most of the comments address different issues. In several cases, in the view of alternative network operators a Common Position should be adapted in one direction and in the view of incumbents in the opposite direction (e.g. the topic cost-oriented prices in CP2, the requirements CPE/modems have to fulfil in CP4).

In response to the contributions received BEREC will adapt the consultation document as follows:

- In the section 'Introduction and objectives' in the context of L2 WAP of market 4/2014, the phrase 'which usually are not related to NGA rollout' will be formulated more precisely and changed to 'which usually have not been imposed in the context of NGA rollout'.

- In CP1, for the purpose of clarification the following examples of access to passive infrastructure will be included in brackets 'e.g. ducts, copper unbundling, fibre unbundling'.

- In CP1 and in the beginning of section 4, a typo will be corrected and the correct abbreviation 'NG-PON2' instead of 'GPON' will be used.

1 Introduction

BEREC published on its website the public consultation on the draft BEREC Common Position on Layer 2 wholesale access products (hereafter L2 WAP and consultation document) on 6 June 2016. The stakeholders were invited to send their views on the consultation document until 1 July 2016. In total BEREC received 11 contributions from the following stakeholders (in alphabetic order):

- 1&1 Telecom
- BT[1]
- ECTA[1]
- ETNO
- EWE TEL
- Fastweb
- KPN
- Nokia
- QSC
- Telefónica
- Wind

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- General Comments;
- Specific comments to the Common Positions and other parts of the consultation document.

In order to ease readability in this report the term 'Common Position (CP)' is used instead of 'draft Common Position (draft CP)' although the consulted document to which the contributions refer to is a draft Common Position.

2 General comments

This section gives an overview on the general comments received from stakeholders.

1&1

1&1 does not share the opinion that there is no correlation between L2 WAP on market 4 (high quality access) and NGA rollout and suggests deleting the respective comment in paragraph 4 of the introduction.

[1] This contribution was received by the BEREC Office shortly after the closing of the public consultation, nevertheless it has been taken into account in this document.
[2] See http://berec.europa.eu/

BEREC response: While there is certainly some influence of NGA rollout on L2 WAP on market 4, such products (e.g. wholesale Ethernet services) usually have not been imposed in the context of NGA rollout. The sentence will be changed to ***'which usually have not been imposed in the context of NGA rollout****' to better reflect this.*

BT

In BT's view it would impose unnecessary cost and disruption, and have an adverse impact on investment incentives, if national regulators were to disrupt existing products simply to comply with a new Common Position. Any such Common Position should therefore have sufficient flexibility to ensure that existing products do not need to be re-engineered without real justification. However, BT does acknowledge that there are benefits to ensuring broad consistency and sharing of best practice between national regulators.

BEREC response: BEREC wants to point out in this context that the CPs are based on the Common Characteristics identified in BoR (15) 133 and therefore the existing L2 WAP generally are compliant with the CPs.

ECTA

ECTA supports BEREC's initiative to adopt a Common Position on L2 WAP. However, ECTA's position is that L2 WAP cannot be considered a substitute for physical unbundling (and physical/civil infrastructure access more broadly). ECTA considers them rather as complementary.

BEREC response: While several NRA have imposed active wholesale access products as a de facto substitute for physical unbundling, it is not the goal of the Common Position to judge on this issue. In CP1 (ii) BEREC recognises the primacy of passive remedies.

ECTA is of the opinion that inputs to business-grade services (market 4/2014) deserve the same level of attention as wholesale inputs to consumer-grade services.

BEREC response: Since the CP is based in BoR (15) 133, products on market 4/2014 (high quality access) are beyond scope.

ECTA, Fastweb

ECTA and Fastweb are of the opinion that the final BEREC Common Position should also stress that given differences in national networks and markets characteristics, there is no one-size-fits all solution that can be horizontally applied in all EU Member States and the guiding criterion to be followed by NRA when defining appropriate wholesale access products should be the promotion of competition.

BEREC response: The CP already recognises that pricing and technical characteristics of L2 WAP in general depend on national circumstances (e.g. p. 7-8). However, as shown in BoR (15) 133, there are several common characteristics of L2 WAP which are the basis for the CP. The goal to promote competition is already included in CP1.

ECTA, EWE TEL, QSC

ECTA, EWE TEL and QSC address the topic distinction between VULA and Ethernet bitstream. ECTA asks BEREC to differentiate between VULA (testing against the criteria set out in the European Commission's (EC) Recommendation on relevant markets of 2014) and

enhanced bitstream products. According to EWE TEL, BEREC should make a clear cut between VULA with local PoH on market 3a and L2 BSA with regional PoH on market 3b of the 2014 EC Recommendation. QSC also suggests that BEREC should make a clear demarcation between L2 WAP at market 3a and L2 WAP at market 3b. Similarly QSC emphasises that Common Positions should be defined for VULA on market 3a on the one hand and for L2 bitstream access on market 3b on the other hand and not for all L2 WAP.

BEREC response: The terms 'VULA' and 'Ethernet bitstream' are not used consistently (across NRA, operators, etc.). Therefore, BEREC decided to use the more generic term L2 WAP. By distinguishing between L2 WAP on market 3a and market 3b the CP should capture the differentiation suggested by ECTA, EWE TEL and QSC. In BEREC's view, the name of the product is not important but its characteristics.

ETNO

ETNO sees no additional value in issuing Common Positions on prices and technical characteristics of L2 WAP (both for markets 3a and 3b), as their usage, requirements and characteristics vary according to different national circumstances. L2 WAP have been introduced and are well established in several European markets. Adapting these products tailored to national market needs in reaction to a BEREC Common Position risks being costly and inefficient.

BEREC response: The goal of the CP is to contribute to harmonisation of L2 WAP in the European Union. The CPs are based on the common characteristics identified in BoR (15) 133 and therefore the existing L2 WAP generally are compliant with the CPs.

ETNO, Telefónica

ETNO and Telefónica are of the opinion that voluntary wholesale arrangements reached between the relevant players in one Member State should take precedence over regulatory impositions.

BEREC response: Indeed, negotiated access agreements (be it voluntary or due to pressure from the NRA) between the incumbent and alternative operators (ANO) concerning L2 WAP play an important role in some countries. If such products ensure effective competition at the retail level, they fulfil the regulatory objective. It should also be recognised, however, that there are benefits from cross-country harmonisation of L2 WAP which may have to be weighed against the benefits of commercial agreements.

EWE TEL

EWE TEL points out that the Common Position on L2 WAP can only aim to point out the minimum requirements. It is essential to define details concerning performance, technical requirements and prices on a national level before taking any restrictions concerning the physical unbundling.

BEREC takes note of this comment but does not see a need to change the CP.

Fastweb

Fastweb shares the overall results of the analysis on the Common Positions. However, Fastweb suggests, that before working on ways of creating viable virtual substitutes to physical

access, NRA should concentrate their efforts in steering market players (operators and technology vendors) to find technological and regulatory solutions able to guarantee functional passive access at all network levels.

BEREC response: In the view of BEREC the Common Positions identified in the consultation document, particularly CP1, do not prevent efforts by NRA or other market players to find technological and regulatory solutions able to guarantee functional passive access, however, such efforts are out of scope of the Common Positions, since the consultation document is a Common Position on L2 WAP, not on physical unbundling/passive access.

KPN

KPN fully supports the contribution of ETNO.

BEREC response: BEREC takes note of this comment and refers to its responses to the comments of ETNO in this document.

QSC

QSC appreciates that BEREC is aware of the importance of L2 WAP and the need for harmonization to strengthen access-based and further network-based competition in all EU Member States. A Common Position may help to develop adequate L2 WAP.

BEREC response: BEREC welcomes this comment.

Telefónica

Telefónica is of the opinion that the Common Position ignores the national circumstances which are so relevant when designing a L2 product. Promoting 'best practices' should not mean favouring some alternatives against others. It should be recognized that the most appropriate measures fit for local/national circumstances should be preferred.

BEREC response: The CP already recognises that pricing and technical characteristics of L2 WAP in general depend on national circumstances (e.g. p. 7-8). However, as shown in BoR (15) 133, there are several common characteristics of L2 WAP which are the basis for the CP.

3 Specific comments to the Common Positions and other parts of the consultation document

This section gives an overview on the specific comments to the Common Positions and other parts of the consultation document received from stakeholders.

3.1 CP1: Conditions for the imposition of L2 WAP on market 3a

CP1: Conditions for the imposition of L2 WAP on market 3a

A L2 WAP should be imposed on market 3a if

(i) an operator holds a position of significant market power (SMP) on market 3a and an access-remedy is considered to be necessary and proportionate; and

(ii) access to passive infrastructure or access to wavelength unbundling of an FTTH GPON as well as wholesale access remedies on market 3b are not sufficient to ensure effective competition at the retail level.

1&1

1&1 recommends clarifying the point of handover (PoH) in section 2.1 / CP1 as a point with identical economies of scale in comparison to local loop unbundling (LLU) at the central office (CO). 1&1 asks BEREC to clarify that a market 3b product must follow the CPs if no L2 WAP is provided at a point with identical economies of scale in comparison to LLU at the CO.

BEREC response: The appropriate (local) PoH (e.g. street cabinet, CO, other PoH) is depending on the circumstances (e.g. extent of sub-loop unbundling, network structure of the incumbent, envisaged changes to the network structure, etc.) and therefore BEREC cannot define or recommend a particular PoH.

BT

BT states that the regulatory imposition of wholesale access conditions must rest on an appropriate finding of SMP and any remedies must only be those necessary and proportionate to address any issues identified. BT agrees that this assessment should also take account of other forms of access which are otherwise available.

BEREC response: BEREC recognises this comment but does not see a need to change the document.

BT is of the opinion that the way the Common Position is currently drafted also emphasises FTTH. BT strongly considers that regulation should be technology neutral: in particular, in this context, it is important that regulation is neutral between different forms of fibre deployment and should not distort efficient investment incentives.

BEREC response: Indeed, FTTH is mentioned repeatedly in the CP since it is an important NGA technology. This does not mean, however, that the CP is not technologically neutral. In fact, L2 WAP can be (and are) offered on FTTH as well as FTTC and FTTB.

ECTA

ECTA emphasises solutions such as multi-operator vectoring (MOV) or TWDM-PON to promote a co-operative approach rather than permitting exclusivity of VDSL Vectoring or FTTH PON by the SMP operator.

BEREC response: The developments with regard to MOV and wavelength unbundling (NG-PON2) are recognised in the CP (see p. 5). If such remedies are sufficiently effective, there might not be a need to impose a L2 WAP as recognised in CP1.

ECTA is unsure about the meaning of 'passive infrastructure' in CP1.

BEREC response: For clarification some examples will be included in CP1: ***'(ii) access to passive infrastructure (e.g. ducts, copper unbundling, fibre unbundling) […]'***

ECTA is of the opinion that civil infrastructure access should in all cases be mandated as an ancillary remedy, and that remedies on market 3a should never be influenced by remedies on a market situated downstream of it. ECTA therefore suggests modifying CP1 accordingly.

BEREC response: Remedies have to be proportionate and depend on the specific situation. BEREC therefore does not believe that there is a remedy which should be mandated in all cases. The issue when and how to impose civil infrastructure access is also beyond the scope of the CP. With regard to the influence of remedies on market 3b on remedies on market 3a BEREC wants to point out that markets 3a and 3b should be analysed together which also means that the appropriate set of remedies will usually be determined together for both markets.

ECTA asks BEREC to include a CP on the imposition of L2 WAP on market 3b.

BEREC response: For the reasons stated in the consultation document (p. 6), BEREC does not believe that such a CP can be defined.

<u>ECTA, Fastweb, QSC</u>

ECTA, Fastweb and QSC suggest that the imposition of L2 WAP should be a complementary measure. ECTA considers that civil infrastructure access, physical unbundling and L2 WAP are complements of one-another and that there are justified reasons to impose L2 WAP, including L2 WAP with local PoH, irrespective of the situation with regard to civil infrastructure access and physical unbundling. Fastweb is of the opinion that the difference between L2 WAP and physical unbundling concerning the ladder of investment and the differences in features of both products make them complementary products and not alternative. QSC emphasises that in cases where unbundled access is not technically impossible because of interferences VULA can be imposed additionally to allow the ANO to offer higher bandwidths staying at the CO and suggests adapting CP1 accordingly.

BEREC response: Remedies always have to be adequate and proportionate and therefore it cannot be concluded, in BREC's view, that the imposition of a L2 WAP will always – and independent of other access remedies – be appropriate.

<u>ETNO</u>

ETNO is of the opinion that the CP only focuses on virtual access to copper or fibre networks in market 3a. The CP should explicitly state that L2 WAP also apply to cable networks.

BEREC response: The CP is based on common characteristics of L2 WAP which have been imposed on operators with copper and/or fibre networks. L2 WAP have so far not been imposed in cable networks. While some CPs may also be applicable for L2 WAP in cable networks (if such products should be imposed), others might not be applicable due to technical differences of the networks.

ETNO believes that L2 WAP with local PoH should be imposed in market 3a *'in situations where fibre physical unbundling is not technically or economically feasible or where the*

implementation of SLU unbundling would impede the realisation of the full benefits of VDSL2 vectoring', an approach adopted so far by several NRA.

BEREC response: The reasons to impose L2 WAP are described on pp. 5-6 of the consultation document. The reasons mentioned by ETNO may apply in some cases but are not general enough to include them as a CP.

ETNO, Telefónica

ETNO and Telefónica believe that when defining markets that may be subject to regulation, geographic segmentation is needed. Nevertheless, no reference is made in the report to this issue.

BERC response: Issues of market definition are beyond the scope of the CP. The CP does not exclude the possibility that a L2 WAP is imposed only in particular geographic areas.

According to ETNO and Telefónica, a lot of emphasis is put on 'access to wavelength unbundling of an FTTH' while, to their knowledge, this solution has not been applied in any market. In their view, these references could be highly counterproductive as the sole prospect of regulation could discourage the implementation of this new technology.

BEREC response: BEREC does not consider that undue emphasis is put on wavelength unbundling. It is only mentioned as a future option (p. 5).

ETNO and Telefónica: BEREC recommends to impose L2 WAP on market 3a if '*wholesale access remedies on market 3b are not sufficient to ensure effective competition at retail level*.' It seems that such an approach does not comply with the 2014 EC Recommendation on relevant markets. In the view of ETNO this approach is contrary to the 'modifying greenfield approach' and in the view of Telefónica according to this Recommendation it should be necessary to look first at market 3a and second at market 3b.

BEREC response: With regard to the influence of remedies on market 3b on remedies on market 3a BEREC wants to point out that markets 3a and 3b should be analysed together which also means that the appropriate set of remedies will usually be determined together for both markets.

EWE TEL

EWE TEL suggests to adapt CP 1 in order to avoid the impression that a L2 WAP should be imposed on market 3a in the general case of passive infrastructure and FTTH/GPON. LLU should be the only case in which VULA could be imposed as an alternative access remedy. If VULA is imposed because of technical restrictions in relation to vectoring at all, this should only be done subordinately and additionally. Physical unbundling should remain the primary access-remedy.

BEREC response: In CP1 (ii) BEREC recognises the primacy of passive remedies. In BEREC's view CP 1 (ii) is sufficiently general and applies to several passive access remedies equally and not just to local loop copper unbundling.

Fatsweb

In the view of Fastweb CP1 (ii) could give the possibility to incumbent operators of not providing ANO with physical unbundling and L2 WAP and physical unbundling are surely not equivalent.

Physical unbundling, due to its unique features, is keener to promote competition and foster innovation than wholesale access products are.

BEREC response: BEREC would like to point out that it is the NRA (and not the incumbent) who decide whether an incumbent/SMP operator has the obligation to offer physical unbundling or not and therefore CP1 does not give incumbent operators the possibility of not providing ANO with physical unbundling. In the view of BEREC the statement to which Fastweb refers to expresses the primacy of passive remedies over L2 WAP.

Fastweb invites BEREC to reconsider its position on MOV and 'multiple-GPON', i.e. they are viable solutions and therefore they should be seen as a concrete solution for maintaining unbundling rather than a reason for introducing L2 WAP in market 3a.

BEREC response: BEREC would like to point out that in CP1 (ii) BEREC recognises the primacy of passive remedies and also of wavelength unbundling over L2 WAP. If physical unbundling together with a MOV solution is sufficient in a particular case to ensure effective competition at the retail level, a L2 WAP may not be necessary (in accordance with CP 1(ii)).

Nokia

Nokia points out that FTTH GPON does not allow wavelength unbundling. Therefore Nokia recommends to replace it by TWDM-PON.

BEREC response: BEREC agrees with this comment and ***will adapt the wording in the consultation document accordingly****.*

QSC

QSC considers that if unbundled access is not possible because of technical restrictions VULA has to be offered for all access seekers concerned. Restrictions that only one or a few access seekers can make use of VULA cannot be allowed and CP1 should be adapted accordingly.

BEREC response: Access products (including L2 WAP) are usually imposed to meet the demand by several/all access seekers. Whether in particular circumstances a limitation on the number of access seekers is proportionate and justified has to be determined on a case-by-case basis.

Telefónica

Telefónica considers that the most relevant element to assess when infrastructure competition is possible could lie in the ducts availability. If there is availability of ducts to the building regulation on ducts together with unbundling of the last fiber drop should be enough and therefore no L2 WAP should be required. If there is no availability of ducts to the building L2 WAP products are needed.

BEREC response: This is exactly what CP1 says. If effective competition at the retail level is ensured with access to passive infrastructure, which includes ducts and LLU, then L2 WAP are not necessary.

Wind

Wind refers to the following statement in the introduction to CP1: There are situations in which access to L2 WAP may not be justified e.g. if ANO invest in FTTC/B/H themselves to a

sufficiently high degree based on sub-loop unbundling or duct access. WIND is concerned that this could mean that if some ANO develop FTTB networks in the same areas as the incumbent then a L2 WAP (i.e. VULA) in these areas is no longer necessary.

BEREC response: According to CP1 (ii), the criterion to impose (or not impose) a L2 WAP is not whether an ANO develops an FTTB network but whether a L2 WAP is needed to ensure effective competition at the retail level.

3.2 CP2: Pricing of L2 WAP

CP2: Pricing of L2 WAP

Prices of L2 WAP should be cost-oriented (in line with the NGA Recommendation). Under certain conditions (in particular those mentioned in the Recommendation on non-discrimination and costing methodologies), prices should not be cost-oriented but should fulfil an economic replicability test.

BT

According to BT, the reference to cost oriented pricing is unduly restrictive of the options available to national regulators and it would be preferable to simply make reference to prices (where regulated access is deemed necessary and proportionate) to be set in accordance with the NGA Recommendation and the Recommendation on non-discrimination and costing methodologies.

BEREC response: CP2 mentions both cost oriented prices and the economic replicability test. Given NRA's practices and the EC's Recommendations BEREC does not consider this as unduly restrictive.

ECTA, EWE TEL, QSC

ECTA is of the opinion that wholesale charges of L2 WAP with local PoH should not be bandwidth-dependent especially not if a L2 WAP with local PoH is positioned as a substitute/replacement for physical unbundling (quod non) on market 3a. Prices should be cost-oriented and match the underlying cost structure of the supplier.

Also according to EWE TEL, prices of L2 WAP should be cost oriented and economically comparable to copper-LLU pricing while allowing an adequate surcharge.

In the same direction, QSC considers that it is necessary that prices are strictly cost-orientated and reviewed by the NRA since VULA as well as L2 bitstream access are new developed products partially not even available (for example in Germany). Therefore, QSC suggests to adapt CP2 accordingly which should not allow that under certain conditions prices should fulfil an economic replicability test, but instead (in any case) being cost-oriented.

BEREC response: BEREC is of the opinion that – in line with the EC Recommendation 2013/466/EU and NRA's practices – there are conditions under which prices should not be cost-oriented but should fulfil an economic replicability test (as stated in CP2).

ETNO

ETNO is of the opinion that the reference to the Recommendation on Costing and Non-Discrimination on p. 7 is incomplete as it fails to acknowledge that the described scenario is

not the only scenario for lifting (or better not imposing) cost orientation in particular in case of infrastructure-based competition (cf. paragraph 58 of EC's Recommendation).

BEREC response: CP2 recognises that there may be other circumstances where prices should not be cost-oriented but should fulfil an economic replicability test.

ETNO, Telefónica

ETNO and Telefónica are of the opinion that cost orientation constitutes a very intrusive regulatory intervention which inevitably shifts market dynamics away from investment and innovation to a 'price only' competition. Cost-based price control of wholesale prices drastically limits the value of the networks and discourages investment by limiting the potential revenues to a regulated rate of return.

BEREC response: BEREC does not agree with ECTA and Telefónica and is of the opinion that dynamic considerations and investment incentives can also be taken into account when setting cost oriented access prices. Furthermore, according to CP2 under certain conditions prices should not be cost-oriented but should fulfil an economic replicability test.

KPN

In the view of KPN tariff regulation by means of cost orientation is by no means a necessary and proportionate measure in the situation where incumbent and ANO reach commercial agreements on L2WAP pricing. In the current regulatory framework tariff regulation should only be imposed if necessary and proportionate in view of the national circumstances.

BEREC response: If at a national level the incumbent operator and ANO agree on the pricing of L2 WAP and effective competition at the retail level is ensured with these prices, then the regulatory objectives are fulfilled. It should also be recognised, however, that there are benefits from cross-country harmonisation of L2 WAP which may have to be weighed against the benefits of commercial agreements.

3.3 Technical characteristics in general

EWE TEL

EWE TEL highly recommends discussing the technical characteristics separately for VULA with local PoH on market 3a and L2 BSA with regional PoH on market 3b of the 2014 EC Recommendation on relevant markets.

BEREC response: The CP distinguishes between L2 WAP on market 3a and market 3b and therefore should capture the differentiation suggested by EWE TEL. However, several CPs define technical characteristics which should be fulfilled on both markets (3a and 3b). If technical characteristics differ between market 3a and 3b then this is clearly mentioned (e.g. CP6).

QSC

QSC emphasises that there has to be a stricter cut between VULA and L2 bitstream access to show the profound difference and suggests to discuss the technical characteristics of VULA and L2 bitstream access in the consultation document separately. QSC is of the opinion that L2 WAP on markets 3a and 3b must have different technical characteristics and the formulated

Common Positions seem to be appropriate for a L2 bitstream access but not for a VULA. In the view of QSC the technical characteristics for VULA (L2 WAP on market 3a) have to be improved and QSC makes suggestions for this to each CP (see the following sub-sections of section 3).

BEREC response: With regard to the stricter cut between VULA and L2 bitstream access BEREC refers to its response on that in section 2. BEREC would like to point out that, as mentioned in the consultation document, the CPs can be viewed as minimum requirements and some CPs are rather fundamental (e.g. CP1, CP10). For these reasons, several CPs have to be fulfilled by both L2 WAP on market 3a and L2 WAP on market 3b. However, there are also CPs where the requirements the L2 WAP have to fulfil differ between market 3a and 3b (e.g. CP6 QoS). With regard to the suggestions of QSC to improve the technical characteristics for L2 WAP on market 3a, BEREC would like to refer to its response in the respective sub-sections of section 3.

3.4 CP3: Technology

CP3: Technology

Ethernet is the dominant Layer 2 protocol and the most commonly used interface in both packet based transport networks of service providers and local area networks (LAN) of end users. Therefore, L2 WAP should be based on Ethernet.

BT

BT points out that it is important to ensure that CP3 does not unduly disrupt the provision of legacy services which are not based on Ethernet and still provided in these markets.

BEREC response: BEREC would like to point out that CP3 does not preclude that, in parallel to L2 WAP based on Ethernet, legacy services not being based on Ethernet may (continue to) be offered depending on the national circumstances.

ECTA, EWE TEL

ECTA and EWE TEL agree with CP3.

BEREC response: BEREC welcomes this comment.

ETNO

ETNO points out that regarding Ethernet transparency, some Ethernet Layer 2 protocols might not be supported in L2 WAP.

BEREC response: BEREC would like to point out that CP3 does not necessarily imply that e.g. all Ethernet control protocols are transported transparently.

Telefónica

Telefónica agrees that, when deemed necessary, L2 WAP should be based on Ethernet.

BEREC response: BEREC takes note of this comment and does not see a need to change the CP.

3.5 CP4: CPE/Modem

CP4: CPE/Modem

The use of their own CPE/modems/ONT enables ANO to further differentiate their services and to innovate. Therefore, if a L2 WAP is imposed, the ANO should also have the possibility to use and configure their own CPE/modem/ONT. However, the CPE/modems/ ONT of ANO have to fulfil certain requirements e.g. in order to ensure a proper interworking with the network of the provider of the L2 WAP.

BT

BT points out that Openreach current FTTC services allow ANO to use their own modems as long as these are compliant with the technical and interworking standards of BT. In the view of BT the inclusion of ONTs in the CP4 implies significant European implementation of fibre-only FTTP.

BEREC response: BEREC welcomes that Openreach current FTTC services are in line with CP4. According to BoR(15)133 in three European countries the SMP operator offers L2 WAP based on FTTH and the ANO can use their own ONT.

ECTA

ECTA agrees with CP4.

BEREC response: BEREC welcomes this comment.

ETNO

ETNO suggests that ONTs should be removed from CP4 since in the view of ETNO the interoperability between the ONT and the OLT of different Vendors is currently not ensured.

BEREC response: According to BoR(15)133, in three European countries the SMP operator offers L2 WAP based on FTTH and the ANO can use their own ONT. Furthermore, according to CP4 the ONT has to fulfil certain requirements and if actually necessary, in order to ensure proper interworking with the network of the provider of the L2 WAP, this may require ONT from (a) specific vendor(s).

ETNO, EWE TEL

EWE TEL basically agrees with CP4. However, a proper interworking with the network of the provider of the L2 WAP should not lead to unproportioned costs for CPE/Modems and/or network on the ANO side e.g. need for replacing a high number CPE/Modems in order to comply with the operator's network requirements or an expensive certification process.

On the other hand, in the view of ETNO the CPE/modems/ONT of the ANO have to fulfil certain requirements and have to be validated by the network owner or even have to be subject to a certification scheme. The fulfilment of certain requirements is crucial in order to ensure a proper interworking with the network of the provider of the L2 WAP.

BEREC response: BEREC acknowledges that in the view of incumbent operators it would be best if the requirements the CPE/modems/ONT have to fulfil are validated by the provider of the L2 WAP or certified and that in the view of ANO the replacement or certifications of

CPE/modems/ONT should be avoided. BEREC believes that CP4 provides a good balance between both positions.

Telefónica

Telefónica points out that in the case of Spain all the operators are currently using their own CPE/Modems in the NEBA service.

BEREC response: BEREC welcomes this comment.

3.6 CP5: Bandwidth

CP5: Bandwidth

ANO need to be able to differentiate the down- and upload speed of their services from those of other operators. Therefore, L2 WAP should enable ANO to control the speed of their services within the limit(s) of the bandwidth profile(s) of the subscriber access line. Depending on the form of price regulation, different bandwidths might be available at different prices.

1&1

1&1 believes that in CP5 commercial and technical arguments should not be linked and therefore suggests that the last sentence in CP5 should be deleted.

BEREC response: While the last sentence of CP5 potentially would also fit in CP2, BEREC does not see the added value from moving it from CP5 to CP2.

BT

BT in principle agrees with the provision of options on different bandwidth profiles for those purchasing access which is the case in the UK. Regulation requiring different profiles must be proportionate and based on an appropriate competition justification.

BEREC response: BEREC takes note of this comment but does not see a need to change the document.

ECTA

ECTA suggests to delete in the CP5 the sentence 'Depending on the form of price regulation, different bandwidths might be available at different prices' and not to reduce the control of the speed of the services to the limit(s) of the bandwidth profile(s). This is necessary in order to avoid the risk of promoting bandwidth-dependent wholesale charges for market 3a products which in the view of ECTA undermines the ability of ANO to innovate and differentiate their offers.

BEREC response: As mentioned in response to similar comments to CP2, BEREC is of the opinion that – in line with the EC Recommendation 2013/466/EU and NRA's practices – there are conditions under which prices should not be cost-oriented but should fulfil an economic replicability test (as stated in CP2). This may also lead to different bandwidths available at different prices.

ECTA also suggests that NRA should lead a co-operative process, which enables all operators to participate in the design of the network delivering L2 WAP (VULA as well as enhanced

bitstream) and put forward bandwidth profiles for inclusion in the wholesale offer of the SMP operator.

BEREC response: BEREC would like to point out that several NRA initiated and/or lead such a process when introducing L2 WAP in their countries.[3] However, whether such a process is actually necessary or possible heavily depends on national circumstances. Furthermore, the question to which extent ANO should be involved in the design of regulated wholesale products is more general and related to non-discrimination and/or (functional) separation remedies. In BEREC's view the CP on L2 WAP is not the appropriate place to deal with this issue. Therefore, BEREC did not suggest a CP on such a process.

ETNO

In the view of ETNO, the regulated wholesale product should allow to replicate the retail offers of the SMP operator. The offer of any other service beyond this should be left to the provider of the L2 WAP. ETNO further points out that it is important to ensure that different prices can be offered per different bandwidth providing wholesale pricing flexibility. ETNO agrees also with the part of CP5 which foresees that the bandwidth profiles of the subscriber access line are managed by the SMP operator.

BEREC response: In BEREC's view and as mentioned in the CP (p. 8), ANO should not only be able to replicate the retail offers of the SMP operator but also to differentiate their services. Whether different bandwidths are available for different prices depends mainly on the form of price regulation. The bandwidth profiles of the subscriber access line are not necessarily determined by the SMP operator.

EWE TEL, QSC

In the view of EWE TEL, the possibility to control the speed of services has principally only be limited to the technical capabilities of the subscriber access line. The L2 WAP should therefore provide the maximum 'technically secured' bandwidth without any additional pricing. Unlike the maximum 'technical possible' bandwidth which could lead to connection failures or connection loss the maximum 'technically secured' bandwidth enables stable connections of the L2 WAP.

In the view of EWE TEL it is also important that ANO are able to offer both symmetric and asymmetric bandwidths to their customers which is especially relevant with regard to business customers.

QSC suggests that L2 WAP should provide unrestricted bandwidth without any additional fees and not different bandwidths profiles at different prices.

BEREC response: Mainly due to the form of price regulation, different bandwidths may also be available for different prices (see also CP2).

Telefónica

Telefónica believes that mandating a single 'maximum' profile that allows technical replicability for each of the available qualities, could be enough for ANO to offer any kind of service. Based on this profile, which allows ANO to reach the maximum capabilities of the incumbent´s offers, they have total freedom to create their own profiles. In this respect Telefónica also points out

[3] See e.g. BEREC report BoR(15)133, p. 7

that ANO will always have the possibility to negotiate, under commercial agreements with the incumbent operator, the definition of profiles below those maximums.

BEREC response: BEREC takes note of this comment but does not see a need to change the Common Position.

3.7 CP6: Quality of service

CP6: Quality of service

ANO need to be able to choose the quality of their services and to provide services with higher quality of service (QoS) requirements. Therefore, L2 WAP should provide (ostensibly[4]) uncontended bandwidth or a bandwidth with a sufficiently high QoS. The QoS should be at least as high as the incumbent operator is providing to his own retail arm internally.

The QoS requirements of L2 WAP imposed on market 3b may be lower compared to the QoS of L2 WAP imposed on market 3a since the definition of market 3b and the retail products which ANO should be able to provide based on L2 WAP on market 3b may not require the same QoS as on market 3a. Also, L2 WAP on market 3b include (additional) backhaul components which may decrease the achievable QoS compared to that on market 3a.

BT

BT suggests that any Common Position on quality of service should focus on ensuring competitive neutrality as the specific level of service required will depend on local characteristics.

BEREC response: As mentioned in the consultation document the technical characteristics of L2 WAP may vary between countries due to national circumstances. However, BoR(15)133 shows that L2 WAP of different countries do have several common characteristics and the consultation document is built upon these findings.

ECTA

ECTA widely agrees with CP6. However, in the view of ECTA, QoS is clearly a matter of network engineering decisions and therefore ECTA does not agree that L2 WAP on market 3b may have a lower QoS than L2 WAP on market 3a due to their backhaul component.

BEREC response: In case the L2 WAP on market 3b is built upon the L2 WAP on market 3a, then its QoS is lower compared to the latter due to the backhaul component. For example, VULA with local and also regional/national PoH are available in Denmark and Italy.

ETNO

ETNO does not see any need for BEREC to specify minimum QoS parameters, as these depend too much on technology, topology and geography of the networks and should be determined on a country and network specific basis by the network operator.

BEREC response: As mentioned in the consultation document the technical characteristics of L2 WAP may vary between countries due to national circumstances. However, BoR(15)133

[4] For the term 'ostensibly uncontended bandwidth' see BEREC report BoR (15) 133, pp. 10-11

shows that L2 WAP of different countries do have several common characteristics and the consultation document is built upon these findings.

EWE TEL

EWE TEL suggests that the term 'ostensibly uncontended bandwidth' should be understood in a way that ANO are able to choose the grade of 'ostensibility' themselves by demanding a (regulated) sufficient dimensioning of bandwidth-relevant components. In the view of EWE TEL, it has to be strictly avoided that bandwidth or QoS requirements set by the SMP operator lead to restrictions compared to physical unbundling and the SMP operator should not be allowed to limit the uncontended bandwidth to the detriment of the ANO.

EWE TEL therefore suggests to add at the end of CP6 the following sentence: 'The QoS should be at a level where the ANO can offer all services provided using the physical unbundled access and develop new services.'

BEREC response: As mentioned in CP6, ANO need to be able to provide services with higher QoS requirements and therefore L2 WAP should provide either (ostensibly) uncontended bandwidth or a bandwidth with a sufficiently high QoS. In the view of BEREC, with this sufficient dimensioning of bandwidth-relevant components should already be ensured. As mentioned in the consultation document, since L2 WAP provide a service and not a physical medium, there may be restrictions compared to LLU (e.g. because of the technical capabilities of the network of the SMP operator) and therefore it is not possible to include in CP6 that QoS requirements which lead to restrictions compared to physical unbundling should be strictly avoided.

KPN

In the view of KPN, uncontended or ostensibly uncontended bandwidth is not necessary to enable ANO to provide services with higher service requirements. Guarantees on well-defined traffic parameters like packet loss, delay and jitter are possible based on traffic prioritisation in combination with adequate capacity management. KPN suggests to use clearly defined QoS parameters instead of ostensibly uncontended bandwidth.

BEREC response: According to CP6, if the L2 WAP does not provide an (osensibly) uncontended bandwidth, then it has to provide a bandwidth with a sufficiently high QoS. With this the goal of CP6 that ANO are able to provide also services with higher QoS requirements can also be achieved.

Nokia

Nokia suggests that the contention factor should only apply to the capacity at the PoH between ANO and access provider and that the selection of such a contention factor per PoH by the ANO should be optional (not mandatory). In case a L2 WAP provides 1:1 connectivity per end-user, there is no need to specify an aggregate bandwidth per PoH between ANO and access provider.

BEREC response: ANO need a high QoS between PoH and end user in order to be able to provide services with higher QoS requirements. Therefore, in the view of BEREC it is necessary that in the CP6 the contention refers to the bandwidth between PoH and end user.

QSC

QSC suggests to include in CP6 that L2 WAP should have a QoS which enables ANO to offer all services provided using the physical unbundling access and also to develop new services.

BEREC response: As mentioned in the consultation document, since L2 WAP provide a service and not a physical medium there may be restrictions compared to LLU (e.g. because of the technical capabilities of the network of the SMP operator) and therefore it is not possible to include in CP6 that L2 WAP should have a QoS which enables ANO to offer exactly all services provided using the physical unbundling access.

Wind

Although Wind shares the view that the QoS of L2 WAP on market 3a may be higher compared to those on market 3b due to the backhauling component of the latter Wind points out that ANO should be able to offer to their end-users a comparable QoS at the retail level regardless of the wholesale markets to which the L2 WAP belongs to.

BEREC response: In case ANO build their retail services on a L2 WAP on market 3a (local PoH) then they need to backhaul the traffic to their regional/national PoPs which will decrease the QoS accordingly. Therefore, in both cases, retail services of ANO based on L2 WAP on markets 3a and 3b, a backhaul component is included and the QoS of the retail services therefore may be the same.

3.8 CP7: Traffic prioritisation

CP7: Traffic prioritisation
Traffic prioritisation increases the flexibility of ANO in the design of their products and enables ANO to use the bandwidth of L2 WAP more efficiently (e.g. by prioritising voice traffic over internet traffic). Therefore, L2 WAP should also offer ANO the possibility to prioritise the traffic (e.g. based on the p-bits of the Ethernet protocol). Several priorities should be available for ANO.

BT

BT notes that the existing products provided by Openreach are consistent with CP7 and it is reasonable to ensure such flexibility for purchasing communications providers.

BEREC response: BEREC welcomes this comment.

ECTA

ECTA agrees with CP7.

BEREC response: BEREC welcomes this comment.

ETNO

In the view of ETNO at least one prioritized traffic flow should be available. Additional priority classes to those already available on the network should be imposed only if necessary and proportionate. ETNO also points out that in case of multiple C-VLANs also a per VLAN prioritization can be applied.

BEREC response: As mentioned in the CP7 traffic prioritisation increases the flexibility of ANO in the design of their products and enables ANO to use the bandwidth of L2 WAP more efficiently (e.g. by prioritising voice traffic over internet traffic). Furthermore, BoR(15)133 shows that in practice L2 WAP do offer several traffic priorities. Therefore, CP6 states that several traffic priorities should be available for ANO. However, networks typically use several traffic priorities and therefore additional traffic priorities to those already available on the network may not be necessary. Several traffic priorities per VLAN enable ANO a higher flexibility compared to different priorities per VLAN and within each VLAN only one traffic priority.

QSC

QSC suggests that all priorities ANO need should be available.

BEREC response: BEREC believes that several traffic priorities provide ANO with much flexibility. With regard to the number of traffic priorities both the demand of retail customers of ANO and the technical capabilities in the network of the SMP operator needs to be taken into account, as mentioned in the consultation document. Therefore, in the view of BEREC it is not possible to demand in any case that all priorities ANO need should be available.

3.9 CP8: Multicast

Multicast
L2 WAP with multicast frame replication functionality enable ANO the provision of services generating multicast traffic (e.g. IPTV) with an efficient use of the bandwidth of L2 WAP. On the other hand, the multicast frame replication functionality increases the complexity and costs of a L2 WAP. Therefore L2 WAP should have a multicast frame replication functionality if it is necessary and proportionate to ensure technical and economical replicability of competing retail (bundled) offers.

BT

BT points out that current Openreach products are already consistent with the proposed approach.

BEREC response: BEREC welcomes this comment.

ECTA

ECTA does agree that L2 WAP should not provide a multicast frame replication functionality by default in particular in those cases in which L2 WAP with local PoH are intended to substitute physical unbundling, because physical unbundling does not as such result in the availability of multicast. However, ANO have the possibility to use equipment which enables multicast based on LLU. Therefore, ECTA suggests that NRA should fully assess the demand of ANO for a multicast frame replication functionality and taking into account their needs with regard to relevant points of handover, treatment of multicast traffic, and related wholesale charging structures.

BEREC response: BEREC welcomes the agreement from ECTA. According to the CP8 L2 WAP should have a multicast frame replication functionality if it is necessary and proportionate to ensure technical and economical replicability of competing retail (bundled) offers. In order

to be able to decide on this, NRA have to assess the demand of ANO. Therefore, BEREC does not see any need to alter CP8.

ETNO

ETNO agrees that a multicast frame replication functionality should not be offered by default. This should only be the case if an SMP analysis has proven that such remedy is justified to address a specific proven market failure related to the broadband market.

BEREC response: BEREC welcomes the agreement from ETNO. According to the CP8, L2 WAP should have a multicast frame replication functionality if it is necessary and proportionate to ensure technical and economical replicability of competing retail (bundled) offers. In order to be able to decide on this, NRA have to analyse this remedy and its impacts carefully. Therefore, BEREC does not see any need to alter CP8.

EWE TEL

EWE TEL does partly not agree to CP8. In the view of EWE TEL, VULA with multicast frame replication would offer a 'service on top' which ANO would not receive in the case of LLU and will lead to exceeding prices and potentially low demand.

EWE TEL suggests to concentrate on the essential VULA characteristics that make VULA comparable to LLU rather than discussing additional services. Therefore, in the view of EWE TEL L2 WAP should not have a multicast frame replication functionality and should offer technology neutral IPTV-functionalities (e.g. multicast and unicast).

BEREC response: BEREC believes that in the cases mentioned in CP8 a multicast frame replication functionality should be provided otherwise technical and economical replicability of competing retail (bundled) offers may not be ensured. For BEREC the comments from EWE TEL are not fully clear, because, on the one hand, L2 WAP should not have a multicast frame replication functionality and, on the other hand, L2 WAP should offer technology neutral IPTV-functionalities which include multicast. For BEREC it is not clear how the latter differs from a multicast frame replication functionality.

QSC

QSC suggests that VULA should have a multicast frame replication functionality.

BEREC response: BEREC believes that a frame replication functionality should not be provided in any case but only in the situations mentioned in CP8.

Telefónica

In the view of Telefónica the imposition on the incumbent to provide multicast functionalities breaks the principle that L2 WAP should enable ANO to develop as much as possible their independent offers. The concept of proportionality is totally broken when the provision of multicast capabilities is applied throughout the whole network of the incumbent operator, particularly considering the degree of use that each operator will do of it, the degree of penetration of IPTV in each country and the market trend to unicast traffic. In the case of Spain, establishing multicast capabilities in the L2 WAP would imply a full reconfiguration of the service.

Telefónica points out that the nonexistence of a multicast frame replication functionality does not preclude the provision of multicast services by ANO, as it can be done based on the mandated L2 WAP without multicast functionalities.

BEREC response: CP8 only demands a multicast frame replication functionality if it is necessary and proportionate to ensure technical and economical replicability of competing retail (bundled) offers. In the cases mentioned by Telefónica, such as low use of it and low penetration of IPTV, this may not be the case. Therefore, BEREC does not see a need to change CP8.

3.10 CP9: Number of VLANs

Number of VLANs
The availability of several VLANs per end user facilitates the provisioning of several services per end user and traffic forwarding. Therefore, L2 WAP on market 3a should enable ANO to use (at least) several VLANs per end user unless the ability of the ANO to provide several services is ensured by complementary wholesale products. On market 3b the need for several VLANs may depend on market situation, e.g. which retail products ANO should be able to provide based on the L2 WAP according to the regulatory objectives.

BT

BT points out that current Openreach products are already consistent with the proposed approach. However, BT suggests that any requirement to offer multiple VLANs should be subject to reasonable demand.

BEREC response: BEREC welcomes that current Openreach products are already consistent with CP9. As mentioned in the consultation document, CP9 is built on BoR(15)133 which shows that L2 WAP of different countries do provide several VLANs per end user unless the ability of ANO to provide several services is ensured by complementary wholesale products. Therefore BEREC does not see any need to alter CP9.

ECTA

In the view of ECTA, multiple VLANs are necessary in order to provide consumer-grade as well as business-grade services and for the former 4 VLANs per end-user is the absolute minimum. This is particularly critical for L2 WAP with local PoH in market 3a (VULA) in order to support both consumer-grade and business-grade services.

ECTA believes that the ANO should always be able to choose between a dedicated and a shared VLAN scenario, and that in addition a multicast VLAN option should be available.

ECTA points out that also VLAN availability, provisioning, modification, de-activation, and the related processes (degree of automation), costs and wholesale charging structures are of importance, because VLAN restriction is a very real issue which deeply affects competition, the fees being charged by SMP operators for VLAN-related activities are considerable and there are considerable risks of discrimination in this specific area.

BEREC response: BEREC would like to point out that according to CP9 on market 3a several VLANs per end user should be available and that, according to the consultation document, the CPs are minimum requirements. Depending on national circumstances, L2 WAP may have to

fulfil further requirements including other technical characteristics as e.g. the type of VLAN (shared or dedicated), and the provisioning, modification and de-activation of VLANs. Therefore, BEREC does not see a need to change CP9.

ETNO

In the view of ETNO, the decision on the need to make available several VLANs should be left to the specific characteristics of each particular case and BEREC should not suggest any specific model. ETNO believes that industry agreements should take precedence over regulatory impositions and voluntary wholesale arrangements, which are preferable to mandatory product definition, may lead to the appropriate number of VLANs compatible with the technical limit of the access devices.

BEREC response: As mentioned in the CP9 the availability of several VLANs per end user facilitates the provisioning of several services per end user and traffic forwarding. BoR(15)133 shows that L2 WAP of different countries do provide several VLANs per end-user and therefore CP9 is possible and it is not necessary to leave this question open. With regard to industry agreement vs. regulatory impositions BEREC refers to its response in section 2.

EWE TEL

EWE TEL principally agrees to CP9. In the view of EWE TEL, in a transparent process managed by NRA SMP operators and ANO should have the possibility to discuss and define on an expert level technical details e.g. the VLAN-model (1:1/1:N, static/dynamic VLAN).

BEREC response: BEREC welcomes the agreement of EWE TEL. With regard to the process, BEREC would like to mention that several NRA initiated and/or lead such a process when introducing L2 WAP in their countries. However, whether such a process is actually necessary or possible heavily depends on national circumstances. Furthermore, the question to which extent ANO should be involved in the design of regulated wholesale products is more general and related to non-discrimination and/or (functional) separation remedies. In BEREC's view the CP on L2 WAP is not the appropriate place to deal with this issue. Therefore, BEREC did not suggest a CP on such a process.

Nokia

In the view of Nokia, the trend for unicast is towards single-VLAN, single-IP for multiple services. This simplifies configuration and adding new services. For these reasons Nokia suggests that the use of a single VLAN per user should be dependent on the network capability of handling single-IP/single-VLAN model.

BEREC response: BEREC acknowledges that different views on the number of VLANs per end-user are possible and would like to point out that the technical characteristics of L2 WAP usually are a compromise between the expectations of ANO and SMP operators. According to BoR(15)133 L2 WAP of different countries provide several VLANs per end user which reflects the need of ANO for that. Therefore, in the view of BEREC CP9 is appropriate.

Nokia points out that multicast can be delivered to the L2 WAP in a separate service VLAN, however this VLAN is a generic VLAN and not a VLAN per user.

BEREC response: According to CP9 ANO should be able to use several VLANs per end user e.g. one VLAN for voice, another for internet access and a third for IPTV. In case of IPTV the

VLAN may be a generic multicast VLAN, i.e. the same for different end users, nevertheless, ANO can also use in this case per end user several different VLANs (voice, internet, IPTV).

Telefónica

Telefónica does not agree with imposing that a L2 WAP on market 3a should provide several VLANs for end users. In the view of Telefónica, voluntary wholesale arrangements reached between the relevant players should take precedence to regulatory impositions as it is the case of Spain where the current bitstream product (NEBA) and the future (NEBA Local equivalent to VULA) are based on a mono-VLAN as the result of the decisions taken by the sector in Spain. Since the investments and implementation of the already existing NEBA have been made, it would not be proportional to change that architecture for the new NEBA Local as this service must be based on the existing NEBA.

BEREC response: Indeed, negotiated access agreements (be it voluntary or due to pressure from the NRA) between the incumbent and ANO concerning L2 WAP play an important role in some countries. If such products ensure effective competition at the retail level, they fulfil the regulatory objective. It should also be recognised, however, that there are benefits from cross-country harmonisation of L2 WAP which may have to be weighed against the benefits of commercial agreements.

Wind

Wind shares the view of CP9 since in some cases it can be useful to have more VLAN for each customer. Wind suggests to integrate in CP9 that L2 WAP should enable to share a VLAN between several customers.

BEREC response: BEREC welcomes the agreement from Wind. As mentioned in the consultation document, the CPs can be viewed as minimum requirements and depending on national circumstances, e.g. the interest of ANO in different types of VLAN (shared/ dedicated) it may be necessary at the national level that the L2 WAP has also to provide a certain type of VLAN.

3.11 CP10: Customer identification

Customer identification
Customer identification enables ANO to provide individual services to their subscribers and to authorise for each customer individually which network resources (services) the customer can use (e.g. limiting the internet access speed based on what the subscriber has signed up for). Therefore, L2 WAP should enable ANO to identify their end users.

BT

BT points out that current Openreach products are already consistent with the proposed approach.

BEREC response: BEREC welcomes this comment.

ECTA

ECTA agrees that L2 WAP should enable ANO to identify their customers. However, in the view of ECTA, this must be possible at Layer 2 itself and VULA should not be delivered in a

manner which forces ANO to construct customer identification at Layer 3 which is the case in some Member States.

BEREC response: As mentioned in the consultation document the definition of technical characteristics of L2 WAP needs to take into account both the demand of retail customers of ANO and the technical capabilities in the network of the SMP operator. Therefore, in some Member States customer identification at Layer 2 may not be available.

ETNO

ETNO agrees with BEREC that a proper identification of the end user must be available. The mandated operator shall offer a customer identification technology which is either standardized, considered as best practice or agreed between operators at national level.

BEREC response: BEREC welcomes that ETNO agrees with CP10. In the view of BEREC the methods for customer identification described by ETNO encompass nearly all possible methods and therefore BEREC does not see a need to further specify the method for customer identification based on these descriptions.

EWE TEL

EWE TEL principally agrees on CP10.

BEREC response: BEREC welcomes this comment.

3.12 CP11: Security

Security
With security measures network operators can preserve the integrity and availability of their networks and services. Therefore, L2 WAP should enable ANO to apply security measures. ANO should have the possibility to apply any security measure they would like to use at Layer 3 and higher layers.

BT

BT points out that current Openreach products are already consistent with the CP11.

BEREC response: BEREC welcomes this comment.

ECTA

ECTA agrees that L2 WAP should enable ANO to apply security measures. However, in the view of ECTA this should apply also at Layer 2. ECTA therefore proposes to include in CP11 that VLAN-ID authentication at Layer 2 should be standard implementation of L2 WAP with local PoH (VULA) as well as L2 WAP with regional/national PoH (enhanced bitstream) and not be offered as an additional service on unregulated commercial terms.

BEREC response: BEREC would like to point out that at Layer 2 the security measures of ANO and the provider of the L2 WAP may impact each other and therefore may have a negative effect on the operation of the L2 WAP. For this reason, BEREC would suggest not to change CP11. However, the VLAN-ID authentication at Layer 2 mentioned by ETNO refers to customer identification. This topic is already discussed in section 3.11 and therefore BEREC refers to its response in this section.

ETNO

ETNO takes note of BEREC's imposition on security measures for L2 WAP. Depending on the selected network architecture and technology of the L2 WAP the responsibility of necessary security measures may be distributed between access network operator and access seeker differently.

BEREC response: L2 WAP are a Layer 2 service and therefore security measures at Layer 3 and higher layers of ANO and the provider of the L2 WAP should not be able to conflict with each other.

EWE TEL

EWE TEL principally agrees on CP11.

BEREC response: BEREC welcomes this comment.

Telefónica

Telefónica does not identify any problem with security measures applied by ANO at Layer 3 or higher. Nevertheless the possibility that ANO implement Layer 2 measures should be discarded, as they could collide with the ones applied by the incumbents offering the service.

BEREC response: According to CP11 ANO should be able to apply security measures at Layer 3 and higher Layers which does not include security measures at Layer 2.

3.13 CP12: Fault management

Fault management

If, in case of a fault, actual information on parameters of the concerned subscriber access line is available to ANO, this supports their fault management and facilitates to locate and repair the failure. Therefore, L2 WAP should enable ANO to receive a report on actual values of parameters of the subscriber access line on request which facilitate their fault management.

BT

BT points out that current Openreach products are already consistent with the proposed approach.

BEREC response: BEREC welcomes this comment.

ECTA

ECTA agrees with CP12 on fault management. This is evidently necessary and ECTA urges BEREC to resist any pushback on these elements from SMP operators. ECTA emphasises that the information needs to be available in real time, on a non-discriminatory basis with the downstream arms of the SMP operator.

BEREC response: BEREC welcomes that ECTA agrees with CP12. According to the CP12, actual values of parameters should be provided which implies that this information needs to be submitted immediately after the request otherwise the values of the parameters would not be actual. Therefore, BEREC does not see a need to alter CP12.

ETNO

ETNO agrees that in case of a fault timely and proper information on parameters of the concerned subscriber access lines are indispensable for the affected access seeker.

BEREC response: BEREC welcomes this comment.

EWE TEL

EWE TEL points out that in case of physical unbundling, ANO have the possibility to analyse and configure the 'last mile' which is not possible in the case of VULA, as it is a service and does not provide a physical medium which could be analysed. However, in the view of EWE TEL it is important that ANO have all relevant information and therefore are able to react on faults in time. Therefore, EWE TEL suggests that L2 WAP should enable ANO to receive automatic continuous instant reports on actual values of parameters of the subscriber access line which facilitate their fault management.

BEREC response: BEREC agrees that it is important that ANO have relevant information and are able to react on faults in time. According to the CP12, actual values of parameters should be provided which implies that this information needs to be submitted immediately after the request otherwise the values of the parameters would not be actual. Therefore, BEREC does not see a need to demand automatic continuous instant reports.

Telefónica

In the view of Telefónica this issue should be discussed nationally. In the case of Spain this topic would be covered by the tele diagnosis service that Telefonica will have to develop and make available to ANO in the coming months. Once it is implemented it would not be justified to implement more control and monitoring measures.

BEREC response: BEREC would like to point out that CP12 demands that actual values of parameters of the subscriber access line should be provided by the SMP operator. However, it does not specify in detail which parameters. Therefore, the parameters which should be reported may be specified at the national level.

3.14 Further technical characteristics

1&1

In the point of view of 1&1, the technical parameters defined by CP3 to CP12 are the relevant technical parameters.

BEREC response: BEREC welcomes this comment.

ECTA

ECTA believes the following technical elements should logically and legitimately be the subject of BEREC Common Positions:

i. Fault management: ANO should be granted full access to the performance/fault management systems, enabling them to receive in real time, via APIs, the actual values of parameters of the subscriber access line.

BEREC response: The topic fault management is already covered by CP12.

ii. Configuration of the DSLAM/MSAN: as is the case in Denmark, ANO should have the possibility to configure some DSLAM/MSAN parameters based on direct access to the DSLAM/MSAN management system of the L2 WAP provider (rate, INP, delay, spectrum mask and open/close ports).

BEREC response: BoR(15)133 shows that this is possible in Denmark but not in the other countries analysed in this report. Therefore, it is not possible to have a Common Position which requires this technical characteristic.

iii. Network design: in order to ensure parity of wholesale inputs, ANO should be involved, on par with the retail division of the SMP operator, in the design of the networks providing L2 WAP.

BEREC response: This point relates not directly (or not only) to L2 WAP. The question to which extent ANO should be involved in the design of the network of the incumbent operator is more general and related to non-discrimination and/or (functional) separation remedies. In BEREC's view the CP on L2 WAP is not the appropriate place to deal with this issue.

iv. Access demarcation equipment: in case access equipment is needed only/specifically for ANO to access the SMP operator's L2 WAP, the choice of the supported equipment should be jointly determined by the operators concerned, and the SMP operator must be required by regulation to make up-to-date technology available.

v. Sharing of resources: in order to ensure maximum efficiency, ANO must have the possibility to share Layer 2 service elements among one-another, including access demarcation equipment, backhaul and bandwidth on all network segments.

vi. Activation and repair: ANO should have the possibility to provide line activation and fault repair services by means of their own certified technicians or by outsourcing such services to external contractors.

BEREC response: The Common Positions are based on BoR(15)133, however, in this report the technical characteristics (iv), (v) and (vi) are not analysed and it is questionable whether these characteristics are fulfilled by existing L2 WAP. In its detailed description of case (vi) ECTA refers to the Belgian case. However, in order to be able to define a Common Position it is not sufficient that a technical characteristic is fulfilled in only one country. Depending on national circumstances it may not be justified to demand such a technical characteristic in all countries.

<u>EWE TEL</u>

EWE TEL points out that Danish ANO are able to configure certain DSLAM parameters via the general wholesale interface system which indirectly controls the DSLAM settings. In the view of EWE TEL, DSLAM-configuration should be an essential Common Position by BEREC as well.

BEREC response: BoR(15)133 shows that this is possible in Denmark but not in the other countries analysed in this report. Therefore, it is not possible to have a Common Position which requires this technical characteristic.

4 Abbreviations

ANO	Alternative network operator
BSA	Bitstream Access
BT	British Telecommunications
CO	Central Office
EC	European Commission
ECTA	European Competitive Telecommunications Association
ETNO	European Telecommunications Network Operators' Association
FTTB	Fibre To The Building
FTTC	Fibre To The Cabinet
FTTH	Fibre To The Home
L2 WAP	Layer 2 Wholesale Access Products
LAN	Local Area Network
LLU	Local Loop Unbundling
MOV	Multi-operator Vectoring
NRA	National Regulatory Authority
ONT	Optical Network Termination
OPEX	Operational Expenditure
PoH	Point of Handover
SMP	Significant Market Power
VLAN	Virtual LAN
VULA	Virtual Unbundled Local Access