

Monitoring implementation of the BEREC Common Positions on WLA, WBA and WLL

Phase I

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I. EXECUTIVE SUMMARY

Over the last three years BEREC has undertaken a programme of work which involved revising its broadband common positions (relating to the relevant markets 4, 5 and 6 as outlined by the Commission Recommendation of 2007)¹ and developing a methodology to monitor how NRAs are implementing these. The third (and final) stage of the work involved undertaking the actual monitoring exercise of whether and how NRAs are following the best practices set in the revised common positions.

The monitoring exercise is being carried out over three years to allow for the full cycle of market reviews to be carried out by all NRAs. This report sets out the results of Phase 1 of the monitoring exercise which was carried out in the first half of 2014. We intend to repeat this exercise in 2015 and 2016 (as Phase 2 and Phase 3 respectively).

Our analysis in this report focuses on NRAs that have notified decisions relating to market reviews in the relevant WLA, WBA and WLL market since the revised common positions were adopted on 7 December 2012 and up to the deadline for providing responses to Phase 1 of the monitoring exercise (around the end of March 2014). We refer to these NRAs as the 'participants' in each of the relevant markets.²

We have broken our analysis down into ten sections, each pertaining to one of the competition objectives identified in the revised common positions and the best practices relevant to these in each of the relevant markets.

There are relatively few NRAs that are included as participants in our analysis at this stage. Therefore, it is probably too early to draw firm conclusions about how participating NRAs are following the best practices set out in the revised common positions. Furthermore, we recognise that NRAs that have not notified decisions in relation to the relevant WLA, WBA and WLL markets since the common positions were adopted on 7 December 2012 will have implemented many of the best practices. However, these NRAs are not included as participants and are not captured in this report. We would expect that as more NRAs complete their cycle of market reviews during the course of 2015 and 2016 the set of participants will increase and a clearer picture of whether, how and why NRAs are adopting best practices (or not) will emerge.

Notwithstanding the above, we consider that some early findings (albeit tentative) are emerging from Phase 1 of our monitoring exercise. Generally participants are following the most broad or high level best practices relating to each of the competition objectives. Where they are not, this appears to be because of reasons relating to specific circumstances (e.g. they were not considered necessary due to the network technology deployed or the competitive problem identified in the country in question). However, there does appear to be more variation relating to whether the participants have adopted the more detailed, specific

¹ COMMISSION RECOMMENDATION of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:344:0065:0069:en:PDF>

² The participants are as follows: WLA and WBA markets – Austria, Croatia, Cyprus, Estonia, Ireland, Latvia, Malta, Netherlands, Norway and UK; WLL market – Belgium, Greece, Ireland, Spain, Sweden and UK.

and prescriptive best practices. This is probably unsurprising since these are often technology specific (and therefore may not be relevant to a particular NRA) or considered unnecessary if other obligations have been imposed.

It is worth noting that certain best practices may only be applicable to certain circumstances (e.g. the deployment of a particular type of network infrastructure) and therefore the fact that an NRA has not implemented a particular best practice does not suggest there may be a concern.

Further, whilst the report discusses whether NRAs have imposed particular best practices under relevant market review procedures, it is not intended to assess whether the reasons for not imposing a particular best practice are justified or not, or what the effect of the imposition or otherwise of a specific best practice by a given NRA might be. The following table gives a high-level (only) overview of our analysis. Section III of this report provides further detail.

Table 1: Broad overview of our analysis

Competition objective	Overview
Assurance of access	<p>All NRAs have imposed obligations requiring SMP operators to provide proportionate access products. These follow the ladder of investment principle and encourage infrastructure competition at the deepest level of the network.</p> <p>There is more variation in remedies relating to specific access products reflecting differences in the detail of the network architecture of the incumbent operator (e.g. some countries have a network that is based on FTTP whereas some do not).</p>
Assurance of colocation at access points	<p>NRAs have generally imposed obligations in line with best practices. Where NRAs have not followed best practices this reflects the differences in the technology used by that country. For example, in the UK and Austria WBA markets colocation is unnecessary given the specifics of the interconnect products offered (bitstream) does not require colocation.</p>
Level playing field	<p>All NRAs have imposed general non-discrimination obligations and provided clarifications on how these should be interpreted.</p> <p>Where NRAs have defined a form of equivalence that should be adopted, most have opted for EOO. However, the UK (WLA, WBA and WLL) and Ireland (WBA only) are exceptions and have imposed EOI obligations to varying degrees.</p>
Avoidance of unjustified first-mover advantage	<p>NRAs have generally imposed requirements that ensure the replicability of new downstream service introduced by SMP operators. It is common practice for notice periods to have been set relating to the removal of products and/or the requirement for the NRA to approve the removal of products.</p> <p>There is variation between NRAs on the details of how this is implemented.</p>
Transparency	<p>NRAs have generally required SMP operators to provide clarity around the terms of access through the publication of a Reference Offer (or where NRAs have not required the publication of a Reference Offer it is common practice for the SMP operator to publish information regarding the terms of access e.g. in Sweden the SMP operator publishes such</p>

Competition objective	Overview
	<p>information for products in the WLL market).</p> <p>The best practices regarding the information that is included in the Reference Offer and how this is updated are also generally well observed although there is variation between NRAs.</p>
Reasonable quality of access products – technical	Where required, NRAs have typically imposed requirements to ensure a reasonable quality of access, through requiring reasonable requests to be met and through the publication of a Reference Offer. However, there are exceptions. For example, the Sweden NRA does not impose any requirements in the WLL market (since it is common practice for the SMP operator to publish this information).
Reasonable quality of access products – operational	NRAs have typically imposed requirements relating to service levels (though the use of SLAs, SLGs and KPIs). However, there are exceptions. For example, the Sweden NRA does not impose any requirements in the WLL market since it considers a non-discrimination obligation to be a sufficient remedy.
Assurance of efficient and convenient wholesale switching	NRAs have generally imposed requirements to ensure that the wholesale switching process is efficient and speedy and that the price of switching does not act as a barrier to competition in the WLA and WBA market (but less so in the WLL market where NRAs have not identified a market failure that needs addressing). However, NRAs have taken different approaches on how prescriptive they are in implementing this requirement. Whilst some NRAs have imposed requirements relating to SLAs and SLGs regarding the switching process other NRAs consider this unnecessary. For example, in the UK WLL market, the SMP operator is subject to an obligation to provide network access on reasonable request and alternative operators can request migration products without further intervention from the NRA.
Assurance of efficient migration processes from legacy to NGN/NGA networks	<p>Evidence is mixed. Approaches by NRAs typically reflect whether or not the incumbent operator is planning to switch-off the legacy network (e.g. in the UK there are no plans to switch-off the legacy network); whether the deployment of NGA is in its early stages; or whether there is no NGA (e.g. in Cyprus).</p> <p>A number of NRAs have not imposed requirements for a migration process between legacy and NGN/NGA networks (or those that have are not prescriptive in their requirements). This appears to be because legacy networks are continuing to be deployed and competition issues around migrating to NGN/NGA networks have not (as yet) been significant.</p>
Fair and coherent access pricing	All NRAs have imposed some form of price regulation (even if only through imposing a non-discrimination obligation e.g. Sweden). NRAs have generally imposed requirements that ensure (with reasonable certainty) that the price of access will permit an efficient entrant to compete with the SMP operator; and that this incentivises efficient investment and sustainable competition. However, NRAs have also taken account of the nature of competition when imposing obligations. For example, the Austria, Netherlands, Norway and UK NRAs have not imposed price regulation relating to access where there is infrastructure based competition that removes the requirement of such remedies.

II. INTRODUCTION

1. Why this work?

Over the last three years BEREC has undertaken a programme of work which involved revising its broadband common positions and developing a methodology to monitor how NRAs are implementing it. The third (and final) stage of the work involved undertaking the actual monitoring exercise.

The monitoring exercise relates to the relevant markets 4, 5 and 6 as outlined by the Commission Recommendation of 2007. However, we recognise that the Commission has published a new Recommendation on relevant markets in October 2014.³

The monitoring exercise is being carried out over three years to allow for the full cycle of market reviews to be carried out by all NRAs. This report sets out the results of Phase 1 of the monitoring exercise which was carried out in the first half of 2014. The results presented here therefore include notifications made by NRAs (since BEREC's Revised Common Positions were adopted on 7 December 2012) up to and including circa 31 March 2014. In some cases, particularly where NRAs had consulted but not completed their market reviews by March 31 2014 (e.g. UK Markets 4 & 5), the results include notifications made as late as June 2014. Further monitoring exercises are being planned for 2015 and 2016 respectively.

1.1. A reminder of the process so far

In 2012, following a public consultation, BEREC adopted its revised Common Positions (CPs) listing the best practice remedies to be used in the following three wholesale markets:

- Revised BEREC Common Position on best practice in remedies on the market for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location imposed as a consequence of a position of significant market power (SMP) in the relevant market (the **WLA CP**).
- Revised BEREC Common Position on best practice in remedies on the market for wholesale broadband access (including bitstream access) imposed as a consequence of a position of significant market power (SMP) in the relevant market (the **WBA CP**).
- Revised BEREC Common Position on best practices in remedies as a consequence of a SMP position in the relevant markets for wholesale leased lines (the **WLL CP**).

Application of the best practices contained in the CPs will assist NRAs in designing effective remedies in line with the objectives of the Framework. At the same time, the CPs are not a substitute for any of the legal tests which NRAs must carry out before imposing SMP remedies, in particular the requirement for NRAs to show (among other things) that SMP remedies are based on the nature of the problem identified, proportionate and justified in light of the policy objectives laid down in Article 8 of the Framework Directive. However, the CPs

³ COMMISSION RECOMMENDATION of 9 October 2014 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC <https://ec.europa.eu/digital-agenda/en/news/commission-recommendation-relevant-product-and-service-markets-within-electronic-communications>

are an important instrument that NRAs and the Commission must take utmost account of, in the same manner as for Commission Recommendations (such as the NGA Recommendation). Therefore, and as discussed in its consultation on the revised CPs, BEREC expects NRAs to explain in their notified draft measures the steps they have taken to:

- analyse the objectives identified in the CPs and the related competition issues with reference to the market analysis they have performed;
- to the extent consistent with applicable national law, provide an effective and proportionate regulatory solution to those issues; and
- explain transparently how those competition issues have been addressed and give reasons when their regulatory solutions depart from the best practice remedies (BPs) identified in the CPs.

Consistent with its work programme for 2013, BEREC then developed a methodology to monitor how NRAs have implemented the BPs recommended in the revised CPs. The revised CPs focus on the consistent application of the Directives across Member States (MSs), rather than solely on the uniformity of the remedies imposed, striking a delicate balance between the need to ensure consistency and the need to take into account national market circumstances and differences in national legislations. On this basis, the main objectives of the monitoring exercise are (amongst other things) to better understand how and to what degree NRAs have implemented the revised CPs and what new best practices may be emerging.

1.2. The focus of the current exercise

Below and in the subsequent sections we briefly summarise the results and key messages emerging from this exercise. As explained above, the results presented in this document include notifications made by NRAs (subsequent to the revised CPs being adopted on 7 December 2012) up to and including circa 31 March 2014. These NRAs are referred to as 'participants' in each of the relevant markets. In some cases, particularly where NRAs had consulted but not completed their market reviews by March 31 2014 (e.g. UK Markets 4 & 5), the results include notifications made as late as June 2014.

We recognise that NRAs that have not notified decisions in relation to the relevant WLA, WBA and WLL markets since the common positions were adopted on 7 December 2012 will have implemented many of the best practices. However, these NRAs are not included as participants and are not captured in this report. We would expect that as these NRAs complete their cycle of market reviews during the course of 2015 and 2016 their information will be captured in Phase 2 or Phase 3 of this exercise.

2. Approach to the analysis

As discussed in the Monitoring methodology which BEREC published in 2013,⁴ to assist in this task, BEREC developed a detailed Excel based questionnaire to be completed by

⁴ BoR (13) 108 Methodology for monitoring the application of the BEREC common positions on WLA, WBA and WLL, 16 September 2013.

individual NRAs. Questionnaires were sent to 33 NRAs and responses were received from 31 NRAs (Bulgaria and Luxembourg NRAs did not respond).

The questionnaires were structured along the competition objectives listed in each CP. In addition, and in order to avoid introducing any unintended bias, at least one question is associated with each BP (in cases where a BP is too long or made up of several elements, further questions were included). Moreover, several questions were added which were more general in nature and which aimed to capture the high level policy considerations underpinning the overall regulatory approach implemented by each NRA.

The information gathered has been provided through a self-certification process. Therefore, although BEREC has considered the accuracy of the information in the round (and sought clarifications where necessary) it has not cross-checked each response against each NRA's published decision.

2.1. Types of questions

The questionnaire included a mixture of closed YES/NO or where the answer can be chosen using a drop down menu) and open ended questions WHY/HOW.

The questionnaire was structured in a manner which also captured the following additional considerations:

- A **generic question**, at the start of each section of the questionnaire dealing with a relevant competition objective, aimed at capturing the main documents and (briefly) any general information NRAs thought would be useful for BEREC to collate.
- In some instances, when the answer to a question was **YES** - we requested NRAs to provide (briefly) additional information regarding the implementation of the relevant BP (for example, commenting on the length of notice periods imposed on a case-by-case basis).
- When the answer to a question was **NO** – we requested NRAs to provide a brief summary of the justification for such a departure (for example, the competition problem identified is being addressed through alternative remedies).
- In a limited set of cases the NRA could choose to respond 'No, but conforming to the Best Practice'. This response was allowed where the best practice is less definitive and indicates that the NRA 'may consider' imposing a particular obligation (rather than 'should' impose an obligation).
- We also included a number of questions which aim to explore **HOW** NRAs have implemented certain BPs. For example, one of the BPs require "NRAs' imposition of remedies should be based on the ladder of investment principle". In such cases it is more informative to find out how NRAs ensured the practical implementation of a BP, rather than only whether they have implemented it.

3. Structure of this report

Section III provides our analysis of responses. The section has been split into sub-sections each pertaining to one of the ten Competition Objectives outlined in BERECs Revised CP, as follows:

- Assurance of access
- Assurance of co-location at the access point (e.g. MDF, street cabinet, concentration point) and other associated facilities
- Level playing field
- Avoidance of unjustified first mover advantage
- Transparency
- Reasonable quality of access products – technical issues
- Reasonable quality of access products – operational aspects
- Assurance of efficient and convenient wholesale switching
- Assurance of efficient migration processes from legacy to NGN/NGA network
- Fair and coherent access pricing

Each sub-section is then structured as follows:

- First, we provide a description of the competition issues identified by BEREC.
- Second, we summarise the Best Practice remedies relevant to addressing those competition issues.
- Third, we analyse the evidence pertaining to whether NRAs have imposed the Best Practice in each of the relevant markets. We summarise the responses to the questionnaire (according to each BP) in tables. Where NRAs have not imposed obligations relating to each BP an overview of the reasons for this is provided. In the tables that summarise the responses the following notation is used:

Table 2: Notation used in summary tables

✓	Impose obligations pertaining to BP
✗	Do not impose obligations pertaining to BP
[✓]	No, do not impose obligations, but conform to BP
n/a	Best practice is not applicable. For example, in cases where specific technology relevant to BP is not deployed and therefore BP is not required; or where market is deregulated.
✓/✗	In a limited set of cases a ✓/✗ is given. Where this is the case an explanation is provided in the text.

Annex 1 provides a list of respondents to the questionnaire.

III. ANALYSIS OF RESPONSES

1. Introduction

This section provides our analysis relating to whether NRAs are implementing the Best Practice remedies outlined in BEREC's Revised CP.

We have received 31 responses to the questionnaire issued to NRAs in 2014 (see Annex 1 for a list of respondents). However, our analysis has focused on those NRAs that have notified the Commission of their decisions relating to reviews of the relevant markets since BEREC's Revised CPs were adopted on 7 December 2012. These NRAs are referred to as the 'participants'.

2. Competition objective 1: Assurance of access

2.1. Background

The BEREC Common Positions state three competition problems that may arise across all three markets. First, operators with significant market power (SMP) may deny access to their networks. Second, SMP operators may restrict the use of services. Third, SMP operators may refuse to develop new access products on request from alternative operators.

The competition issues identified by BEREC are addressed by the Best Practices 1-15 in the WLA Common Position; Best Practices 1-9 in the WBA Common Position; and Best Practice 1-6 in the WLL Common Position. These can be summarised as follows:

Table 3: Best practice remedies

Description of best practice remedy	WLA	WBA	WLL
NRAs should impose the appropriate and proportionate access products to reflect national circumstances	BP1	BP1	BP1
NRAs' remedies should be based on the ladder of investment principle	BP2	BP2	BP2
NRAs should encourage infrastructure competition at the deepest level where it is reasonable	BP3	BP3	BP3
To avoid competitive distortions, access should be mandated regardless of technical solution (insofar as it is proportionate)	BP4	BP4	BP4
When imposing remedies, implementation should take account of the viability of the remedy	BP5	n/a	n/a
NRAs should impose bitstream access products including the appropriate level of handover	n/a	BP5	n/a
Access products at specific access points: Unbundled access to the fibre loop in the case of FTTH. For P2P the ODF is the appropriate access point	BP6a	n/a	n/a
Access products at specific access points: Unbundled access to the fibre loop in the case of FTTH For P2MP, the access point is typically an access point downstream	BP6b	n/a	n/a

Description of best practice remedy	WLA	WBA	WLL
from the MPoP			
The last splitter is the unique access point for physical unbundled access (as long as no alternative for unbundling at the MPoP is available). The design of P2MP needs to take account of the location of the splitter	BP6b (i)	n/a	n/a
Whenever the access point is downstream of the MPoP the remedies imposed need to encompass the access point in combination with an appropriate product between the access point and the MPoP	BP6b (ii)	n/a	n/a
Until any feasible technologies allowing physical unbundling at the MPoP become available, the NRA should consider imposing an active remedy replicating as much as possible physical unbundling	BP6b (iii)	n/a	n/a
Access products at specific access points: NRAs should impose unbundled access to the copper loop at the MDF	BP7a	n/a	n/a
Access products at specific access points: In the case of FTTN, the copper loop is properly accessed at a concentration point downstream of MPoP	BP7b	n/a	n/a
Access products at specific access points: NRAs may consider imposing an active remedy providing access at the MPoP replicating as much as possible physical unbundling	BP7c	n/a	n/a
Access products at specific access points: In case access to in-house cabling is not included in the (copper) loop it should be granted if applicable under private law	BP8	n/a	n/a
Access products to reach access point: NRAs should impose an obligation for an access product to reach the access point from the MPoP Access product to reach the bitstream access point: NRAs should impose an obligation ensuring that the bitstream access point can be reached with an appropriate remedy	BP9	BP6	n/a
Access products to reach access point: NRAs should impose an obligation to ensure that the MPoP can be connected to the operators infrastructure with an appropriate remedy	BP10	n/a	n/a
Access products to reach access point or Access product to reach the bitstream access point: Obligations to reach the access point should be designed to prevent strategic withholding of capacity	BP11	BP7	n/a
Access products to reach access point: Access to civil engineering infrastructure between the MPoP and the customer premises should be ensured by the NRA	BP12	n/a	n/a
This should take into account access to manholes and derivation points	BP12a	n/a	n/a
The NRA should define rules for optimising space	BP12b	n/a	n/a
Prices should be cost oriented	BP12c	n/a	n/a
Access products to reach access point: Where necessary NRAs should impose dark fibre/leased lines as an independent measure or	BP13	n/a	n/a

Description of best practice remedy	WLA	WBA	WLL
subsidiary measure to duct access			
NRAs should require SMP operators to provide network access where an alternative operator reasonably requests it	BP14	BP8	BP5
If access to new products and services is not included through the review of the Reference Offer (RO), NRAs should impose an obligation on SMP operators requiring them to publish the process specifying how they will deal with requests	BP15	BP9	BP6
The process should detail how to make the request, the information required and timescales	BP15a	BP9a	BP6a
NRAs should impose timescales for dealing with requests	BP15b	BP9b	BP6b
If considered feasible, access should be given to new products promptly	BP15c	BP9c	BP6c
When new services and products are made available, NRAs should ensure that they are captured by the relevant SMP obligations already imposed on the SMP operator	BP15d	BP9d	BP6d

2.2. Analysis by best practice

2.2.1. WLA market

Since the revised CP has been in place, the WLA market has been reviewed by 10 NRAs ('the WLA participants'). Table 4 summarises the best practice remedies that have been imposed for each of the WLA participants.

Table 4: Best practice remedies imposed by WLA participants

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
<i>General remedy</i>										
BP1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Access product at specific access point remedy</i>										
BP6a	n/a	n/a	n/a	✓	✗	✓	n/a	✓	✓	n/a
BP6b(i)	✓	✓	n/a	✗	n/a	✓	✓	✗	✓	✗
BP6b(ii)	✗	✓	n/a	✗	✗	✗	✗	✗	✓	✗
BP6b(iii)	✓	✓	n/a	✓	✓	✓	✗	✗	✓	✓

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
BP7a	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP7b	✓	✓	✓	n/a	x	✓	✓	✓	✓	✓
BP7c	✓	✓	[✓]	n/a	✓	x	[✓]	[✓]	[✓]	✓
BP8	✓	✓	[✓]	✓	n/a	x	n/a	[✓]	✓	x
<i>Access products to reach access point remedy</i>										
BP9	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP11	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP12a	x	✓	✓	x	✓	✓	x	✓	✓	✓
BP12b	x	✓	x	✓	x	✓	x	x	x	✓
BP12c	✓	✓	✓	✓	✓	✓	x	n/a	✓	✓
BP13	✓	✓	✓	x	✓	✓	✓	x	✓	✓
<i>General remedy</i>										
BP14	✓	✓	✓	✓	x	✓	✓	✓	✓	✓
BP15	x	n/a	✓	n/a	n/a	n/a	n/a	n/a	✓	✓
BP15a	x	n/a	✓	n/a	n/a	n/a	n/a	n/a	✓	✓
BP15b	x	n/a	✓	n/a	✓	n/a	✓	✓	✓	✓
BP15c	x	n/a	✓	n/a	✓	n/a	✓	✓	✓	x
BP15d	x	✓	✓	✓	✓	✓	✓	✓	✓	✓

In relation to BP5, all WLA participants assessed the viability of an access product. When imposing remedies, population density was taken into account by 5 NRAs (Cyprus, Estonia, Ireland, Latvia, the Netherlands), economic factors by 8 NRAs (Austria, Cyprus, Estonia, Latvia, Malta, the Netherlands, Norway, UK), the architecture chosen by the SMP operator including the location of the concentration points by 9 NRAs (Austria, Croatia, Cyprus, Estonia, Latvia, Malta, the Netherlands, Norway, UK) and other factors by 2 NRAs (Austria, Malta).

BP6a is not applicable to Austria, Croatia, Malta and the UK since the SMP operators FTTH network is not P2P.

BP6a is not applicable to Cyprus since the SMP operator has not deployed a fibre network. The Ireland NRA explained that the SMP operator has not deployed a commercial fibre product and therefore it has mandated access at the exchange (MPOP) and cabinet co-location to facilitate either a P2P or a GPON solution.

In relation to BP6b(i), the UK NRA does not take account of the location of the splitter as unbundling at the splitter was not considered to be viable. The Ireland NRA does not impose a P2MP obligation.

Seven NRAs did not mandate (BP6(ii)) since this obligation is dependent on the location of the splitter (and in some cases the access point has to be combined with the fibre sub-loop). The Austria NRA explained that using the SMP operator's GPON the last splitter would not connect a sufficient proportion of customers to support a viable business case for unbundling at the last splitter. Instead the Austria NRA imposed a requirement for the SMP operator to provide a VULA product covering FTTH. The Ireland NRA imposed an obligation to provide access to the fibre loop (but explained that access to the terminating segment was not mandated).

In relation to BP6(iii) the Netherlands NRA explained that there appeared to be a viable business case for physical unbundling and therefore it was unnecessary to impose an obligation requiring an active remedy. The Malta NRA explained that a VULA remedy was currently being developed with the SMP operator.

In relation to BP7b, the Ireland NRA withdrew access to SLU in certain geographic areas to facilitate the deployment of vectoring technology.

In relation to BP12a, the Austria NRA explained that ducts and dark fibre are only available between the street cabinet and the MDF. With regard to optimising space available in ducts (BP12b), the Austria NRA explained that the demand for access to ducts has been very low and therefore this was not considered an issue. The Ireland NRA imposes an obligation requiring access to civil engineering (BP12a) and stated that access to ducts is currently under discussion by industry. In relation to BP12b, the Ireland NRA stated that this requirement is currently under discussion with industry and the Norway NRA explained that the need for regulatory intervention had not been identified.

In relation to BP14, although the Ireland NRA does not impose a requirement for SMP operators to provide network access where an alternative operator reasonably requests, an industry process is established for assessing and responding to SoRs with an indicative timeline.

In relation to BP15, the Croatia, Estonia, Ireland, Latvia, Malta and Netherlands NRAs explained that this was not applicable since access to new products and services is generally included through the review of the Reference Offer.

In relation to BP15, the Austria NRA explained that if the SMP operator is offering a new retail product which requires a new wholesale access product, it has to offer such a product due to a non-discrimination obligation. In the event that an alternative operator demands a new product which is not used internally by the SMP operator, the SMP operator has an obligation to negotiate in good faith. If there is no agreement, the alternative operator can make an interconnection proceeding to the NRA.

In relation to BP15c, the UK NRA does not impose a requirement to give access to new products where it is feasible but instead imposes a requirement to give access to new products where it is reasonable.

2.2.2. WBA market

Since the revised CP has been in place the WBA market has been reviewed by 10 NRAs ('the WBA participants'). Table 5 summarises the best practice remedies that have been imposed for each of the WBA participants.

In Malta the WBA market was deregulated in 2008 and therefore no regulatory remedies are imposed.

In the Netherlands and Austria, the WBA market is deregulated for residential users but not for the business segment (and therefore the information below relates to the best practice obligations imposed in the business segment only).

Table 5: Best practice remedies imposed by WBA participants

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
BP1	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓
BP2	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓
BP3	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓
BP4	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓
BP5	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓
BP6	✓	✓	✓	✓	✓	✓	n/a	✓	[✓]	✓
BP7	✗	✓	✓	✓	✓	✓	n/a	✓	[✓]	✓
BP8	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓
BP9	✗	n/a	n/a	n/a	✗	n/a	n/a	n/a	✓	✗
BP9a	✗	n/a	✓	✓	✗	n/a	n/a	n/a	✓	✓
BP9b	✗	n/a	✓	✓	✓	n/a	n/a	n/a	✓	✓
BP9c	✗	n/a	✓	✓	✓	n/a	n/a	n/a	✓	✗
BP9d	✗	✓	✓	✓	✓	✓	n/a	✓	✓	✓

In relation to BP7, the Austria NRA did not set obligations designed to prevent the strategic withholding of capacity since access points are central and capacity issues are not considered relevant.

In relation to BP9, the Croatia, Cyprus, Estonia, Latvia and the Netherlands NRAs address the issue of obtaining access to new access products through reviewing the Reference Offer (as opposed to imposing a specific condition). The UK NRA requires access to new products as part of an EOI obligation. The Austria NRA requires the SMP operator to provide access through imposing a non-discrimination obligation.

In relation to BP9a, the Ireland NRA does not impose a specific requirement since timescales for dealing with requests for access are included in the Reference Offer.

In relation to BP9c, the UK NRA does not impose a requirement to give access to new products where it is feasible but instead imposes a requirement to give access to new products where it is reasonable.

2.2.3. WLL market

Since the revised CP has been in place the WLL market has been reviewed by 6 NRAs ('the WLL participants'). Table 6 summarises the best practice remedies that have been imposed for each of the WBA participants.

Table 6: Best practice remedies imposed by WLL participants

	Belgium	Greece	Ireland	Spain	Sweden	UK
BP1	✓	✓	✓	✓	✓	✓
BP2	✓	✓	✓	✓	✗	✓
BP3	✓	✓	✓	✓	✗	✓
BP4	✓	✓	✓	✓	✓	✓
BP5	✓	✓	✓	✓	✓	✓
BP6	n/a	n/a	✓	✓	n/a	✓
BP6a	n/a	n/a	✓	✓	n/a	✓
BP6b	✓	n/a	✓	✓	✓	✓
BP6c	n/a	n/a	✓	✓	✓	✗
BP6d	✓	✓	✓	✓	✓	✓

In relation to BP2, the Sweden NRA explained that the remedies imposed are not based on the ladder of investment principle since there was no point in a leased lines buyer building its own network. This argument justified its position in relation to BP3 i.e. it has not sought to encourage competition at the deepest level in the network.

In relation to BP6, the Belgium, Greece and Sweden NRAs do not impose a specific requirement since timescales for dealing with requests for access are included in the Reference Offer.

In relation to BP6c, the UK NRA does not impose a requirement to give access to new products where it is feasible but instead imposes a requirement to give access to new products where it is reasonable.

3. Competition objective 2: Assurance of co-location at the access point (e.g. MDF, street cabinet, concentration point) and other associated facilities

3.1. Background

The BEREC Common Position refers to the competition issues relating to SMP operators denying access to associated facilities which are key to the provision of services in the relevant market and artificially restricting the usage of co-location and other associated facilities.

The competition issues identified by BEREC are addressed by the Best Practice 16 in the WLA Common Position; Best Practice 10 in the WBA Common Position; and Best Practice 7 in the WLL Common Position. The best practice can be summarised as follows:

Table 7: Best practice remedies

Description of best practice remedy	WLA	WBA	WLL
NRAs should impose obligations with regard to the provision of co-location and other associated facilities on a cost-oriented basis under clear rules and terms approved by the regulator	BP16	BP10	BP7

3.2. Analysis by best practice

3.2.1. WLA market

Since the revised CP has been in place, the WLA market has been reviewed by 10 NRAs ('the WLA participants'). Table 8 summarises whether the best practice remedy in relation to the assurance of co-location at delivery points and other facilities has been imposed for each of the WLA participants.

Table 8: Best practice remedies imposed by WLA participants

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
BP16	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

3.2.2. WBA market

Since the revised CPs has been in place the WBA market has been reviewed by 10 NRAs ('the WBA participants'). Table 9 summarises whether the best practice remedy in relation to the assurance of co-location at delivery points and other facilities has been imposed for each of the WBA participants.

In Malta the WBA market was deregulated in 2008 and therefore no regulatory remedies are imposed.

In the Netherlands and Austria, the WBA market is deregulated for residential users but not for the business segment (and therefore the information below relates to the best practice obligations imposed in the business segment only).

Table 9: Best practice remedies imposed by WBA participants

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
BP10	*	*	✓	✓	✓	✓	n/a	✓	✓	*

The Austria, Croatia and the UK NRAs do not impose obligations regarding the provision of co-location in the WBA market since it is not necessary as the interconnect products currently in place do not require co-location.

3.2.3. WLL market

Since the revised CP has been in place the WLL market has been reviewed by 6 NRAs ('the WLL participants'). Table 10 summarises whether the best practice remedy in relation to the assurance of co-location at delivery points and other facilities has been imposed for each of the WLL participants.

Table 10: Best practice remedies imposed by WLL participants

	Belgium	Greece	Ireland	Spain	Sweden	UK
BP7	✓	✓	✓	✓	*	✓

Although the Sweden NRA has imposed obligations with regard to the provision of co-location and other associated facilities these have been imposed on a non-discriminatory pricing basis instead of a cost-oriented basis.

4. Competition objective 3: Level playing field

4.1. Background

The BEREC Common Position refers to the competition issue of alternative operators being unable to compete on a level playing field which may result in SMP players having an unfair advantage; having an unmatchable advantage; discriminating in favour of their own group business (or between its own wholesale customers); and exhibiting obstructive and foot-dragging behaviour.

The competition issue identified by BEREC is addressed by the Best Practices 17-20 in the WLA Common Position; Best Practices 11-14 in the WBA Common Position; and Best Practices 8-11 in the WLL Common Position. These can be summarised as follows:

Table 11: Best practice remedies

Description of best practice remedy	WLA	WBA	WLL
NRAs should impose a general obligation of non-discrimination	BP17	BP11	BP8
NRAs should further clarify how the non-discrimination obligation is interpreted on a case-by-case basis	BP18	BP12	BP9
NRAs should impose an obligation on SMP operators requiring equivalence and justify the form of equivalence imposed	BP19	BP13	BP10
NRAs should consider imposing functional separation as remedy of last resort	BP20	BP14	BP11

4.2. Analysis by best practice

4.2.1. WLA market

Since the revised CP has been in place the WLA market has been reviewed by 10 NRAs ('the WLA participants'). Table 12 summarises the best practice remedies that have been imposed for each of the WLA participants.⁵

Table 12: Best practice remedies imposed by WLA participants

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
BP17	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP18	✓	✓	n/a	n/a	✓	*	n/a	✓	✓	✓
BP19	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EOI, EOO, or both	EOO	EOO	Both	EOO	EOO	EOO	EOO	Both	EOO	Both
BP20	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	[✓]

In relation to BP18 the Cyprus, Estonia and Malta NRAs do not provide further clarification regarding the interpretation of the non-discrimination requirement since no relevant cases have emerged. The Latvia NRA does not provide clarification of the interpretation of the non-discrimination requirement on a case-by-case basis but provides clarification under its relevant rules. In particular, it has set rules on technical terms and conditions and on the information that must be included in the Reference Offer, which provide greater detail about the non-discrimination obligation.

⁵ Although not included in the WLA participants, the Italy NRA imposes EOO requirements in relation to the WLA market and has accepted a voluntary undertaking of functional separation by the SMP operator. The Slovenia NRA is also not included in the WLA participants, however, in 2011 it imposed EOI requirements on the SMP operator in relation to access to copper-based LLU (full and shared) and sub-loop unbundling (including access to duct and dark fibre).

In relation to BP20, none of the WLA participants have imposed functional separation. However, BP20 is considered a remedy of last resort. The UK NRA accepted a voluntary undertaking of functional separation by the SMP operator.

4.2.2. WBA market

Since the revised CP has been in place the WBA market has been reviewed by 10 NRAs ('the WBA participants'). Table 13 summarises the best practice remedies that have been imposed for each of the WBA participants.⁶

In Malta the WBA market was deregulated in 2008 and therefore no regulatory remedies are imposed.

In the Netherlands and Austria, the WBA market is deregulated for residential users but not for the business segment (and therefore the information below relates to the best practice obligations imposed in the business segment only).

Table 13: Best practice remedies imposed by WBA participants

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
BP11	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓
BP12	✓	✓	n/a	✓	n/a	✗	n/a	✓	✓	n/a
BP13	✓	✓	✗	✓	✓	✗	n/a	✓	✓	✓
EOI, EOO, or both	EOO	EOO	✗	EOO	Both		n/a	EOO	EOO	EOI
BP14	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

In relation to BP12, the Latvia NRA does not provide clarification on the interpretation obligation a case-by-case basis but does so under its relevant rules, as explained above in relation to the WLA market. At this stage it has not implemented either EOO or EOI since the costs are considered too high.

In relation to BP13, the Ireland NRA requires the SMP operator to provide the ordering, provisioning and repair of NGA bitstream services on an EOI basis. All other services in the WBA market must be provided, at a minimum, on an EOO basis.

In relation to BP14, none of the WLA participants have imposed functional separation. However, BP14 is considered a remedy of last resort.

⁶ Although not included in the WBA participants, the Italy NRA imposes EOO requirements in relation to the WBA market and has accepted a voluntary undertaking of functional separation by the SMP operator. The Slovenia NRA is also not included in the WBA participants, however, in 2011 it imposed EOI requirements on the SMP operator in relation to copper-based and NGA-based bitstream access.

4.2.3. WLL market

Since the revised CP has been in place the WLL market has been reviewed by 6 NRAs ('the WLL participants'). Table 14 summarises the best practice remedies that have been imposed for each of the WLL participants.

Table 14: Best practice remedies imposed by WLL participants

	Belgium	Greece	Ireland	Spain	Sweden	UK
BP8	✓	✓	✓	✓	✓	✓
BP9	n/a	n/a	✓	✓	n/a	✓
BP10	✓	✓	✓	✓	×	✓
EOI, EOO, or both	EOO	EOO	EOO	EOO	×	Both
BP11	n/a	n/a	n/a	n/a	n/a	[✓]

In relation to BP9, the Sweden NRA has not provided further clarification regarding the interpretation of the non-discrimination since no relevant cases have emerged.

In relation to BP11, none of the WLA participants have imposed functional separation. However, BP11 is considered a remedy of last resort. The UK NRA accepted a voluntary undertaking of functional separation by the incumbent operator.⁷

5. Competition objective 4: Avoidance of unjustified first mover advantage

5.1. Background

The BEREC Common Position refers to the competition issues of SMP operators having an incentive to discriminate in favour of their own downstream arms (and thereby having an unjustified first mover advantage in downstream markets); the risk of SMP operators commissioning new infrastructure that alternative operators are not able to use (and thereby not allowing all market players the same opportunity to compete for new business in downstream markets); and SMP operators denying access to information relevant for other operators roll-out of NGA.

⁷ Although not a WLL participant, the Italy NRA imposes EOO requirements on the SMP operator in the WLL market and has accepted a voluntary undertaking of functional separation by the SMP operator.

The competition issues identified by BEREC are addressed by the Best Practices 21-25 in the WLA Common Position; Best Practices 15-20 in the WBA Common Position; and Best Practices 12-15 in the WLL Common Position. These can be summarised as follows:

Table 15: Best practice remedies

Description of best practice remedy	WLA	WBA	WLL
NRAs should put in place a regime that ensures the technical and economic replicability of the new downstream services introduced by SMP players	BP21	BP15	BP12
Where SMP operators need to supply a new wholesale product, NRAs should impose an obligation on SMP operators regarding the timely availability of information according to lead times	BP22	BP16	BP13
In relation to NGA 6 months might be reasonable	n/a	BP17	n/a
NRAs should ensure that alternative operators have the ability to influence the decisions regarding the characteristics of the new wholesale product	BP23	BP18	BP14
Where relevant, NRAs should impose a requirement in relation to lead times regarding the removal of existing wholesale inputs	BP24	BP19	BP15
Information on an SMPs newly rolled out NGA network should be available (a) well in advance and on a non-discriminatory basis; and (b) periodically updated if necessary	BP25	BP20	n/a

5.2. Analysis by best practice

5.2.1. WLA market

Since the revised CP has been in place the WLA market has been reviewed by 10 NRAs ('the WLA participants'). Table 16 summarises the best practice remedies that have been imposed for each of the WLA participants.

Table 16: Best practice remedies imposed by WLA participants

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
BP21	✓	✓	✓	✗	✓	✗	✓	✓	✓	✓
BP22	✓	✓	✓	✗	✓	✗	✗	✓	✓	✓
BP23	✗	✓	✓	✓	✓	✗	✗	✗	✓	✓
BP24	n/a	✓	✓	✗	✓	✓	✗	✓	✓	✓
BP25 (a)	✓	✓	✓	✗	✓	✓	✗	✓	✓	✓
BP25 (b)	✓	[✓]	✗	[✓]	✓	✓	✓	✓	✓	✗

In relation to BP21, the Latvia NRA stated that it did not impose a requirement on the SMP operator to ensure the technical and economic replicability of new downstream services since it considered there was the presence of infrastructure competition with both the SMP operator and alternative operators investing in NGA networks.

In Malta VULA obligations are currently being developed with the SMP operator and their details are not yet available.

In relation to BP23, the Norway NRA indicated that the SMP operator has to negotiate with alternative operators regarding the technical characteristics and terms and conditions of new wholesale services and interfaces. The Austria NRA explained that the introduction of new or adapted wholesale products mainly results from the non-discrimination obligation.

In relation to BP24, the Austria NRA explained that it had not imposed lead times for removing wholesale products since the SMP operator was not allowed to remove products it was obliged to provide.

In relation to BP25(a), the Malta NRA and the Estonia NRA did not require the information on the SMP operator(s)' 'newly' rolled-out NGA network to be made available on a non-discriminatory basis. In Malta the information is only available to the NRA. The Estonia NRA considered the obligation unnecessary. In relation to BP25(b), the UK NRA explained that although it did not specifically require the information to be periodically updated, where this information is updated it must be provided to other operators at the same time it is provided to its the SMP operators own downstream divisions. Where it relates to technical information it must be provided 90 days in advance and for the reference offer the notification periods is 28 days.

5.2.2. WBA market

Since the revised CP has been in place the WBA market has been reviewed by 10 NRAs ('the WBA participants'). Table 17 summarises the best practice remedies that have been imposed for each of the WBA participants.

In Malta the WBA market was deregulated in 2008 and therefore no regulatory remedies are imposed.

In the Netherlands and Austria, the WBA market is deregulated for residential users but not for the business segment (and therefore the information below relates to the best practice obligations imposed in the business segment only).

Table 17: Best practice remedies imposed by WBA participants

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
BP15	✓	✓	✓	✗	✓	✗	n/a	✓	✓	✓
BP16	✓	✗	✓	✗	✓	✗	n/a	✓	✓	✓
BP17	✓	[✓]	✗	✗	✓	✗	n/a	✓	✓	✗
BP18	✗	✓	✓	✗	✓	✗	n/a	✗	✓	✓
BP19	n/a	✓	✓	✗	✗	✓	n/a	✗	✓	✗
BP20(a)	✓	✓	✓	✗	✓	✓	n/a	✓	✓	✗
BP20(b)	✓	[✓]	✗	✗	✓	✓	n/a	✓	✓	✗

The Estonia NRA responded that it had not imposed any of BP15 – BP20 in the WBA market, explaining that these are considered unnecessary to implement individually because of other remedies that have been imposed, namely cost oriented prices and a non-discrimination obligation. These remedies have provided sufficient protection against potential distortions to competition and no complaints have been received regarding these issues.

In relation to BP15, the Latvia NRA stated that it did not impose a requirement on the SMP operator to ensure the technical and economic replicability of new downstream services since it considered there was the presence of infrastructure competition with both the SMP operator and alternative operators investing in NGA networks.

In relation to BP17, the Austria, Ireland, Netherlands and Norway NRAs set lead times around the availability of information in relation to new NGA products. Ireland NRA requires a 6 month lead time to provide information on a new wholesale product and the Norway NRA requires a 9 month lead time. Where other NRAs impose lead times, these are generally for shorter periods (up to 90 days). In Croatia, the NRA has not set a lead time in relation to information for new wholesale products. However, where the SMP operator is introducing a new wholesale product it is required to amend the Reference Offer and the NRA sets the lead time under which changes can be made to the Reference Offer.

In relation to BP18, the Austria NRA explained that the introduction of new or adapted wholesale products mainly results from the non-discrimination obligation.

In relation to BP19, although the UK NRA did not impose any specific remedy in relation to the notice period for the SMP operator to remove wholesale products, it noted that the SMP operator already provided significant notice periods regarding the removal of regulated and non-regulated products. The Croatia and Ireland NRAs explained that there were general obligations that prevented the removal of wholesale products (without the NRAs approval). The Austria NRA explained that it had not imposed lead times for removing wholesale products since the SMP operator was not allowed to remove products it was obliged to provide.

In relation to BP20(a) and BP20(b), the UK NRA explained that this was mainly relevant to VULA, which was largely addressed as part of remedies in the WLA market.

5.2.3. WLL market

Since the revised CP has been in place the WLL market has been reviewed by 6 NRAs ('the WLL participants'). Table 18 summarises the best practice remedies that have been imposed for each of the WLL participants.

Table 18: Best practice remedies imposed by WLL participants

	Belgium	Greece	Ireland	Spain	Sweden	UK
BP12	✓	✓/✗	✓	✓	n/a	✓
BP13	✓	✗	✓	✓	✓	✓
BP14	✓	✓	✓	✓	✗	✓
BP15	✓	✗	✓	✓	✓	✓

In relation to BP12, the Greece NRA only imposes a remedy requiring technical replicability. Economic replicability is not considered necessary since low capacity WLL markets are shrinking, high capacity WLL markets are become increasingly competitive and no complaints have emerged. The Sweden NRA indicated that BP12 is not applicable, since leased lines are provided according to international technical standards (SDH, Ethernet).

In relation to BP13, the Greece NRA has not imposed specific lead times regarding the introduction of new wholesale products since this is fulfilled through an update of the Reference Offer under which lead times are determined on a case-by-case basis depending on the requirements.

In relation to BP14, the Sweden NRA does not consider this necessary, since technical characteristics are based on internationally approved standards and interfaces.

In relation to BP15, the Greece NRA did not consider whether specific regulation was needed relating to the lead times for removing wholesale products because there has not been any product withdrawal.

6. Competition objective 5: Transparency

6.1. Background

The BEREC Common Position refers to the competition issues of SMP operators not providing sufficient clarity or transparency on the terms and conditions of access; SMP operators delaying the provision of a Reference Offer (RO) to alternative operators, SMP operators not taking into account the views of wholesale customers when developing the RO; and SMP operators having preferential access to key information compared to alternative operators.

The competition issues identified by BEREC are addressed by the Best Practices 26-28 in the WLA Common Position; Best Practices 21-22 in the WBA Common Position; and Best Practices 16-17 in the WLL Common Position. These can be summarised as follows:

Table 19: Best practice remedies

Description of best practice remedy	WLA	WBA	WLL
NRAs should require SMP operators to provide clarity of terms and conditions by publishing a RO. The key element of which should be specified or approved by the NRA	BP26	BP21	BP16
NRAs should require SMP operators to take account any reasonable views of wholesale customers in their RO	BP26a	BP21a	BP16a
NRAs should require SMP operators to publish RO within a reasonable time of access being granted	BP26b	BP21b	BP16b
NRAs should require SMP operators to update the RO as necessary in a timely manner	BP26c	BP21c	BP16c
Where applicable, NRAs should impose an obligation on SMP operators in relation to the minimum amount of information to be made available in the RO	BP26d	BP21d	BP16d
After lifting an obligation on the RO, NRAs should ensure that SMP operators provide provisions for the change in the contractual conditions on the basis of that RO	BP26e	BP21e	BP16e
NRAs should require SMP operators to make certain information available to all operators within a reasonable period of time i.e. KPIs, planned changes to infrastructure	BP27	BP22	BP17
NRAs should consider setting up a civil infrastructure database containing information of all ducts of the SMP operator	BP28	n/a	n/a

6.2. Analysis by best practice

6.2.1. WLA market

Since the revised CP has been in place the WLA market has been reviewed by 10 NRAs ('the WLA participants'). Table 20 summarises the best practice remedies that have been imposed for each of the WLA participants.

Table 20: Best practice remedies imposed by WLA participants

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
BP26	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP26a	x	✓	✓	x	x	✓	x	✓	✓	x
BP26b	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP26c	✓	✓	✓	x	✓	✓	✓	✓	✓	✓
BP26d	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP26e	✓	x	x	✓	x	x	x	x	x	x
BP27	✓	✓	✓	✓	✓	✓	x	✓	✓	✓
BP28	x	✓	✓	x	x	✓	x	x	x	x

In relation to BP26a, Austria, Estonia, Ireland, Malta and the UK NRAs do not specifically require SMP operators to take account of the views of wholesale customers in their RO. The Austria NRA considers that such a requirement would not be considered to be sufficiently precise to guarantee legal certainty.⁸ The Ireland NRA explains that this is addressed through the wholesale customer being able to make a request for access at any time. The UK NRA explains that the SMP operator has a regulatory obligation to notify other operators of changes to the reference offer (any such changes amount to a contract variation). The non-discrimination obligations also provide additional protection for operators against discriminatory changes to RO terms.

In relation to BP26e, with the exception of the Austria and Estonia NRAs, NRAs have not imposed a condition since they have not removed any obligations in relation to a RO.

In relation to BP27, the Malta NRA considers that most information is of a commercially sensitive nature and that certain technical information is only supplied to alternative operators under non-disclosure agreements.

In relation to BP28, only the Croatia, Cyprus and Latvia NRAs have required the SMP operator to set up a civil infrastructure database containing information relating to all ducts.

The UK NRA explained that it had not implemented BP28 since given the lack of evidence of the likely future material use of physical infrastructure access, it did not consider it proportionate to impose requirements on the SMP operator to publish more information.

In relation to BP28, the Austria NRA explained that the availability of ducts (and dark fibre) is determined on demand. However, the level of sub-loop unbundling is low (and as a result the demand for access to ducts and dark fibre for backhaul from street cabinets is also low) and therefore a requirement to provide a civil infrastructure database is considered unnecessary.

⁸ According to a decision by national courts, official notifications have to be sufficiently precise for the affected undertakings to follow them without further guidance. An obligation to consider views of wholesale customers in the ROs was not eligible to fulfil that condition.

6.2.2. WBA market

Since the revised CP has been in place the WBA market has been reviewed by 10 NRAs ('the WBA participants'). Table 21 summarises the best practice remedies that have been imposed for each of the WBA participants.

In Malta the WBA market was deregulated in 2008 and therefore no regulatory remedies are imposed.

In the Netherlands and Austria, the WBA market is deregulated for residential users but not for the business segment (and therefore the information below relates to the best practice obligations imposed in the business segment only).

Table 21: Best practice remedies imposed by WBA participants

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
BP21	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓
BP21a	✗	✓	✓	✓	✓	✗	n/a	✓	✓	✓
BP21b	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓
BP21c	✓	✓	✓	✗	✓	✓	n/a	✓	✓	✓
BP21d	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓
BP21e	✓	✗	✗	✓	✗	✗	n/a	✗	✗	✗
BP22	✓	✓	✓	✗	✓	✓	n/a	✓	✓	✓

In relation to BP21a, the Austria NRA considers that such a requirement would not be sufficiently precise to guarantee legal certainty. The Latvia NRA explained that alternative operators have an opportunity to comment during a national consultation on draft rules on terms and conditions to be included in the RO.

In relation to BP21e, with the exception of the Austria and Estonia NRAs, NRAs have not imposed a condition since they have not removed any obligations in relation to a RO.

6.2.3. WLL market

Since the revised CP has been in place the WLL market has been reviewed by 6 NRAs ('the WLL participants'). Table 22 summarises the best practice remedies that have been imposed for each of the WLL participants.

Table 22: Best practice remedies imposed by WLL participants

	Belgium	Greece	Ireland	Spain	Sweden	UK
BP16	✓	✓	✓	✓	✗	✓

	Belgium	Greece	Ireland	Spain	Sweden	UK
BP16a	✓	✓	✓	✓	n/a	*
BP16b	✓	✓	✓	✓	n/a	✓
BP16c	✓	✓	✓	✓	n/a	✓
BP16d	✓	✓	✓	✓	✓	✓
BP16e	✓	*	*	✓	*	*
BP17	✓	✓	*	✓	✓	✓

In relation to BP16, the Sweden NRA does not impose a requirement to publish a RO, but does require all information to be publically available. Therefore, BP16a, BP16b and BP16c are not applicable to Sweden.

In relation to BP16a, the UK NRA requires the SMP operator to notify other operators of changes to the RO. Any such change amounts to a contract variation with the other operators and can only be implemented by agreement. In cases of disagreement, operators can use the formal disputes process. The non-discrimination obligations also provide additional protection for operators against discriminatory changes to the RO terms.

In relation to BP16e, with the exception of the Belgium and Spain NRAs, NRAs have not imposed a condition since they have not removed any obligations in relation to a RO.

In relation to BP17, the Ireland NRA does not set specific timescales regarding the provision of information to operators.

7. Competition objective 6: Reasonable quality of access products - technical issues

7.1. Background

The BEREC Common Position refers to the competition issues of SMP operators restricting the usage of services in the relevant markets; not providing access products of reasonable quality; arbitrarily limiting forms of access; or providing forms of access that are over specified.

The competition issues identified by BEREC are addressed by the Best Practices 29-31 in the WLA Common Position; Best Practices 23-24 in the WBA Common Position; and Best Practices 18-21 in the WLL Common Position. These can be summarised as follows:

Table 23: Best practice remedies

Description of best practice remedy	WLA	WBA	WLL
NRAs should choose appropriate measures of control including: (a) An obligation to publish RO; and (b) obligation to meet all reasonable requests and which is periodically reviewed by NRA	BP29	BP23	n/a
NRAs should ensure that detailed information about the characteristics of the access product are available to alternative operators (including which technologies are allowed at each site)	BP30	BP24	n/a
NRAs should ensure that rules are in place to prevent mutual interference of signals	BP31	n/a	n/a
NRAs should require that SMP operators provide a RO which includes relevant technical information	n/a	n/a	BP18
NRAs should encourage SMP operators to adhere to European or global technical standards (where feasible)	n/a	n/a	BP19
NRAs should require the interconnection of leased lines is possible at a wide range of convenient locations	n/a	n/a	BP20
For wholesale leased line services that exclude trunk segments, NRAs should ensure that end-to-end wholesale leased lines are available in circumstances where interconnecting lines would be technically infeasible or uneconomic	n/a	n/a	BP21

7.2. Analysis by best practice

7.2.1. WLA market

Since the revised CP has been in place the WLA market has been reviewed by 10 NRAs ('the WLA participants'). Table 24 summarises the best practice remedies that have been imposed for each of the WLA participants.

Table 24: Best practice remedies imposed by WLA participants

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
BP29	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP29: RO reviewed?	✓	✓	✓	x	x	✓	✓	x	✓	✓
BP30	✓	✓	✓	✓	x	✓	✓	✓	✓	✓
BP31	✓	✓	✓	x	✓	✓	✓	✓	✓	✓

In relation to BP29, the Ireland NRA does not have a formal process for reviewing the RO. The NRAs that have a review process either undertake this as part of the market review process (the UK); periodically as the RO is revised (Austria, Cyprus); at least on an annual

basis (Croatia); on an annual basis or when there are major changes (Malta); or whenever changes are made to the RO (Norway).

In relation to BP30, the Ireland NRA has imposed a general obligation requiring the SMP operator to include a "Description of the technical specifications and the network characteristics of the access being offered" in the RO for transparency.

7.2.2. WBA market

Since the revised CP has been in place the WBA market has been reviewed by 10 NRAs ('the WBA participants'). Table 25 summarises the best practice remedies that have been imposed for each of the WBA participants.

In Malta the WBA market was deregulated in 2008 and therefore no regulatory remedies are imposed.

In the Netherlands and Austria, the WBA market is deregulated for residential users but not for the business segment (and therefore the information below relates to the best practice obligations imposed in the business segment only).

Table 25: Best practice remedies imposed by WBA participants

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
BP23	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓
BP23: RO Reviewed?	✓	✓	✓	✓	✓	✓	n/a	*	✓	✓
BP24	✓	✓	✓	*	✓	✓	n/a	*	✓	*

In relation to BP24, although the Austria, Croatia, Cyprus, Ireland, Latvia and Norway NRAs require that information regarding the technical characteristics of the product is provided to alternative operators the type (and extent) of information provided is not uniform across the NRAs.

7.2.3. WLL market

Since the revised CP has been in place the WLL market has been reviewed by 6 NRAs ('the WLL participants'). Table 26 summarises the best practice remedies that have been imposed for each of the WLL participants.

Table 26: Best practice remedies imposed by WLL participants

	Belgium	Greece	Ireland	Spain	Sweden	UK
BP18	✓	✓	✓	✓	*	✓

BP19	x	✓	x	✓	x	✓
BP20	✓	✓	✓	✓	✓	✓
BP21	✓	✓	x	✓	x	✓

In relation to BP18, the Sweden NRA does not require that the SMP operator provides a RO which includes relevant technical information. However, it does require that all information is made public.

In relation to BP19, the Belgium, Ireland and Sweden NRAs do not include a requirement that operators adhere to European or global technical standards since this is considered unnecessary (and/or reflects technical standards being negotiated between industry players).

In relation to BP21, the Ireland NRA does not impose a requirement that end-to-end wholesale leased lines are available in circumstances where interconnecting lines would be technically infeasible or uneconomic since these are generally not purchased in the market. The Sweden NRA considers this requirement unnecessary and notes that no such problems have arisen in the market.

8. Competition objective 7: Reasonable quality of access products – operational aspects

8.1. Background

The BEREC Common Position refers to the competition issue of SMP operators having an incentive to discriminate in favour of their own downstream operations in relation to the quality of wholesale access products.

The competition issues identified by BEREC are addressed by the Best Practices 32-34 in the WLA Common Position; Best Practices 25-27 in the WBA Common Position; and Best Practices 22-24 in the WLL Common Position. These can be summarised as follows:

Table 27: Best practice remedies

Description of best practice remedy	WLA	WBA	WLL
NRAs should require SMP operators to provide a reasonable defined level of service	BP32	BP25	BP22
SLAs should cover specific areas	BP32a	BP25a	BP22a
SLAs should be made available to wholesale operators	BP32b	BP25b	BP22b
NRAs should take oversight for the process of setting SLAs	BP32c	BP25c	BP22c
SLAs should take into account differences in customer requirements	BP32d	BP25d	BP22d
NRAs should impose a requirement on SMP operators to provide SLGs	BP33	BP26	BP23
SLGs should cover all necessary specific areas	BP33a	BP26a	BP23a
SLG payments should be made without undue delay (with a pre-established process for payment and billing)	BP33b	BP26b	BP23b
NRAs should take oversight for the process of setting SLGs	BP33c	BP26c	BP23c

Description of best practice remedy	WLA	WBA	WLL
SLGs should be made available to all alternative operators (irrespective of the size of purchases)	BP33d	BP26d	BP23d
NRAs should impose a generic requirement on SMP operators to provide KPIs as a means of monitoring non-discrimination and compliance obligations	BP34	BP27	BP24
KPIs should cover all necessary specific areas	BP34a	BP27a	BP24a
The results of monitoring KPIs should be made available to all operators in the market	BP34b	BP27b	BP24b
NRAs should take oversight for the process of setting KPIs	BP34c	BP27c	BP24c

8.2. Analysis by best practice

8.2.1. WLA market

Since the revised CP has been in place the WLA market has been reviewed by 10 NRAs ('the WLA participants'). Table 28 summarises the best practice remedies that have been imposed for each of the WLA participants.

Table 28: Best practice remedies imposed by WLA participants

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
<i>Requirement for SLAs</i>										
BP32	✓	✓	✓	✓	✓	✓	✓	✓	✓	*/✓
BP32a	✓	✓	✓	✓	✓	x	✓	✓	✓	✓
BP32b	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP32c	✓	✓	✓	✓	x	✓	✓	✓	✓	✓
BP32d	✓	✓	x	✓	✓	x	x	✓	x	x
<i>Requirement for SLGs</i>										
BP33	✓	✓	✓	x	✓	x	x	✓	✓	✓
BP33a	✓	✓	✓	x	✓	x	x	✓	✓	✓
BP33b	✓	✓	✓	x	✓	x	x	x	✓	✓
BP33c	✓	✓	✓	x	✓	x	x	✓	✓	✓
BP33d	✓	✓	✓	x	✓	x	x	✓	✓	✓
<i>Requirement for KPIs</i>										
BP34	✓	✓	✓	[✓]	✓	✓	[✓]	✓	✓	✓
BP34a	✓	✓	✓	x	✓	✓	x	✓	✓	✓
BP34b	✓	✓	✓	x	✓	✓	x	x	✓	✓

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
BP34c	✓	✓	✓	x	✓	x/✓	x	✓	✓	✓

In relation to BP32, the UK NRA does not define “a reasonable level of service”, rather the requirement is on the SMP operator to negotiate and agree this with alternative operators. However, the UK NRA has imposed minimum QoS standards on WLR and LLU products provisioning and repair.

In relation to BP32a, the Latvia NRA does not define the specific areas that SLAs should cover. The SMP operator is responsible for defining the set of SLAs.

In relation to BP32c, although the Ireland NRA does not oversee the process of setting SLAs, it explains that the SMP operator is required to complete a legally binding SLA (and the NRA can intervene if necessary).

In relation to BP33 and BP33 (a)-(d), the Latvia NRA did not consider it appropriate to impose SLGs whilst operators were continuing to invest in NGA. The Malta NRA has not imposed a requirement relating to SLGs since there is a lack of demand for LLU/SLU.

In relation to BP34, the Estonia NRA does not impose a requirement for KPIs since these are not considered cost effective. The Malta NRA has not imposed a requirement relating to KPIs since there is a lack of demand for LLU/SLU.

In relation to BP34c, the Latvia NRA responded that it did not oversee the process of setting KPIs since the particular requirement had not come in to force at the time of responding to the questionnaire.

8.2.2. WBA market

Since the revised CP has been in place the WBA market has been reviewed by 10 NRAs ('the WBA participants'). Table 29 summarises the best practice remedies that have been imposed for each of the WBA participants.

In Malta the WBA market was deregulated in 2008 and therefore no regulatory remedies are imposed.

In the Netherlands and Austria, the WBA market is deregulated for residential users but not for the business segment (and therefore the information below relates to the best practice obligations imposed in the business segment only).

Table 29: Best practice remedies imposed by WBA participants

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
<i>Requirement for SLAs</i>										
BP25	✓	✓	✓	✓	✓	✗	n/a	✓	✓	✓
BP25a	✓	✓	✓	✓	✓	✗	n/a	✓	✓	✓
BP25b	✓	✓	✓	✓	✓	✗	n/a	✓	✓	✓
BP25c	✓	✓	✓	✓	✓	✗	n/a	✓	✓	✗
BP25d	✓	✓	✗	✓	✗	✗	n/a	✓	✗	✓
<i>Requirement for SLGs</i>										
BP26	✓	✓	✓	✗	✓	✗	n/a	✓	✓	✓
BP26a	✓	✓	✓	✗	✓	✗	n/a	✓	✓	✓
BP26b	✓	✓	✓	✗	✓	✗	n/a	✗	✓	✗
BP26c	✓	✓	✓	✗	✓	✗	n/a	✓	✓	✓
BP26d	✓	✓	✓	✗	✓	✗	n/a	✓	✓	✓
<i>Requirement for KPIs</i>										
BP27	✓	✓	✓	✗	✓	✗	n/a	✓	✓	✗
BP27a	✓	✓	✓	✗	✓	✗	n/a	✓	✓	✗
BP27b	✓	✓	✓	✗	✓	✗	n/a	✓	✓	✗
BP27c	✓	✓	✓	✗	✓	✗	n/a	✓	✓	✗

In relation to BP25, BP26 and BP27, the Latvia NRA does not impose any requirements. However, the SMP operator may define levels of service on its own initiative. At the stage when both the incumbent and alternative operators continue to invest into NGA, it does not consider that imposing SLGs or KPIs is appropriate.

In relation to BP25c, the UK NRA considers that the publication of SLAs in the RO provides sufficient oversight without a specific requirement.

In relation to BP26c, although the UK NRA imposes no requirement to include SLGs in the RO this is not considered to be an issue.

In relation to BP27 and BP27 (a)-(c), the UK NRA has not imposed a requirement on the SMP operator to provide KPIs since the SMP operator provides these voluntarily.

8.2.3. WLL market

Since the revised CP has been in place the WLL market has been reviewed by 6 NRAs ('the WLL participants'). Table 30 summarises the best practice remedies that have been imposed for each of the WLL participants.

Table 30: Best practice remedies imposed by WLL participants

	Belgium	Greece	Ireland	Spain	Sweden	UK
<i>Requirement for SLAs</i>						
BP22	✓	✓	✓	✓	x	✓
BP22a	✓	✓	✓	✓	x	✓
BP22b	✓	✓	✓	✓	x	✓
BP22c	✓	✓	✓	✓	x	✓
BP22d	✓	x	x	✓	x	x
<i>Requirement for SLGs</i>						
BP23	✓	✓	✓	✓	x	✓
BP23a	✓	✓	✓	✓	x	✓
BP23b	x	✓	✓	✓	x	✓
BP23c	✓	✓	✓	✓	x	✓
BP23d	✓	✓	✓	✓	x	✓
<i>Requirement for KPIs</i>						
BP24	✓	✓	✓	✓	[✓]	x
BP24a	✓	✓	✓	✓	x	x
BP24b	✓	✓	✓	✓	x	x
BP24c	✓	✓	✓	✓	x	x

In Sweden, the SMP-operator has provided relevant SLAs and SLGs for at least 15 years. In relation to BPs 22 – 24, the Sweden NRA considers a non-discrimination remedy sufficient.

In relation to BP 22d, there is no demand for differentiated SLAs in Spain as the SLA included in the reference offer, developed under the supervision and final approval by the NRA, have been set at the highest standard. Nonetheless, the Leased Lines Reference Offer clarifies that the SMP operator is obliged to address reasonable requests for stricter or specific requirements on SLAs made by any alternative operator. In relation to BP23b, the Belgium NRA does not impose a requirement that SLG payments should be made without undue delay (with a pre-established process for payment and billing). However, penalties are a right for customers.

In relation to BP24, although the UK NRA has imposed an obligation for the SMP operator to publish information about quality of service it has not exercised this since the SMP operator has shared quality of service information with operators voluntarily. In relation to BP24(c) the UK NRA does not have oversight of the process for setting KPIs since the market circumstances did not cause particular concerns for discriminatory behaviour. In relation to BP24, the Sweden NRA explained that in conformity with the best practice it had not imposed an obligation since this was considered unnecessary and would not be cost effective.

9. Competition objective 8: Assurance of efficient and convenient wholesale switching

9.1. Background

The BEREC Common Position identifies the competition issue of SMP operators having an incentive to discriminate in favour of their own downstream operations which may result in wholesale customers being unable to switch wholesale products and/or wholesale providers without the minimum delay or disruption.

The competition issues identified by BEREC are addressed by the Best Practice 35 in the WLA Common Position; Best Practice 28 in the WBA Common Position; and Best Practice 25 in the WLL Common Position. These can be summarised as follows:

Table 31: Best practice remedies

Description of best practice remedy	WLA	WBA	WLL
NRAs should impose obligations to ensure that wholesale switching processes are speedy and efficient	BP35	BP28	BP25
NRAs should require that the maximum allowed downtime during wholesale switching is the lowest possible	BP35a	BP28a	BP25a
NRAs should require that the price of the switch does not act as a barrier to switching	BP35b	BP28b	BP25b
Where necessary, NRAs should put in place measures to facilitate bulk wholesale switching process and ensure these are non-discriminatory	BP35c	BP28c	BP25c
NRAs should require that the transaction time required to process wholesale switching is as low as possible	BP35d	BP28d	BP25d
NRAs should require SMP players to introduce SLAs/SLGs and KPIs to ensure the efficiency of the switching process	BP35e	BP28e	BP25e

9.2. Analysis by best practice

9.2.1. WLA market

Since the revised CP has been in place the WLA market has been reviewed by 10 NRAs ('the WLA participants'). Table 32 summarises the best practice remedies that have been imposed for each of the WLA participants.

Table 32: Best practice remedies imposed by WLA participants

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
BP35	✓	✓	✓	x	✓	✓	✓	✓	✓	✓
BP35a	✓	✓	✓	x	x	✓	x	✓	✓	✓
BP35b	✓	✓	✓	x	✓	✓	✓	✓	✓	✓
BP35c	✓	[✓]	✓	[✓]	✓	✓	[✓]	[✓]	[✓]	✓
BP35d	x	✓	✓	x	x	x	✓	✓	✓	✓
BP35e	[✓]	✓	[✓]	[✓]	[✓]	[✓]	[✓]	✓	[✓]	✓

The Estonia NRA does not impose any obligations to ensure wholesale switching since these are considered unnecessary and not cost effective.

Where NRAs did not impose specific BPs (a) to (e) this was typically because these were considered unnecessary.

In relation to BP35(d) the Latvia NRA stated that the requirement is in line with the current NGA recommendation. The Austria NRA explained that there is no general obligation, but a process is defined for switching between LLU and VULA.

9.2.2. WBA market

Since the revised CP has been in place the WBA market has been reviewed by 10 NRAs ('the WBA participants'). Table 33 summarises the best practice remedies that have been imposed for each of the WBA participants.

In Malta the WBA market was deregulated in 2008 and therefore no regulatory remedies are imposed.

In the Netherlands and Austria, the WBA market is deregulated for residential users but not for the business segment (and therefore the information below relates to the best practice obligations imposed in the business segment only).

Table 33: Best practice remedies imposed by WBA participants

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
BP28	✓	✓	✓	n/a	✓	✓	n/a	✓	✓	✗
BP28a	✓	✓	✓	n/a	✗	✓	n/a	✓	✓	✗
BP28b	✓	✓	✓	n/a	✓	✓	n/a	✓	✓	✗
BP28c	[✓]	[✓]	✓	n/a	✓	✓	n/a	✓	[✓]	✗
BP28d	✗	✓	✓	n/a	✓	✗	n/a	✓	✓	✗
BP28e	✓	✓	[✓]	n/a	✓	[✓]	n/a	✓	[✓]	✗

The Estonia NRA responded that all BPs were not applicable but did not give any further detail explaining why this is the case. The UK NRA explained that it does not impose any remedies relating to wholesale switching in the WBA market because switching between wholesale suppliers has not been a feature of the WBA market. To the extent it does occur, it relies on switching and migration processes in the upstream LLU market.

In relation to BP28a, the Ireland NRA does not impose a requirement relating to the maximum allowed downtime during wholesale switching since the SLA is negotiated by the industry.

In relation to BP28(d) the Latvia NRA stated that the requirement is in line with the current NGA recommendation. The Austria NRA explained that maximum process times are defined for different switching processes.

For all other responses where NRAs did not impose specific BPs (a) to (e) this was typically because these were considered unnecessary.

9.2.3. WLL market

Since the revised CP has been in place the WLL market has been reviewed by 6 NRAs ('the WLL participants'). Table 34 summarises the best practice remedies that have been imposed for each of the WLL participants.

Table 34: Best practice remedies imposed by WLL participants

	Belgium	Greece	Ireland	Spain	Sweden	UK
BP25	✗	✓	✗	✓	✗	✗
BP25a	✗	✗	✗	✓	✗	✗
BP25b	✗	✓	✗	✓	✗	✓
BP25c	[✓]	[✓]	✗	[✓]	✗	✗

	Belgium	Greece	Ireland	Spain	Sweden	UK
BP25d	x	x	x	✓	x	x
BP25e	[✓]	[✓]	x	[✓]	x	x

In relation to BP25, only the Greece NRA and the Spain NRA imposed obligations to ensure a speedy and efficient wholesale switching process. Where either the Greece or Spain NRA did not impose the specific BPs (a) to (e) this was because they were not considered necessary (in the case of the Greece NRA it noted that businesses generally wish to avoid disruption when changing leased lines and therefore want the new leased line provided and tested before the old one is decommissioned).

In relation to BP25, the Belgium, Ireland and Sweden NRAs do not impose obligations to ensure a speedy and efficient wholesale process. The Belgium NRA explained that the end user needs to have the services of the ending contract operational in parallel with those of the starting contract before decommissioning the old one. It thus considers that switching is not relevant. The Ireland NRA explained that there is no obligation for switching of leased lines and no requests have been made by industry for such a process. In Sweden the NRA considers these obligations are not necessary for leased lines.

The UK NRA also does not impose obligations to ensure a speedy and efficient wholesale process. It explained that the demand for such switching/migration products is uncertain. Businesses generally wish to avoid disruption when changing leased lines and therefore want the new leased line provided and tested before the old one is decommissioned. It also noted that the SMP operator is subject to an obligation to provide network access on reasonable request and alternative operators can request migration products without further intervention by the NRA. Notwithstanding this, the NRA did impose a remedy to ensure that the pricing of switching (BP25(b)) did not act as a barrier to switching through a charge control.

10. Competition objective 9: Assurance of efficient migration processes from legacy to NGN/NGA network

10.1. Background

The BEREC Common Position identified the competition issue of SMP operators not providing migration procedures from legacy to NGN/NGA networks that enable competitors to provide retail services based on the new network to compete with the SMP operator.

The competition issues identified by BEREC are addressed by the Best Practices 36-40 in the WLA Common Position; Best Practices 29-33 in the WBA Common Position; and Best Practices 26-29 in the WLL Common Position. These can be summarised as follows:

Table 35: Best practice remedies

Description of best practice remedy	WLA	WBA	WLL
NRAs should require that switching procedures equally apply between legacy and NGN/NGA wholesale products	BP36	BP29	BP26
Where an SMP intends to decommission its legacy network the NRA should impose obligations in relation to the framework for migration; notice period and an obligation for incumbent to provide all relevant information	BP37	BP30	BP27
NRAs should require that existing obligations remain in place until migration path is agreed and finished	BP38	BP31	BP28
When imposing a notice period for phasing out a legacy network the NRA should consider the notice period is likely to be longer for locations; the availability of a full-fledged alternative; and reasonable migration period for a switch of wholesale products	BP39	BP32	BP29
A notice period of 5 years for decommissioning MDFs may be appropriate	BP40	n/a	n/a
The replacement network is active in adequate advance of the decommissioning of MDFs	n/a	BP33	n/a

10.2. Analysis by best practice

10.2.1. WLA market

Since the revised CP has been in place the WLA market has been reviewed by 10 NRAs ('the WLA participants'). Table 36 summarises the best practice remedies that have been imposed for each of the WLA participants.

Table 36: Best practice remedies imposed by WLA participants

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
BP36	✓	✓	✗	✓	✓	✓	✗	✓	✓	✗
BP37	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
BP38	✓	✗	✗	✗	✗	✓	✗	✓	✓	✗
BP39	✓	✗	✗	✗	✗	✓	✗	✓	✓	✗
BP40	✗	✗/✓	✗	✗	✗	✗	✗	✗	✗	✗

The UK NRA has not imposed obligations relating to BP36 – BP40 since there is no planned decommissioning of the legacy network in the UK at present.

In relation to BP36, the Cyprus and Malta NRAs do not impose switching procedures that apply equally between legacy and NGN/NGA wholesale products. In Malta this is because

there is a lack of demand for LLU and SLU (with VULA under consideration). In Cyprus, the SMP operators NGA topology is currently not known as it has yet to deploy an NGA network.

In relation to BP38, although the Ireland NRA has not imposed a requirement for existing obligations to remain in place until a certain migration path is agreed it stated that the SMP operator offers a wide range of migration paths to satisfy other operator's needs.

In relation to BP39, although the Malta NRA has considered the notice period relevant to phasing out a legacy network it reserves the right to set out conditions for migration if required. Similarly, although the Ireland NRA has not considered the issue, the withdrawal of access already granted requires the prior approval of the NRA.

In relation to BP40 the Croatia NRA has required a notice period for decommissioning MDFs of up to 5 years in some specified geographic areas. No other NRA has imposed a notice period of as long as 5 years in relation to decommissioning MDF. However, the Ireland NRA has proposed 5 years as part of a set of proposals. For those NRAs that have implemented a remedy, the notice period is a maximum of 3 years in Norway and 1 year in Latvia.

10.2.2. WBA market

Since the revised CP has been in place the WBA market has been reviewed by 10 NRAs ('the WBA participants'). Table 37 summarises the best practice remedies that have been imposed for each of the WBA participants.

In Malta the WBA market was deregulated in 2008 and therefore no regulatory remedies are imposed.

In the Netherlands and Austria, the WBA market is deregulated for residential users but not for the business segment (and therefore the information below relates to the best practice obligations imposed in the business segment only).

Table 37: Best practice remedies imposed by WBA participants

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
BP29	n/a	✓	✗	✓	✗	✓	n/a	✓	✓	✓
BP30	n/a	✓	✓	✓	✓	✓	n/a	✓	✓	✗
BP31	n/a	✗	✗	✗	✗	✓	n/a	✓	✓	✗
BP32	n/a	✗	✗	✓	✗	✓	n/a	✓	✓	✗
BP33	n/a	✗	✗	✗	✓	✓	n/a	✗	✓	✗

The Austria NRA does not impose any obligations relating to BP29-BP33 since there are no new wholesale products or changes (other than bandwidth increases) to the existing products which result from the migration to NGN/NGA.

In Cyprus the SMP operator has yet to deploy an NGA network. However, in relation to BP30 the Cyprus NRA has imposed obligations in relation to a framework for migration.

In relation to BP30, the UK NRA has not imposed any obligations around a framework for migration or notice periods for migration. However, under the Reference Offer, the SMP operator is required to provide details of the phase-out of legacy networks and in practice, the SMP operator has already been providing significant notice of the phase-out of IPstream services.

In relation to BP33, the UK NRA considered that the notice for decommissioning MDFs would be considered in the next market review for WLA. In Ireland, there is a general obligation not to withdraw facilities already granted without approval from the NRA.

10.2.3. WLL market

Since the revised CP has been in place the WLL market has been reviewed by 6 NRAs ('the WLL participants'). Table 38 summarises the best practice remedies that have been imposed for each of the WLL participants.

Table 38: Best practice remedies imposed by WLL participants

	Belgium	Greece	Ireland	Spain	Sweden	UK
BP26	x	x	x	✓	x	x
BP27	✓	✓	x	✓	x	✓
BP28	✓	x	x	✓	x	x
BP29	✓	x	x	✓	x	x

In relation to BP26-BP29, the Sweden NRA did not consider it necessary to impose any remedies relating to the migration processes from legacy to NGA/NGN networks in the WLL market. The Ireland NRA does not impose any obligations for switching from legacy to NGA network in the WLL market but explains that no requests have been lodged by the industry for such a process.

In relation to BP26, only the Spain NRA imposed a requirement that switching procedures apply equally between legacy and NGN/NGA wholesale products. All other NRAs considered it unnecessary. The UK NRA explained that demand for such switching/migration products is uncertain with businesses generally wishing to avoid disruption when changing leased lines and therefore want the new leased line provided and tested before the old one is decommissioned. Furthermore, in the UK, the SMP operator is subject to an obligation to provide network access on reasonable request, and operators can request migration products without further intervention by the NRA.

In relation to BP27, the Ireland NRA imposed a general requirement that the SMP operator must not withdraw access to facilities already offered without the permission of the NRA.

In relation to BP28, the UK NRA has not imposed an obligation that requires existing obligations to remain in place until a migration path is agreed and finished. However, it explained that it would be likely to maintain the SMP obligations in the legacy markets (also

noting that the SMP operator has not yet decommissioned its legacy network to any significant extent).

In relation to BP29, although the Greece and Ireland NRAs did not impose a specific requirement, a general obligation is imposed requiring the notification of all changes to SMP products (i.e. that is not limited to the phasing out of legacy products). The Ireland NRA also approves the withdrawal of wholesale products. The UK NRA has not imposed a specific notice period for phasing out of legacy networks as the obligation for the SMP operator to notify technical information is considered sufficient (there is accompanying guidance about notice periods for major changes).

11. Competition objective 10: Fair and coherent access pricing

11.1. Background

The BEREC Common Position identifies the risk of alternative operators in the market facing uncertainty as to the price of wholesale services in the relevant market with SMP operators creating arbitrage opportunities between different wholesale inputs that may dis-incentivise efficient investment by alternative operators. The Common Position also makes reference to SMP operators engaging in margin squeeze and engaging in predatory pricing.

The competition issues identified by BEREC are addressed by the Best Practices 41-59 in the WLA Common Position; Best Practices 34-50 in the WBA Common Position; and Best Practices 30-37 in the WLL Common Position. These can be summarised as follows:

Table 39: Best practice remedies

Description of best practice remedy	WLA	WBA	WLL
NRAs should ensure that with reasonable certainty the price of access will permit an efficient entrant to compete with the SMP operator	BP41	BP34	BP30
When determining pricing regulation, NRAs need to consider that it incentivises both efficient investment and sustainable competition	BP42	BP35	BP31
Where appropriate and proportionate, NRAs should require SMP operators to provide regulated products based on an explicit pricing obligation	BP43	BP36	BP32
NRAs should determine the costing methodology taking account of the prioritisation of regulatory objectives; and prevailing market conditions	BP44	BP37	BP33
When setting a cost oriented price control obligation, NRAs should consider the relevant costing methodology to be used for setting charges. This must allow the recovery of efficiently incurred costs and follow cost causality	BP45	BP38	BP34
Prices for services that are technically similar should be priced similarly	n/a	n/a	BP34a
Where prices are cost oriented, NRAs should impose obligations in relation to cost accounting and/or accounting separation	n/a	n/a	BP34b
The access price should send the correct economic signals i.e. should be competitively neutral;	BP46	BP39	n/a

Description of best practice remedy	WLA	WBA	WLL
NRAs should impose regulatory remedies that avoid excessive profitability	BP47	n/a	n/a
The effective price granted by the SMP operator should not be discriminatory	BP48	BP40	BP35
An ex ante pricing remedy may be unnecessary if there is no risk of excessive pricing due to strong indirect constraints or remedies imposed in markets 4 and 5 regarding EOI and a margin squeeze test	n/a	BP41	n/a
NRAs should put in place obligations preventing SMP operators engaging in margin squeeze	BP49	BP42	BP36
NRAs may need to take steps to ensure that the margin between upstream and downstream services is sufficient to facilitate investment (by alternative operators)	BP50	BP43	n/a
NGA WLA only: NRAs should ensure that the pricing of inputs to NGA access products is in line as the same products when used for legacy access products	BP51	n/a	n/a
NGA WLA/WBA only: NRAs should ensure that the pricing of NGA access products is consistent with the pricing of legacy access products to set efficient incentives to invest	BP52	BP44	n/a
NGA WLA only: Regarding duct access, the NRA may consider different cost allocation rules	BP53	n/a	n/a
NGA WLA/WBA only: The NRA should consider whether to separate the risk borne by the SMP operator in operating its NGA network from other services	BP54	BP45	n/a
NGA WLA/WBA only: Price differences should reflect differences in risk faced by the investor	BP55	BP46	n/a
NGA WLA/WBA only: When assessing long-term contracts NRAs should strike a balance between lowering the risk for the SMP operator and transferring the risk to other operators	BP56	BP47	n/a
NRAs should ensure that discounts are not discriminatory	BP57	BP48	BP37
NGA WLA/WBA only: The main objective of volume discounts is to increase penetration and lower unit costs	BP58	BP49	n/a
NGA WLA/WBA only: When considering volume discounts, NRAs should consider whether the threshold for minimum efficient scale may curtail competition and foreclose the market	BP59	BP50	n/a

11.2. Analysis by best practice

11.2.1. WLA market

Since the revised CP has been in place the WLA market has been reviewed by 10 NRAs ('the WLA participants'). Table 40 summarises the best practice remedies that have been imposed for each of the WLA participants.

Table 40: Best practice remedies imposed by WLA participants

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
BP41	✓	✓	✓	✓	✓	x	✓	✓	✓	✓
BP42	✓	✓	✓	✓	✓	n/a	✓	✓	✓	✓
BP43	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP44	✓	✓	✓	✓	✓	n/a	x	✓	✓	✓
BP45	✓	✓	✓	✓	✓	x	✓	✓	✓	✓
BP46	✓	✓	✓	x	✓	n/a	✓	✓	✓	✓
BP47	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP48	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BP49	✓	✓	✓	x	✓	✓	x	✓	✓	✓
BP50	✓	✓	✓	x	x	x	x	✓	✓	x
<i>BPs applicable to pricing of NGA WLA only</i>										
BP51	✓	✓	✓	✓	✓	x	x	✓	✓	x
BP52	✓	✓	x	✓	✓	x	x	✓	✓	x
BP53	✓	✓	✓	✓	✓	x	x	n/a	✓	✓
BP54	n/a	✓	x	x	x	x	x	✓	n/a	x
BP55	n/a	x	x	x	x	x	x	x	✓	x
BP56	n/a	x	x	x	x	x	x	x	✓	x
BP57	n/a	x	x	✓	x	x	x	✓	✓	x
BP58	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
BP59	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

The Latvia NRA explained that "the current methodology used for legacy networks is FDC CCA, and the NRA is in the process of elaboration of costing principles". Hence, many of the BPs have not, to date, been imposed.

In relation to BP43, the Norway NRA regulates the price of copper-based WLA products but does not regulate the price of fibre-based WLA products. Similarly, the UK NRA price regulates copper-based WLA products but does not price regulate VULA since it has imposed an EOI requirement in the WLA market (which is consistent with the Commission's recommendation on regulated access to NGA networks).⁹

⁹ COMMISSION RECOMMENDATION of 20 September 2010 on regulated access to Next Generation Access Networks (NGA)
<http://eur-lex.europa.eu/LexUriServ/%20LexUriServ.do?uri=OJ:L:2010:251:0035:0048:EN:PDF>

In relation to BP44, although the Malta NRA responded that it had not taken into account the factors of (i) the prioritisation of regulatory objectives; and (ii) prevailing market conditions when determining its costing methodology, it did say that for fibre it had used an economic replicability test that takes account of market conditions.

In relation to BP49, only the Estonia and Malta NRAs have not imposed a remedy preventing SMP operators engaging in a margin squeeze. Estonia uses a TD FDC HC cost model for the regulation of wholesale prices and does not consider that a margin squeeze remedy is necessary. The Malta NRA explained that the price control of fibre is based on an economic replicability test. The UK NRA has imposed a margin squeeze remedy on NGA only and relies on competition law as a remedy to address margin squeeze in relation to current generation access.

In relation to BP50, only the Austria, Croatia, Cyprus, Netherlands and the Norway NRAs explicitly ensured that the margin between the upstream and downstream services is sufficient to facilitate efficient investment in line with the ladder of investment principle. The UK NRA explained that since LLU has expanded to around 95% of UK premises it considered that CPs have already climbed the ladder of investment and therefore there is no specific need to ensure a particular margin that facilitates efficient investment in this manner. The Malta NRA is still developing its policy.

BP51-59 concerns pricing issues applicable to NGA-based wholesale local access only. For the Latvia and Malta NRAs these issues are still being considered. The UK NRA does not set the price of NGA access but notes that NGA must be provided on an EOI basis. Therefore, many of the BPs are not applicable to these NRAs.

In relation to BP53, regarding the cost allocation rules for the pricing of ducts, the Austria NRA uses number of subscribers, the Croatia NRA and the UK NRA use space, the Cyprus NRA uses number of cables and the Estonia NRA uses duct metres. The Norway NRA uses historical costs.

In relation to BP54, the Austria NRA explained that it was left to the SMP operator to identify an NGA specific risk. However, the SMP operator did not identify such a risk. In relation to BP55-BP57, the Austria NRA explained that no pricing schemes had been proposed.

Our questionnaire did not pose questions relating to the specifics of BP58 and BP59 (which regard the criteria that should be used when assessing the introduction of volume discounts). Therefore, these are blocked out in Table 40. However, none of the SMP operators within the WLA participants offer volume discounts and therefore these are considered not applicable.

11.2.2. WBA market

Since the revised CP has been in place the WBA market has been reviewed by 10 NRAs ('the WBA participants'). Table 41 summarises the best practice remedies that have been imposed for each of the WBA participants.

In Malta the WBA market was deregulated in 2008 and therefore no regulatory remedies are imposed.

In the Netherlands and Austria, the WBA market is deregulated for residential users but not for the business segment (and therefore the information below relates to the best practice obligations imposed in the business segment only).

Table 41: Best practice remedies imposed by WBA participants

	Austria	Croatia	Cyprus	Estonia	Ireland	Latvia	Malta	Netherlands	Norway	UK
BP34	✓	✓	✓	✓	✓	✗	n/a	✓	✓	✓
BP35	✓	✗	✓	✓	✓	✗	n/a	✓	✓	✓
BP36	✓	✓	✓	✓	✓	✓	n/a	✓	✓	✓
BP37	✓	✓	✓	✓	✓	✗	n/a	✓	✓	✓
BP38	✓	✓	✓	✓	✗	✗	n/a	✗	✓	✓
BP39	✓	✓	✓	✗	✗	✗	n/a	✓	✓	✓
BP40	✓	✓	✓	✓	✓	✗	n/a	✓	✓	✓
BP41										
BP42	✓	✓	✓	✗	✓	✗	n/a	✓	✓	✓
BP43	✓	✓	✓	✓	✓	✗	n/a	✓	✓	✓
<i>BPs applicable to pricing of bitstream based on NGA only</i>										
BP44	✓	✗	✓	✓	✓	✗	n/a	✓	✓	✓
BP45	n/a	✓	n/a	✗	n/a	✗	n/a	n/a	n/a	n/a
BP46	n/a	✗	n/a	✗	n/a	✗	n/a	n/a	✓	n/a
BP47	n/a	✗	✗	✗	✗	✗	n/a	✓	✓	✗
BP48	✓	✗	✓	✓	✗	✗	n/a	✓	✓	✓
BP49										
BP50										

The Latvia NRA explained that "the current methodology used for legacy networks is FDC CCA, and the NRA is in the process of elaboration of costing principles". Hence, many of the BPs have not, to date, been imposed.

In relation to BP36, the Norway NRA regulates the price of copper-based WLA products but does not regulate the price of fibre-based WLA products.

In relation to BP38, the Netherlands NRA has set a cost oriented pricing obligation based on the recovery of actual costs as opposed to efficient cost. The Ireland NRA is still considering this issue (and therefore the issue relating to BP39 also).

Our questionnaire did not pose a question relating to BP41. Therefore, this is blocked out in Table 41.

In relation to BP42, the Estonia NRA uses a TD FDC HC cost model for the regulation of wholesale prices. However, it has no legal basis for imposing regulation on retail prices and therefore has not imposed an obligation that prevents SMP operators engaging in a margin squeeze (this would be addressed through ex post competition law).

In relation to BP43, with the exception of Latvia, all NRAs have taken steps to ensure that the margin between upstream and downstream services is sufficient to facilitate investment (by alternative operators).

In relation to BP44-50 currently NGA bitstream prices in Croatia are based on a retail minus methodology. However, the NRA has recently concluded its bottom-up bitstream FTTH pricing model and its decision on implementing bottom-up bitstream FTTH pricing is pending. The decision is expected to come into force on 1st January 2015.

In relation to BP45 (and thereby BP46), Austria, Cyprus, Ireland, the Netherlands, Norway and the UK NRAs did not identify specific risks relating to the NGA.

In relation to BP47, the Austria NRA explained that no pricing schemes had been proposed.

Our questionnaire did not pose questions relating to the specifics of BP49 and BP50 (which regard the criteria that should be used when assessing the introduction of volume discounts). Therefore these are blocked out in Table 41. However, it is noted that the Austria and Norway NRAs accept volume discounts based on the volume of individual operators; the Ireland NRA considers the use of volume discounts on a case by case basis; and the UK NRA does not specifically refer to volume discounts but requires that access is provided on an EOI basis.

11.2.3. WLL market

Since the revised CP has been in place the WLL market has been reviewed by 6 NRAs ('the WLL participants'). Table 42 summarises the best practice remedies that have been imposed for each of the WLL participants.

Table 42: Best practice remedies imposed by WLL participants

	Belgium	Greece	Ireland	Spain	Sweden	UK
BP30	✓	✓	✓	✓	x	✓
BP31	✓	✓	✓	✓	x	✓
BP32	✓	✓	✓	✓	x	✓
BP33	✓	✓	✓	✓	x	✓
BP34	✓	✓	✓	✓	x	✓
BP35	✓	✓	✓	✓	✓	✓
BP36	✓	✓	✓	✓	x	✓
BP37	✓	✓	✓	✓	✓	✓

In relation to BP30 and BP31, five NRAs have ensured that the price of access permits an efficient entrant to compete, incentivises efficient investment and incentivises sustainable competition. The Sweden NRA has not imposed these requirements and has instead chosen to impose a non-discriminatory pricing requirement only. With the exception of BP35 and BP37 (prices and discounts not being discriminatory), the Sweden NRA does not impose any of the remaining BPs.

Due to an error in the questionnaire, the wrong question was asked regarding BP35. However, based on the answers to BP37, it is reasonable to conclude that all NRAs have ensured that prices are not discriminatory and are offered to all operators.

Annex 1 – List of respondents

Country	NRA	Respondent	NRAs included in Phase 1 report		
			WLA participant	WBA participant	WLL participant
Austria	RTR	Yes	✓	✓	
Belgium	BIPT	Yes			✓
Bulgaria	CRC	No			
Croatia	HAKOM	Yes	✓	✓	
Cyprus	OCECPR	Yes	✓	✓	
Czech Republic	CTU	Yes			
Denmark	DBA	Yes			
Estonia	ECA	Yes	✓	✓	
Finland	FICORA	Yes			
France	ARCEP	Yes			
Germany	BNETZA	Yes			
Greece	EETT	Yes			✓
Hungary	NMHH	Yes			
Ireland	COMREG	Yes	✓	✓	✓
Italy	AGCOM	Yes			
Latvia	SPRK	Yes	✓	✓	
Lithuania	RRT	Yes			
Luxembourg	ILR	No			
Malta	MCA	Yes	✓	✓	
Montenegro	EKIP	Yes			
Netherlands	ACM	Yes	✓	✓	
Norway	NPT	Yes	✓	✓	
Poland	UKE	Yes			
Portugal	ANACOM	Yes			
Macedonia	AREK	Yes			
Romania	ANCOM	Yes			
Slovak Republic	RU	Yes			
Slovenia	AKOS	Yes			
Spain	CNMC	Yes			✓
Sweden	PTS	Yes			✓
Switzerland	COMCOM	Yes			
Turkey	BTK	Yes			
UK	OFCOM	Yes	✓	✓	✓