

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 IN THE RELEVANT MARKET

Consistent with Article 2(a) of the BEREC Regulation, one of BEREC's key roles is to develop best practices and disseminate these among National Regulatory Authorities (NRAs). The best way to achieve this and promote consistent regulatory approaches is through common positions. This Common Position provides best practice remedies for dealing with competition issues in respect of key wholesale access products in the market for wholesale (physical) network access (market 4) where a position of SMP has been identified. It complements the general guidance given on choice of SMP remedies included in the revised ERG Common Position on Remedies¹. Application of this Common Position will assist NRAs to design effective remedies in line with the objectives of the regulatory framework. However, this Common Position does not alter, and is without prejudice to, the powers conferred, and obligations imposed, on the NRAs under the Framework Directive and the Specific Directives. It is therefore not a substitute for the responsibilities on the 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 Directive².

The CP dating from 2007³ needs to be updated and extended to take account of NGA roll-out which raises some new dimensions. The multiplicity of architecture has led to a number of different and complex access products imposed in the market for wholesale (physical) network infrastructure access, namely ducts, in house cabling, dark fibre, terminating segment, fibre unbundling and, sub-loop-unbundling. The revision will be based on BEREC's previous work on NGA, starting with the NGA opinion leading up to the Implementation report of the NGA Recommendation⁴. These documents as well as the CPs are based on the ladder of investment principle. Regulated access at different rungs of the ladder promotes competition and investment, thus fostering a competitive NGA roll-out.

NRAs are required under Article 3(3) of the BEREC Regulation to take the utmost account of any regulatory best practice adopted by BEREC, including the practice set out in this common position. Therefore, in carrying out its tasks (such as commenting on draft measures of NRAs concerning the imposition of remedies), BEREC expects NRAs to explain in their notified draft measures the steps they have taken to:

¹ ERG (06) 33 (Revised ERG Common Position on the approach to appropriate remedies in the ECNS regulatory framework).

² Article 8(4) of the Access Directive.

³ ERG (06) 70 Rev1 (Common position on Wholesale local access)

⁴ ERG (07) 16 Rev 2 (ERG Opinion on Regulatory Principles of Next Generation Access), ERG (09) 17 (Report on NGA - Economic Analysis and Regulatory Principles), BoR (10) 08 (BEREC Report NGA – Implementation Issues and Wholesale Issues), BoR (10) 25rev1 (BEREC Opinion to the Draft Recommendation on regulated access to Next Generation Access Networks), BoR (11) 06 (Next Generation Access – Collection of factual information and new issues of NGA roll-out), BoR (11) 43 (BEREC Report on the Implementation of the NGA-Recommendation)

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 IN THE RELEVANT MARKET

- (a) analyse the objectives identified in this common position and the related competition issues with reference to the market analysis performed by the NRA;
- (b) to the extent consistent with applicable national law, provide an effective regulatory solution to those issues unless market forces can reasonably be expected to be sufficient to guarantee a solution;
- (c) explain transparently how those competition issues have been addressed and give reasons when their regulatory solution departs from the best practice remedies identified in this common position.

Wholesale (physical) access products included in Market 4 are consistent with the classification of relevant markets established by the European Commission in 2007⁵. Therefore this Common Position reflects the product market boundaries as originally set up by the European Commission.

⁵See [Commission Recommendation 2007/879/EC 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 of the European Parliament and of the Council of 7 March 2002, on a common regulatory framework for electronic communications networks and services](#).

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 IN THE RELEVANT MARKET

Objective	Competition issue which arises frequently	Best practice remedies
Assurance of access	<p>SMP operators may deny access to their networks. There should be reasonable certainty of ongoing access on reasonable terms in order to give competitors confidence to enter the market.</p> <p>SMP operators may refuse to develop new access products on request from an alternative operator. SMP operators may have an incentive to deny access by either charging excessive prices and/or delaying development/implementation of new products and services that are feasible and reasonable (such issues which may arise if SMP operators claim they did not obtain the appropriate information from the alternative operator in relation to the new products/services they are being asked to develop by alternative operators).</p> <p>SMP operators do not grant access in suitable forms to allow competitors to offer either standalone broadband services or combined</p>	<p>BP1 NRAs should impose the appropriate and proportionate combination of access products that properly reflect their national circumstances. This involves reflecting the actual competitive situation including different architectures (e.g. FTTH/B, FTTC). In doing so NRAs should simultaneously look at access products in markets 4 and 5 and take into account the effects of symmetrical regulation if it has been imposed.</p> <p>BP2 NRAs imposition of remedies should be based on the ladder of investment principle.</p> <ul style="list-style-type: none"> • The ladder consists of access products at specific access points and wholesale products to reach these access points⁶. • The access products have a geographic/architectural dimension as well as a dimension of product characteristics. <p>BP3 NRAs should encourage infrastructure competition at the deepest level where it is reasonable, to reduce barriers to entry.</p>

⁶ A diagram of the ladder of investment can be found in the glossary.

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 IN THE RELEVANT MARKET

broadband/narrowband services, at their discretion.

SMP operators do not grant access at a level in the network where entrants are able to achieve a minimum scale allowing a viable business case thereby making access ineffective.

BP4 To avoid competitive distortions access should be mandated regardless of the technical solution insofar as it is proportionate, possible and efficient. Different treatment of copper and fibre access should be justified and non-discriminatory, and should be motivated by differences in identified competition problems between copper and fibre.⁷

Access products at specific access points:

Access to the unbundled local loop and access to the terminating segment constitute the same access obligation for those cases where unbundling consists of a dedicated line reaching from the end-user premises (including in-house wiring from the network termination point) to the first concentration point. In this document access to the unbundled local loop and access to the terminating segment are treated in the same manner.

BP5 When imposing remedies implementation should take account of the viability of the remedy. It depends on structural factors such as population density of the area, economic factors and the architecture chosen by the SMP operator including the location of the concentration points.

BP6 Unbundled access to the fibre loop in the case of FTTH

- **BP6a** For P2P the ODF is the appropriate access point

⁷ BoR (12) 66 and BoR (12) 26.

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 IN THE RELEVANT MARKET

(typically at the MPoP).

- **BP6b** For P2MP (e.g. GPON) the access point is typically a concentration point downstream of the MPoP.
 - The last splitter is the unique access point for physical unbundled access (as long as no alternative technology for unbundling at the MPoP is available). The design of the P2MP remedies particularly needs to take account of the location of the splitter (e.g. in the basement of the house, at the cabinet or some other concentration point between basement and ODF). Depending on the location of the splitter an appropriate measure should be imposed to reach the access point in combination with access to the fibre sub-loop as these factors impact on the viability of the remedy.
 - Whenever the access point is downstream of the MPoP the remedies imposed need to encompass the access product at the concentration point in combination with an appropriate product between the access point and the MPoP. This applies particularly if the concentration point is located in the basement of the building⁸ independent of whether the imposition of physical unbundling allowing access to in-house is legally feasible.
 - Until any alternative technologies⁹ allowing physical unbundling at the MPoP become available the NRAs should consider imposing an active remedy providing access at the MPoP replicating as much as possible

⁸ This may be the case for both FTTH GPON and FTTB scenarios.

⁹ Like WDM-PON (depending on the outcome of process standardization regarding NGPON2)

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 IN THE RELEVANT MARKET

physical unbundling (for details on the product see CP on Bitstream access remedies).

BP7 Unbundled access to the copper loop

- **BP7a** NRAs should impose unbundled access to the copper loops at the MDF.
- **BP7b** In the case of FTTN, the copper sub-loop is properly accessed at a concentration point downstream of the MPoP (mostly the cabinets). NRAs should consider copper sub-loop unbundling in combination with an appropriate product to reach the cabinet when choosing the appropriate combination of remedies.
- **BP7c** NRAs may consider imposing an active remedy providing access at the MPoP replicating as much as possible physical unbundling (for details on the product see CP on Bitstream access remedies) in the case of FTTN.

BP8 In case access to in-house cabling is not included in the unbundled loop it should be granted if applicable under private law.¹⁰

SMP operators do not provide suitable wholesale products to connect the access point to the MPoP (right side of the ladder of investment).

SMP operators do not provide suitable

Access products to reach access point

BP9 The closer the access point is to the end-user the more essential the access product to reach the access point becomes. NRAs should impose an obligation for an access product to reach the access point from the MPoP such as

¹⁰ However, it might be reasonable to use symmetrical regulation (Art 12 AD). In some countries access to in-house cabling is imposed on a symmetrical basis by national law or transposition of Art 12 AD in Croatia, under consideration in Italy.

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 IN THE RELEVANT MARKET

wholesale product to connect the MPoP to the operator's infrastructure.

duct access, dark fibre, leased lines including Ethernet access taking into account the economics of specific NGA scenarios.

BP10 NRAs should impose an obligation to ensure that the MPoP can be connected to the operators infrastructure with an appropriate remedy or set of remedies on regulated terms (although not necessarily covered by the same market review) unless the NRA is satisfied that such access products are available under competitive conditions on reasonable terms throughout the relevant geographic market.

BP11 Obligations to reach the access point need to be designed in such a way as to prevent strategic withholding of capacity.

BP 12 Access to civil engineering infrastructure/ducts¹¹ between the MPoP and the customer premise to reach the respective access points

- **BP12a** NRAs should ensure that access is designed taking into account also manholes and derivation points to access the private premises.
- **BP12b** NRAs should define rules for optimizing space's use in the available ducts.
- **BP12c** Prices should be cost oriented.

BP13 Backhaul dark fibre/leased lines including, Ethernet backhaul

¹¹ See also NGA Rec. Art. 13

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 IN THE RELEVANT MARKET

Where necessary NRAs should impose dark fibre/leased lines including Ethernet backhaul as an independent measure or as a subsidiary measure of duct access (i.e., in case there are no ducts, there is no space in the ducts or duct access is not viable) supplementing the FTTH and FTTN access remedies to connect the access point to a point higher in the network, e.g. MPoP.¹²

BP14 NRAs should require SMP operators to provide network access to an alternative operator where that alternative operator reasonably requests it. It is advisable that such requests are formally documented. NRAs should require SMP operators to grant access as soon as possible following receipt of the request from an alternative operator.

BP15 If access to new products and services is not generally 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 in relation to such new products and services on existing infrastructure.¹³

- **BP15a** The process should detail (amongst other things):
 - how the request should be made,
 - the information the SMP operators require to assess feasibility of the new product being requested (type of product and location of

¹² Some NRAs regard access to the splitter as a bundle with dark fibre access (from the splitter to a concentration higher in the network (e.g. the MPoP)) as in an 'end to end access product' (e.g. Italy).

¹³ A new product and service could include a new speed, a new (faster) repair service etc.

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 IN THE RELEVANT MARKET

- interconnection); and
 - the timescales within which the SMP operator will deal with such requests.
- **BP15b** NRAs should impose an obligation on SMP operators to consider such requests within reasonable timescales.
- **BP15c** If the request for a new product is assessed as feasible, NRAs should require SMP operators to develop and grant access to the new products/services promptly.¹⁴ Otherwise, NRAs should require SMP operators to objectively justify their refusal for access to such new products and services. When necessary, NRAs should review the reasonableness of such refusal.
- **BP15d** When new products and services are made available, NRAs should ensure that they are captured by the relevant SMP obligations already imposed on SMP operators (this would mean, amongst other things, that those new products and services are immediately incorporated into the RO unless it is deemed not proportionate to do so, for example, because market driven demand cannot be expected).

Assurance of co-location at the access point (e.g. MDF, street cabinet, concentration point) and other

SMP operators may deny access to co-location and other associated facilities (e.g. energy supply, cooling) which are necessary to make the access offer effective for the entrant to provide viable broadband or

BP16 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 to support viability of the access products mentioned above.

¹⁴ This is also linked to the competition objective of Avoiding Unjustified First Mover Advantage (see Best Practice BP21 below).

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 IN THE RELEVANT MARKET

associated facilities

telephony services on the retail market.

SMP operators may not provide co-location at a cost faced by themselves and at a scale and quality suitable for the needs of the alternative network operator.

SMP operators may hinder the reuse of infrastructure or services already deployed by alternative operators. With this practice, SMP operators may raise their competitors' costs, as competitors would be forced to purchase additional ancillary services across different regulated markets (irrespective of levels of utilisation).

- **BP16a** NRAs should ensure that the remedies allow the optimised use of alternative operators' existing infrastructures.
- **BP16b** NRAs should ensure that these remedies allow co-location and other associated facilities to be used efficiently. In particular, NRAs should ensure that usage is not artificially segregated by product or market.

Level playing field

Alternative operators may not be able to compete on a level playing field which may result in SMP players

- having an unfair advantage;
- having unmatchable advantage, by virtue of their economies of scale and scope, especially if derived from a position of incumbency;
- discriminating in favour of their own group business (or between its own wholesale customers), either on price or non-price issues;
- exhibiting obstructive and foot-dragging behaviour.

BP17 NRAs should impose a general obligation of non-discrimination.

BP18 NRAs should further clarify how the non-discrimination obligation is to be interpreted on a case-by-case basis.

- **BP18a** In cases where a general non-discrimination obligation (imposed under BP17) proves to be not sufficient to the particular issues faced by a specific market and/or product, NRAs could attempt to clarify, as far as possible, how a non-discrimination remedy will be interpreted in practice, via identification of forms of behaviour which will be considered to be discriminatory (e.g. providing lines at minor technical quality to

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 IN THE RELEVANT MARKET

alternative operators). NRAs could implement such clarifications in various ways, for example either through explicit wording of the SMP obligation or via explanatory guidance which provides clarity as to the NRA's interpretation of the obligation.

BP19 NRAs should impose an obligation on SMP operators requiring equivalence, and justify the exact form of it, in light of the competition problems they have identified.

- **BP19a** NRAs are best placed to determine the exact application of the form of equivalence on a product-by-product basis. For example, a strict application of EOI is most likely to be justified in those cases where the incremental design and implementation costs of imposing it are very low (because equivalence can be built into the design of new processes) and for certain key legacy services (where the benefits are very high compared to the material costs of retro-fitting EOI into existing business processes). In other cases, EOO would still be a sufficient and proportionate approach to ensure non-discrimination (e.g. when the wholesale product already shares most of the infrastructure and services with the product used by the downstream arm of the SMP operator).

BP20 NRAs should consider imposing functional separation as a remedy of last resort and only when all relevant regulatory obligations have failed to create a level playing field.

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 IN THE RELEVANT MARKET

Avoidance of **SMP operators may have an incentive to discriminate in favour of their own downstream arms.** Alternative operators need assurance that, as downstream markets develop, suitable wholesale products will be available in time to permit them to offer a new, enhanced or cheaper downstream service (e.g. higher speed internet access) at the same time as the introduction by the SMP player.

SMP operators may commission new infrastructure which alternative operators are not able to use. This may be necessary for the provision of new retail services, but may not allow all market players the same opportunity to compete for the new business (especially true if new infrastructure may be deliberately designed to obstruct access and prevent the provision of relevant new wholesale services to alternative operators).

SMP operators may deny access to key information relevant for alternative operator's roll-out of NGA. A denial of access to information has a new dimension for NGA roll-out because we deal with access to "newly" rolled out networks instead

BP21¹⁵ NRAs should put in place a regime which ensures the (technical and economic) replicability of the new downstream services introduced by SMP players.¹⁶

- **BP21a** In relation to economic replicability, NRAs should ensure that the methodology and/or the principles applied to ensure replicability are made public beforehand.
- **BP21b** In cases where (technical and/or economic) replicability cannot be achieved by using the available wholesale products, SMP operators should be required either to amend the existing wholesale product or to make a new wholesale product available.

BP22 In cases where SMP operators need to provide a new wholesale product, NRAs should impose an obligation on SMP operators regarding the timely availability of relevant information according to lead times (i.e. notice periods) defined on a case-by-case basis. The relevant information should include information on prices, terms and conditions and technical characteristics of the new wholesale product. The information provided should allow alternative operators to effectively assess the impact on their own processes.

BP23 NRAs should ensure that alternative operators have the ability to influence the decisions regarding characteristics of new wholesale products and new interfaces.

¹⁵ ANCOM expresses its reservation related to the applicability on market 4 of Best Practices BP21-24.

¹⁶ For purely passive products timely access to the wholesale inputs may only be relevant in the case when access is first requested. See also BoR (12) 10

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 IN THE RELEVANT MARKET

of existing networks.

BP24 Where relevant, NRAs should impose a requirement on SMP operators in relation to lead times (i.e. notice periods) regarding the removal of existing wholesale inputs.

BP25 NRAs should consider which information on the SMP-operator's 'newly' rolled-out NGA network is essential to competitors and should be available well in advance on a non-discriminatory basis.¹⁷ This may include information per geographical area - periodically updated if necessary - on:

- The planning and status of the network roll-out;
- The physical locations of access points (e.g. MPoPs), the area covered by the MPoP and the number of (potential) customers per MPoP;
- Relevant parameters regarding the architecture of the network.

Transparency

SMP operators may not provide sufficient clarity or transparency on the terms and conditions of access.

SMP operators may delay provision of the RO to alternative operators. Doing so would, in turn, delay access to their networks.

When developing their RO, SMP operators may not take into account any reasonable views from wholesale customers. As a result the Reference Offer may not be fit for

BP26 NRAs should require SMP operators to provide clarity of terms and conditions of access (including those relating to relevant ancillary services) by publishing a Reference Offer (RO), the key elements of which should be specified or approved by the NRA. All material contractual terms and conditions which are known or knowable at the time of publication should be covered clearly.

- **BP26a** NRAs should require SMP operators to take into account any reasonable views of wholesale customers in their RO, in particular regarding the evolution of the services offered.

¹⁷ See BoR (11) 43, BEREC Report on the Implementation of the NGA-Recommendation, p. 68/69

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 IN THE RELEVANT MARKET

purpose.

SMP operators have preferential access to certain key information compared to alternative operators. Certain information which is naturally available to SMP operators (but not to alternative operators) could be used to gain an unfair advantage (for example, SMP operator's development close off dates).

SMP operators may deny access to information on existing infrastructure that might be used for NGA roll-out by alternative operators.

- **BP26b** NRAs should require SMP operators to publish the RO (i.e. make it operational) within a reasonable time after NRAs have imposed the obligation to grant access. NRAs should give guidance on the reasonable timeframe on a case by case basis.
- **BP26c** NRAs should require SMP operators to update the RO as necessary, and in a timely manner (see BP22), to reflect relevant changes such as developments in line with market and technology evolution and/or changes to prices, terms and conditions for existing services or technical and operational characteristics. Where NRAs follow a pre-approval process, NRAs should further require SMP operators to inform them before publishing the necessary amendments to the RO.
- **BP26d** 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 (for example, see Annex 1).
- **BP26e** After lifting an obligation to apply a RO, NRAs should ensure that SMP operators provide provisions for the change in the contractual conditions which are in place on the basis of that RO for a transitional period to be determined accordingly.

BP27 NRAs should require SMP operators to make certain information available to all operators (publicly or on request) within a reasonable period of time. Such information should include the results of Key Performance Indicators (KPI) measurements (see BP34b below) and planned future changes to the SMP operator's network architecture as far as they are relevant to network access (e. g. future points of

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 IN THE RELEVANT MARKET

access) and which might affect the provision of services.

BP28 NRAs should consider imposing an obligation to set up an infrastructure database for the use of civil engineering infrastructure at least containing all ducts of the SMP operator. The database should contain organisation and technical characteristics of civil engineering infrastructure, their geographic location. Available space in ducts may be considered to be part of such a database.

BP29 NRAs should choose appropriate methods of control including:

- (a) an obligation to publish a RO (see BP26) which includes the technical parameters of access and which is periodically evaluated by the NRA and/or
- (b) an obligation to meet all reasonable requests for access.

BP30 NRAs should require that detailed information about the characteristics of the access product is available to the alternative operator (such as length of the access loop, type of cabling and/or attenuation). For each site (at MDF level, street cabinet or concentration point) this includes which technologies are allowed.

BP31 NRAs should require that appropriate rules are in place to prevent mutual interference of signals.

BP32 NRAs should require SMP operators to provide a reasonable defined level of service.

- **BP32a** Service Level Agreements (SLAs) should cover specific service areas. Service areas where SLAs are

Reasonable quality of access products - technical issues

SMP operators do not provide access products of reasonable quality.

SMP operators arbitrarily limit forms of access (e.g. to whatever suits their own business) or provide forms of access which are over-specified for many players.

Reasonable quality of access products – operational aspects

SMP operators may have an incentive to discriminate in favour of their own downstream operations in relation to the quality of wholesale access products. As a result, access products may not be of

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 IN THE RELEVANT MARKET

reasonable quality and service levels may not be comparable with those provided by the SMP operators to their own downstream businesses.

most likely to be necessary are ordering, delivery, service (availability) and maintenance (repair).

- **BP32b** SLAs should be made available to wholesale operators. To ensure maximum transparency and comparability of the terms provided by SMP operators to alternative operators and their downstream arm, all SLAs could be made available to all relevant wholesale customers (including those outside from a specific Member State). For example, SMP operators could make them available on demand or automatically publish these on their web-site (as part of their RO).
- **BP32c** NRAs should take oversight for the process of setting SLAs. NRAs should determine the level of their involvement in this process by taking into account specific market circumstances and particular concerns for discriminatory behaviour.
- **BP32d** SLAs should take into account differences in customer requirements.

BP33 NRAs should impose a generic requirement on SMP operators to provide Service Level Guarantees (SLGs).

- **BP33a** SLGs should cover all necessary specific service areas. Service areas where SLGs are most likely to be necessary are ordering, delivery, service (availability) and maintenance (repair).
- **BP33b** SLG payments should be made without undue delay and should be proactive in nature. That is, with a pre-established process for the payment and billing of the SLGs among operators and without the need for

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 IN THE RELEVANT MARKET

alternative operators to request the intervention of any third party i.e. NRAs or courts.

- **BP33c** NRAs should take oversight for the process of setting SLGs. NRAs should determine the level of their involvement in this process by taking into account specific market circumstances and particular concerns for discriminatory behaviour.
- **BP33d** SLGs should be made available to all alternative operators irrespective of the size of their purchases.

BP34 NRAs should impose a generic requirement on SMP operators to provide Key Performance Indicators (KPIs) as a means to monitor compliance with a non-discrimination obligation and ensure that SMP operators fulfil their SLAs (unless there is evidence that this is unnecessary or would not be cost-effective).

- **BP34a** KPIs should cover all necessary specific service areas. Service areas where KPIs are most likely to be necessary are ordering, delivery, service (availability) and maintenance (repair).
- **BP34b** The results of monitoring KPIs should be made available to all operators in the market. To determine whether they could have been discriminated against, alternative operators would need to be able to compare the levels of service they have received to those provided by the SMP player a) to their downstream businesses and b) the industry average.
- **BP34c** NRAs should take oversight for the process of setting KPIs. NRAs should determine the level of their

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 IN THE RELEVANT MARKET

involvement in this process by taking into account specific market circumstances and particular concerns for discriminatory behaviour.

Assurance of efficient and convenient wholesale switching

SMP operators have an incentive to discriminate in favour of their own downstream operations. This may result in wholesale customers not being able to switch wholesale products and/or wholesale providers with the minimum of delay and/or disruption.

Charges for migration should be reasonable and should not deter acquisition of existing customers or climbing of the ladder of investment.

BP35 NRAs should impose obligations on SMP operators in order to ensure wholesale switching processes are speedy and efficient.

- **BP35a** NRAs should require that the maximum allowed downtime during wholesale switching is the lowest possible for the different needs of specific wholesale customer segments.
- **BP35b** NRAs should require that the price of the switch does not act as a barrier to the wholesale switching processes happening.
- **BP35c** Where necessary, NRAs should put in place specific measures to facilitate bulk wholesale switching processes and ensure these are non-discriminatory.
- **BP35d** NRAs should require that the transaction time required to process wholesale switching requests is as low as possible based on the nature and size of the request.
- **BP35e** NRAs should require SMP players to introduce SLAs/SLGs and KPIs to ensure the efficiency of the switching process, unless there is evidence that these are unnecessary or not cost-effective.

Assurance of efficient migration processes from legacy to

SMP operators may not provide migration procedures enabling the competitors to provide retail services based on new

Phasing out of legacy network may relate to

- Network infrastructure impacting on e.g. locations of access products (e.g. MDF)

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 IN THE RELEVANT MARKET

NGN/NGA network

network and to compete with the SMP operators.

- Technologies
- Access products

No clear announcements by SMP operators of intended close down of MDFs, copper network and TDM technology.

Announcements of close down of MDFs by SMP operators may contribute to halting competitive tendencies.

BP36 NRAs should require that switching procedures equally apply between legacy and NGA wholesale products.

BP37 Where an SMP operator intends to phase out its legacy network, NRAs should impose specific obligations on the SMP operator in relation to:

- a framework for migration;
- a notice period;
- an obligation for the SMP operator to provide all relevant information on network modification such as decommissioning MDFs.

BP38 NRAs should require that existing obligations remain in place until a certain migration path is agreed and finished.

BP39 When imposing an obligation on SMP operators relating to a notice period for phasing out legacy networks NRAs should take into account that the choice of the appropriate notice period may depend on the following factors:

- Notice period is likely to be longer for locations than for access products/technologies as a new access product may be available at the same location;
- Availability of a full-fledged alternative;
- Reasonable migration period for a switch of wholesale products. If a legacy access product will be phased out at an access location at which the NGA access product

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will also be available the reasonable notice period will be shorter than in a scenario where the NGA-access product will be available at a different access location, where competitors do not yet have a physical presence.

BP40 A notice period of 5 years for decommissioning MDFs may be appropriate. A shorter period may be appropriate if:

- all investments by alternative operators are already written off, or
- the phase out was known at the time of investment or
- the stranded investment is compensated by the incumbent, or
- an alternative is available which is equivalent to the legacy access product on NGA network.

Fair and coherent access pricing

Alternative operators in the market may face uncertainty as to the price of wholesale network access.

SMP operator may create arbitrage opportunities between different wholesale inputs. SMP operators may have an incentive to set prices for wholesale local access which are not coherent with the prices of other related services. This may dis-incentivise efficient investment by alternative operators and create arbitrage opportunities.

SMP operators may margin squeeze. Whether or not there is an explicit pricing

BP41 NRAs should ensure that with reasonable certainty the price of access will permit an efficient entrant to compete with the SMP player. The access price should also be set in a way which is coherent with the prices for other (broadband and narrowband) related services.

BP42 When determining their price regulation NRAs need to consider that it should incentivise both efficient investment and sustainable competition.

BP43 Where appropriate and proportionate, NRAs should require SMP operators to provide regulated products based on an explicit pricing obligation. Price control obligations can be implemented in different degrees, ranging from a requirement for prices to be cost-oriented and subject to rate approval through to specific charge controls such as a price

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 IN THE RELEVANT MARKET

obligation, SMP operators may still have an incentive to margin squeeze in relation to downstream products. Furthermore, alternative operators may face uncertainty regarding the principles and methodology for the assessment of margin squeeze which in turn could result in complaints not being resolved quickly.

SMP operators offer pricing schemes / prices not allowing alternative operators to compete on a level playing field and/or enabling a viable business case.

SMP operators offer pricing schemes on a discriminatory basis, or prices which do not allow a sufficient margin. In case of long-run upfront commitments SMP operators offer prices not only reflecting the reduction of the risk for the investor.

cap, retail minus etc.

BP44 NRAs should determine the costing methodology taking account of the following two key factors:

- the prioritisation of the regulatory objectives and
- prevailing market conditions.¹⁸

BP45 When imposing a cost-oriented price control obligation the NRAs should specify the relevant costing methodology to be used as a reference for setting the charges. Any costing methodology selected must allow the recovery of efficiently incurred costs as the relevant cost standard and follow the principle of cost causality.¹⁹

BP46 It is important that the access price sends the right economic signal, i.e. is that the price is competitively (and technologically) neutral. This will best be achieved with cost-oriented access seeking to mimic the outcome of a competitive market where the equilibrium price reflects the cost of efficient service provision.²⁰

BP47 Since local access in most cases constitutes an enduring bottleneck, NRAs should impose effective regulatory remedies in order to avoid excessive profitability. This implies directly imposing cost-orientation or where proportionate indirectly imposing a combination of remedies having the

¹⁸ See BoR (11) 65 BEREC response to the Commission's Questionnaire on costing methodologies for key wholesale access prices in electronic communications

¹⁹ However, ERG (05) 29 (p. 9). points out that when an NRA is considering or determining a cost recovery mechanism or value there are factors to be taken into account, in addition to cost causality principle (normally established in the cost accounting system), such as distribution of benefits, effective competition, cost minimisation, reciprocity and practicality.

²⁰ BoR (11) 65, page 5

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 IN THE RELEVANT MARKET

same effect.

BP48 The effective price granted by the SMP operator should not be discriminatory and should be offered to all operators that meet the established conditions.

BP49 NRAs should put in place obligations preventing SMP operators from engaging in margin squeeze²¹.

- **BP49a** In considering the minimum acceptable margin, NRAs need to strike a balance between short term efficiency, derived from the economies of scale and scope realisable by an SMP player, and the longer term benefits (assessed on a realistic basis) of a more competitive downstream market, brought about by new entrants which should, in due course and to a reasonable extent, be able to match those economies.
- **BP49b** Two imputation tests may be considered²²: (i) the equally efficient operator (“EEO”) test and (ii) the reasonably efficient operator (“REO”) test. Both tests are referred to in the Notice on the application of the competition rules to access agreements in the telecommunications sector²³.
- **BP49c** NRAs should evaluate which imputation test (EEO, REO or a combination of both) is better suited to attain the regulatory objectives pursued.
- **BP49d** The chosen principle and methodology for the assessment of a margin squeeze should be made known

²¹ This is discussed in more detail in the ERG Report on price consistency in upstream broadband markets, ERG(09)21, June 2009.

²² Report on the Discussion on the application of margin squeeze tests to bundles, ERG (09) 07, March 2009.

²³ European Commission, Notice on the application of the competition rules to access agreements in the telecommunications sector, 98/C 265/02

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 IN THE RELEVANT MARKET

in advance (e.g. by advance publication).

- **BP49e** Where cost-based access is imposed, this should help address concerns about downstream margin squeeze.
- **BP49f** The imposition of cost-based access prices does however not remove the concern for margin squeeze.
- **BP49g** The price squeeze test applied by the NRA should take into account the costs faced by an efficient operator with a minimum scale such that the minimum margin for this operator with relevant downstream services makes commercial sense.

BP50 Moreover, especially where the downstream (bitstream) access price is also cost-based, it is not necessarily guaranteed that a cost-based price for unbundled loops and shared access will permit competitors to extend their networks to take advantage of those services. NRAs may therefore also need to take steps to ensure that the margin between the upstream and downstream services is sufficient to facilitate efficient investment of this nature. In principle, such controls could be imposed as a remedy to SMP in either market to achieve consistency along the ladder of investment.

Pricing applicable to NGA-based wholesale local access only

BP51 NRAs should ensure that the pricing of inputs to NGA-access products (e.g. ducts) is in line with the pricing of the same product when used as inputs to legacy access products (copper).

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 IN THE RELEVANT MARKET

BP52: NRAs should ensure that the pricing of NGA-access products (e.g. unbundled fibre access/access to the terminating segment) is consistent with the pricing of legacy access products (copper), to set efficient incentives to invest.

BP53 Regarding duct access the NRAs may consider several cost allocation rules. It could be based on the degree to which the duct infrastructure is occupied. This may be determined by e.g. the space taken up, the number of cables or the number of subscribers.²⁴

BP54 Where NRAs decide that it is appropriate to regulate the prices of NGA-based services on the basis of cost orientation they should consider whether to differentiate the risks borne by the SMP player in operating its NGA access network from other risks of its business. The investment risk should be assessed by taking account of various factors of uncertainties for the time period considered relevant. This includes an assessment of the likely demand for NGA-based services (penetration) and the willingness to pay a pricing premium (ARPU) and how this develops through time. In case this assessment has identified an NGA-specific risk, it should be factored into the cost of capital.

BP55 NRAs should assess pricing schemes proposed by the investor, but price differences should only reflect differences in risk for the investor and must not lead to a margin squeeze (see BP49).

²⁴ See BoR (11) 43 p. 24.

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BP56 When assessing long-term pricing contracts NRAs should strike a balance between lowering the overall risk of the investor by transferring part of the risk from the investor to other operators (risk diversification), which may lead to a higher level of investment and possible negative effects on competition and investment of competitors who cannot commit to purchasing over a long period. The effective unit prices implied by the up-front commitment should not in any event suppose a wholesale price below the efficient costs calculated including - if applicable - the risk premium because otherwise the effective price overcompensates the risk.

BP57 NRAs should ensure that discounts are not discriminatory. NRAs should ensure that volume discounts comply with their margin squeeze test (see BP49).

BP58 The main objective of volume discounts is not to reduce the risk of the investment as it has already taken place prior to purchasing the volume contrary to the case of upfront commitments. Its main objective is to stimulate network penetration and lower unit costs per end user. An indirect effect on investment risk may potentially exist to the extent that the investor has certainty prior to the investment taking place that volume discounts will be allowed in principle, whereby the investor could expect that network penetration rates and total turnover will be higher than in the case when such discounts are ex ante prohibited.

BP59 NRAs may consider accepting volume discounts based

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 IN THE RELEVANT MARKET

on total market volume as this stimulates network penetration and benefits smaller operators as well. When assessing volume discount schemes based on the volume of individual operators NRAs should bear in mind that the threshold of the minimum efficient scale may curtail competition and foreclose the market, because in a number of circumstances the minimum efficient scale may not allow more than one additional competitor beside the SMP operator to be eligible for the discount.

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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 IN THE RELEVANT MARKET

Annex 1

The Reference Offer could (amongst other things) include the following information:

- a description of the network access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of network access);
- the locations at which network access will be provided;
- a procedure and conditions to request relevant information for the provision of the relevant regulated wholesale service;
- any relevant technical standards for network access (including any usage restrictions and other security issues);
- the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing), including their usage restrictions and procedures to access those services;
- details of operational processes including, for example:
 - eligibility, ordering and provisioning;
 - migration, moves and ceases;
 - repair and maintenance; and
 - changes to IT systems (to the extent that it impacts alternative operators);
- relevant charges, terms of payment and billing procedures;
- details of interoperability tests;
- specifications of equipment allowed on the network;
- details of quality as follows:
 - specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);
 - service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;
 - the amount of compensation payable by one party to another for failure to perform contractual commitments as well as the conditions for eligibility to compensations;
 - a definition and limitation of liability and indemnity; and
 - procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;
- details of any relevant intellectual property rights;

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 IN THE RELEVANT MARKET

- a dispute resolution procedure to be used between the parties;
- details of duration and renegotiation of agreements;
- rules of allocation between the parties when supply is limited (for example, for the purpose of co-location or location of masts);
- the standard terms and conditions for the provision of network access.

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