



KPN's Next Generation Network: All-IP

Position paper

OPTA/BO/2006/202771
3 October 2006

This paper is a translation of the original Dutch version. Although the translation has been carried out with the utmost care, there may be small deviations from the Dutch version. In case of any dispute or opacity, the Dutch version prevails over the English.

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1 Introduction

1.1 Preamble

At the end of 2005, KPN announced that over the next few years it wanted to migrate its network to a so-called 'Next Generation Network' (hereinafter: NGN). In this Position Paper, OPTA's Commission (hereafter called: 'the Commission') will examine and discuss this proposal.

The migration to an NGN is intended to give KPN a cost-effective broadband IP network that will allow it to provide tomorrow's electronic communications services. KPN's plans include the realisation of unbundled access at the sub-network level, also known as the streetcabinet level (see Appendix 1).¹ To this end, that section of the access network to the streetcabinet box is to be provided using fibre optics. KPN also wants to phase out the functionality of the main distribution frames (MDFs) and phase out a large number of so-called 'MDF locations'. These locations and this functionality will become superfluous in KPN's modernised network. KPN is calling this operation the migration to 'All-IP'.^{2 3}

All-IP will affect market dynamics in the electronic communications sector in general and in a number of retail and wholesale markets regulated by the Commission in particular. This is because KPN's competitors buy unbundled access to the access network (MDF access) for their broadband services. The phasing out of the MDF locations proposed by KPN would mean that this type of access - i.e. to the access network - needed by these competitors would come to an end.

The Commission has gained a general idea of the issues involved in All-IP and of the role and the position that the Commission will adopt on these issues.

From 22 May to 16 June 2006, the Commission used an Issue Paper to consult stakeholders on an initial stocktaking of the regulatory issues surrounding All-IP.⁴ In this consultation, the focus was on the relationship between All-IP and KPN's existing obligation to offer unbundled access to its access network. The Issue Paper also sets out the provisional position that the Commission is adopting in respect of a number of issues.

Partly on the basis of the responses to the Issue Paper, the Commission has now decided on its more detailed positions on these issues, along with the actions and follow-up actions that the Commission currently feels are necessary to find a solution to the identified issues. The Commission wishes to use this All-IP Position Paper to inform and consult stakeholders about the positions that it proposes to adopt and about the follow-up steps it considers necessary. The Commission asks the parties to respond to the follow-up actions it has identified and to the issues that the Commission wishes to address with these follow-up actions. The Commission has a number of specific consultation questions regarding that part of the Position Paper that relates to the conditions the Commission

¹ Unbundled access to the sub-network is also known as Subloop unbundling (SLU).

² This Position Paper uses the term 'All-IP' both for the network that KPN wishes to have in a few years' time and for the migration process.

³ See KPN's wholesale website www.kpn-wholesale.nl for a presentation that provides details of All-IP. KPN gave this presentation to its wholesale customers on 29 March 2006.

⁴ Issue Paper KPN's Next Generation Network: All-IP dated 22 May 2006, reference: OPTA/BO/2006/201599. The main points of KPN's All-IP programme are described in Section 2 of OPTA's All-IP Issue Paper.

wishes to attach to the phasing out of MDF locations (see Section 5). The Commission intends to publish policy guidelines at the end of December 2006 that will take into account the responses to the conditions the Commission wishes to attach to the phasing out process. The Commission will notify the parties as quickly as possible by letter after the end of the consultation period as to the definitive follow-up actions that it will take.

In its memorandum of findings ('Nota van bevindingen') appended as Appendix 2 to this Position Paper, the Commission reports on the responses received to the Issue Paper, and shows the influence this has had on the determination of its own position and follow-up actions.

1.2 Consultation process

1.2.1 Written response

The consultation period for the Position Paper commences on 3 October 2006. Stakeholders have four weeks to submit their written response to this document to the Commission. Therefore the deadline for submitting responses is 31 October 2006.

The response may be sent by e-mail to All-IP@opta.nl, with reference 'Consultation response to All-IP Position Paper'. You will receive an e-mail with a confirmation of receipt.

Please submit your response in the Microsoft Word format if possible, so that responses can be processed quickly and efficiently.

1.2.2 Confidentiality

The responses to the consultation process will be published in their entirety on OPTA's website. Should your response contain confidential passages, please indicate this, and submit a public version of your response along with the confidential version of your response. You may also choose to submit your confidential information in a confidential Appendix to your otherwise public response.

1.2.3 Further information

If you need further information or further clarification of the consultation process in question, then you may send an e-mail to All-IP@opta.nl or else contact Martijn Meijers by phone at +31-(0)70-3159288.

1.3 Structure of this Position Paper

The structure of this Position Paper is as follows: Section 2 discusses the context of All-IP, along with the role of OPTA and the objective of this Position Paper. Section 3 sets out the Commission's position on the proposed phasing out of MDF access and the relationship between All-IP and the market analyses. In Section 4, the Commission takes an advance look at the question of which services could offer a fully fledged alternative in the absence of MDF access. The Commission will then (in Section 5) set out a number of conditions which in its opinion KPN must comply with if the Commission is to issue a judgment that the continued granting of access can no longer be reasonably demanded of KPN. Section 6 discusses a number of more general issues, along with issues discussed in the Issue Paper. In Section 7, the Commission summarises its conclusions, sets out the specific consultation issues that it will submit to the parties, and also provides details of the follow-up actions that it intends to take.

The Commission requests parties to respond to the positions that the Commission is assuming in the Position Paper and to the follow-up actions that the Commission has identified. The Commission expects to take into account the responses of the parties on the other issues from the Position Paper in its follow-up actions. The Commission will inform parties as soon as possible by letter after the end of the consultation as to its follow-up actions and to the way in which it will take into account the parties' responses.

2 Context and objective

2.1 All-IP in its context

Partly thanks to the development of IP technology, it is now possible to offer multiple services over the same network, a development also becoming more and more pronounced in the marketplace. Cable providers and DSL providers are increasingly offering so-called 'triple-play' services, consisting of telephony services, TV services and broadband internet access offered via a single connection.

This trend means that the original function of networks is becoming less prominent and that the traditional distinction between separate data, telephony and broadcasting networks is going to disappear. This development is called 'convergence' and actually started several years ago. KPN's launch of All-IP means that it has decided to capitalise on these developments and to reorganise its classic core networks⁵ and part of the access network. In the past few years, other providers (DSL providers, cable providers) have already carried out such convergence drives for their own networks. In Europe too, more and more former incumbents are performing convergence drives, although in general they are restricting themselves to updating their core networks.

In its market decisions the Commission has already recognised and taken into account the potential consequences of current and possible future trends in network convergence and the increasing popularity of bundling on competition. For example, the market analyses have taken into account the development of bundled services in the domain of telephony and broadband internet access and at the question of what this development means for market definition.⁶ The Commission has also had further research carried out into the development of Voice over Broadband (VoB).⁷

The objectives that KPN has set for All-IP, as communicated by KPN, are predominately positive from a market perspective: additional services, lower costs and more extensive investment in innovative technologies. All-IP will lead to a change in the network and as a result of this to a (potential) change in the opportunities for and the position of KPN in various relevant markets. However, the proposed phasing out of the MDF locations means that All-IP will also directly affect the position of other providers that use KPN's (access) network. In particular, All-IP will directly affect those alternative DSL providers who use MDF access to utilise KPN's copper wire access network and who need this service in order to be able to compete in a number of wholesale and retail markets.⁸ When seen from this perspective, KPN's All-IP plans also contain a potentially negative market effect.

It is these potentially negative consequences in particular that cause the Commission to re-define its

⁵ See OPTA All-IP Issue Paper, page 4: this relates to the so-called 'stovepipes' for telephony, leased lines, data communication services and broadband internet access.

⁶ See for example the Decision on retail markets for fixed telephony ('Besluit retailmarkten voor vaste telefonie') dated 21 December 2005, reference nr: OPTA/TN/2005/203468, Section 5.4.4 from page 56 onwards.

⁷ Decision on retail markets for fixed telephony ('Besluit retailmarkten voor vaste telefonie') dated 21 December 2005, reference number: OPTA/TN/2005/203468, margin number 203.

⁸ Namely the wholesale markets for high and low quality wholesale broadband access and to a limited extent the wholesale market for the terminating segments of leased lines on the one hand and the retail markets for broadband internet access, fixed telephony, data communication services and leased lines on the other. See also the market decision ('marketbesluit') on unbundled access (Section 5.3).

position on All-IP. When arriving at its position, the Commission started from the premise that the positive effects that All-IP could have on the market mean that KPN will be able to further modernise its network, but also mean that the potential negative market effects that All-IP could have on the competition must be prevented as much as possible.

2.2 The role of OPTA

The Commission has stated in the Issue Paper that it feels that it has reserved both a formal and a more informal role for itself in respect of All-IP.

The Commission feels that it is of paramount importance that parties take on their own responsibility when All-IP is launched. A process such as the transition to All-IP - a process in which many commercial decisions have to be made - cannot be shaped in its entirety by the regulatory authority. According to the Commission it was not set up for this purpose. KPN too has to be able to capitalise on IP but when doing so must bear in mind the obligations imposed on it by virtue of its SMP position in a number of markets. In principle, this also appears to be KPN's basic position, as it has stated that it wishes to make the transition to All-IP 'in conjunction with market parties'. It is KPN's responsibility to fully implement this basic position in practice and in all its facets and to shape it accordingly.

Those competitors of KPN who are dependent on regulated access must prepare for these developments in particular and must ensure that they develop sustainable business cases in which their dependence on KPN disappears over time. In this respect, MDF access customers are currently standing at a crossroad: do they opt for further rollout in the direction of the sub-network or do they change over to a KPN service provision that is more geared towards competition in services? Here, parties must bear in mind that the objective of the new regulatory framework is to reduce regulation where possible. As part of the All-IP drive, KPN will now invest in new parts of its network. Regulation of such an innovative network does not need to be as strict as it was at the time of the classic telephony network that originated in part from a monopoly. The extent to which such regulation is needed will be determined by market analysis. The convergence of networks will create new opportunities for the market parties but will also mean that the asymmetric market positions in a number of markets - as well as their regulation - could disappear over time. The parties must bear this in mind when making this imminent decision.

The Commission is responsible for ensuring real competition in practice in the relevant markets, to enable maximum benefit for the end-user with respect to choice, price and value when buying electronic communications services. In this process, the Commission must ensure that a situation of sustainable competition can be created, that is to say that there is effective competition that continues to exist even when there is no regulation. In this context, according to the Commission it can be asked to ensure that the migration to All-IP proceeds in a way that neither impedes nor reduces the current level of competition. In addition, the Commission may be expected to ensure that KPN fulfils its existing obligations and that it will clearly define what KPN's obligations will be both during and after the migration towards All-IP.

When carrying out this task, the Commission will have to strike the right balance between official intervention and enforcement of obligations on the one hand and the informal supervision of the process on the other. In those areas where KPN enters into sustainable workable agreements with parties that promote competition, the Commission can adopt a less formal role, with the potential to

have less strict regulation or even none at all. In the context of these types of agreements, in 2006 the Commission will start research into the ways in which the so-called 'Open Reach' model and the principle of 'Equivalence' - as applied in the United Kingdom - can be adapted for use in the Netherlands. And in contrast, where there is a risk that competition may be restricted, the Commission will have to take the more formal approach and use the range of options at its disposal for preventing conduct that restricts competition.

2.3 Objective of the Position Paper

The Commission views All-IP as a large-scale operation within KPN. This transition consists of a number of interdependent choices made by KPN in respect of its network, business operations and commercial strategy. However, All-IP will have consequences that extend beyond KPN itself - as it will also affect KPN's competitors and the market dynamics in the Dutch communications sector in general.

The potentially significant impact that All-IP could have on the competition is the reason why the Commission wants to use this Position Paper to clarify its position in respect of the various regulatory issues related to All-IP. As was the case with the Issue Paper, the focus here will be on the relationship between All-IP and KPN's current obligation to offer unbundled access to its access network and associated facilities such as co-location.

In this respect, the Commission does not wish to restrict itself to those issues where the Commission is entitled to enforce rules and regulations by virtue of the existing market decisions; instead, the Commission feels that it is also important to clarify its position in respect of those issues where the Commission does not have any powers (yet), in order to be able to steer the consultation process between the parties in the right direction as far as possible.

3 The redesign of the KPN network

3.1 Reasonableness of redesigning the KPN network

This Issue Paper deals with the question of the extent to which KPN is free to redesign its network in the manner it has proposed, given the regulation of unbundled access to the access network.⁹ In this context the Commission adopts the following point of view.

In the Market decision of 21 December 2005 (hereafter called: the ULL Market decision)¹⁰ - based on an analysis of the competitive situation in that market and underlying markets - the Commission concluded that infringement of KPN's right of ownership was justified. By imposing the obligation to offer access to the access network, both at the level of the main distribution frame as well as at the sub-network level, the Commission restricted KPN's options for using that infrastructure arbitrarily. The Commission deemed this justified due to KPN's position of significant market power with regard to that access network and the necessity for other market parties to have access to the local loop in such a way as to create a situation in which there is actual competition in the underlying markets. However, the regulation imposed does not mean that KPN no longer has any freedom to modify the network, not even if this means that access options for all market parties would disappear over time. It is up to the Commission to determine whether the existence of a position of significant market power creates potential competition problems that warrant imposing appropriate obligations. Then, given the access options - and the lack of these options - offered by the current and future KPN network structure, the Commission must determine what obligations are deemed appropriate at that moment.

In principle, the initiative lies with KPN to be able to decide autonomously on the deployment and allocation of its company resources. Against that background, according to the Commission KPN may not be forbidden to proceed with the proposed phasing out of the MDF locations, in part because the Commission does not view the proposed phasing out of this layer in the network hierarchy as illogical in the process of developing a more efficient fully packet-switched network.

3.2 Incentive for new market analyses

The prevailing obligation for KPN to offer unbundled access to its local loop is stipulated in the ULL market decision. The obligations specified in this decision took effect on 1 January 2006. The obligations remain fully in force - also against the background of All-IP - until the Commission rescinds these obligations or imposes other appropriate obligations based on the results of a new market analysis. The Commission supervises KPN's compliance with these obligations by virtue of the ULL market decision and will take actions to enforce these obligations, if necessary.

In the framework of All-IP, KPN intends to restructure its network in such a way that a significant part of the regulated service provision in the market for unbundled access, namely MDF access, will be phased out. In light of a number of other developments, the Commission views this intention as sufficient motivation for conducting new market analyses in the short term in order to determine what (potential) competition problems (could) arise in the various relevant markets and what other access options there must be in such a case to mitigate the effects of phasing out MDF access. In doing this,

⁹ OPTA All-IP Issue Paper, in particular paragraph 4.3 and questions 11 and 12 included in this paragraph.

¹⁰ Decision Analysis of the market for unbundled access at the wholesale level (including shared access) to copper networks and sub-networks for the provision of broadband and voice services of 21 December 2005, reference number: OPTA/BO/2005/203431.

the Commission deviates from the point of view expressed in the Issue Paper that KPN's intention to migrate to All-IP in itself does not detract from the conclusions the Commission has adopted in the current market decisions, nor does it conflict with the obligations imposed on KPN.¹¹ The Commission has considered the following in evaluating whether a new market analyses needs to be conducted.

The Commission has investigated whether or not it is possible to force alternative service provision via the current market decisions. However, new obligations, such as those provided by the Commission in advance for SDF backhaul, cannot be guaranteed via the current market decisions. One important consideration in this context is that the Commission is of the opinion that without a meticulous analysis of the possible alternatives and their economic effect on the competitive situation, it cannot provide market parties adequate assurance regarding a fully fledged alternative. There is the risk of either over-regulation or under-regulation. The proposed phasing out of MDF access requires insight on the part of the Commission and assurance regarding possible (regulated) service provision that must be provided to replace such access. Only a new market analysis can indicate what is required to maintain actual competition in the underlying markets or, if that proves impossible, to address the potential competition problems caused by the creation of a position of significant market power.

One important consideration in this context was that up to now consultation between KPN and other market parties has not led to the result the Commission desires, as demonstrated for example by the lack of any concrete offer from KPN for SDF backhaul. The individual interests of KPN on the one hand and the market parties that have or wish to construct a competitive DSL infrastructure on the other appear to be too diametrically opposed to one another.

Finally, another relevant factor in deciding to conduct a market analysis is that alternative DSL providers have not continued their efforts to roll out their DSL networks during the first six months of 2006, as demonstrated by OPTA's Market Monitor for the first and second quarter of 2006. Moreover, the market was recently faced with KPN's proposed take-over of an important DSL competitor. And during the consultation regarding KPN's proposed pilot, it was revealed that KPN has already installed a considerable part of the fibre network between the street cabinets and the MCL. This makes it even more important to provide parties clarity and certainty regarding a fully fledged alternative as soon as possible. These factors have led the Commission to the conclusion that a new market analyses must be conducted.

¹¹ OPTA All-IP Issue Paper, paragraph 3.2.1 and question 5 included in this paragraph.

3.3 What markets will the Commission analyse?

As stated in paragraph 2.2, this Position Paper focuses on the relation between All-IP and KPN's obligation to offer unbundled access to its local loop.

In the new market analyses, the Commission will re-define the relevant market and determine whether or not there is a party with Significant Market Power (SMP) in the relevant market. If the Commission determines that one or more parties have an SMP, the (potential) competition problems this entails will be specified as well as any appropriate obligation(s) that must be imposed in order to address these problems. In the context of All-IP, the Commission will initially re-analyse the competitive situation in the wholesale markets for unbundled access to the local loop (the market for ULL) and the market for wholesale broadband access (the market for WBT) in particular and will consider the correlation between the regulations for these markets. The Commission will also investigate to which relevant market SDF backhaul belongs and analyse the competitive situation in that market.

In its market analysis, the Commission will investigate whether the proposed phasing out of MDF access means that (other) appropriate obligations must be imposed on KPN for currently regulated market or other relevant markets. The entire set of obligations must ensure that even in the event that the MDF locations are phased out, the markets involved are and continue to be actually competitive and, if this is not the case, they must adequately address the (potential) competition problems. Naturally, the principle here continues to be that obligations that promote infrastructure competition are preferred over those that promote service competition or obligations that protect end-users. In fact, the other possible appropriate obligations that may be required, comprise the 'fully fledged alternative to the MDF access intended in the Issue Paper.'¹² Moreover, the conditions required to ensure that the phase-out process is conducted with due care, will also be part of these obligations. In doing this, the Commission will initially harmonise these conditions with the conditions the Commission will impose on KPN based on the ULL market decision.

As part of the new market analyses, the Commission will determine i) which obligations are appropriate in the current situation where MDF access is still possible, ii) which obligations apply during the phase-out process and iii) which obligations are appropriate given KPN's new network architecture in which MDF access will no longer be possible.

The Commission considers this approach to be consistent with the manner in which the European Commission considers the technological innovation in the form of Next Generation Networks (NGNs) from the perspective of regulations in its draft recommendation: "The use of more efficient technology to provide existing regulated services does not alter the justification for that regulation; the move to NGNs does not provide an opportunity to roll back regulation on existing services if the competitive conditions have not changed."¹³

¹² In doing this, the Commission confirms the conditions formulated for the fully fledged alternative stipulated in paragraph 4.4 of the OPTA All-IP Issue Paper. (See in particular questions 13 - 15).

¹³ Public consultation on a draft Commission recommendation, Commission staff working document 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 on a common regulatory framework for electronic communication networks and services, Brussels, 28 June 2006, SEC(2006)837, p. 16.

3.4 The relation to this Position Paper

In section 4 of the Position Paper, the Commission describes - based on insights, data and conclusions from the current market analyses – what could be considered as other possible appropriate (access) obligations in a situation where MDF access is no longer possible. The preliminary position taken in this Position Paper must be specifically viewed against the background of the analysis and conclusions regarding definition and dominance analysis stipulated in the current market decisions.

Using this, the Commission attempts to provide insight into the possible outcomes of the new market analyses, based on the current market decisions. Hereby the Commission provides a direction for the decision-making by KPN and other market parties as well as to provide a direction for their mutual consultation ('regulatory guidance'). The Commission encourages parties to arrive at sustainable solutions and agreements that promote actual competition during the coming period. If KPN and the MDF access customers come to such sustainable agreements, this could mean that the Commission will encounter fewer (potential) competition problems during the new market analyses and thus can decide to impose less stringent obligations.

The most important conclusion in this section for determining the Commission's point of view is that ultimately, KPN's proposed phase-out of MDF locations cannot and may not be forbidden. The startingpoint for the ULL market decision is that, in principle, access already granted to (regulated) facilities cannot be withdrawn and that KPN must honour reasonable requests for access. KPN's position as a party with significant market power and the objective of the regulatory framework (the attempt to ensure actual, sustainable competition), justifies imposing conditions on KPN in the interest of the MDF access customers, with which KPN must comply if MDF access is actually to be phased out. In section 5 the Commission specifies the conditions it intends to impose on the proposed phase out. The Commission intends to stipulate these conditions in the form of policy guidelines.

4 The fully fledged alternative

This section describes the Commission's specification of what it considers to be a fully fledged alternative for MDF access. In describing the fully fledged alternative, the Commission wants to provide an image of possible appropriate obligations that could follow from the market analyses to be conducted. In paragraph 4.1 the Commission specifies how it arrived at its provisional point of view regarding a fully fledged alternative. Paragraph 4.2 consists of the Commission's description of the fully fledged alternative.

4.1 Manner in which the Commission arrived at a fully fledged alternative

In the Commission's opinion, a fully fledged alternative must satisfy three conditions.

First of all, a fully fledged alternative must address the potential competition problems in the ULL market identified in the ULL market decision; it must address the potential competition problems in the market for high quality wholesale broadband access and it must not jeopardise actual competition in the market for low quality wholesale broadband access and the retail market for broadband Internet access.

A second condition a fully fledged alternative must satisfy is the supremacy of infrastructure competition. In the explanation to the Recommendations, the European Commission states that "regulations that impose mandatory access to existing networks must serve as an interim measure to ensure competition between services and options for the consumer until adequate infrastructure competition exists."¹⁴

The Commission has taken into consideration that service competition is only promoted and introduced using access obligations under specific conditions. These conditions are only met when analysis indicates that the infrastructure over which competitive services can be delivered cannot be replicated within the period of the review and when wholesale markets, on the basis of which effective service competition is possible, do not arise spontaneously. Obligations such as access and price regulation must be set up in such a way that they do not negatively influence investment incentives for market parties and, if possible, promote companies to 'ascend the investment ladder'.¹⁵

The final condition is that the preference must be honoured for measures at the 'highest level wholesale markets' that follows from the Telecommunications Act and is the obvious path given the importance of infrastructure competition. One of the objectives of obligations imposed on a higher wholesale market is to facilitate competition at a lower level wholesale market. In evaluating the necessity of imposing obligations on a lower wholesale market (or retail market), the effect of such

¹⁴ Explanation to the recommendation of the European Commission of 11 February 2003 regarding relevant product and service market, Official Journal of the EC 203, L114/45, page 29.

¹⁵ The investment ladder, or 'ladder of investment' is a theoretical concept based on the notion that competitors will roll out their network gradually, by purchasing wholesale broadband access, first to MDF access and then to SLU with the ultimate goal of realising end-user connections.

obligations on higher level markets must be taken into account.

4.2 The fully fledged alternative

In determining what it considers a fully fledged alternative for MDF access, the Commission will base its considerations on the findings of the analysis of the competition problems observed and the competitive situation in retail markets from the market decisions of December 2005. The Commission can only make definitive statements regarding appropriate obligations and the necessity for imposing obligations after conducting a completely new market analysis.

In the current ULL Market Analysis Decision the Commission imposed obligations on KPN for the current regulation period that guarantees that other suppliers have unbundled access to KPN's local loop. The Commission has concluded that introducing service competition on the underlying retail markets using access obligation to the market for unbundled access is necessary to achieve the effects of sustainable competition in the retail market. Because unbundled access introduces competition at the lowest level of the network, namely at the level of the local loop, regulation of this market comes closest to achieving the infrastructure competition the Commission has in mind. Other providers must be able to have access to the local loop, both at the level of the main distribution frame (MDF access) and at the sub-network (SLU) level.¹⁶

KPN has a reference offer for MDF access and related facilities and is currently developing a reference offer for SLU in consultation with other market parties. Over the last few years, the obligation to provide MDF access has been extremely important to the existence of competitive DSL platforms. At the moment DSL providers that use the KPN access network have rolled out their network to the MDF level and not any higher.

Offering regulated MDF access is an important building block for the services provided by suppliers in the market for low quality wholesale broadband access (hereafter called: the market for WBT LQ) and the market for high quality wholesale broadband access (hereafter called: the market for WBT HQ). Analysis of these markets has shown that the development of competition in these markets is such that, given the obligations in the market for unbundled access, the market for WBT LQ requires no regulation and an obligation to deliver transparent, non-discriminatory access is sufficient for the market for WBT HQ.¹⁷

If KPN proceeds with its intention to restructure its network, this means transferring the functionality of the main distribution frame from the MDF location to the level of the sub-network and phasing out a large number of MDF locations. In that case unbundled access to the local loop can only be obtained at the level of the street cabinet (SLU). The result of phasing out will be the fact that the obligation to provide unbundled access at the level of the main distribution frame will (ultimately) negate the positive economic effect on developing competition in the underlying wholesale and retail markets. Unless this is completely mitigated by SLU, or there are other developments that ensure that actual

¹⁶ Decision Analysis of the Market for unbundled access at the wholesale level (including shared access) to copper networks and sub-networks for the provision of broadband and voice services of 21 December 2005, reference number: OPTA/BO/2005/203431.

¹⁷ Decision Analysis of the market for wholesale broadband access of 21 December 2005, reference number: OPTA/BO/2005/203432.

competition is achieved, this means an alternative must be created that has at least the same positive economic effect.

The elimination of MDF access means that other providers will lose the possibility to continue providing their current services via MDF access and to further roll out their networks via the so-called 'investment ladder'. These providers will have to decide whether they want to further roll out their networks to the sub-network or want to realise access to the KPN network at a higher network level, for example at the level of the so-called Metro Core Locations (MCL). The Commission refers to Appendix 1 for an explanation of the current and future network architecture of KPN's network.

When another provider elects a rollout to SLU, infrastructure to the street cabinet – SLU Backhaul (also referred to as SDF Backhaul) is required.¹⁸ This SDF backhaul can be installed by the provider itself (whether or not in collaboration with other providers) or realised by leasing infrastructure from KPN or another network provider on a structural basis. Based on the idea of the supremacy of infrastructure competition, ideally the implementation of SDF backhaul must be realised by further rolling out the provider's own infrastructure.

The willingness and possibilities of market parties other than KPN to invest in the further rollout of a network to the street cabinet is specified by the number of customers a market party has gained or can potentially win and the costs involved in such further rollout. Rollout over the short term may be profitable in specific regions, but the Commission assumes that KPN is currently the only market party that has the economies of both scope and scale to achieve rollout at the national level. The speed at which other providers are forced to roll out further will be dictated by KPN's phase-out, not by their own business cases. The Commission does not expect that rollout of SDF backhaul will be an economically viable alternative in a large part of the Netherlands, at least not for some time. The Commission can imagine that realising SDF backhaul is a genuine entry barrier for market parties other than KPN, in particular because of the considerable investments such further rollout entails.

In the opinion of the Commission, the fully fledged alternative must guarantee connectivity between the KPN sub-network and networks of other providers in a way that adequately compensates for the elimination of the MDF access rung on the investment ladder and also involves an incentive for market parties to further roll out their own networks. In the Commission's view, a fully fledged alternative must stimulate the rollout of alternative infrastructure to the street cabinet. In this context, the planned modifications of the KPN network offer a unique opportunity to dramatically decrease the costs of installing an alternative infrastructure, by installing this infrastructure at the same time the KPN cables are laid or by having multiple parties collectively use facilities (cable channels or ducts¹⁹) for these cables. A provider that wants to further roll out infrastructure to SLU could correlate the time and scope of his investment with KPN and share the digging costs, for example (hereafter called: joint infrastructure installation). However, parties would be dependent on KPN's speed and rollout schedule in this case. Moreover, KPN has already begun this rollout, while other providers have not yet been

¹⁸ Further rollout of the network to the level of the sub-loop automatically means that network providers must extend the branches of their networks. To do this, a provider must realise transport capacity between his existing network and his access point to KPN's local loop, the street cabinet (referred to as the SDF). This capacity between the SDF and the network provider's backbone network is called a 'backhaul'. In this case, this is SDF backhaul.

¹⁹ Ducts are also referred to as cable protection pipes.

able to make a decision regarding rolling out to SLU based on a definitive SLU reference offer that includes rates. Parties would also have to be informed in advance of KPN's digging activities. The Commission comments that the transparency required for this is not guaranteed. This means that the possibility of joint infrastructure installation cannot adequately ensure that other providers will install and will be able to offer SDF backhaul facilities.

Another possibility is that KPN makes part of its infrastructure available to other providers. Provisions regarding the structural sharing of cables or ducts are already included as part of Article 5.10 of the Telecommunications Act. This article is intended to promote the installation and utilisation of such facilities by obligating providers to honour reasonable requests for co-utilisation of these facilities.

Moreover, KPN can install extra capacity when installing cable channels and ducts, which other parties could then use. This would make the entry of such parties to the market less dependent on the rollout schedule KPN maintains for the restructuring of its network. These types of measures only make sense if they create a sustainable possibility for third parties to realise SDF backhaul using KPN's facilities. The Commission sees no clear competencies in advance for forcing the installation of extra capacity or activities in the area of collective cable installation (in particular providing information). The Commission discusses the topic of collective cable installation in further detail in paragraph 6.7. The Commission will examine the possibilities that exist for arriving at market-wide agreements regarding these issues together with the Ministry of Economic Affairs.

If it is not realistic for a party to roll out its own SDF backhaul facilities and no sustainable SDF offer is available from another market party, for example KPN, providers may switch to KPN's wholesale broadband access (WBT service provision), which KPN refers to as Wholesale Broadband Access (WBA). This offer consists of wholesale broadband access at different levels in the new KPN network architecture.²⁰ From the perspective of the development of infrastructure competition, in the Commission's opinion, this is a step backwards compared to MDF access, because the dependency on the KPN network increases and other providers assume a lower position in the value chain.²¹ Thus, it is the Commission's opinion that KPN's WBT does not offer the structural solution the Commission envisions when it speaks of a fully fledged alternative.

The Commission can imagine that WBT can fulfil a temporary role to compensate for the elimination of the incentive to further rollout in those areas where other providers have not yet realised unbundled access. The Commission has observed that investments in further rollout have come to a standstill. Ideally, in the Commission's view, parties can expand their current coverage area based on SLU and/or SDF backhaul. However, KPN is not yet able to deliver this. In these cases, the Commission expects WBT to be able to serve as a temporary replacement for an SLU and SDF backhaul offering. KPN's obligation no longer applies the moment KPN is providing the fully fledged alternative that

²⁰ At the level of the Metro Core Location, which KPN refers to as 'local access', at the level of the Core Location, which KPN refers to as 'regional access', or at the level of the AURA locations (Amsterdam, Utrecht, Rotterdam, Arnhem), which KPN refers to as 'national access'.

²¹ High in the value chain (frequently also referred to as the industrial column) is defined as the place in the value chain at which the greatest economic value can be added to a product. In this case, this corresponds to the lowest possible level in the network. The first and hierarchically lowest network level consists of the end-users; the second network level is the local connection point (street cabinets and then the MDF locations).

follows from the market analysis. Market analyses must indicate whether there is a need for imposing a temporary WBT obligation in order to facilitate further rollout during the phase-out process.

From the perspective of the development of infrastructure competition, the Commission foresees a risk that parties that are not able to realise connectivity between the KPN sub-network and their own network in the short term will become more dependent on KPN. If no additional measures are taken when MDF access is eliminated, they must provide connectivity to the end-users based on KPN's Wholesale Broadband Access offer or they will be forced to abandon the market.

Based on current insights, the most direct and appropriate measure that adequately addresses this aspect of the elimination of MDF access appears to be imposing an obligation on KPN to offer regulated lease of glass fibre/glass-fibre routes or to offer SDF backhaul. Thus, the Commission already foresees a regulated offer for SLU in combination with a regulated offer for glass fibre/glass-fibre routes possibly supplemented with SDF backhaul from KPN as part of the fully fledged alternative. Offering co-location facilities in the street cabinet and the MCL must also be part of this offer. This not only involves the delivery of co-location for the purchase of SDF backhaul, but also co-location facilities for providers that want to realise SDF backhaul from the MCL to the street cabinet themselves. The Commission will also investigate the possibilities of leasing glass fibre and/or glass-fibre routes ('dark fibre') in the framework of a market analysis of SDF backhaul.

The Commission also notes that it would consider it a positive development if market parties install their infrastructures collectively to the greatest possible extent and take possible future joint use into account as much as possible by installing extra capacity. The Commission also points out that should KPN and other parties make sustainable agreements regarding this, thus dramatically reducing the threshold for realising SDF backhaul, for example, this would play an important role in an analysis of the necessity for regulation.

Finally, the Commission assumes that a regulated offer for SLU and SDF backhaul could have an economic effect equivalent to the current obligation to deliver unbundled access to the local loop at the level of the main distribution frame. The Commission assumes that in such a situation market analysis would indicate that there is no need for regulation that is more stringent than is currently the case in the market for high quality wholesale broadband access.

Finally, the Commission would like to emphasise that, in itself, the fully fledged alternative outlined by the Commission is not the result of a market analysis and thus does not include any obligations for KPN. A new market analysis will have to determine whether the fully fledged alternative outlined by the Commission is an appropriate obligation and will have to be imposed.

4.3 Conclusion

The startingpoint for the Commission is that a fully fledged alternative replaces the connectivity from the sub-network to the networks of other suppliers. An MDF access customer currently purchases this connectivity from KPN. Ideally other suppliers will realise this connectivity, just as KPN does, by installing their own infrastructure or purchasing this connectivity. However, the Commission foresees obstacles to further rollout, given the speed and the scope at which other parties must realise this. The Commission does not see any clear authority in advance for imposing collective cable installation or

installing extra capacity in cable channels.

The fully fledged alternative for the current applicable obligations could consist of the following components:

- A regulated offer from KPN for unbundled access to the sub-network, as well as the related facilities such as co-location at the street cabinet for purchasing SLU.
- Phase-out conditions for the withdrawal of access already granted (the Commission will discuss the conditions it will impose on the phase-out of MDF locations based on the current ULL market decision in section 5. The Commission expects this to be part of the ultimate set of new obligations).
- A regulated WBT offer from KPN for the areas where KPN does not yet offer SLU and/or SDF backhaul and the MDF locations are phased out.
- A regulated offer for the delivery of glass fibre and/or glass-fibre routes by KPN, as well as the related facilities such as co-location on the MCL and the street cabinet for installation and delivery of backhaul by third parties.
and/or
- A regulated offer from KPN for SDF backhaul, as well as the related facilities such as co-location on the MCL and street cabinet for purchasing backhaul from KPN or delivery of backhaul by third parties.

5 Conditions for phasing out MDF locations

This chapter describes how the Commission will deal with KPN's (current) obligations resulting from the ULL market decision. Below, the Commission indicates under which conditions it will no longer reasonably desire the continued granting of access from KPN. These are provisional points of view of the Commission that it submits for consultation. The Commission intends to formulate the final conditions in policy guidelines following the consultation.

Section 5.1 outlines the relevant legal framework that set out by the market decisions. In section 5.2, the Commission makes clear how it, given this framework, will weigh up the interests of KPN on the one hand and the interests of the customers of unbundled access on the other during the formulation of these conditions. Subsequently, the phase-out conditions follow in section 5.3. Section 5.4 describes the process with respect to an intention to withdraw already granted access to facilities; section 5.5 contains a summary of the Commission's conclusions.

5.1 Legal framework

The conditions that the Commission intends to impose on KPN before it may proceed with withdrawal of already granted access to facilities and the phasing out of the MDF locations are based on the unbundled access market decision. This section describes those elements of the market decision that are considered relevant by the Commission.

First of all, by virtue of Article 6a.2 in conjunction with Article 6a.6, first clause of the Telecommunications Act, KPN is obliged to comply with reasonable requests for unbundled access to its local loop. Unbundled access to the local loop involves fully unbundled access as well as shared access at the level of the main distribution frame and at the level of the sub-network.

A request for unbundled access to KPN's local loop can only be refused on the grounds of objective criteria such as the technical feasibility or the necessity of maintaining the integrity of the network.

By virtue of Article 6a.2 in conjunction with Article 6a.6, second clause of the Telecommunications Act, KPN must offer providers these related services and facilities that are reasonably necessary for the provision of electronic communications services on the basis of unbundled access to KPN's local loop. In any case, this includes co-location, tying cables or other forms of shared use of facilities (including shared use of cable ducts, buildings or masts).

Also by virtue of Article 6a.2 in conjunction with Article 6a.6, second clause of the Telecommunications Act, KPN cannot withdraw already granted access to facilities unless continued granting of access cannot reasonably be desired from KPN. KPN must submit an intention to withdraw to the Commission in advance, with a minimum term of three months prior to the intended date of withdrawal.

By virtue of Article 6a.2 in conjunction with Article 6a.6, second clause of the Telecommunications Act, KPN must also negotiate in good faith.

By virtue of Article 6a.2 in conjunction with Article 6a.9, second clause of the Telecommunications Act, KPN must announce and regularly update a reference offer for unbundled access to the local loop and

related facilities within 30 days of the effectuation of this decision. To this end, KPN must include the minimum list as described in appendix 3 of the ULL market decision in the reference offer.

By virtue of Article 6a.9, fifth clause of the Telecommunications Act, the Commission has formulated the following conditions with respect to the method of announcing the reference offer:

- a) KPN must announce the reference offer by electronic means on its website;
- b) KPN must include changes to its wholesale offer in the reference offer in a timely manner, i.e. no later than six months before the change will be implemented, and inform its customers of this;
- c) KPN must provide the Commission with a copy of the reference offer and every change to it.

When it wants to phase out an MDF location, KPN is withdrawing already granted access to facilities. After all, unbundled access to the local loop is used by KPN itself and/or other market parties at all MDF locations. The startingpoint of the market decision is that, in principle, KPN is obliged to continue its services. Given the wish to phase out the MDF locations and the judgment of the Commission that forbidding this would be an unwarranted violation of KPN's proprietary rights, this means that the Commission will determine in which circumstances continued granting of access cannot reasonably be expected from KPN. Following consultation, the Commission will include the conditions as outlined in the following section in policy guidelines that it will employ when evaluating an intention to withdraw already granted access to facilities.

5.2 Weighing up of interests

In the market decision on ULL, the Commission has concluded that in order to achieve a situation of actual competition, it is essential, among other things, to impose an access obligation on KPN. When deciding whether the imposition of an access obligation is justified, the Commission has weighed up the interests. The Commission has determined whether the interest and the necessity for other market parties to gain access to the infrastructure of KPN weighs up against the interest of KPN to operate its infrastructure at its own discretion. The Commission has concluded that, given the SMP position of KPN and the objective of the regulatory framework to achieve a situation of actual competition, preferably by means of measures that stimulate the infrastructure competition, an access obligation was appropriate.²² The Commission has thus also decided that a violation of KPN's proprietary rights was justified to that extent. Given the access possibilities to the KPN network, the Commission has obliged KPN, among other things, to grant access to the Main Distribution Frame (MDF) and to provide related facilities (such as co-location in the MDF locations).²³

²² Decision Analysis of the market for unbundled access at wholesale level (including shared access) to copper networks and sub-networks, for the provision of broadband and voice services of 21 December 2005, reference: OPTA/BO/2005/203431, section 7.1 and 7.2.

²³ The obligation to offer unbundled access to the local loop already existed on the basis of the old Telecommunications Act. First by virtue of the obligation to agree to reasonable requests for special access (Article 6.9 of the old Telecommunications Act) and subsequently by European harmonisation via Regulation (EG) No. 2887/2000 of the European Parliament and the Council of 18 December 2000 concerning unbundled access to the local loop, PbEG 2000 L 336/4. Unbundled access to the local loop at the level of the main distribution frame has already been provided to KPN itself and to other market parties since mid-2000.

Both the appropriateness of an access obligation to this market and the correctness of the analysis of the market underlying this are also not disputed by KPN or other market parties.

The Commission will also weigh up these interests when determining the conditions that KPN must comply with if the Commission is to arrive at a judgment that continued granting of the regulated access cannot reasonably be desired from KPN. In this respect, the Commission considers the following.

The granted MDF access is based on reasonable requests for access for providers. Given the justifiably imposed access obligation, this means that it is established that there is no objective reason for refusing access in these cases. Partly due to the investments they have made, providers have a reasonable interest in continuing this service. This is also the reason why the startingpoint in the decision is that already granted access to facilities may, in principle, not be withdrawn. There may, however, be important reasons why continued services may nevertheless no longer be desired from KPN.

The Commission recognises the interest of KPN in the phase-out, in part due to the cost advantages for KPN. Given the startingpoint that the already granted access to facilities may not be withdrawn and that KPN must also agree to reasonable requests for access, KPN may not, however, end the possibilities of other market parties to be active on the underlying markets as a matter of course. This would negate the competition possibilities of these other providers. The access possibilities and continuity of the services of the current MDF access customers must be sufficiently safeguarded. If this is the case, continuation of already granted access can no longer reasonably be desired from KPN. The conditions that the Commission imposes on the phasing out of the MDF locations and MDF access therefore ensure that i) parties can access the market on the basis of the regulated offer for SLU and ii) the MDF access customers are able to migrate to SLU.

When determining a reasonable phase-out period, the Commission also considers the following. KPN has an interest in being able to perform the phase-out within a reasonable period. The Commission considers KPN's interest in being quickly able to discontinue the MDF locations less important than the interest of maintaining competition possibilities and thus the interest of the MDF access customers in a seamless migration to the fully fledged alternative. According to the Commission, in view of the irreversibility of the migration and the impact on the competition possibilities of parties if the migration does not run smoothly, a phase-out period must therefore offer customers more than enough time to be able to execute the migration.

The Commission will explain the conditions that result from weighing up the various interests in section 5.3.

5.3 Conditions for the phase-out

This section describes how the Commission has arrived at the conditions that apply to KPN if it wants to proceed with the withdrawal of already granted access to facilities. The Commission thus specifies the circumstances under which continued services can no longer reasonably be desired from KPN.

5.3.1 A reference offer for unbundled access to the sub-network

The first condition is that providers (both new entrants and the existing MDF access customers) must be able to acquire SLU. This means that there must be a reference offer for SLU that complies with the requirements as formulated in the market decision. For a full description of this, the Commission refers to the ULL market decision.

In general, this means that the reference offer must be irrevocable and cover services that are actually available to other providers. In this respect the Commission concurs with what it said about this in the judgment regarding the RA ULL of KPN²⁴. Briefly speaking, there is a reference offer when there is:

- an irrevocable offer, which
- is specific enough to lead to an agreement if another provider so wishes and thus
- includes those services that are actually available to (other) providers. If services are still being developed there is no question of a reference offer in the sense of the market decision unbundled access.

The reference offer must also be transparent, i.e. that it is published electronically on the KPN website and a copy of the offer (and every change to it) is submitted to the Commission. The reference offer is also non-discriminatory.

The SLU reference offer must comply with the minimum list of appendix 3 of the market decision. Termination of the services and migration between the various forms of access should normally already be part of the reference offer. However, the present situation not only involves the introduction and operationalisation of SLU services. Given the intention of KPN to phase out MDF locations, the migration of MDF access to SLU will have an irreversible character. As a result, the migration of the existing MDF access to SLU services must take place with the utmost care. The Commission therefore considers it vitally important that the SLU reference offer also includes a completely detailed migration offer. As long as it is not clear how and according to which processes and agreements KPN will migrate its existing MDF access customers to SLU, the customers of the MDF access will also be unable to make the necessary preparations for the migration. Possible migration tariffs also constitute an inseparable part of the migration offer.

As a provider of MDF access and SLU services, KPN must ensure that it acts meticulously and fairly in the migration from MDF to SLU (which becomes a requirements following its intended phase-out). If a migration does not proceed smoothly or correctly, customers run the risk that the quality of their services is no longer guaranteed and that they lose customers. In the worst case, it could even mean that an MDF access customer is unable to guarantee the continuity of any of its services. In a situation where migration to SLU, on account of the phasing out of an MDF location, means that a party, which at that moment has realised a certain quality of service at MDF level, cannot remigrate to the MDF, this places a heavy responsibility on KPN as market party that initiates the migration and must partly implement it. Given the importance that the Commission attaches to the meticulousness of this process, the Commission wishes to emphasise that KPN's migration offer must therefore include strict

²⁴ Judgment of the Commission of the Independent Post and Telecommunication Authority with respect to the reference offer for the unbundled access to the local loop and the related facilities of 28 June 2001, reference: OPTA/IBT/2001/201679, section 3.1.

quality levels, including compensation (penalties) for not complying with these quality levels. KPN must also include procedures for remedying any deficiencies. KPN must also make transparent in the migration offer which actions and/or information it requires from the counterparty and when this is needed.

The phase-out process cannot be started until there is an SLU reference offer that complies with the requirements from the market decision. The Commission will describe the phase-out process in the following section, including the periods that it intends to attach to this. In order to determine whether there is a minimum SLU reference offer that complies with the requirements from the existing market decision, the Commission will evaluate a reference offer submitted by KPN. The Commission will also evaluate any migration tariffs proposed by KPN. In response to the issue paper, the MDF access customers (except KPN) have indicated that, in their opinion, this should mean that migration costs are not charged to them. The Commission recognises that this is an exceptional situation because there is in fact a compulsory migration and it will pay specific attention to this issue in the tariff evaluation.

The Commission requests parties to respond to the condition that the phase-out process cannot start until there is an SLU reference offer that has been evaluated by the Commission and that complies with the requirements from the market decision.

The Commission requests parties to respond to the point of view that the SLU reference offer does not comply with the requirements from the market decision if it does not also include an MDF-SDF migration offer.

The market decision on unbundled access includes the Commission's decision that KPN must include changes to its wholesale offer in the reference offer in a timely manner, i.e. no later than *six months* before the change will be implemented, and inform its customers of this. The Commission has indicated here that this not only involves a change to existing services, but also, e.g. the introduction of new wholesale services. The non-discrimination obligation means that when KPN is able to provide a particular wholesale service to itself, other parties must also be able to acquire the wholesale service in question. The Commission points out that this period is included in the market decision to enable customers and future customers to modify or prepare their own services for a change or extension to the wholesale offer.

This also means that KPN must have informed its customers of this offer six months prior to the implementation of the SLU reference offer. The potential customers of SLU can, for example, only adjust their processes and systems to KPN's SLU reference offer if this offer includes a specified description of services. It is also the case, for example, that potential customers can only arrange their financing if they know the conditions (particularly the tariffs) under which they can purchase SLU. The Commission believes that this phase should include the following activities:

- Strategic decision-making;
- Financing of the business case;
- Choice of suppliers (equipment);
- Technical tests;
- Architecture design;
- Modification of processes and systems to the KPN offer.

The period of six months is a generic period and thus applies to all MDF locations. Since the MDF access customers cannot reasonably start with the migration process until there is a reference offer, a reasonable migration period therefore can not start any sooner than six months after the publication of a reference offer that has been assessed by the Commission.

The Commission requests parties to respond to the point of view that a reasonable migration period cannot start sooner than six months after KPN has published an SLU reference offer by KPN that has been evaluated by the Commission.

5.3.2 A reasonable phase-out period

In the Commission's view, a reasonable phase-out period is determined by two factors:

- The possibility MDF access customers have had to recoup their investments (a reasonable depreciation period);
- The period MDF access customers need to be able to migrate to SLU (a reasonable migration period).

The phase-out period that will result for each MDF location depends on the question when the last market party that is present on the MDF location began purchasing MDF access. The Commission emphasises that a reference offer assessed by the Commission and published is not a condition for beginning the depreciation period. When the reasonable depreciation period for all parties at the MDF location has expired within the migration period deemed reasonable by the Commission, the reasonable migration period applies as the reasonable phase-out period to be maintained. This means that the primary principle is that the reasonable migration period applies, unless the reasonable depreciation period dictates a longer period.

The condition for the start of the phase-out of a specific MDF location is KPN's publication of a phase-out notice for that location on its website; KPN must also send notification to this effect to both the Commission and to the customers involved for that location. In this notification, KPN must specify the reasonable phase-out period that applies for the MDF location in question, with due regard for the conditions mentioned above. Once KPN announces that it is starting the phase-out process for a specific MDF location, customers of existing MDF access must begin preparations for actual migration. Without such 'formal' notification, the MDF access customers cannot be expected to make preparations for migration. After all, if the location was not being phased out, customers would still be able to utilise their facilities on that MDF location. Naturally, MDF access customers are free to accept the SLU offer and to start the migration of their MDF access earlier, independent of any phase-out notification from KPN.

The Commission requests parties to respond to the condition that the phase-out process cannot begin until after notification of such a process is published on the KPN website and written notification is sent to the MDF access customers at that location as well as to the Commission.

First of all, the Commission will discuss what it considers to be a reasonable depreciation period and how this has been determined. Then the Commission will explain what it estimates to be a reasonable migration period in advance.

A reasonable depreciation period

KPN must negotiate in good faith with MDF access customers by virtue of the market decision ULL. In the opinion of the Commission, this means that, in principle, MDF access customers could have assumed that in any case they would be given the opportunity to recoup the one-off fee paid to KPN for the basic configuration of their co-location facilities. For example, if, shortly before KPN's disclosure that it intends to phase out the MDF locations, an MDF access customer has purchased co-location facilities at a location that KPN intends to phase out within a limited period of time, this would mean that the customer must depreciate that one-off fee within a very brief time period. The Commission considers this unreasonable, partly because of the amount of the one-off fee for purchasing co-location. KPN acts as reliable supplier when it ensures that, based on its planning for phasing out the various MDF locations, customers at that location have had the opportunity to depreciate their one-off fee for the basic configuration.

The Commission wishes to align the reasonable depreciation period with the conditions from the reference offer for co-location, from the so-called KPN Framework agreement for co-location.²⁵ Article 15.7 of this agreement stipulates that under specific circumstances an MDF access customer can claim reimbursement from KPN of (a part of) the one-off fee it paid to KPN for basic provisions in the framework of the co-location facilities. One of the conditions for the eligibility to claim (partial) reimbursement is if termination of the agreement between KPN and the customer takes place within five years after this agreement has been concluded. Obviously KPN itself maintains a depreciation period of five years as the startingpoint for the depreciation of the co-location facilities. The Commission believes that it is obvious that the same depreciation period should apply for the MDF access customers. The Commission is of the opinion that it is unreasonable to maintain the same depreciation period for the one-off fee for expansion of the basic configuration. After all, the tariffs for expansion of co-location facilities are significantly lower than the tariffs for the basic configuration.²⁶ Should the responses to the Position Paper indicate that opinions regarding a reasonable depreciation period differ considerably from one another, the Commission may launch a further study into this issue.

The Commission requests parties to respond to the Commission's point of view that a reasonable depreciation period for the one-off fee that a customer has paid to KPN for the basic configuration at an MDF location is five years.

A reasonable migration period

If there is a reference offer of which the Commission has indicated that it satisfies the requirements from the market decision, the phase-out process can begin. During the phase-out process, suppliers must make concrete preparations for the purchase of SLU and the migration from MDF to SLU in the coverage area for that MDF location for which KPN has transparently announced its intention to start the phase out process.

The phase-out process involves the following primary activities. These activities must be performed

²⁵ KPN's offer for co-location services, Model Framework Agreement, version 2.1 dated 01-01-2004, which can be viewed on the KPN website at <http://www.kpn-wholesale.com/>.

²⁶ Draft wholesale price cap decision of 25 April 2006, reference number: OPTA/TN/2006/200897.

individually and independently for each MDF location.

1. The preparations for SLU;
2. The construction of SLU and the migration from MDF to SLU;
3. Phase-out of the facilities at the MDF location by the MDF access customer;
4. Phase-out of the MDF location by KPN.

The Commission will not discuss KPN's actual phasing out of the MDF location here. The Commission emphasises that KPN cannot begin the actual phase-out until the Commission has specified that continued provision of access can no longer reasonably be required of KPN.

Operational preparations for SLU

The Commission envisions the following activities for the future customers of SLU during the *operational SLU preparation* phase. These activities are independent of the question of whether the customer of SLU purchases MDF access or is a new entrant to the market. The Commission's preliminary estimate is that the activities during this phase will take approximately six months.

- Draw up a project schedule (cable route plan);
- Purchase SLU components from KPN (types of cabinets and equipment);
- Make or buy decision (install one's own infrastructure or purchase SDF backhaul);
- Request tenders from contractor(s) for installing facilities;
- Set up a project organisation;
- Operational Decision process (including project financing);
- Request licenses (for digging).

Construction of the SLU and migration from MDF to SLU

The Commission envisions the following activities during the SLU service construction phase and during the migration from MDF to SLU. The Commission's preliminary estimate is that these activities will take approximately one and a half years.

- Install the glass fibre connections (SDF – SDF – MCL);
- Install/construct the street cabinets connected to the MDF location (including the requisite equipment);
- Install/construct the MCL co-location (including equipment);
- Test the ring network;
- Test the configurations in the street cabinet;
- Integral test;
- Migrate customers;
- Overlay period (redundancy/fallback).

Phasing out facilities for the MDF access customer

Finally, the Commission envisions that the only activity for the MDF access customer during the *phase-out* will be to dismantle its equipment. The Commission's preliminary estimate is that this phase will take approximately three months per MDF location.

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| The Commission requests parties to respond to the phases the Commission has distinguished and the |
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activities that the Commission envisions for each of these phases. Have phases/activities been designated that are redundant? Are any phases/activities missing from the phase-out process as described? Moreover, the Commission requests market parties to respond to the periods the Commission has mentioned.

The Commission calls on parties to substantiate their responses with objective information to the extent possible. The Commission specifically requests that KPN provide insight into the activities that it distinguishes and the deadlines it maintains for these activities, based in part on historical figures.

Conclusion

The Commission determines that a reasonable depreciation period for the one-off co-location tariffs that an MDF access customer has paid to KPN is five years. This means that the reasonable depreciation period for a specific MDF location is five years after the last delivery of a basic configuration to a market party.

As a preliminary determination, the Commission also stipulates that the migration period that customers reasonably require in the framework of this phase-out process will be just over two years per MDF location. If this period is observed, the forced migration will not create an obstacle for competition possibilities for the existing MDF customers. The Commission points out that KPN maintains a period of four to five year for its own rollout. For the time being, the Commission considers a period of two years per MDF location as not unreasonably long.

A second condition in the phase-out process is that KPN must maintain a reasonable phase-out period for each MDF location it announces to be phased out. The reasonable phase-out period that KPN must maintain is determined by the relationship between the reasonable depreciation period and the reasonable migration period for that specific MDF location to be phased out. In this respect, KPN must maintain the reasonable migration period unless the depreciation period of five years after the last delivery of co-location for that MDF location requires a longer period.

The Commission requests parties to respond to the condition that KPN must maintain a reasonable phase-out period that is identical to the reasonable migration period, unless the reasonable depreciation period of five years after the last delivery of a basic configuration at that MDF location, requires a longer period. In that case the reasonable depreciation period to be maintained for all parties must be five years after the last delivery of a basic configuration at that MDF location.

The Commission also notes that, apart from this Position Paper, it has launched a study in order to gain more insight into the activities required to construct SLU and the migration from MDF to SLU and the reasonable periods involved for this. Based on this study and the responses of the market parties, the Commission will ultimately stipulate a definitive period in its policy guidelines.

The Commission is of the opinion that, once it has stipulated a reasonable phase-out period in its policy guidelines, KPN must incorporate the principles that apply for this phase-out period in its reference offer for SLU.

5.3.3 Non-discriminatory treatment

The Commission points out that KPN must satisfy the obligations regarding non-discrimination for the

migration process and the termination of service provision. This means that all MDF customers, including KPN itself, must be treated equally during the migration phase and must receive the same information at the same moment.

This does not mean that there is no leeway for reaching other agreements. Of course, it must be possible for KPN to reach an agreement regarding the phase-out of a specific location with (one of its) customers through migration to another type of service provision and/or an agreement regarding another migration period. Provided the MDF access customers agree to them, deviations from the conditions imposed by the Commission in its policy guidelines would be allowed in individual cases. However, this must be done transparently and other parties must also be able to enter into these agreements under the same conditions in equivalent circumstances.

In this case, transparent means that KPN places a notice on its website regarding the locations for which other agreements apply, what these agreements entail and that KPN also notifies the Commission of any such agreements made.

The Commission requests parties to respond to the point of view that KPN must announce on its website for which locations it has agreed different conditions as well as the details of these agreements, and that KPN must also notify the Commission of such agreements in writing.

The obligation to be non-discriminatory as provider of both MDF access and the SLU service means that the possibility must be avoided where KPN announces the phase-out of an MDF location but subsequently it does not actually phase out the location and continues to utilise access in that MDF location. Such a situation would violate the non-discrimination principle.

The Commission is currently of the opinion that such behaviour could be a violation in the area of non-discriminatory information provision, because - in contrast to other customers – KPN was informed in a timely manner that it apparently (still) did not need to migrate from the MDF location, even though other market parties were forced to migrate. Moreover, this would appear in advance to be a case of a discriminatory behaviour in the domain of the facilities granted. After all, by formally announcing its intention to phase out the location, KPN starts a process that must lead to the withdrawal of access already granted and thus to termination of the access delivery. Given the forced nature of the termination of MDF access and any migration to the SDF, the fact that this situation is irreversible for MDF access customers and the activities that the migration process demands of a customer, the Commission is predisposed to consider such conduct as a flagrant violation.²⁷

The Commission requests parties to specify the circumstances under which KPN or other parties could use an MDF location, in spite of KPN's publication of an announcement that this MDF location is to be phased out.

5.3.4 Granting requests for access in light of the phase-out

The further conditions the Commission proposes above for determining that access already granted to

²⁷ Policy Guidelines for meting out penalties with regard to imposing fines by virtue of Article 15.4 of the Telecommunication Act (OPTA Policy Guideline regarding Penalties) Netherlands Government Gazette 29 July 2005, no. 145 / page 10.

facilities may not be withdrawn, unless continued granting of access cannot be reasonably expected from KPN, does not prejudice the fact that KPN also has an obligation by virtue of the market decision to honour reasonable requests for unbundled access to the access network and related facilities. Rejection of a request can only be based on objective criteria that involve the technical feasibility or the necessity to maintain network integrity.

This means that the general intention to phase out MDF locations or the formal announcement that a specific MDF location is to be phased out cannot be justification for rejecting a request for unbundled access and related facilities. A market party that, in spite of a formal announcement of a phase-out, still submits a request for unbundled access on the specific MDF location in question, must still have the possibility to obtain that access during the remaining part of the phase-out period. The phase-out period is specified the moment the phase-out announcement is made for that location. Thus, the reasonable phase-out period for an MDF location will not be specified anew based on a reasonable depreciation period for the basic configuration for this new customer. After all, that could lead to unfair access requests. The reasonable phase-out period is determined on the basis of the reasonable migration period after an announcement and the reasonable depreciation period that applies for the customers that were already purchasing facilities at that location at the time the announcement was made.

If KPN acts in conformance with the Commission's policy guidelines, it is not required to continue offering facilities to that customer once the phase-out period has expired. As long as the MDF location has not yet been phased out, delivery is technically feasible; after expiration of the phase-out period, delivery is no longer technically feasible. (After all, the MDF location no longer exists). KPN must make it clear during the negotiation process for granting access that this involves an MDF location for which KPN has already issued a formal phase-out announcement.

The Commission requests parties to respond to the startingpoint that parties can request unbundled access to existing MDF locations from KPN at any time, but that once a formal phase-out announcement has been made, KPN is authorised to limit the period of delivery to the remaining part of the phase-out period.

5.4 Evaluation of the intention to withdraw already granted access

The Commission is of opinion that the conditions the Commission intends to impose on KPN guarantee a meticulous phase-out process for MDF locations and that these conditions reflect a balanced consideration of both the interests of customers of MDF and KPN's interests. KPN has an interest in not being prevented from setting up its infrastructure and in implementing its plans over time. The MDF access customers have an interest in sound preparation of an alternative service and in meticulous migration and phase-out, so that the continuity of their services is guaranteed.

By virtue of the market decision, KPN must submit its intention to withdraw already granted access to facilities to the Commission three months prior to the intended withdrawal. The Commission is of the opinion that withdrawal of MDF access is in effect once the MDF access customer must begin phasing out his MDF facilities. After all, during the construction and migration phase, the Commission foresees a period of overlay during which the customer has a structure for the SLU service, but can still revert to MDF access. Once the phase-out of MDF facilities begins, the migration is irreversible and KPN has

begun withdrawing its MDF service. This means that KPN must submit its intention to phase out the MDF facilities to the Commission three months before the phase-out begins.

Within those three months, the Commission will verify whether KPN has lived up to its agreements from the reference offer and whether KPN has satisfied the conditions specified above that the Commission plans to formulate in policy guidelines. Given the administrative burden that this process potentially involves, the Commission intends to be reserved in conducting this verification. The Commission will also publish the submitted intention so that other parties are aware of this.

Figure 1 shows the chronological relationship between the phase-out process, the preliminary phase of publication of a reference offer evaluated by the Commission and evaluation of an intention to withdraw previously granted access.

The Commission is of the opinion that when KPN's non-compliance with the agreements from the reference offer results in a situation in which MDF access customers have not yet migrated at the moment at which the phase-out phase is to begin, MDF access must be maintained until the moment the construction/migration phase is completed. The same applies to non-compliance with the conditions imposed by the Commission. In such cases, continued service provision may be required of KPN and will be required by the Commission. Should the Commission stipulate this, either by virtue of its capacity as supervisor or because parties submit a request for extending service, KPN will not be allowed to withdraw the access already granted and the Commission will, if necessary, take measures to enforce its ruling.

The Commission points out that if KPN deviates from the 'standard' conditions mentioned above in a transparent and non-discriminatory manner, in agreement with the customers, KPN will be deemed to have complied with the conditions. If KPN has complied with the conditions, KPN may, given KPN's desire to phase out the MDF locations, no longer reasonably be required to extend its MDF service.

5.5 Conclusion

KPN has an interest in phasing out its MDF locations, due to the cost savings this will represent for KPN. However, given KPN's position of significant market power and its obligations, KPN may not simply act in a way that jeopardises the competitive possibilities of a significant percentage of its competitors. These competitors' access possibilities and service continuity must be sufficiently guaranteed. The Commission intends to formulate policy guidelines in which it stipulates conditions under which KPN may no longer reasonably be required to continue previously granted access. In this Position Paper the Commission submits its proposed conditions to market parties for review. The conditions ensure that i) parties can enter the market based on a regulated SLU offer and ii) the MDF access customers are able to migrate to SLU.

The first condition is that phasing out of MDF locations cannot begin before KPN has published an SLU reference offer, which has been evaluated by the Commission and that satisfies the requirements stipulated in the market decision. The reference offer must also include a complete migration offer for the migration from MDF to SDF, including strict quality levels. Parties must be informed of the reference offer in a timely manner, that is to say six months before the SLU offer is introduced.

Phasing out of the MDF locations can begin six months after publication of the reference offer. KPN must formally announce a phase-out on its website and must notify both the customers at that location and the Commission of the intended phase-out in writing. KPN must maintain a reasonable phase-out period for the phase-out of an MDF location. This period is determined by the time customers at that location reasonably require to be able to migrate from MDF to SDF (reasonable migration period) and the period that the customers at that MDF location may reasonably expect for the depreciation of the one-off investment in their basic configuration (reasonable depreciation period). The Commission considers a period of five years after the last delivery of a basic configuration at an MDF location (whose phase-out has not yet been announced) to be a reasonable depreciation period. For migration from MDF to SDF, the Commission's preliminary opinion is that a period of at least two years is reasonable. The reasonable phase-out period for a specific MDF location is the reasonable migration period, unless the reasonable depreciation period after the last delivery of a basic configuration is longer. In that case, the reasonable depreciation period after the last delivery of a basic configuration

for that location must be used as the reasonable phase-out period.

In agreement with its customers, KPN may deviate from the agreements from the reference offer and the Commission's policy guidelines. However, KPN's actions in this context must be transparent and non-discriminatory. This means that if KPN makes special agreements involving deviating conditions, KPN must announce the locations to which such deviating agreements apply on its website and specify what these agreements entail. KPN must also send the Commission written notification of any such agreements. The non-discrimination obligation also means, in principle, that once the phase-out period expires, all parties will have abandoned the MDF location.

KPN can only reject a request for MDF access and related facilities (co-location) on the basis of technical feasibility or the necessity to maintain network integrity. This means that KPN must grant such a request, both for locations for which KPN has announced a pending phase-out, as well as for locations for which no pending phase-out has been announced. For locations for which a formal phase-out notification has been issued, KPN is authorised to limit delivery to the remaining part of the phase-out period.

Three months before the MDF access customers must remove their equipment, KPN must submit its intention to withdraw previously granted access to facilities to the Commission. If KPN has not complied with the agreements from the reference offer or with conditions imposed by the Commission, KPN may not withdraw the previously granted access and the Commission will, if necessary, take measures to enforce this condition. If KPN has complied with the agreements from the reference offer and the conditions imposed by the Commission, continued provision of access may no longer reasonably be required of KPN. This is also the case if special agreements involving deviating conditions have been made with customers in a transparent and non-discriminatory manner.

6 Related subjects

In the All-IP Issue Paper the Commission identified a large number of issues related to All-IP. In the previous chapters, the Commission explained its views on the proposed phase-out of MDF access and the issue of a fully fledged alternative, as well as the conditions the Commission believes are necessary for KPN's phase-out. In this chapter, the Commission states its views on a number of other subjects that are important within the framework of All-IP. The subjects pertain to the premises, prerequisites and rules that apply to the market parties in general during the transition to All-IP.

6.1 Constructive approach

The transition to All-IP will require significant effort and involvement from KPN and the MDF access customers. The Commission believes that it is important not only for all of the parties involved to be able to present and protect their own interests, but also to take the interests of the other market parties into account.

The Commission expects KPN to take a proactive, constructive and customer-friendly approach to its wholesale customers. This approach will, for example, have to be evident in the manner and speed with which KPN provides information to the parties, as well as the manner in which KPN involves the parties in certain choices that have to be made during the transition. This approach should not be limited to the aspect of All-IP that KPN considers to be the access model of the future (WBA), but must also include the services that KPN might not initially wish to include in the commercial offer, but that the customers may want (SLU and SDF backhaul). The Commission expects from the other parties the willingness to participate in constructive discussions with KPN within the framework of All-IP, with a view to the future.

6.2 Equivalence

Within the framework of alternative regulation models for the transition to NGNs, the Commission discussed in the Issue Paper the concept of equivalence that plays a central role in the United Kingdom in the regulatory contract between the regulator Ofcom and BT.²⁸

Responses to the Issue Paper indicate that the majority of the market parties are basically positive about equivalence despite the uncertainties that exist regarding the possible details of this concept in the situation in the Netherlands. The Commission will therefore start a study before the end of this year to examine the possibilities that the regulation model used in the UK can offer for the situation in the Netherlands. The Commission will first examine the experiences that Ofcom and BT have gained using the model. The possibility of an equivalence model in which not only sale but also purchasing takes place in the same manner will also be examined. An important question in this respect is how the economies of scale of wholesale can, in a similar manner, be passed on from KPN wholesale to all wholesale customers, including KPN.

If KPN sustainably implements a model of this type in the Netherlands, the Commission will include

²⁸ Briefly stated, equivalence means that BT will take structural measures at wholesale level to ensure that competitor providers and BT itself can purchase certain wholesale components from BT under completely identical conditions. The most important of these structural measures is that BT has isolated elements including its local loop and the backhaul in a separate business unit (named Open Reach) that has been placed at a distance from the rest of BT. See www.openreach.co.uk/orpg/home/home.do

this in its market analyses. The Commission believes that it is conceivable that a model of this type could affect the occurrence of competition issues and thus have consequences for the fitting obligations imposed.

6.3 Pilot SLU

Within the framework of All-IP, KPN intends to start a series of experiments in November 2006 (hereinafter referred to as the pilot) for services including SLU and WBA.

The pilot is an important concern for the Commission because cooperation between the parties is an important factor in this phase for further development of competition on the market. In the interest of a level playing field and based on the obligations ensuing from the ULL and WBT market decisions, KPN should involve the market parties in the execution of a pilot in a transparent and non-discriminatory manner. The testing method may not result in unequal starting positions among the market parties when a fully fledged offer is introduced on the market. The current cooperation between KPN and the other market parties gave the Commission reason to further clarify its position with regard to a pilot. The Commission sent a letter to KPN stating the conditions with which KPN must comply within the framework of the pilot. The Commission also announced its intention to evaluate KPN's pilot in order to determine whether the testing has the characteristics of a rollout. A copy of this letter was sent to all IG SLU participants.²⁹

6.4 KPN's WBA offer

KPN has indicated that it intends to expand its existing WBA offer within the framework of the All-IP programme. Based on this WBA offer, the market parties can gain access to KPN's new All-IP network. With this offer, KPN will provide other market parties with access to its network based on its own commercial considerations.

The expansion of KPN's WBA offer will initially create the possibility to establish broadband access to end-users based on what is known as VDSL2 technology and the fibre-optic connections in residential areas (Fibre to the Home, or FttH). This will enable other providers to offer services including IPTV that cover the entire country.

The Commission notes the following with reference to the position assumed by this WBA offer in the existing relevant markets. The market for wholesale broadband access has two relevant markets: the market for low-quality wholesale broadband access (hereinafter: WBA-LQ) and the market for high-quality wholesale broadband access (hereinafter: WBA-HQ). In the WBA market decision, the Commission imposed on KPN the obligation to provide transparent and non-discriminatory access in the market for WBA-HQ.³⁰ The Commission concluded that the market for WBA-LQ is effectively competitive and therefore imposed no obligations.

Which services will be included in KPN's WBA offer is currently unclear to the Commission. Consequently, the Commission cannot yet determine whether KPN's proposed WBA offer belongs to the market for WBA-HQ or the market for WBA-LQ. The Commission will monitor the development of

²⁹ See letter from the Commission to KPN of 21 September 2006, reference: OPTA/BO/2006/202709, published on the Commission's website (www.opta.nl).

³⁰ Decision Analysis of the market for wholesale broadband access of 21 December 2005, reference: OPTA/BO/2005/203432.

the WBA offer and, when KPN introduces a WBA offer on the market in the coming regulation period, it will determine to which relevant market it belongs. Regarding the pilot offer in which WBA is also being tested, the Commission will first be able to determine which services are included and subsequently determine whether the expanded offer of services is part of the market for WBA-HQ and, if so, which part. If (part of) KPN's WBA offer is part of the market for WBA-HQ, obligations for that market will also apply to (that part of) KPN's WBA offer. KPN's WBA offer will also be included in the Commission's new market analyses of the WBA market.

6.5 The existing obligations

In general, the Commission will hold KPN unbridged to the existing obligations ensuing from the market decisions, irrespective of the new market analyses. This is relevant to two subjects in particular. The first of these is a discussion, partly conducted in the IG SLU, regarding the possibility of shared access to the sub-network; the second is the decision to be taken regarding the Wholesale Price Cap (hereinafter: WPC).

6.5.1 Shared access to the sub-network

Regarding shared access to the sub-network, the Commission is considering the following.

In the market decision unbundled access to the local loop market, it was determined that unbundled access to the local loop (at both sub-network and MDF level) pertains to both completely unbundled access and shared access. KPN did not contest this in the appeal procedure. Thus the reference offer for unbundled access to the sub-network should also include access to the sub-network.

Firstly, a functionality of this type is important in enabling the migration of end-users from MDF access to SLU. After all, more than 70% of the unbundled access lines used by providers other than KPN are shared access lines with which the end-user continues to use KPN's telephone service while purchasing a broadband connection from a different provider. In its market analyses, the Commission has therefore determined that there are separate relevant markets for fixed telephony and broadband internet access. As far as the Commission is concerned, this also means that end-users – including KPN's wholesale customers – must not be forced to purchase telephony and broadband access as a bundle. If no shared access is established to the sub-network, this would in fact mean that an alternative provider could only reach the end-user if the user purchases both telephony and broadband internet access from the alternative provider (as well as any other services) in a single package, or that the provider would have to use a different network, e.g. mobile only, for these services. This would make it impossible for a provider of broadband internet access wanting to utilise unbundled access to the sub-network to reach end-users of KPN's telephony. This disproportionately diminishes the possibilities open to alternative providers of internet access for competing with KPN.

The Commission has considered the fact that the need for a wholesale service such as shared access could disappear if in the long term the markets for broadband internet access and telephony were to converge into a single bundled relevant end-user market. In a bundled market, the choice of end-users for a provider is no longer determined by the individual product offers of telephony and broadband internet access; the majority of end-users opt to purchase the services from the same provider. However, a bundled market for broadband internet access and telephony does not exist at this time. Providers must therefore be able to choose whether they want to offer a bundle of services and/or individual products. They must have the option of also acquiring unbundled access at SLU level based

on line sharing.

It is evident to the Commission from the IG SLU that KPN does not want to include shared access to the local loop in its offer, but that the market parties do need this. The Commission comments that its point of view in this respect is completely clear. KPN must honour every reasonable request for access to the local loop within the framework of its obligations ensuing from the market analysis decision. These obligations also include shared access to the sub-network.

6.5.2 All-IP and the WPC

The relationship between All-IP and the wholesale tariff regulation imposed on KPN on the basis of the market decisions of 21 December 2005 was discussed by the Commission in the Issue Paper. For the existing regulated services, it was noted that costs and volume developments related to All-IP, including expected revenue from the sale of MDF locations, have been considered in the formulation of the WPC draft decision. Thus in principle, All-IP does not affect the tariff ceilings determined in the WPC. Moreover, the market decisions include conditions that apply in the event that modification of the wholesale services regulated under the WPC or the regulated wholesale portfolio is required. These conditions also apply if the modifications are a result of All-IP.

In response to the Issue Paper, some market parties commented that the introduction of All-IP means that other KPN services also need to be regulated based on costs. The Commission agrees. If KPN develops services within the framework of All-IP for which a tariff regulation applies at this time (SLU), these must be evaluated in terms of cost orientation. For SLU, this is done on the basis of the obligations in the ULL market decision. When the time comes, if KPN has an SLU reference offer, the Commission will start an evaluation process. This will include the assessment of the costs of MDF-SLU migration. For the wholesale services not regulated at this time, e.g. SDF backhaul, the Commission will determine in the market analyses whether and to what extent tariff regulation is an appropriate measure.

6.6 Other markets

In this section the Commission will discuss the consequences that implementation of All-IP could have on markets other than those for ULL, WBT and the relevant market to which SDF backhaul belongs. In the long term, KPN's plans will affect not only these markets but possibly also those for fixed telephony and leased lines.

6.6.1 Fixed telephony

KPN has indicated that the obligations to provide CPS and WLR must be revised: providers can already provide Voice over Broadband (VoB), and this will be even easier based on the future WBA. The Commission also notes that the fact alone that other providers are also able to offer Voice over Broadband (VoB) based on a broadband connection does not mean that this renders sufficient discipline to address KPN's SMP position on the retail telephony market. In its current analysis, the Commission has extensively taken the development of IP and VoB into account. Thus there is no reason to revise the obligations at this time. Whether KPN's future WBA offer will prove to lower the threshold will become evident with time. This cannot be determined at this stage.

The question of the end of the distinction between local and long-distance telephone traffic has been addressed by the Commission in its market decisions. This also provides no reason to take any

measures in the short term. The Commission requests parties to respond to its position that All-IP does not require any immediate subsequent measures with reference to the issues it raises in the area of fixed telephony.

With reference to IP interconnection and the conditions for migration from PSTN to IP interconnection, the Commission believes that these need not necessarily be addressed within the framework of All-IP. After conclusion of the consultation, the Commission will inform the market parties of the steps it will take regarding this matter.

6.6.2 Leased lines

Retail leased lines

For retail leased lines, KPN is required (Regulation Minimum Package Leased Lines) to provide analogue leased lines, 64 kbit/s digital leased lines and 1984 kbit/s digital leased lines. KPN intends to replace these services within the framework of All-IP with alternatives based on Ethernet. KPN has not yet presented concrete proposals in this respect. The Commission will therefore not yet assume a position in this matter, but does note that a possible modification of the Regulation Minimum Package Leased Lines by the European Commission could have consequences for KPN's obligations to provide these services.

Wholesale leased lines

The markets for wholesale terminating leased lines pertain to the provision of leased lines between an end-user's customer location and the provider's Point of Presence on the one hand and the provision of leased lines between a local network point (e.g. an MDF location or mobile base station) and the provider's Point of Presence on the other (the Commission will hereinafter refer to these services as ILL services).³¹ Based on capacity, the Commission distinguishes between a relevant market for wholesale leased lines < 2Mbit/s, 2Mbit/s wholesale leased lines and wholesale leased lines with a capacity of >2Mbit/s. On the market for ILL services, an access obligation for <2Mbit/s and 2Mbit/s has been imposed on KPN.

All-IP poses the question of whether this will also affect KPN's provision of ILL services. As a result of All-IP, the existing ILL services may in the long term be replaced by services based on Ethernet connections. The lack of any concrete intention on KPN's part to modify the ILL services within the framework of All-IP means that the Commission will not take a position regarding this matter in this Position Paper. Depending on future All-IP developments, this will be addressed separately.

A number of parties have indicated that they expect that providers will no longer want to establish MDF backhaul and that this could cause problems. Considering the fact that the phase-out conditions generally give the parties another two and a half years (or longer if the reasonable depreciation period is longer) to utilise an MDF location, the Commission believes that there could still be providers who want to establish MDF backhaul. In addition, the Commission has also considered the fact that MDF backhaul can provide a stepping stone to SDF backhaul connectivity. This means that a market party that utilises SLU and/or SDF backhaul could still utilise MDF backhaul even after an MDF location is phased out. The Commission sees no reason to revise the market analyses for this market.

³¹ Decision Market analysis Leased Lines of 21 December 2005, reference: OPTA/BO/2005/203430.

Datacom services

Within the framework of the market analyses performed on the leased lines market, the Commission also studied the market for broadband copper connections for business purposes (datacom copper). This market is indirectly related to the market for ULL because providers of datacom services use unbundled access to KPN's local loop at MDF level via the market for WBT-HQ. KPN is obliged to provide access that is both non-discriminatory and transparent for WBT-HQ.

The Commission expects that phasing out MDF access because of All-IP will have little direct effect on this market or on the higher WBT-HQ market if the Commission imposes a fully fledged alternative based on the new market analyses and if the conditions specified phase-out conditions are implemented. The obligation to provide WBT-HQ (also via All-IP network) will continue to apply to KPN based on the currently applicable market decisions. Finally, the developments in the datacom market will also be included in the new market analysis of WBT.

6.7 Joint infrastructure installation when digging

The Commission has determined that the transition to All-IP and the development of FttH initiatives will bring significant investments in the construction of fibre-optic infrastructures in the coming years. Based on the desirability of establishing sustainable infrastructure competition, the Commission considers these investments to be positive.

An issue in which the Commission is particularly interested in this respect is the shared construction of fibre-optic infrastructures. When two or more parties decide to collectively construct – in the sense that they will each lay their own ducts into a gully that has been jointly dug – the digging costs per market party involved will decrease proportionately. This could have a positive effect on providers' decisions regarding the construction of their own fibre-optic infrastructures.

Against this backdrop, the Commission requests that all market parties take an active approach and arrive at a situation in which the parties jointly install infrastructures as much as possible. It is, however, essential that market parties inform one another adequately and especially in a timely manner regarding planned digging activities, so that other parties have sufficient time to decide whether or not they also want to utilise the relevant segments.

The Commission is aware of the existing Klic system and of the municipal coordination mechanisms, but concludes based on discussions in the Industry Group SLU that these have not yet generated optimum transparency with regard to planned digging activities, which the Commission believes are necessary to stimulate joint construction by the market parties. The Commission would like to see a market-wide agreement made in which the market parties agree to announce planned digging activities in a timely manner. The concrete meaning of the term 'communication in a timely manner' will be an essential element in these agreements. The Industry Group SLU is currently determining what this term should be understood to mean.

The Commission will also study the extent to which arriving at further-reaching agreements is feasible. The Commission is considering the following possibilities, for example:

- Market parties agree to include an empty duct at their own cost as standard procedure in any

digging activities. This empty duct could be purchased later by another market party for the price of the costs of the empty duct and a proportionate share of the digging costs;

- Market parties include an empty duct, but other market parties indicate prior to the digging activities that they intend to purchase the empty duct in the long term. In this case, the second party reimburses the first party in advance for the additional cost of including the empty duct, and for a proportionate share of the digging costs when the duct is purchased.

However, the Commission does not currently believe that its authority includes powers to impose an obligation to include extra capacity or an extra duct. The Commission will examine the available possibilities for arriving at market-wide agreements in cooperation with the Ministry of Economic Affairs.

7 Conclusions, consultation questions and subsequent steps

7.1.1 Conclusions

An important conclusion from this Position Paper is that KPN can phase out the MDF locations within the framework of All-IP in accordance with conditions. The proposed phase-out of this layer in the network hierarchy is a logical step in moving towards a more efficient totally packet-switched network. This phase-out means that the KPN network will be reorganised in such a way that a significant part of the regulated services in the market for unbundled access, namely MDF access, will also be phased out. In the context of a number of other developments, the Commission believes that this intention provides an incentive for conducting new market analyses in the short term to determine whether, and if so, what other access options there must be to mitigate the effects of phasing out MDF access.

In the Position Paper, the Commission takes a preliminary position regarding the question of what a fully fledged alternative for MDF access might be. In doing so, the Commission is basing its position on the analysis of the competition problems observed and the competitive situation in the retail markets from the market decisions of December 2005.

The Commission believes that a fully fledged alternative must facilitate connectivity between the sub-network and other suppliers' networks. Ideally, other suppliers will, like KPN, realise this connectivity, by installing their own infrastructure or by purchasing this connectivity. However, the Commission foresees obstacles for further rollout, given the speed and scale on which other parties must realise this infrastructure. The Commission proposes that a fully fledged alternative for the currently applicable obligations would include an obligation to offer unbundled access to the sub-network, but that supplementary measures are needed to facilitate this connectivity. This can be achieved by leasing glass fibre and/or glass-fibre routes from KPN, possibly in combination with a regulated SDF backhaul offer from KPN. Finally, the Commission envisions a role for temporary regulation of the WBT offer for the locations that KPN wants to phase out, but for which KPN is not yet able to deliver SLU and other possible supplementary measures. Regulation of this offer will end when KPN is able to deliver the alternative service. The Commission currently expects that in a situation in which parties are able to further roll out to the sub-network, further-reaching regulation of the markets for wholesale broadband access, as is currently the case, will no longer be necessary.

The Commission hopes that these measures will provide guidance for decision-making by KPN and other market parties, as well as for their mutual consultation ('regulatory guidance'). The Commission hopes that parties will arrive at sustainable solutions and agreements during the coming period that promote actual competition. If KPN and other parties arrive at such sustainable agreements, this could mean that the Commission could adopt fewer (or less stringent) obligations in the new market analyses.

While it is true that KPN can phase out MDF locations, the startingpoint for the ULL market decision is that, in principle, access already granted to (regulated) facilities cannot be withdrawn and that KPN must respond to reasonable requests for access. KPN's position as a party with significant market power and the objective of the regulatory framework (striving to ensure actual, sustainable competition), also justifies imposing conditions on KPN in the interest of the MDF access customers, with which KPN must comply if MDF is actually to be phased out.

The Commission intends to impose the following conditions on KPN in the form of policy guidelines:

- KPN cannot begin the phase-out process for a specific MDF location until it publishes an SLU reference offer that has been evaluated by the Commission.
- The MDF access customers must also have been able to fully utilise the period of six months stipulated in the market decision for unbundled access in order to prepare for the purchase of SLU.
- A phase-out of a specific MDF location begins with an announcement to this effect on KPN's website, written notification sent to the customers at that location and written notification sent to the Commission.
- KPN must grant MDF access customers a reasonable phase-out period. First of all, this means that the current customers of co-location facilities must have had a reasonable period (five years) in which to depreciate the one-off fee for co-location facilities for the MDF location they have paid to KPN. Moreover, parties must be granted a reasonable period (two years and three months) in which to migrate from MDF to SLU. In principle, the reasonable phase-out period that KPN must maintain is the reasonable migration period of two years and three months, unless the reasonable depreciation period of five years after delivery of the last co-location facilities is longer.
- KPN and the MDF access customers can make other agreements regarding the phase-out of a specific location. KPN must announce the locations for which other agreements have been made on its website, specify what these other agreements entail and notify the Commission of such agreements.
- Once KPN has announced that it intends to phase out an MDF location, this must, in principle, mean that upon expiration of the phase-out period, all parties will be migrated from the MDF location.
- Parties can request unbundled access to existing MDF locations at any time. Once KPN has issued a formal announcement regarding a phase-out, KPN is authorised to limit the delivery period to the remaining part of the phase-out period.

7.1.2 Consultation questions

The Commission requests parties to respond to the points of view the Commission has adopted in this Position Paper and the subsequent steps the Commission has announced.

The Commission has the following specific questions for the parties regarding the phase-out conditions it has outlined.

1. The Commission requests parties to respond to the condition that the phase-out process cannot start until there is an SLU reference offer that has been evaluated by the Commission and that complies with the requirements from the market decision.
2. The Commission requests parties to respond to the point of view that the SLU reference offer does not comply with the requirements from the market decision if it does not also include an MDF-SDF migration offer.
3. The Commission requests parties to respond to the point of view that a reasonable migration period cannot start sooner than six months after KPN has published an SLU reference offer by KPN that has been evaluated by the Commission.

4. The Commission requests parties to respond to the condition that the phase-out process cannot begin until after notification of such a process is published on the KPN website and written notification is sent to the MDF access customers at that location as well as to the Commission.
5. The Commission requests parties to respond to the Commission's point of view that a reasonable depreciation period for the one-off fee that a customer has paid to KPN for the basic configuration at an MDF location is five years.
6. The Commission requests parties to respond to the phases the Commission has distinguished and the activities that the Commission envisions for each of these phases. Have phases/activities been designated that are redundant? Are any phases/activities missing from the phase-out process as described? Moreover, the Commission requests market parties to respond to the periods the Commission has mentioned. The Commission calls on parties to substantiate their responses with objective information to the extent possible. The Commission specifically requests that KPN provides insight into the activities that it distinguishes and the deadlines it maintains for these activities, based in part on historical figures.
7. The Commission requests parties to respond to the condition that KPN must maintain a reasonable phase-out period that is identical to the reasonable migration period, unless the reasonable depreciation period of five years after the last delivery of a basic configuration at that MDF location, requires a longer period. In that case the reasonable depreciation period to be maintained for all parties must be five years after the last delivery of a basic configuration at that MDF location.
8. The Commission requests parties to respond to the point of view that KPN must announce on its website for which locations it has agreed different conditions as well as the details of these agreements, and that KPN must also notify the Commission of such agreements in writing.
9. The Commission requests parties to specify the circumstances under which KPN or other parties could use an MDF location, in spite of KPN's publication of an announcement that this MDF location is to be phased out.
10. The Commission requests parties to respond to the startingpoint that parties can request unbundled access to existing MDF locations from KPN at any time, but that once a formal phase-out announcement has been made, KPN is authorised to limit the period of delivery to the remaining part of the phase-out period.

7.1.3 Subsequent steps

The Commission foresees the following four important activities during the coming months.

Market analyses

First of all, the Commission has announced that in any event it intends to conduct new market analyses as soon as possible for the market for unbundled access to the KPN local loop, the markets for high and low quality wholesale broadband access and to determine to which relevant market SDF backhaul belongs, in order to be able to determine what obligations are appropriate in the absence of MDF access and during the phase-out process.

Policy guidelines

Based on the current market decision, the Commission has sketched a number of conditions in this Position Paper that it intends to impose on the phase-out of MDF locations. One important aspect of these conditions is the 'reasonable migration period'. In order to be able to objectify these conditions

as much as possible, the Commission will soon launch a study into the activities that must be performed within the framework of a migration to SLU, as well as the deadlines associated with these activities. Once the consultation period (which ends on 1 November 2007) expires, the Commission will evaluate the parties' responses and, based in part on these responses and the study findings, formulate policy guidelines. The Commission expects to be able to publish policy guidelines by the end of December.

Industry Group SLU

A number of parties have suspended their participation in the Industry Group SLU, which was set up by the Commission until i) KPN revises its intention to launch a pilot and ii) the Commission has published its Position Paper. The Commission wants to re-start the IG SLU in the short term and will send parties an invitation to participate in this effort. Within the framework of IG SLU, the Commission will consult further with parties regarding the pilot, the SLU reference offer and the MDF-SDF migration process. The Commission also intends to include further development of the fully fledged alternative, in anticipation of the new MA, as one of the topics to be dealt with by the IG SLU. In this context, the Commission is considering subjects such as leasing glass fibre/glass-fibre routes and SDF backhaul. One precondition in this respect is that KPN and market parties must be willing to contribute to this endeavour constructively.

Studies launched (or to be launched) within the framework of AII-IP

As already stated, the Commission will launch a study into the MDF-SLU migration process. The Commission has already begun a study into the business case for SLU. Finally, the Commission also announced in this Position Paper that it intends to launch a study before the end of this year into the possibilities that the 'Open Reach' model and the principle of 'Equivalence' as these are applied in the United Kingdom might offer for the Dutch situation.

Appendix 1: Network overview and list of terms and definitions

The Position Paper uses a large number of terms that are based on KPN's old (i.e. existing) and new ALL-IP network.

This appendix will clarify these terms, using a general depiction of both the existing network and the new ALL-IP network planned by KPN .

KPN's existing (broadband) network

Current KPN broadband network

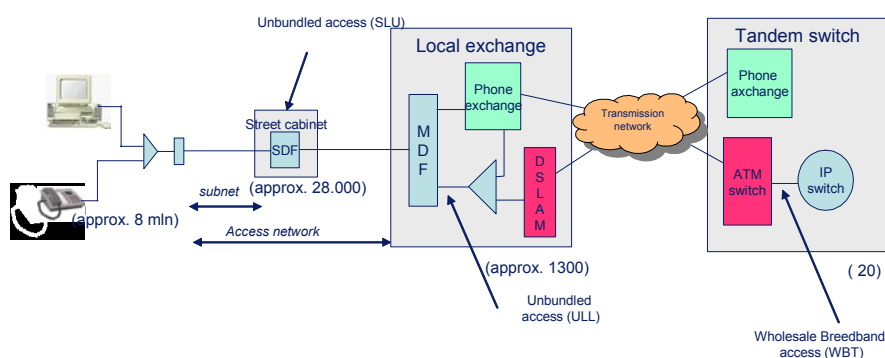


Figure: Diagram of KPN's existing network

Brief general description

The above figure depicts KPN's existing network. It shows in particular the access section for the delivery of broadband services.

KPN's existing network consists of a (copper wire) access network (local loop) with millions of connections. The local loop consists of two network levels: the subnetwork (also known as the secondary local loop or subloop) and the primary local loop.

In the Netherlands (the NL), a copper wire connection runs from each customer location to a street cabinet. There are about 28,000 street cabinets in the NL. The street cabinet contains a cable distributor, also known as a SDF (Subloop Distribution Frame). The street cabinets are connected to the MDF (Main Distribution Frame) via the primary local loop. This main distributor is located in a building known as the local exchange or MDF location. This local exchange contains the phone exchange, with all KPN telephony customers having a phone connection.

Access to the local loop

Access to KPN's copper wire local loop van KPN is enabled at two levels: at the level of the main distribution frame (access to the main distribution frame, also known as MDF Access or ULL) and

access at the subnetwork level (access to the street cabinet, also known as SDF Access or SLU). There are two types of access for this: shared access and full access. In the case of shared access, the connection is split (using a 'splitter') into two frequency bands, namely a low and a high frequency band. The low frequency band is used to (continue to) provide the classic telephony services, with the high frequency part of the band being used to deliver other services (usually broadband internet access services). In the case of full unbundled access, the entire connection is made available.

Wholesale Broadband Access (WBT)

In addition to unbundled access to the local loop, there is also the option of so-called 'bit stream access' to KPN's network. This provides access at a higher level in the network (typically at tandem switch level, also known as regional access). In other words, this WBT service means that a provider does not need to roll out up to the local exchange but can connect to the end-user at the level of the tandem switch.

This means that the transmission from the local switch to the tandem switch, also known as the MDF backhaul, is an integral component of the WBT service.

Co-location facilities

KPN also provides so-called 'co-location', to enable access to KPN's network. These co-location facilities mean that a customer who has bought access is allowed to place his own equipment in the KPN locations and connect them to KPN's network. All facilities (incl. power, cooling etc.) are included in a co-location facility. Examples of co-location include SDF Co-location, MDF Co-location etc.

KPN's new ALL-IP network

The following figure¹ shows KPN's new ALL-IP network. The figure clearly shows that the ALL-IP network consists of different network levels: an access network ('Local Loop'), a Metro Access, a MetroCore, a Backbone and an IP Edge network.

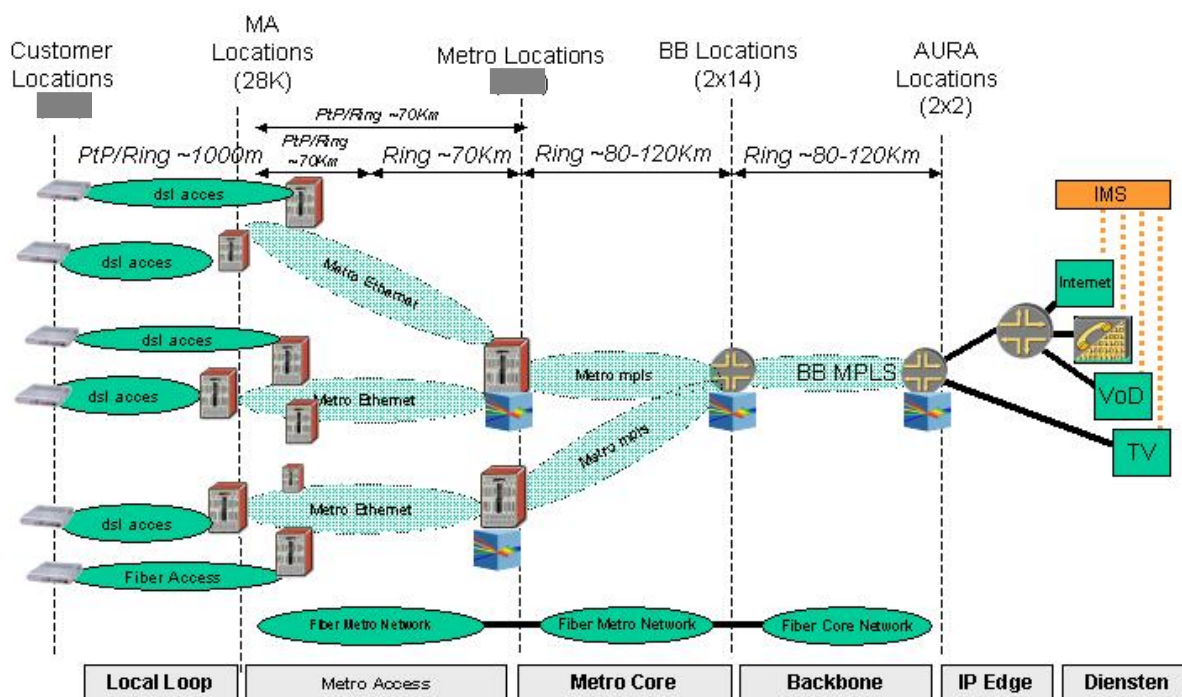


Figure: illustration of KPN's new ALL-IP network

[Legend: Diensten = Services.]

Access network

This network also consists of a local loop, whereby there is no longer a distinction between the subnetwork and the primary local loop; the subnetwork is now the sole component of the copper wire access networks. In addition, KPN is also enabling the provision of a fibre optic local loop (known as 'Fibre to the Home' or 'Fibre to the Office') in new districts, in addition to the copper wire local loop. This fibre optic local loop too is connected to the existing street cabinet.

The new network has no local exchange (as defined in the existing network), this function is transferred to the street cabinet. As a consequence, new equipment - designated by KPN as 'NG-DSLAM' - is installed in the street cabinet, to which the customer is connected. This equipment allows the integrated delivery of all services (such as broadband internet, VoIP and IPTV) as well as the classic telephony services.

Street cabinets equipped in this way are also known as Multi-Service Access Nodes (MSANs).

¹ Source: KPN.

MetroAccess network

The design of the new network uses fibre optic rings to connect these NG-DSLAMs (which are located in the street cabinets) to the so-called MetroCore Location (MCL). In each case, these (approx. 200) MC locations correspond to the old local exchanges. An Ethernet network is used to connect the various NG-DSLAMs to the Ethernet routers on the MCLs. This connectivity between the SDF (street cabinet) and the MCL is also known as 'SDF Backhaul'.

MetroCore and Backbone network

The various MCLs are connected with a number of Broadband (BB) Locations (2 x 14). This network is also based on fibre optic rings, DWDM and Ethernet connections.

Finally, KPN has also defined four so-called 'AURA locations' (NB. 'AURA' stands for Amsterdam, Utrecht, Rotterdam and Arnhem), where it is linking its Ethernet transmission network with other networks, such as IP, VoIP, IP TV distribution etc.

List of network terms and definitions

| Term | Abbreviation | Description | Synonyms, Dutch terms / abbreviations |
|--|--------------|---|---------------------------------------|
| ADSL | | Modulation technique used to deliver broadband services in the local loop. | |
| ADSL2+ | | A modulation technique used for the local loop that permits speeds of about 20Mb at distances of 2 - 2.5 km | |
| AURA | | The locations in KPN's ALL-IP network that connect the Backbone network to the IP-edge network. | |
| Backbone network | | In the ALL-IP network, the network component (network layer) between the MetroCore and the IP-edge network. | |
| BB location | BB | See Core Location | |
| Bitstream access | | General term for wholesale broadband access services | 'Bitstroomtoegang' (Dutch term), BSA |
| Co-location | | Facilities in a (KPN) building that permit efficient access to the network. | |
| Core Location | CL | The locations in KPN's ALL-IP network that connect the MetroCore network to the Backbone network. | BB location |
| DSLAM | | Equipment that permits multiplexing of various DSL connections in a backhaul connection. | |
| Ethernet | | A (new) transmission technique used in KPN's new ALL-IP network | |
| Fibre to the Curve | FTTC | Fibre optic cable to the SDF (street cabinet). | |
| Fibre to the Home | FTTH | Fibre optic cable to the home | |
| Fibre to the Office | FTTO | Fibre optic cable to business districts | |
| Shared access | | With shared access, the telephony signal (the telephone line) is retained; a splitter is used to split off part of the connection capacity for broadband applications (see figure A) | 'gedeelde toegang' (Dutch), ASL |
| Main distribution frame | MDF | The cable distributor in the local exchange, used to connect customers to the phone exchange | MDF |
| IP-Edge | | KPN's IP transmission network (or backbone network). | |
| Cable distributor (Subloop Distribution Frame/SDF) | | A cabinet in which incoming cables are connected with outgoing cables. In this way, for example, the copper wire local loops of the individual connections are connected with the cables in the primary local loop in the street cabinet. | KVD (Dutch) |
| Local Loop Unbundling | LLU | Unbundled Access to the local loop at the level of the main distribution frame | MDF Access |

| | | | |
|------------------------------------|------|--|------------------------------|
| MDF location | | Location/building where the main distribution frame is located | Local switch |
| MDF Backhaul | | Connectivity between the MDF location and the network PoP | |
| Metro Access Network | MAN | The network component in KPN's ALL-IP network where the street cabinets are connected to the MetroCore network (via the MCL) | Also known as 'SDF Backhaul' |
| Metro Core Location | MCL | The locations in KPN's ALL-IP Network that connect the Metro Access network to the Metro Core network | Metro Location |
| MetroCore Network | MCN | The network component in KPN's ALL-IP Network used to connect the MCLs to the Backbone network (via the CL) | |
| Multi-Service Access Node | MSAN | Fully-equipped street cabinet (incl. with NG-DSLAMs) in KPN's new ALL-IP Network | |
| NG-DSLAM Local exchange | | A new type of DSLAM that supports both VDSL2, ADSL, ADSL2+ and FTTH/FTTO connections and that can also deliver 'classic' telephony lines. The location of the phone exchange to which customers are connected. (NB. There are 1,361 in the NL) | nrc (Dutch), MDF location |
| Unbundled access to the local loop | ULL | Access to the copper wire local loop via the main distribution frame (LLU) or via the cable distributor (SLU), see figure | Also known as ULL |
| Open Wholesale Model | | The term used by KPN to denote the options for commercial access to the KPN network. Mainly refers to KPN's WBA services. | |
| Point of Presence | PoP | Network location of (alternative) provider | |
| Primary local loop | PLL | Copperwire network component between the street cabinet and the local switch | PAN (Dutch) |
| RO-SLU RO-ULL | | RO for SLU ROA for ULL | |
| Reference offer | RO | Offer that includes all services, prices and conditions for certain wholesale (access) services | RA (Dutch abbreviation) |
| Regional access point | RAP | Term used in RO for regional level access (at tandem switch level) | |
| SDF | | Cable distributor in the street cabinet | |
| SDF access | | Access to the local loop at subnetwork level | SLU |
| SDF backhaul | | Connectivity between the street cabinet and the network location (PoP) of the alternative provider | Metro Access Network |
| Splitter | | A passive device (i.e. a filter) that splits the high and low frequency components of a local loop into two lines, enabling shared access to the local loop. Splitters are always located on both sides of the connection i.e. close to the customer and in the network of the broadband provider. | |

| | | | |
|----------------------------|--------|--|--|
| Street cabinet | | Location in the street where the cable distributor (SDF) is located. | 'straatkast' (Dutch) |
| Sub Loop Unbundling | SLU | Unbundled Access to the local loop at the subnetwork level | SDF Access |
| Subloop | | See subnetwork. | |
| VDSL2 | | A new modulation technique for the copperwire local loop that enables higher bandwidths (50 to 100 Mb) to be achieved, especially across short connection distances (up to 800m) | |
| Tandem switch | | The locations in the network where the so-called 'tandem switches' for telephony are located. There are 20 such locations in the NL. | evkc / 'verkeerscentrale' (Dutch terms) |
| WBA (high quality) | WBA-HQ | Separate relevant market for WBA high quality services. These are mainly business WBA services that deliver a guaranteed capacity. | Also known as business WBA or WBT-HQ (Dutch) |
| WBA (low quality) | WBA-LQ | Separate relevant market for WBA low quality services. These are mainly WBA services consumers where there is no guaranteed capacity - instead, capacity is shared amongst a large group of users. | Also known as consumer WBA, Wholesale DSL Access (from KPN), or WBA-LQ (Dutch) |
| Wholesale Broadband Access | WBA | A term used in the market decisions for the wholesale market for broadband access services. KPN uses this term for the WBA access portfolio in the ALL-IP network. | WBA, BSA |
| xDSL | | General term for all DSL modulation techniques (such as ADSL, SDSL, VDSL etc.) | |