MARKETS FOR THE SUPPLY OF WHOLESALE (PHYSICAL) NETWORK INFRASTRUCTURE ACCESS AT A FIXED LOCATION AND WHOLESALE BROADBAND ACCESS

Definition of product and geographic markets, assessment of SMP and the imposition, maintenance, alteration or removal of regulatory obligations

ICP-ANACOM

January 2009

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1. INTRODUCTION

1.1. Conclusions of the latest market analyses

1.1.1. The market for the wholesale provision of unbundled access

In its Determination of 30 March 2005, the Board of ICP-ANACOM approved the decision on the definition of product and geographic markets, assessments of significant market power (SMP) and the imposition, maintenance, alteration or removal of regulatory obligations in the wholesale market for unbundled access[1].

In this analysis, ICP-ANACOM identified the following relevant market for the purposes of *ex-ante* regulation:

– Wholesale supply of unbundled access (including shared access) to metallic loops and sub-loops for the provision of broadband and voice services, covering the entire national territory.

Having analysed this market[2], ICP-ANACOM concluded that the PT Group held SMP in the relevant market and, as a consequence, imposed the obligations contained in Table 1.

Table 1 – Obligations imposed on companies identified with SMP in the relevant market - Market 11

Obligations	**Market for the wholesale provision of unbundled access (including shared access) to loops and sub-loops for the provision of broadband and voice services**
Access to and use of specific resources networks	▪ Grant access to local loops and sub-loops and associated resources ▪ Negotiate in good faith with companies requesting access ▪ Not withdraw access already granted to determined resources
Transparency in the publication of information, including reference offers	▪ Publication of the RUO ▪ 30 days notice of alterations to the offer
Non-discrimination in the provision of access and interconnection and in the provision of the respective information	▪ Not engage in undue discrimination with regard to provision of access to local loops and sub-loops and associated resources
Separation of accounts for specific activities related to access and/or interconnection	▪ Cost accounting system and accounting separation
Price control and cost accounting	▪ Set cost-oriented prices ▪ Maintain the methodology used to estimate costs ▪ Possibility of moving towards forward-looking long-term incremental cost models
Financial reporting	▪ Provision of accounting records (AAS), including data on revenue from third parties

1.1.2. The market for wholesale provision of broadband access

In its Determination of 24 June 2005, the Board of ICP-ANACOM approved the decision on the definition of product and geographic markets, assessments of significant market power

[1] Market 11 of EC Recommendation 2003/311/EC of 11 February, 2003.

[2] Taking into full consideration the EC Guidelines on the analysis and assessment of SMP within the scope of the Community regulatory framework for electronic communication services and networks.

(SMP) and the imposition, maintenance, alteration or removal of regulatory obligations in the wholesale broadband access market[3].

In this analysis, after identifying the retail broadband access market[4] as non-competitive, ICP-ANACOM identified the following related wholesale market:

– Wholesale provision of broadband access, including broadband access services supported over the public switched telephone network and cable distribution networks, covering the entire national territory.

Having identified the above market, ICP-ANACOM concluded that the PT Group had SMP in the identified relevant market and consequently imposed the obligations contained in Table 2.

Table 2 – Obligations imposed on companies identified with SMP in the relevant market - Market 12

Obligations	**Market for the wholesale provision of broadband access which includes broadband access services supported over the public switched telephone network and cable distribution networks**
Access to and use of specific resources networks	▪ Grant access to the PSTN at different points ▪ Negotiate in good faith with companies requesting access ▪ Not withdraw access already granted to determined resources
Transparency in the publication of information, including reference offers	▪ Publication of the broadband access reference offer ("Rede ADSL PT"), with clear indications of the alterations to different versions, including SLAs and compensation for non-compliance
Non-discrimination in the provision of access and interconnection and in the provision of the respective information	▪ No undue discrimination in providing access to network ▪ 30 days notice of alterations to wholesale provision – in the event of significant alterations to wholesale provision, this period shall be extended to 2 months ▪ Launch of retail offers bound by the existence of equivalent wholesale offers in the "Rede ADSL PT" ▪ Submit information on maximum, average and minimum periods for delivery and repair of faults and level of availability (itemised by type of installation and operator)
Separation of accounts for specific activities relating to access and/or interconnection	▪ Cost accounting system and accounting separation
Price control and cost accounting	▪ Set cost-oriented prices (broadband access services supported over the public switched telephone network) ▪ Control of prices ("retail-minus")
Financial Reporting	▪ Provision of accounting records (AAS) including data on revenue from third parties

ICP-ANACOM concluded that the obligations imposed at wholesale level would be sufficient to ensure competition in the retail market for broadband access.

1.2. Market developments

Since mid-2005, when the above analyses were published, there have been a number of alterations which have had a significant impact on the defined markets.

Amongst other changes in the domestic market, the following are of key importance:

[3] Market 12 of EC Recommendation 2003/311/EC of 11 February, 2003..

[4] Comprising broadband access services supplied via ADSL and cable modem to residential and non-residential customers and covering the entire national territory.

– Mergers, including:

  - the acquisition, in 2007, of full control by Sonaecom, SGPS, SA (Sonaecom) of the entire share capital of Telemilénio – Telecomunicações, Sociedade Unipessoal, Lda (Tele2);

  - the acquisition, in 2007, of full control by Sonaecom[5] of a range of assets corresponding to the residential and SoHo (Small Office/Home Office) segment of the fixed network communications market (voice and Internet) of Onitelecom – Infocomunicações, S.A (OniTelecom).

– Prior notification of mergers, under review by the CA:

  - the acquisition by CATVP - TV Cabo Portugal S.A. (TV Cabo) of full control of Bragatel - Companhia de Televisão de Cabos de Braga, S.A. (Bragatel), Pluricanal Leiria - Televisão por Cabo, S.A. (Pluricanal Leiria) and Pluricanal Santarem - Televisão por Cabo S.A. (Pluricanal Santarem), through the acquisition of shares currently held in these undertakings by Parfitel – SGPS S.A.;

  - the acquisition, by TV Cabo, of full control of TVTEL Comunicações, S.A. (TVTEL).

– Expansion of the supply of local loops (LLU), in terms of exchanges with co-installed operators, the number of unbundled accesses and the entry of new operators, namely COLT TELECOM - Serviços de Telecomunicações, Unipessoal, Lda. (COLT), Tele2 and VODAFONE PORTUGAL - Comunicações Pessoais, S.A. (Vodafone);

– Expansion of mobile broadband, in particular for the purposes of this analysis, supported by data transmission cards connected to personal computers (desktop[6] or portable), namely those using PCMCIA, PCI Express or USB cards, allowing broadband Internet access[7];

– A higher number of bundled offers, namely “triple-play” offers, which had already been available from some cable distribution network operators and which are now provided by most of the companies in the market;

– Introduction of the “Naked DSL” offer, which allows the broadband Internet access service to be contracted without the need to contract a fixed telephone service (FTS);

– Increases in broadband speeds, whilst maintaining or even reducing prices;

– A definition of the procedure for the allocation of frequency usage rights for broadband wireless access (BWA)[8].

Finally, one of the main changes which has had a significant impact on the structure of the markets was the separation (spin-off) of PT Multimédia - Serviços de Telecomunicações e Multimédia, SGPS, S.A., (now ZON Multimédia - Serviços de Telecomunicações e

[5] Through its subsidiary, Novis Telecom, S.A.
[6] Commonly known as " desktops".
[7] Currently, up to 7.2 Mbps.
[8] See http://www.anacom.pt/template31.jsp?categoryId=267122.

Multimédia, SGPS, S.A.) from Portugal Telecom, SGPS, S.A. (Portugal Telecom), which took place on 7 November 2007. This spin-off is considered to be a potential driving force for greater competition in the markets where these companies operate.

Following the announcement of the ZON Multimédia spin-off, ICP-ANACOM sought the opinion of the CA (Competition Authority) as to whether or not ZON Multimédia should be included in the Portugal Telecom Group. In other words, it sought to clarify whether, despite the separation of ZON Multimédia and Portugal Telecom, they should continue to constitute a single company for the purposes of the Competition Law (Law no 18/2003 of 11 June).

The main concerns of ICP-ANACOM arose from the fact that:

- a significant part of the obligations imposed under the regulatory framework currently in force were directed towards companies in the PT Group and it therefore became relevant, for the purposes of the current process of (re)analysing the relevant markets, to assess whether ZON Multimédia would continue to be part of the PT Group after the spin-off;

- despite the disposal of shares held by Portugal Telecom in ZON Multimédia, due to the terms under which this operation took place, the core group of entities within the companies with decision-making powers remained the same.

Responding on 17 January 2008, the CA stated that it would be premature to adopt a definitive position on the issues raised by ICP-ANACOM, identifying (i) a set of indicators that appeared to suggest that Portugal Telecom and ZON Multimédia remained integrated as a single economic unit for purposes of Law no 18/2003 of 11 June, and (ii) other factors that were likely first signs of the separation of Portugal Telecom and ZON Multimédia.

Subsequently, the ICP-ANACOM Board, in its Determination of 3 April 2008, approved its position on the ZON Multimédia spin-off and its impact in terms of the respective market analysis and obligations[9].

ICP-ANACOM acknowledged that, due to the nature of the spin-off process, there were certain aspects that would make it advisable to consider ZON Multimédia and the PT Group a single economic unit, and other indications to the contrary.

The reasons in support of the argument that ZON Multimédia and the PT Group might constitute an integral part of the same undertaking, even after the completion of the spin-off process had been announced, were linked to the fact that the two companies had the same core shareholder - a situation inherent to the spin-off process itself. The possibility that these two companies constitute a single economic unit for the purposes of Article 2 of Law no 18/2003 of 11 June cannot, therefore, be ruled out.

The reasons supporting the consideration that ZON Multimédia could be seen as a separate economic unit from the PT Group relate to the fact that there were no common members on the Board of Directors of each company - although the members of the Boards of each company had been members of the Boards of the other or of their subsidiaries - and also due to the emergence of competing offers from ZON Multimédia and the PT Group.

Accordingly, having considered these factors, ICP-ANACOM concluded that special emphasis should be given to the fact that there was evidence that ZON Multimédia and the PT Group

[9] *See* http://www.anacom.pt/template31.jsp?categoryId=272931.

were beginning to act competitively towards each other, in line with the essential advantage, from a regulatory point of view, of the spin-off process. Furthermore, the Authority was convinced that to establish a transitional regime at the time, together with an analysis of the markets, which would imply subjecting ZON Multimédia to all or some of the obligations to which the PT Group was bound might hinder competition and influence the very conclusions of the market analysis. In other words, verification of one of the key conditions for considering ZON Multimédia to be separate from the PT Group could be compromised, precisely because the former was still considered part of the PT Group - a situation that could lead to a vicious circle that would certainly fail to take advantage of the increased competition in the electronic communications market.

Within this context ICP-ANACOM therefore clarified that, following the spin-off, ZON Multimédia was no longer to be included within the PT Group and that the obligations arising from the market analyses conducted pursuant to Title IV of Chapter II of Law no 5/2004 of 10 February (Law no 5/2004) which applied to the PT Group were not applicable to ZON Multimédia.

Accordingly, subsequent to the developments described above resulting from the ZON Multimédia spin-off and given the position of ICP-ANACOM, clarification of the regulatory situation was needed, and is provided in this market analysis.

Looking ahead, potential concerns should be aired with respect to the development of new generation access networks (NGNs).

It should be added that, in the meantime, the Recommendation on relevant markets was revised by the European Commission (EC) and a definitive version published at the end of 2007.

1.3. The revision of the European Commission recommendation on relevant markets

On 17 December 2007, the EC issued a revised recommendation on relevant markets[10] – "Recommendation 2007/879/EC of 17 December, on relevant markets of products and services in 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 communications networks and services"[11] (hereinafter the Recommendation).

This Recommendation replaces Commission Recommendation 2003/311/EC of 11 February, the contents of which were revised due to market developments witnessed over recent years. There is now provision for seven markets, one at retail level[12] and the other six at wholesale level[13].

[10] Published in the Official Journal of the European Union (JOUE), 28 December 2007.

[11] Available at http://www.anacom.pt/content.jsp?contentId=547618.

[12] Market 1: Access to the public telephone network at a fixed location for residential and non-residential customers.

[13] Which are the following:

- Market 2: Call origination on the public telephone network provided at a fixed location;
- Market 3: Call termination on individual public telephone networks provided at a fixed location;
- Market 4: Wholesale network infrastructure access at a fixed location;
- Market 5: Wholesale broadband access;
- Market 6: Wholesale terminating segments of leased lines;
- Market 7: Voice call termination on individual mobile networks.

As in the previous version of the Recommendation, the revised version is accompanied by an "Explanatory Note" in which the Commission seeks to explain the definition of the new markets[14].

Following this review, the markets under consideration herein (Markets 11 and 12 of the "previous Recommendation") are now defined by the EC as follows:

– Market 4: Wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location.

– Market 5: Wholesale broadband access.

  This market comprises non-physical or virtual network access including bit-stream access at a fixed location. It is situated downstream from the physical access covered by Market 4 above, in that wholesale broadband access can be achieved by using this physical access combined with other elements.

1.4. The need to review the analysis of the relevant markets

Previous market analyses envisaged the following:

- the need to revise the market analysis if the EC recommendation on relevant markets is revised; or

- in the event of significant changes in the market which would alter conditions.

Accordingly, for the above reasons, it is now considered timely and necessary to review the analysis of the relevant markets, specifically the market for the wholesale provision of unbundled access and the market for the wholesale provision of broadband access.

The priority and urgency given to the analysis of these markets is due to the major impact of the ZON Multimédia spin-off.

1.5. The process of market analysis

Law no 5/2004 approved the legal regime for electronic communications services and networks and for related resources and services, setting out the powers of the National Regulatory Authority (NRA) in this area.

This law transposes Directives no. 2002/19/EC, 2002/20/EC, 2002/21/EC, 2002/22/EC, all of the European Parliament and the Council of 7 March, and Directive no 2002/77/EC of the Commission of 16 September.

ICP-ANACOM, as the NRA, is responsible for defining and analysing the relevant markets, declaring which companies have SMP and determining appropriate measures for companies that offer electronic communications services and networks (Article 18 of Law no 5/2004).

The process is conducted in the following stages (Articles 55 to 61 of Law no 5/2004)[15]:

[14] "Explanatory Note" available at http://ec.europa.eu/information_society/policy/ecomm/doc/library/proposals/sec2007_1483_final.pdf
[15] See Framework Directive, Articles 7 and 14 to 16.

- Definition of the relevant markets (Article 58 of Law no 5/2004)

  The NRA is responsible for defining the relevant products and services markets in the electronic communications sector, including the relevant geographic markets, in accordance with the principles of competition law.

  In defining the relevant markets the NRA shall, according to national circumstances, take into account the Recommendation and Guidelines of the European Commission on the analysis and assessment of significant market power under the Community regulatory framework for electronic communication networks and services[16] (hereinafter referred to as the 'Guidelines').

- Analysis of the relevant markets (Article 59 of Law no 5/2004)

  The NRA is responsible for analysing the relevant markets defined under the terms of the previous point, taking the Guidelines into account.

  The aim of the market analysis is to investigate the existence of effective competition. There is no effective competition when it is possible to identify companies with SMP[17].

  A company is considered to have SMP if, individually[18] or in conjunction with others, it enjoys a position equivalent to dominance or a position of economic strength which enables it to act largely independently of competitors, customers and consumers.

- The imposition, maintenance, alteration or removal of regulatory obligations (Article 66 of Law no 5/2004)

  If ICP-ANACOM concludes that a market is effectively competitive, it shall refrain from imposing any specific regulatory obligation and shall remove such obligations where they are already in place.

  If ICP-ANACOM determines that the relevant market is not effectively competitive, it should impose specific regulatory obligations on companies with SMP in that market, or maintain or modify these obligations where they are already in place.

  The obligations imposed:

  - shall be appropriate for the problem identified and proportionate and justified in the light of the regulatory objectives set forth in Article 5 of Law no 5/2004;

[16] Available at http://www.anacom.pt/template20.jsp?categoryId=55015&contentId=87568.

[17] Also, according to the Guidelines (Paragraph 24), "*Under the regulatory framework, markets will be defined and SMP will be assessed using the same methodologies as under competition law (...) and the assessment of effective competition by NRAs should be consistent with competition case-law and practice. To ensure such consistency, these guidelines are based on (1) existing case-law of the Court of First Instance and the European Court of Justice concerning market definition and the notion of dominant position within the meaning of Article 82 of the EC Treaty and Article 2 of the merger control Regulation*"

[18] It should be noted that, according to EC Judgement of 12 July 1984, (Hydrotherm), the notion of a company "*must be understood as designating an economic unit for the purposes of the subject-matter of the agreement in question even if in law that economic unit consists of several persons, natural or legal".*
According to Article 2,(1 and 2) of Law no 18/2003 of 11 June (approving the legal competition regime), "1 – For the purposes of this Act, an undertaking is considered to be any entity exercising an economic activity that consists of the supply of goods and services in a particular market, irrespective of its legal status or the way in which it functions. 2 - A group of undertakings is considered as a single undertaking if, though legally distinct, they make up an economic unit or maintain ties of interdependence or subordination among themselves arising from the rights or powers set out in Article 10 (1)."

- shall be objectively justified in relation to the networks, services or infrastructure to which they refer;
- may not lead to undue discrimination with respect to any entity;
- shall be transparent with regard to the purposes for which they are intended.

In its Recommendation, specifically in the "Explanatory Note (Section 4.2.2), the Commission advises that, given that Markets 4 and 5 are associated with the same retail market, NRAs should analyse these markets together and subsequently assess the impact of regulated infrastructure access and (virtual) access to the network on any market power that may be identified. The EC accepts that, depending on the level of development of the networks and the particular conditions of supply and demand in the various Member States, these two markets may remain separate or merge into a single market, and therefore recommends that the two markets be analysed jointly.

In this context, Markets 4 and 5 of the Recommendation will be analysed jointly.

According to the methodology that continues to be adopted in the Recommendation[19], the definition and identification of relevant wholesale markets should begin with a characterization of the relevant retail markets over a period of time, their geographical size and the competitive pressures to which they are subject on the demand and supply sides. In the initial phase, the broadband access retail market is defined and SMP is analysed in terms of this market. Later, the associated wholesale markets are defined, taking the same factors into account, and the possible existence of SMP in these markets is analysed. Finally the regulatory obligations to be imposed on undertakings with SMP are analysed.

The analysis (of SMP) follows the methodology advocated by the Commission in its Recommendation[20] which stipulates that, with regard to wholesale markets, those markets positioned higher in the vertical value chain should be analysed first and then, taking into account the regulation (if any) imposed on these markets, this should be followed by an analysis of markets lower down the value chain - this is known as the "modified greenfield approach*"*.

In this context, the present document substantiates the draft decision of ICP-ANACOM on the definition of product and geographic markets, assessment of SMP and the imposition, maintenance, alteration or removal of regulatory obligations in the markets for wholesale supply of access (physical) to the network infrastructure at a fixed location and the supply of wholesale broadband access.

This document results from the ICP-ANACOM Board's approval, on 26.06.2008, of the probable nature of the decision on the analysis of these markets. The draft measures were submitted for public consultation[21] and a preliminary hearing[22] for a period of 30 days. The consultation took place between 30.06.2008 and 11.08.2008.

The Competition Authority was notified in order that, within the same period of time and under the terms of Article 61 of Law no 5/2004, it could issue an opinion on the draft measures. On 07.08.2008 the Competition Authority issued its opinion on the probable nature of the decision

[19] See Recommendation - Explanatory Note, Section 2.1.

[20] See Recommendation - Explanatory Note, Section 2.5.

[21] Under the terms of Article 8 of Law no 5/2004 and in accordance with Article 57(1) of the same legislation and Article 3 of the "ICP-ANACOM Consultation Procedures", approved by the Determination of 12.02.2004.

[22] In compliance with the stipulations contained in Articles 100 and 1001 of the Code of Administrative Procedures.

in question, under the terms of Article 61 of Law no 5/2004, having agreed with the argument of the probable nature of the decision, considering that the analysis that had been developed was appropriate and generally coherent with regard to the application of competition law methodology and that the definition of geographic markets was suitable for identifying heterogeneous competition conditions.

On 04.12.2008, the ICP-ANACOM Board approved the consultation report from the interested parties and the revised draft decision on the definition of product markets and geographic markets, assessment of SMP and the imposition, maintenance, alteration or removal of regulatory obligations in relation to the market for the wholesale (physical) network infrastructure access at a fixed location and the market for the wholesale provision of broadband access.

On the same date, the notification to sent be sent to the EC and the ARNs of the various Member States under the terms of Article 57(1) of Law no 5/2004, was also approved together with the standard notification form elaborated under the terms of Annex I of the Commission Recommendation of 15.10.2008 on notifications, time limits and consultations provided for in Article 7 of Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services.

Following notification, the EC requested certain information and additional clarifications from ICP-ANACOM. On 05.01.2009 the EC ruled on the analysis it had received and made some comments which were taken into consideration in this present analysis in the form of alterations or occasional clarifications of the analysis submitted to the EC.

2. DEFINITION OF THE BROADBAND RETAIL MARKET

According to the Community regulatory framework applicable to electronic communications, which follows Community competition law, relevant markets are defined in terms of the intersection of two different dimensions: the product market and the geographic market.

The process of defining the product market aims to identify all products and/or services that are sufficiently interchangeable or replaceable, not only in terms of their objective characteristics which make them particularly suited to meeting the needs of consumers, but also in terms of their prices and intended use[23].

The exercise of defining the relevant product or service market begins with the group of products or services used by consumers for the same purpose/end use[24], i.e. according to demand.

These products and services will be part of the same market if the behaviour of the producers or suppliers of the services in question is subject to the same type of competitive pressures, i.e., on the supply side, notably in terms of pricing.

Within this context, two main types of competitive pressures can be identified: (i) demand-side substitution and (ii) supply-side substitution[25].

These competitive pressures may, individually or jointly, constitute grounds for defining the same product market.

In theory, the degree to which there is substitutability or complementarity between two products can be estimated through cross-elasticity of demand. However, in practice, such an analysis is complex and only limited data is available. Therefore one of the methods used to evaluate the degree of substitutability on the supply and demand sides is the so-called "hypothetical monopoly" test (the SSNIP test - Small but Significant and Non-Transitory Increase in Price)[26].

The relevant geographic market includes the area in which the companies in question are involved in the supply and demand of relevant products or services and where the competitive conditions are similar or sufficiently homogeneous in relation to neighbouring areas[27].

The definition of the geographic market presupposes the use of the same methodology used to define the product market, namely the hypothetical monopoly test which enables competitive pressures to be identified with regard to demand-side and supply-side substitution.

As previously stated, this definition and analysis of Market 4 - wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location - and Market 5 - wholesale broadband access - follows the methodology adopted in the Recommendation, which involves a characterization of the retail market at a particular moment in time and in a particular geographical area and the competitive pressures to which it is subject on the demand and supply sides.

[23] See Guidelines §44.
[24] See Guidelines §44.
[25] See Guidelines §38. There is also a third source of competitive pressure on the behaviour of the operator, which is potential competition - this possibility will be considered wherever relevant.
[26] See Guidelines §40-43.
[27] See Guidelines §56.

It should be noted that in its Recommendation the EC does not identify the retail broadband market as a relevant market for the purposes of *ex-ante* regulation and gives priority to regulation at wholesale level. However, this does not, in itself, exclude the possibility of the retail broadband market being identified as a relevant market and proposed at national level.

2.1. Definition of broadband

In its previous analysis of the market for the wholesale supply of broadband access, ICP-ANACOM, taking into account the positions of the EC[28] and the *Unidade de Missão Inovação e Conhecimento* (UMIC – The Knowledge Society Agency)[29], took the position that although the concept of broadband is evolving from a regulatory and commercial point of view, the definition contained in the Recommendation could be adopted, i.e. services characterised by the provision to end users of asymmetric and symmetric speeds that, in the downward direction (i.e. originating in the network and destined for the client) exceed 128 Kbps. In the prevailing market conditions at the time, the Authority considered that the concept of permanent ("always on") access was not a relevant factor in terms of characterising broadband, given the recent introduction of deals with time limits.

In the present Recommendation, the Commission again argued that broadband Internet services are characterised by the provision to end users of downstream speeds exceeding 128 Kbps and ICP-ANACOM continues to uphold the view advocated in the previous market analysis, even though the reference bandwidth[30] is currently 4 Mbps downstream.

It should be noted that, in the case of mobile operators, the very nature of mobile networks can change the perception of end-users with respect to the “always on” nature of the broadband access service, given the greater number of interruptions to the service in comparison with the broadband service supported by fixed networks, which may make it necessary to restart access.

There are several technologies that support the provision of broadband to end-users. Indeed, throughout the “Explanatory Note” there is frequent mention of DSL and cable modem access as alternative services[31]. In the future, optic networks and access will be used to provide services with very high speeds. This approach is also in line with the principle of technological neutrality, a fundamental principal in the process of defining the current regulatory framework, as stated in article 8 of paragraph 1 of the Framework Directive. Therefore, the definition of markets should be neutral in relation to the network or infrastructure used to provide services.

The EC also determined that the market for "access" includes all types of infrastructures that can be used to provide a given service[32]. An example given by the EC refers to the fact that

[28] Which argues that “There is no universally accepted definition of broadband, but its key characteristics are high speed and always-on functionality.” (see eEurope 2005: An information society for all, COM(2002) 263 final, 28.05.2002, page 8) and that broadband Internet services may be characterised as providing a downstream capacity to end-users in excess of 128 kbits/sec. (see Recommendation – Explanatory Note, footnote no 33.

[29] Which argues that “the concept of broadband encompasses all access, irrespective of the technology which, with the appropriate performance, supports the use of progressively more complex content and applications which are adapted to the circumstances of its users, taking into account demands associated with the availability of time, mobility, the levels of sophistication required and the purposes of this use” (see “*Iniciativa Nacional para a Banda Larga*” (National Broadband Initiative) – document approved by the Council of Ministers on 26.06.2003) and, along these lines, argues that access is classified as broadband where it is they “always on” and supports high speed interactive applications.

[30] Or the class/offer most commonly used by consumers.

[31] E.g. page 23 of this document.

[32] See Guidelines, §67.

users can resort to different services, such as cable and satellite connections, for the same purpose, namely Internet access[33].

The EC further notes that the question of "*whether the market for network infrastructures should be divided into as many separate submarkets as there are existing categories of network infrastructure, depends clearly on the degree of substitutability among such (alternative) networks*".

Accordingly, the characteristics and the current state of implementation of the different technologies and infrastructures supporting broadband access service will be analysed, with a view to defining the retail market.

2.2. Characterisation of the retail broadband market

In terms of technology platforms that allow access to broadband, access is still essentially offered in Portugal via the copper telephone network using ADSL technology or via cable distribution networks[34] using cable modems, although broadband access supported by wireless networks (mobile or BWA) is also gaining importance.

Data obtained at wholesale level will be used in relation to broadband access supported by ADSL technology, in view of the fact that this information is better itemised than the data obtained at retail level, with the exception of data on the PT Group provision of "triple-play" (the "MEO" offer) relating to the retail market.

2.2.1. Twisted metal pair technologies (xDSL[35]) and coaxial cable technologies

Among the xDSL services with asymmetric speed available to final customers, ADSL continues to stand out due to the significant growth in its market penetration[36].

In November 2000, a month before the *de jure* entry into force of Regulation (EC) no 2887/2000 on the LLU, PT Comunicações, S.A. (PTC) introduced a wholesale offer based on this technology in Portugal, "Rede ADSL PT", on which a number of retail offers, including offers from PT Group companies, are based.

In addition to using this wholesale offer, alternative operators (hereinafter operators and service providers - OSPs) can also offer retail ADSL services by renting unbundled local loops/sub-loops (full or shared access) or can use their own networks (although currently in only a few cases[37]).

Where OSPs do not have their own copper pair access network, the majority of retail ADSL offers are based on the "Rede ADSL PT" and LLU wholesale offers.

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[33] See Guidelines, §45.

[34] HFC – Hybrid Fibre Coax networks, historically used for the provision of television distribution services.

[35] *x* Digital Subscriber Line – Set of digital subscriber line technologies, generically DSL, capable of transforming copper lines, (for example, ordinary telephone lines) into high-speed digital lines capable of supporting advanced services with greater bandwidths, such as high-speed Internet access and video-on-demand. Some common variants include ADSL (Asymmetric DSL), HDSL (High data rate DSL) and VDSL (Very high data rate asymmetric DSL

[36] Asymmetric Digital Subscriber Line – The most commonly used asymmetric transmission technology in the xDSL family. An ADSL connection provides a high-speed downstream channel (1.5 to 9 Mbps) and a lower speed upstream channel (16 to 640 Kbps), in addition to the standard telephone service on a low frequency range.

[37] Not possessing a copper access network, OSPs usually make use of other infrastructures to provide broadband services over their own infrastructure.

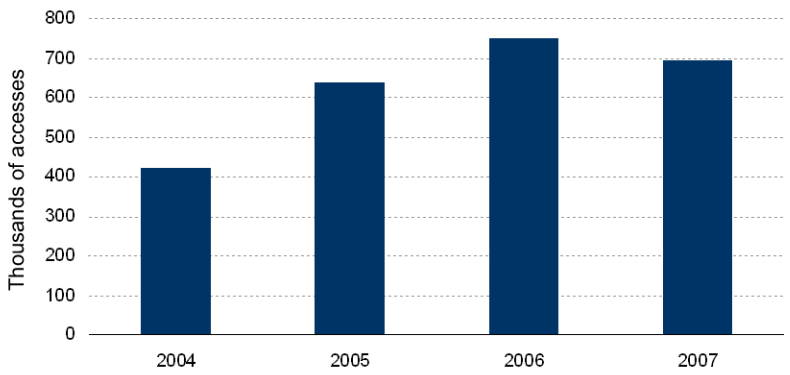
In the last quarter of 2007, the PT Group launched a "triple-play" ("MEO") offer, which includes television, Internet and phone services - according to information presented in the PT Group financial reports at the end of 2007 this offer had 21,000 accesses. According to more recent information, the PT Group announced that the number of Meo customers totalled 200,000 in September 2008[38].

Unbundled access using broadband has been gaining ground since 2005 and represented approximately 29% of the total ADSL access by the end of 2007.

2.2.1.1. Retail offers based on the "Rede ADSL PT" wholesale offer and the evolution of this offer

The data presented in Graph 1 shows that ADSL access based on the "Rede ADSL PT" wholesale offer increased significantly between the end of 2004 and the end of 2007 and almost doubled during this period. It should be noted that the fall in access recorded from 2006 to 2007 is the result of clearing 103 thousand (inactive pre-paid) customers from the PT Group database at the end of 2007.

Graph 1 – Changes in the number of ADSL accesses based on the "Rede ADSL PT" offer



The total number of OSPs basing their retail offers on this wholesale offer has only changed slightly since 2004, due to the fact that various operators entered and exited the market during this period (see Table 3).

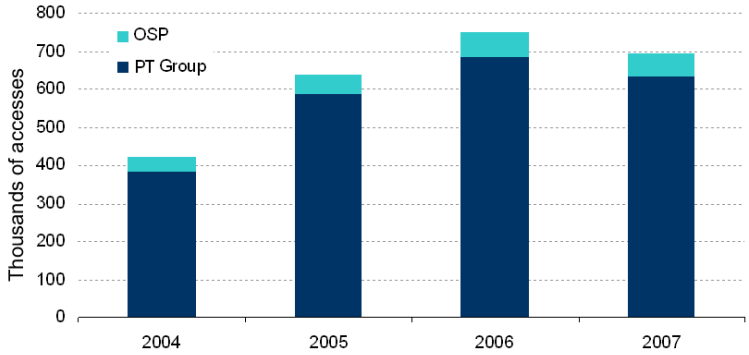
Table 3 – Changes in the number of OSPs with broadband offers based on the "Rede ADSL PT" offer

	2004	2005	2006	2007
OSPs with broadband offers based on "Rede ADSL PT"	9	8	8	9

Even when several alternative operators benefit from the "Rede ADSL PT" wholesale offer, most of these accesses are leased by PT Group companies, as confirmed by Graph 2.

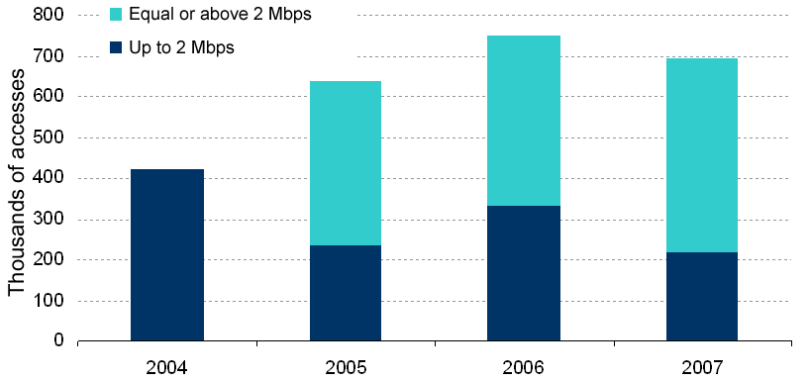
[38] See http://ir.telecom.pt/InternetResource/PTSite/PT/Canais/Investidores/Pressrel/Noticias/2008/COM230908.htm .

Graph 2 – Changes in the number of ADSL accesses based on the "Rede ADSL PT" offer, by operator groups



At the end of 2007, there were 31 product classes (compared with 11 in 2004), distinguished by maximum speeds (upstream or downstream) and contention rates[39] offered, prices and other characteristics. It is significant that, whilst in 2004 the maximum downstream speed available was 1 Mbps, by the end of 2007 there were already four classes of service offering a maximum downstream speed of 24 Mbps. It can be seen that accesses with service classes of downstream speeds equalling or exceeding 2 Mbps are becoming more important (see Graph 3).

Graph 3 – Changes in the number of ADSL accesses based on the "Rede ADSL PT" offer, by downstream speed



With regard to the coverage of this offer, it can be seen that at the end of 2004 the "Rede ADSL PT" offer covered around 1,270 exchange areas out of a total of 1,853 in the PTC network. This allowed for a potential coverage of approximately 90% in terms of active access. In the meantime, since June 2006, the 1,853 exchanges in the PTC public telephone network have been equipped with DSLAM, corresponding to full coverage of the areas where ADSL can be provided. Furthermore, in order to reduce the length of the local loop, in several exchanges there is more than one attendance point with DSLAM and higher speed broadband services can be supplied to customers.

In terms of the retail prices of currently available offers, it appears that changes in this market since 2004 have led to clear benefits for consumers: the prices charged (per Mbps) to the final customer have decreased significantly, especially in the higher speed classes, and there are also

[39] The contention rate represents the relationship between the bandwidth contracted by the user (e.g. 4 Mbps downstream) and the effective bandwidth by user of the connection between the PTC (exchange/DSLAM) network and the Internet Service Provider (ISP) network. A contention rate of 1:20 indicates that the bandwidth of the connection from the ISP to the exchange central is shared by users at a maximum rate of 1 to 20. Therefore, at peak times, when various customers are connected simultaneously, the potential speed of the connection is less (by up to 1:20, in this example). At other times when there is little use (fewer users at the same time in relation to the exchange), a user may be able to use the total capacity contracted with the ISP.

offers with much higher downstream speeds at monthly rates that are the same as, or lower than, the previously available offers (which provided much slower speeds).

An example of this is the offer identified in 2004 as the most representative retail offer from the PT Group (sold by Telepac) - the "Sapo ADSL.PT Standard" offer, which provided a downstream speed of 512 Kbps for which the final customer paid a monthly charge of €29.40[40]. Today, for an identical sum (€29.40[41]), the "Sapo ADSL 16Mb" offer provides a maximum downstream speed that is 32 times higher. It should also be noted that the changes to the terms of the offers are not limited to increases in downstream speeds, but also include increases in monthly traffic, involving, in many cases, the lifting of restrictions (i.e. unlimited downloads).

Furthermore, with regard to the prices of retail offers, there has been frequent use of promotions, involving free activation and discounts on monthly payments for the first months after subscription.

In regulatory terms, ICP-ANACOM has continued to intervene in relation to the "Rede ADSL PT" offer in order to ensure compliance with the applicable regulatory principles, taking into account the objectives of promoting competition and defending the public interest in accordance with its remit[42].

2.2.1.2. Retail offers based on LLU and the evolution of this offer

In order to increase competition and stimulate technological innovation in the local access market through the establishment of harmonised conditions for LLU, the European Parliament and the Council approved Regulation (EC) no 2887/2000 on 18 December 2000[43].

PTC published the first version of the Reference Unbundling Offer (RUO) in March 2001, with ICP-ANACOM intervening in several areas and on several occasions in order to adapt the offer to the interests of the market[44].

The LLU consists of PTC making the local loop (the physical circuit, comprising twisted copper pairs in the local access network linking the terminal equipment in the premises of the user to the network infrastructure of the operator) available to OSPs, enabling them to provide their narrowband and/or broadband services to the end user as full access[45] and shared access[46].

Providing LLU-based broadband access has been the preferred option of the alternative operators and has mainly accounted for the significant increase in broadband access. At the end of 2007, the number of LLU-based broadband accesses exceeded 280 thousand, which compares very favourably with the figure of less than 8 thousand accesses in late 2004 (see Graph 4).

[40] Information compiled from the Telepac website in September 2004 (prices exclude VAT).

[41] Information compiled from the Telepac website in February 2004 (prices exclude VAT).

[42] See the ICP-ANACOM Determination on ADSL offers at http://www.anacom.pt/template15.jsp?categoryId=36415 .

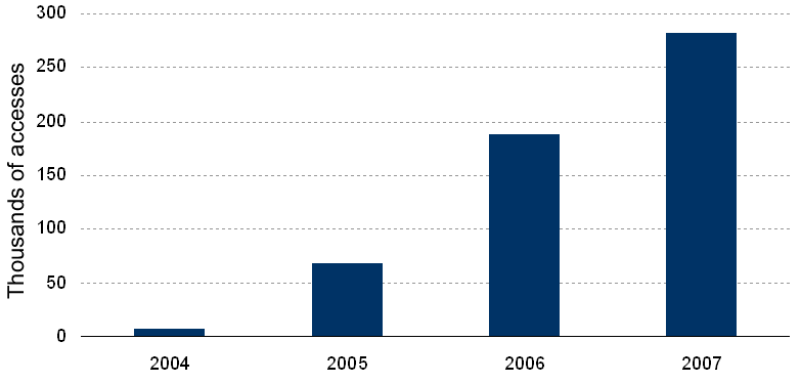
[43] See the Regulation, which entered into force in January 2001, at http://www.anacom.pt/template12.jsp?categoryId=17477

[44] See the ICP-ANACOM Determination on LLU at http://www.anacom.pt/template8.jsp?categoryId=56

[45] With full access, the OSP has full control over the local loop, so that it can supply the final user with voice services and broadband services.

[46] With shared access, the voice service and the broadband service, whilst supplied over the same local loop, are provided respectively by PTC and by the OSP using different bands of the frequency spectrum. This model allows PTC to continue to offer the telephone service, whilst at the same time allowing the OSP to provide high-speed data transmission services using their own xDSL equipment at a higher frequency band over the same local loop.

Graph 4 – Changes in the number of LLU-based ADSL accesses



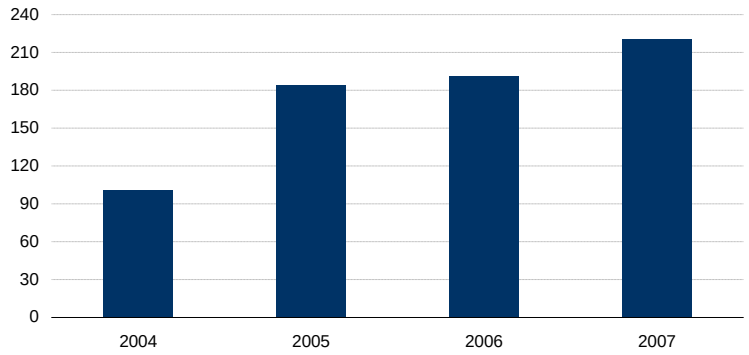
The number of OSPs that base their retail offers on this wholesale offer has increased since 2004 - at the end of 2007, there were five operators benefiting from this offer[47] (see Table 4).

Table 4 – Changes in the number of OSPs with LLU-based broadband offers

	2004	2005	2006	2007
OSPs with LLU-based broadband offers	2	3	5	5

As far as the geographical coverage of the LLU is concerned, it can be seen that at the end of 2004 there were co-installed operators in 101 PTC exchanges. This has gradually increased to a total of 221 exchanges by the end of 2007.

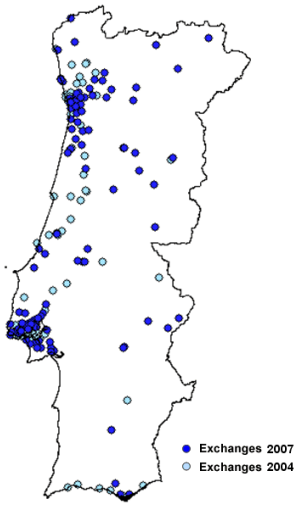
Graph 5 – Changes in the number of exchanges with co-installed operators



As a result of this increase in the number of exchanges with co-installed operators, the potential coverage of this offer has also increased to 60% of the population by the end of 2007.

[47] Following the acquisition by Sonaecom of total control over the share capital of Tele2 and over a range of assets corresponding to the residential segment of the OniTelecom fixed network communications retail business, the number of LLU beneficiaries should fall to three (in the event that OniTelecom contracts the remaining accesses to Sonaecom) or four (in the event that OniTelecom contracts the remaining accesses to PTC).

Figure 1 – Location of exchanges where OSPs use LLU in Mainland Portugal (a) end of 2004 (b) end of 2007



In forwarding-looking terms and in relation to exchanges with co-installed operators, it is considered that the plans of the operators benefiting from the RUO have already materialised, due to the co-installation which took place in the first semester of 2008.

As far as the prices of current retail offers based on this PTC wholesale offer are concerned, it appears that, once again, the changes witnessed since 2004 have resulted in very significant benefits for consumers: the prices of offers to the final customer have been significantly reduced as new offers have been developed with lower monthly charges than those previously available (which, in many cases, offered much slower speeds).

The development of the offers from Sonaecom, the main beneficiary of LLU, may serve as an example: in 2004 the "Opção Livre" offer had a downstream speed of 1024 Kbps for which the final customer paid €32.69[48] per month; currently the Novis offer whose monthly charge comes closest to the 2004 offer is the “Clix 24Mb”, which provides a maximum downstream speed that is 24 times higher (24 Mbps) whilst charging the final customer virtually the same amount of €32.98 per month[49]. Again in this case, the changes in the terms of the offer include an increase in the amount of monthly traffic.

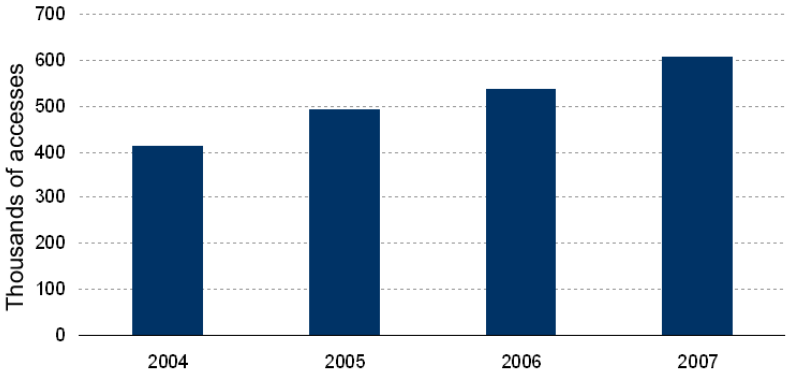
In addition, LLU-based broadband access offer promotions have been used frequently, including free activation and discounts on monthly charges during the first months after subscription.

2.2.1.3. Cable modem

The most relevant technologies for fixed network broadband access, continue to be broadband access via xDSL and cable modem, with ADSL having gained importance since the end of 2004 (see Graph 6).

[48] Information compiled from the Clix website in September 2004 (prices exclude VAT).
[49] Information compiled from the Clix website in February 2008 (prices exclude VAT).

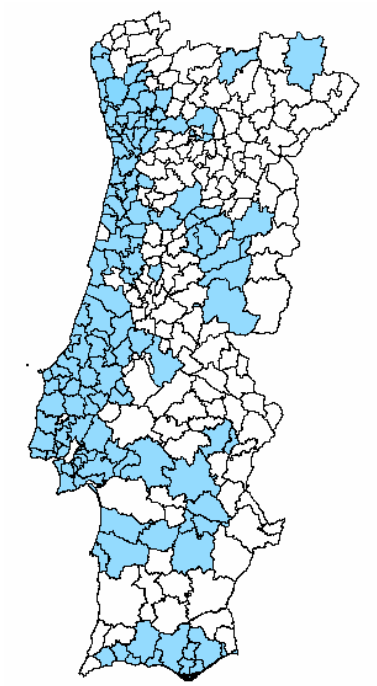
Graph 6 – Cable modem



The number of operators providing broadband services via cable modem has remained unchanged since 2004 – there are four operators - although on completion of the mergers of which the CA has already been notified this could be reduced to just two.

Since the majority of cable distribution networks are digital and two-way[50], characteristics required to support the Internet access service, penetration of these networks is a good reflection of the potential coverage of Internet access service by cable modem (see Figure 2).

Figure 2 – Geographical distribution (municipalities) of cabled households (end of 2007)



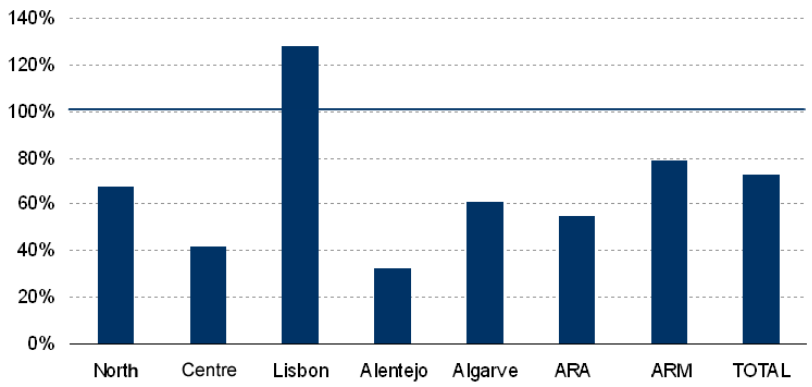
At the end of 2007, the average percentage of cabled households (i.e. those ready for subscriber connection) compared to the total number of classic family dwellings[51] in the country, was 73%

[50] For example, according to the PT Multimédia Consolidated Report and Accounts for the first quarter of 2007, the number of cabled houses able to access broadband is 98%.

[51] Classic family dwelling (definition of INE (Statistics Portugal)): "*A room or suite of rooms and its accessories in a permanent building or structurally separated part thereof which, by the way it has been built, rebuilt or converted, is intended for habitation by one household (...) The classic family dwellings should have its own main entrance generally giving onto a street or the land surrounding the building, or common area of the building*".

for all regions, with significant differences remaining between the various regions (NUTS[52] II) – see Graph 7.

Graph 7 – Coverage of cabled households (end of 2007)



It is significant that the percentage of cabled households compared to the total number of households in the Lisbon region is significantly in excess of 100%. This is due to the fact that the same households have been cabled by various operators and this practice is still continuing in the region. In other words, the information available to ICP-ANACOM records the sum of households cabled by each operator may include households that are counted more than once.

It should be noted that in some less densely populated areas, television is transmitted through (DTH - direct to home) satellite which, in its current state, does not allow for bi-directional signals and broadband Internet access. As such, it is not considered in the analysis of the broadband market.

In terms of the prices of retail offers, major benefits for final consumers have again been noted, with maximum downstream speeds increasing significantly whilst prices remain the same or have fallen. This is the case with the TV Cabo offers: in 2004 the "NetCabo 512" offer provided a maximum downstream speed of 512 Kbps for a monthly charge of 29.41[53]; today the "NetCabo Plus" offer provides a maximum downstream speed of 12 Mbps at the same monthly rate - €29.41[54]. In other words, the final customer now has access to an offer whose maximum downstream speed is about 20 times faster than in 2004, whilst paying exactly the same.

2.2.2. Other broadband access networks or technologies

2.2.2.1. Mobile systems

The UMTS (Universal Mobile Telecommunication Systems) system of third generation mobile services, for which Optimus, TMN and Vodafone have licensing, has begun to develop since the three operators embarked on the commercial launch at the end of the second quarter of 2004.

At the end of 2007 there were 1,439 million users with mobile broadband Internet access in Portugal, a figure that increased significantly during 2007, with the figures for December 2007

[52] NUTS – Nomenclature of Territorial Units for Statistics.
[53] Information compiled from the TV Cabo website in September 2004 (prices exclude VAT).
[54] Information compiled from the TV Cabo website in January 2008 (prices exclude VAT).

representing a cumulative growth rate since January 2007 of around 88%. This reflects the number of mobile operator customers who are able to access the Internet using mobile broadband and have done so at least once since the launch of the service.

Table 5 – Evolution of mobile Internet access customers in 2007

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Number of users with mobile broadband Internet access (thousands of users)	862	984	1.183	1.439

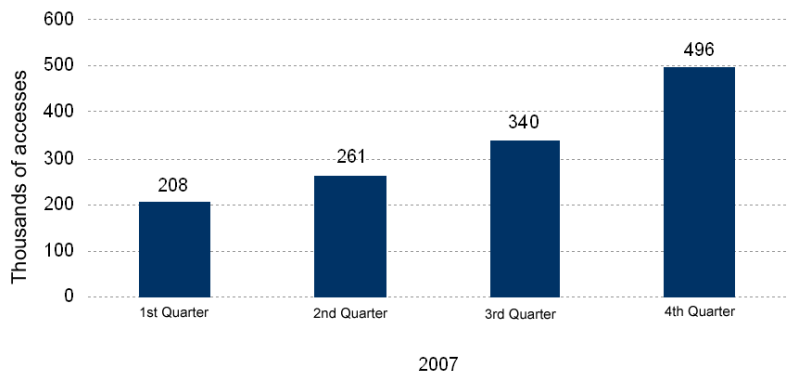
The figures are also striking if we consider the number of mobile operator customers who can access the Internet using mobile broadband and have done so at least once during the quarter in question.

Table 6 – Changes in the number of active mobile Internet access customers in 2007

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Number of active users in the period being reported (thousands of users)	315	359	478	660

However, it is deemed that for the purposes of comparison with fixed broadband offers, consideration should be given only to mobile broadband access supported by transmission cards which provide for similar functions, particularly in personal computer use (PCMCIA cards, USB cards, USB modem, PC-Card, PC Card USB, etc.). According to information provided by the operators, the number of users totalled around 500,000 at the end of 2007 (see Graph 8).

Graph 8 – Evolution of mobile broadband access (supported by data transmission cards)



The evolution of this form of mobile broadband access (supported by data transmission cards) has been driven mainly by the "*e-escola*", "*e-professor*" and "*e-oportunidades*" (e-school, e-teacher and e-opportunities) programmes[55] promoted by the government which involve offering

[55] See http://eescola.pt/indexA.aspx.

For example, in January 2008 TMN reported that, within the scope of the "*e-escolas*" programme alone, "a total of 80,000 computers had already been delivered to trainees, teachers and students" – see press release at:

http://www.tmn.pt/portal/site/tmn/menuitem.db67f528a6dbaa5ac8a71c10a51056a0/?vgnextoid=91d3f80f6e82a110VgnVCM1000005401650aRCRD&vgnextchannel=15b5fa2eb8b37110VgnVCM1000005401650aRCRD&vgnextfmt=default2.

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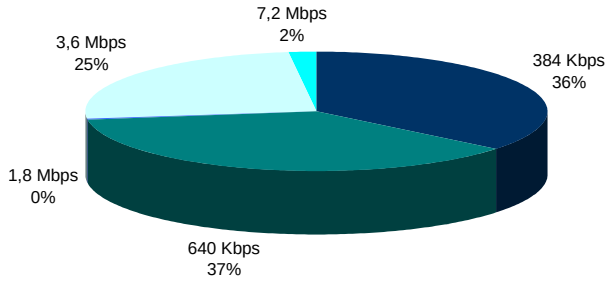
computers with broadband Internet access to key segments of the population on very favourable terms.

When access is broken down by transmission speed, it can be seen that at the end of 2007 around 75% was at speeds of up 640 Kbps[56], which is significantly below the maximum access speeds for the most representative of the fixed broadband access offers.

Graph 9 – Mobile broadband access (supported by data transmission cards) by transmission speed (end of 2007)



In terms of coverage, data provided by operators of the land mobile service shows that while less than half the national territory has coverage at speeds of 128 Kbps, this encompasses more than three quarters of the population. With speeds of 3.6 Mbps, the area covered falls to less than 10% of the country, encompassing approximately one third of the population.

Operators of the land mobile service are introducing new technologies to the access network, especially HSUPA and HSDPA, which allow for broadband access at higher speeds than those currently available.

In terms of prices, it can be seen that the offers provided by the various operators are substantially more expensive than those charged for ADSL or cable modem, given the transmission speed, as will be seen below.

2.2.2.2. Others

In addition to the technologies already mentioned, a range of alternative technologies supporting broadband access can be identified, in different states of implementation and maturity.

- Satellite communication systems still enjoy very limited use, only occasionally and at corporate level.
- As far as FWA (Fixed Wireless Access) is concerned, it is known that the only company actively exploring this access network solution, ARTelecom, is to expand its coverage in the cities of Lisbon and Porto.
- Various market participants remain interested in the introduction of BWA applications in Portugal and ICP-ANACOM has instigated a series of steps to determine the manner by which usage rights for BWA reserved frequencies are to be allocated. An auction for

[56]The 640 Kbps offer was recently replaced by an offer with downstream speed of 1 Mbps.

the allocation of frequency usage rights in the 3.4 - 3.8 GHz band has been planned for this year.

– The provision of services supported by fibre optics may show relevant progress within the context of the trend towards NGNs, an area in which there are some expectations and regarding which there have been announcements of investments[57] or expectations of investment.

In view of the limited availability, coverage and market penetration, levels of service and functions on offer, it is considered that these technologies do not currently fulfil the conditions whereby they would be relevant for the purposes of market definition. However, fibre optic may come to constitute an important source of competition, and therefore the impact of any potential investment on the currently regulated offers should be assessed, particularly any investments by PTC. Moreover, this is an issue that ICP-ANACOM is currently analysing in a separate procedure involving, in its initial phase, the launch of a specific public consultation on the subject of next generation access networks (NGNs).

2.2.3. Conclusions regarding the characterisation of the retail broadband market

From this analysis, and also in the light of the 2005 analysis, it can be concluded that there have been major developments in broadband services in the retail market, with significantly higher speeds available at the same prices. This currently provides consumers with a greater of choice of broadband services, due mainly to the obligations imposed by this Authority, which have proved to be essential in developing competition, to the benefit of end users.

As in the previous analysis, a range of alternative technologies providing support to broadband access services can be identified, in different stages of implementation and maturity. It should be noted, on the one hand, that ADSL and cable modem broadband access is already strongly entrenched and, on the other hand, that mobile broadband access has expanded. At the same time there remains a range of technologies which continue to have little availability, coverage and market penetration.

In general terms, as the previous analysis of the market for the wholesale supply of broadband access also concluded, cable modem and ADSL broadband Internet access services have very similar features from the point of view of the end user, namely permanent access (always on), equivalent speeds and equivalent perceived quality[58] and can therefore be considered to satisfy the same needs.

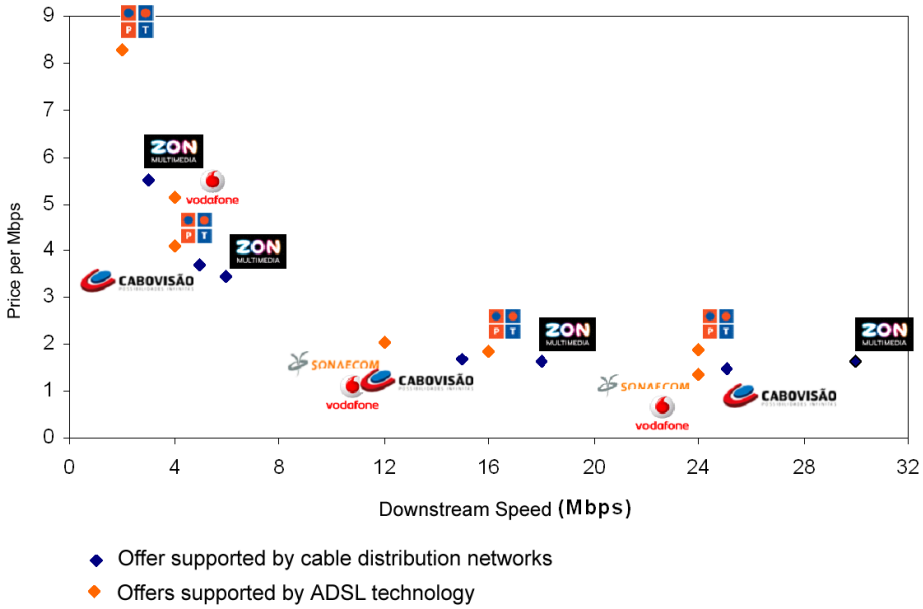
Given the similarity between the features, functionality and price levels of ADSL and cable modem broadband Internet access offers targeted at end-users and the similarity of the commercial activities associated with these offers (vide Graph 10), it is reasonable to accept that a small but non-transitory increase in the price of the cable modem Internet access service

[57] Sonaecom, for example, which on 20.02.2008 announced a 240 million euro investment plan for new generation networks covering a million houses.
See
http://www.sonaecom.pt/filedownload.aspx?schema=a67f9277-d23c-4f99-8642-9acd3e463b93&channel=44E65941-12EC-4115-9D0F-898A110E2077&content_id=93AD601F-8267-4AE1-95E8-50A41A1C0D5A&field=file_src&lang=pt&ver=1

[58] See Survey of Broadband Consumption, carried out by ICP-ANACOM and Metris GFK in December 2006: http://www.anacom.pt/template12.jsp?categoryId=231582. There is, however a study recently carried out by ICP-ANACOM, in which the index of measured (rather than perceived) relative speed for broadband offers supported over cable modem is relatively higher than those supported over ADSL
(see http://www.anacom.pt/streaming/qos_outnov07.pdf?categoryId=267663&contentId=557182&field=ATTACHED_FILE)

would lead to its substitution by ADSL Internet access services, to the extent that this would make such an increase unprofitable, with the reverse being equally true if the customer has already installed an ISDN or analogue line. Even the potential costs incurred as a result of the switch (including changing modem) do not present a significant obstacle to substitutability, given that such costs are estimated to be limited[59]. In fact, it can be seen that as part of promoting the broadband access services of the two technologies, most of the companies that offer broadband access also offer "installation kits" and free activation of the service.

Graph 10 – Prices (relative) and access speeds of broadband offers supported by cable modem and ADSL



Source: Operator Internet sites in March Prices do not include VAT.

It should be noted that the price per Mbps is similar for similar intervals of available downstream speeds, whether for the offers are supported by ADSL technology or the cable distribution networks.

In the case of new customers, i.e. those who do not yet use broadband access services, the substitutability of the two technologies is even more evident, as there are no switching costs.

The various Internet access service offers via ADSL and cable modem which have similar characteristics have, in general, been launched simultaneously, which may suggest that the commercial conditions for one type of service might limit the other, and vice-versa.

Moreover, access service coverage via ADSL and cable distribution networks with bi-directional capability is already very significant and in general spans the same areas, making substitution a real possibility.

With the proliferation of "triple-play" offers supported by ADSL technology and the cable distribution networks, the substitutability of these two types of access becomes even more evident.

Accordingly, ICP-ANACOM believes that, from the point of view of users, the ADSL and cable modem access services are provided in the same retail market - the broadband access market.

[59] There are always costs involved when switching operator, including the cost of searching for information, the time taken to terminate a contract and enter into another, etc.

On the other hand, one of the more significant alterations to occur in the national market since 2005 has been the expansion of mobile broadband including, for the purposes of this present analysis, mobile broadband supported by data transmission cards connected to personal (portable or desktop) computers. Given that this may be relevant for the purposes of market definition, this change calls for an analysis of the degree of substitutability which this option for broadband access has with regard to the other solutions. This issue will be addressed in the next section.

As far as the other existing and commercially available platforms are concerned, whilst recognising their potential and taking into account the degree of substitutability they may have in the future, ICP-ANACOM considers that, in view of their limited availability, coverage and market penetration, as well as the level of service and functionalities offered, such platforms will remain irrelevant to market definition in the present circumstances and until the next market analysis . Accordingly these platforms will not be analysed in the context of the current broadband market. However, ICP-ANACOM will closely monitor the evolution of the services supported by these infrastructures and technologies, with a view to a possible revaluation of the above position.

However, although fibre optic access is still relatively unimportant within the broadband retail market, it is likely that this technology will develop significantly in the future period covered by this analysis. This justifies the inclusion of services supported by fibre optics in this analysis and in the respective relevant markets, and their development will be closely monitored by ICP-ANACOM.

2.3. Definition of the product market

types of currently available Internet access: (i) per call services, (ii) broadband services using xDSL technology (or equivalent) or cable modems, and (iii) dedicated access[60].

ICP-ANACOM considers that, given the developments since the last market review and

analyses made to date of substitutability, the resulting conclusions remain valid with regard to the definition of the product market. In other words, substitutability analyses remain valid and current between:

- The broadband access service and the narrowband Internet access service - the narrowband Internet access service has itself lost relevance, both in terms of the current low number of accesses[61] and the greater difference in available speeds;
- The broadband access and dedicated access services - dedicated access services are used primarily by large corporate customers with greater needs in terms of quality of service; and
- The broadband access service for residential and non-residential customers - it should be noted that the distinction between residential and non-residential customers, which may be relevant for other services, is less important when considering broadband access via ADSL

[60] See Recommendation - Explanatory Note, Section 4.2.2.

[61] At the end of the 4th quarter of 2004 there were approximately 400,000 narrowband Internet access customers and about 840,000 broadband access customers. By the 4th quarter of 2007, the number of narrowband Internet access customers had fallen by around 75% to around 100,000 and the number of broadband access customers had increased by around 81%, to about 1.5 million.

and cable modem, which is directed primarily towards residential customers and other customers who are more demanding in terms of quality (containment[62]), upstream bandwidth[63] and traffic consumption (although there is a trend towards offers that allow unlimited consumption).

In addition, as already stated, although fibre optic access is still relatively unimportant within the broadband retail market it is likely that this technology will develop significantly during the period covered by this analysis.

It is considered, therefore, that in Portugal, the retail market for broadband access comprises the broadband access services using ADSL and cable modem provided to residential and non-residential customers.

In view of developments in the market, the possibility of including mobile broadband services and fixed broadband access markets in the same market or in separate markets is examined in the following section. For this purpose, use is made of the tools described under "2. Definition of the market", in particular, the possibilities for demand and supply-side substitution.

Considering that there is yet another source of competitive pressure[64] in addition to demand and supply side substitution, the potential competition will also be analysed, where appropriate.

2.3.1. Fixed broadband access service vs. mobile broadband access service

An end user can access the Internet using data transmission cards connected to a personal computer with a level of quality that may approach that of fixed network broadband access.

However, the demand side substitutability is limited, given the differences that exist between these two types of access, both in terms of cost and in terms of access speeds. The price difference is currently quite substantial and increases when contract access speeds are taken into account. The offers of one of the mobile operators shown in the following table serves as an example (the offers of other operators providing fixed and mobile services are structured similarly).

Table 7 – Vodafone broadband offers[65]

Offers		Speeds		Monthly charge (excluding VAT)	Monthly charge per Mbps
		Download	Upload		
Mobile Broadband	Broadband 384 Kbps	Up to 384 Kbps	Up to 384 Kbps	€ 18.60	€ 48.4
	Broadband 640 Kbps	Up to 640 Kbps	Up to 384 Kbps	€ 24.71	€ 38.6
	Broadband 3.6 Mbps	Up to 3.6 Mbps	Up to 1.4 Mbps	€ 32.98	€ 9.2
	Broadband 7.2 Mbps	Up to 7.2 Mbps	Up to 1.4 Mbps	€ 37.11	€ 5.2
Duplex ADSL	Duplex ADSL 4 Mbps	Up to 4 Mbps	Up to 512 Kbps	€ 16.45	€ 4.1
	Duplex ADSL 12 Mbps	Up to 12 Mbps	Up to 512 Kbps	€ 24.71	€ 2.1
	Duplex ADSL 24 Mbps	Up to 24 Mbps	Up to 1024 Kbps	€ 32.98	€ 1.4

60The representativeness of the classes of contention 1:10 and 1:20 in all the classes available in the “Rede ADSL PT” offer, in terms of number of access, is about 3%.

63 The representativeness of the classes of upstream speed exceeding 512 kbps in all the classes available in the “Rede ADSLPT” offer in terms of number of accesses, is approximately 0.1%.

64 See Guidelines §38

65 Information compiled from the Vodafone website in February 2008.

With regard to the relationship between price and available access speed, the offers supported by data cards compare unfavourably with the fixed broadband offers (in the case of Vodafone, corresponding to the "Duplex ADSL" offers) - although it could be argued that in regions without access to fixed broadband offers supported over cable distribution networks or LLU the difference between prices for similar deals is less pronounced.

In addition, in the case of offers supported by data cards, each transmission speed is associated with a specific geographical area of coverage, with the areas covered by higher speeds becoming increasingly smaller[66].

For example, according to information on the Vodafone website, "*the entire Vodafone 3G network, which covers most of the territory, allows access speeds of up to 1.8 Mbps. In most urban areas, speeds of up to 3.6 Mbps are possible. In some areas of the cities of Lisbon, Oeiras, Cascais and Faro, the 3G network already offers speeds of up to 7.2 Mbps*." This situation is similar for the other land mobile service operators.

In this respect it is also worth noting that the principle results of the evaluation of the quality of GSM/UMTS networks and mobile services in urban areas and along main roads in mainland Portugal[67] reveal significant differences, with the former achieving good levels of coverage and performance for the voice service, both in urban areas and along the roads. According to this assessment, the UMTS network has shortcomings, in that it does not provide good WCDMA coverage and certain areas continue to suffer from poor or no coverage, especially along roadways.

This "geographical restriction" can also be seen in relation to fixed broadband offers, especially Vodafone's "Duplex ADSL" offer, which is limited by the number of exchanges with co-installation and by the length of the loops (a relevant factor for offers with very high speeds e.g. 12 Mbps and 24 Mbps). However, the introduction of attendance points closer to the end user has helped reduce the maximum length of the local loop and, as a consequence, it is expected that the maximum access speeds available on these networks will increase in the near future[68].

Another differentiating characteristic which potentially limits the possibility of substitutability between the fixed and mobile broadband access services is the fact that the latter generally includes traffic limits that are significantly below the traffic limits of fixed broadband access offers. For example, in the case of the offers sold by Vodafone, the traffic limit for the high speed mobile broadband access offer (7.2 Mbps) is 6 GB, which is the same as the traffic limit for the lowest speed for the fixed broadband access offer (2 Mbps). The traffic limit for the fastest fixed broadband access offer sold by Vodafone includes 60 GB of traffic[69] (10 times higher than the highest speed for the mobile broadband access offer).

Moreover, the main advantage of the mobile broadband access service is essentially its mobility, which allows the service to be used anywhere (universities, first and second homes, the workplace) using one contract only.

[66] There may be very exceptional circumstances in which the maximum speeds available on the mobile networks may be higher than those for the fixed networks (due to restrictions that are essentially associated with the length or condition of the local loop).

[67] See study at http://www.anacom.pt/template12.jsp?categoryId=272122.

[68] It is also to be expected that new technologies and standards will be developed that will allow for an increase in the transmission speeds of mobile networks.

[69] Information taken from the Vodafone website in June 2008.

Notwithstanding the above arguments, it is acknowledged that on the demand side there may be some degree of substitution between the fixed broadband access service and the mobile broadband access service. However, given the arguments identified, including:

- the difference in prices, with the fixed broadband access service being lower for an equivalent speed;
- the maximum speed of offers, with the mobile broadband access service being slower;
- the different traffic limits, with the mobile broadband access service being lower, for an equivalent speed;
- mobility, an intrinsic feature of the mobile broadband access service;

ICP-ANACOM considers that at present the degree of substitutability between the fixed and mobile broadband access services is limited, with the mobile broadband access service essentially targeted at a particular segment (apart from users eligible for the "*e-escola*", "*e-professor*" and "*e-oportunidades*" programmes), consisting of users:

- who do not require fixed access (for voice communication or television);
- who value mobility;
- who do not need higher quality broadband access services in terms of speed;
- who are not intensive users.

In other words, this group of users is not yet of a sufficient size to prevent a hypothetical monopolist from the fixed broadband access service maintaining prices at a significantly higher level than would be the case in a competitive market.

The examination of supply-side substitutability on the part of mobile Internet access providers which are not currently broadband service providers on the fixed network is not relevant in this analysis. To enter the fixed network broadband access market, a mobile broadband access provider would have to acquire the relevant wholesale inputs or construct its own network. However, these solutions do not reflect the concept of supply-side substitution, which requires that operators (in this case the mobile broadband operators) are able to enter the fixed broadband access market quickly and without high costs. Therefore, these providers cannot impose any constraints on fixed broadband providers during the period of time elapsing until the next market analysis.

In addition, all the land mobile service operators are included in economic groups which also provide fixed network broadband access services. In the reverse situation (providers of fixed network broadband access services becoming providers of mobile broadband services) this would be considerably more difficult, given the need for spectrum, which is a scarce resource (this may, however, change with the allocation of frequency usage rights reserved for BWA).

Another aspect which could lead to the same conclusion (that on the supply side, the products are separate) arises from the fact that specific mobile broadband access offers are provided by fixed network operators which belong to the same corporate group as the land mobile service operators and are targeted at customers who contract ADSL services. Take, for example, the Vodafone's "Casa Duplex ADSL" kits, which are sold, amongst others, in two configurations: one to be used inside the home and one to be used inside/outside the home through a mobile

broadband offer. This shows that, to a certain extent, the two Internet access services (fixed and mobile) complement rather than replace each other.

The lack of substitutability on the demand side (for most users) and the view that supply-side substitution is not relevant to this market analysis indicate that the existence of mobile Internet access offers does not restrict a hypothetical monopolist from setting a price that is above the level of competition in the provision of the fixed broadband access service.

Therefore, for the time period relevant to this market analysis, it is considered that fixed broadband access and mobile broadband access are not included in the same market. Nevertheless, ICP-ANACOM will monitor developments in this area closely.

2.3.2. Definition of the product market: conclusion

As a result of this analysis, it is considered that in Portugal the retail product market for the broadband access product consists of a broadband access service using xDSL, cable modem and fibre optics provided to residential and non-residential customers.

2.4. Definition of the geographic market

Having identified the relevant product market, it is now necessary to define its geographical dimensions.

According to the Guidelines *"the relevant geographic market comprises an area in which the undertakings concerned are involved in the supply and demand of the relevant products or services, in which area the conditions of competition are similar or sufficiently homogeneous and which can be distinguished from neighbouring areas in which the prevailing conditions of competition are appreciably different"*[70].

In the electronic communications sector, the geographical scope of the relevant market has traditionally been defined according to two main criteria:

- The existence of legal and regulatory instruments, in particular, restrictions on licensing/authorisation, tariff obligations and the provision of services.

  In Portugal, the (former) licences[71] of FTS providers and the registration of Internet access service providers were allocated at national level. In the case of cable distribution network operators, permits were granted for certain municipalities. However, in the case of the ZON Multimédia cable television operators, these were consolidated into a single company - TV Cabo - which has national coverage[72]. Furthermore, Cabovisão has extended its area of operation and now has a transmission infrastructure which covers a considerable area of national territory.

[70] See Guidelines §56.

[71] The licensing system was replaced by a general authorisation system.

[72] Except for Cabo TV Madeirense and Cabo TV Açoreana which, whilst belonging to ZON Multimédia, have not been merged into TV Cabo and remain independent, operating in the Autonomous Regions of Madeira and the Azores respectively.

PTC, which possesses the largest network supporting ADSL services, provides FTS under its obligations as a universal service provider, and is therefore required to provide FTS throughout national territory[73].

PTC practices tariff uniformity, i.e. it applies common tariffs throughout national territory. However, the availability of certain offers is restricted to particular areas within the country (e.g. the "Naked DSL" offer).

- The area covered by a network.

  As previously stated, since 2006 the 1,853 PTC public telephone exchanges have been equipped with DSLAM, which corresponds to full coverage for all areas which can be supplied with ADSL. In addition, in terms of LLU there has been a substantial increase in coverage, with about 60% of the population covered at the end of 2007.

  As far as cable distribution network penetration is concerned, by the end of 2007 73% of households in all regions were cabled across all regions[74].

Historically, the definition of the geographic market has, in general terms, been based on the area covered by the network of the incumbent operator and therefore tended to be national in scope.

However, developments now occurring in the broadband access market point to the existence of different competitive conditions in different areas.

In Portugal, the developments observed in the broadband market, particularly the expansion of LLU, in terms of exchanges with co-installed operators, the number of unbundled accesses, the entry of new operators and the ZON Multimédia spin-off, point to the existence of different competitive conditions on a geographical level, which may mean that the definition of the relevant geographic market no longer corresponds to national territory.

2.4.1. Defining the appropriate geographic unit

In seeking to assess the geographic scope of electronic communications markets, the application of substitutability tests can ultimately lead to the definition of very small geographic markets due to the limited capacity for substitution. This is because it is unlikely an end user would move house to benefit from lower broadband prices and because supply-side substitution implies significant sunk costs.

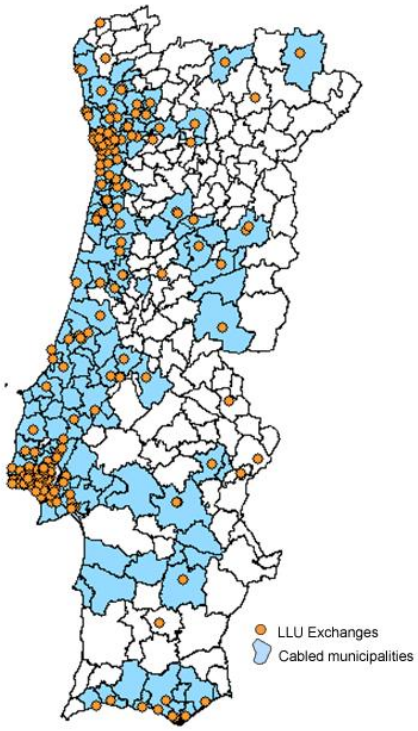
Therefore, rather than use substitutability analysis, it may be more illuminating to consider the existence of common restrictions on prices in order to identify the geographical boundaries of the market.

Historically, broadband service providers offer prices and services which do not vary according to geographical location, suggesting that there is a single geographic market. However, with the development of LLU and the expansion of the area covered by the cable distribution networks, the respective retail products have been offered at prices which are significantly lower than other broadband access offers, including those based on the "Rede ADSL PT" offer.

[73] See Article 3 of Decree-Law no 458/99 of 5 November.
[74] Although, as previously mentioned, there may be multiple cabling of the same household.

Accordingly, the previously described geographical variations affecting the availability of offers have also given rise to geographical price variations.

Figure 3 – Location of exchanges where the OSP make use of LLU in mainland Portugal and municipalities with cabled households



Assuming that the potential coverage of broadband offers based on the "Rede ADSL PT" wholesale offer extends throughout national territory[75], and observing the location of the exchanges where OSPs make use of LLU in mainland Portugal and the municipalities - the smallest unit for which statistical information concerning the distribution of cable networks is compiled – with cabled households (as shown in Figure 3),), it can be seen that there are four types of geographical area:

- Areas where there are only broadband access retail offers based on the "Rede ADSL PT" wholesale offer;
- Areas where, in addition to broadband access retail offers based on the "Rede ADSL PT" wholesale offer, LLU-based broadband access retail offers are also available; and
- Areas where, in addition to broadband access retail offers based on the "Rede ADSL PT" wholesale offer, cable modem broadband access retail offers are also available; and
- Areas where broadband access is provided based on the "Rede ADSL PT" wholesale offer, LLU and the cable distribution network.

Table 8 – Number of municipalities covered by the various types of LLU coverage, the "Rede ADSL PT" wholesale offer and the cable distribution networks

Areas	No of	Resident	Classic family

[75] There are exceptional cases in which it may not be possible to provide ADSL services over a particular loop, due to its physical characteristics (including length, section and state of repair).

	municipalities	population	households
"Rede ADSL PT"	308	10,599,095	5,519,654
"Rede ADSL PT" and LLU	113	8,242,296	4,128,608
"Rede ADSL PT" and cable distribution networks	157	9,105,371	4,566,690
"Rede ADSL PT", LLU and cable distribution networks	100	7,973,070	3,977,579

On the basis of the information in this table, it may be concluded that:

- In 100 municipalities there are both cable distribution network operators and operators co-installed as part of LLU;

- In 57 municipalities there are cable distribution network operators but no operators co-installed as part of LLU;

- Of these 57 municipalities, 15 are municipalities in the Autonomous Regions of the Azores and Madeira;

- There are more cabled municipalities (157) than municipalities with co-installed operators (113).

However, it may also be concluded from this analysis that:

- Municipalities with cable distribution network operators but no co-installed operators under LLU represent only 11% of traditional family dwellings and 11% of the national population, and this already small percentage represents 7% of cabled households;

- In municipalities where there are both cable distribution network operators and operators co-installed under LLU, the percentage of cabled households compared to the total number of dwellings is significantly higher than the percentage in municipalities where there are cable distribution network operators but no co-installed operators (95% and 45% respectively);

- Figures for the largest cable distribution network operator show that just 1% of its cable television customers are located in municipalities where it has a presence and there are no co-installed operators.

Thus, in an initial analysis of uniform competitive conditions the four previously defined areas may be concentrated into two broader areas:

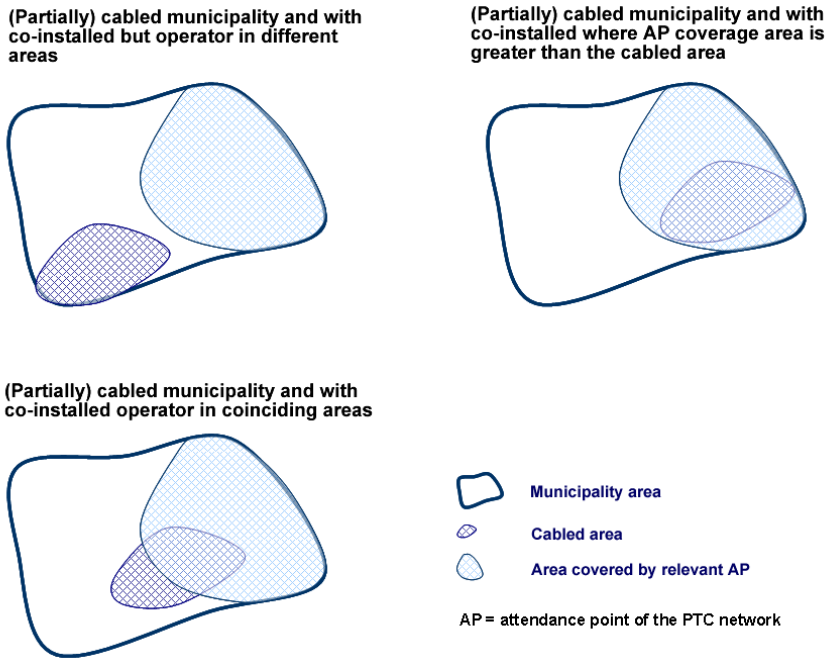
- Areas where there are only broadband access retail offers based on the "Rede ADSL PT" wholesale offer; and

- Areas where there are both broadband access retail offers based on the "Rede ADSL PT" wholesale offer and alternative retail offers.

That is, in most areas (municipalities) where there are retail broadband offers based on LLU, there are also retail broadband offers supported by cable distribution networks in addition to the PT Group retail broadband offers which cover the entire national territory; in fact only 13 of the 113 areas without LLU (still) lack cable television. In the remaining areas there are nearly always only retail broadband access offers based on the "Rede ADSL PT".

Nevertheless, even in municipalities where there are cable distribution network operators and operators co-installed under LLU, different situations may exist in terms of coverage, some examples of which are given in Figure 4.

Figure 4 – Diagram demonstrating coverage of municipalities by cable distribution networks and operators co-installed under LLU



In an initial analysis this finding may justify the choice of the municipality as the geographic unit to be used for the purposes of delineating geographic markets and, on the basis of this assumption, defining the two areas identified above.

However, in choosing the appropriate geographic unit, it is expected that a compromise will emerge between the granularity and the feasibility of the market analysis and the subsequent implementation, where necessary, of relevant obligations.

In order to arrive at the best analysis of this question, ICP-ANACOM requested the following:

- Information from PTC on the coverage area of each attendance point where there was at least one co-installed operator, to be as accurate as possible; and

- A map of coverage for the cable distribution network (cabled households) from the cable distribution network operators, to be as accurate as possible (e.g. including the area surrounding cabled streets or parishes with cabled households),

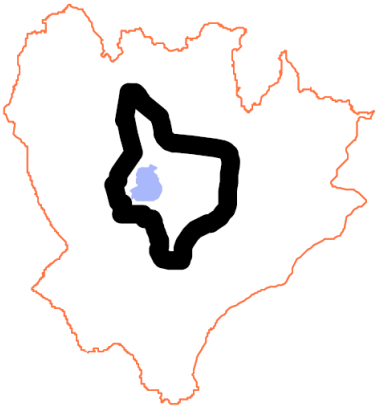
both in electronic format (with respective GIS).

An analysis of the information received enabled it to conclude that the coverage area for the exchanges (information supplied by PTC[76]) normally represented a subdivision of the respective municipality and that cable distribution networks mainly covered a significantly smaller area than that of the exchange (in other words, a much smaller part of the municipality), as can be seen from the figure below in which the municipality is represented by the thinner line, the black line denotes the coverage area for a PTC exchange with at least one co-installed

[76] The area covered by an attendance point is usually a subdivision of the coverage area of the respective exchange.

operator and the solid area – in blue – represents the coverage area for cable distribution network operators in the municipality.

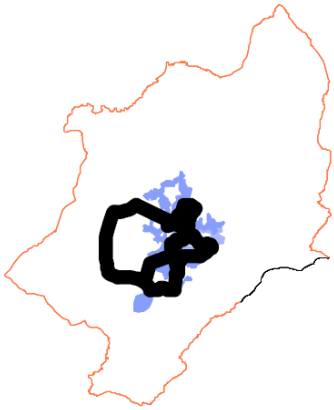
Figure 5 –Example of a municipality with co-installed operators and cable distribution network operators



Moreover this is an obvious conclusion, given that the cable distribution networks and the operators supported by LLU aim to cover the same main centres where the population is denser, so that in most cases coverage is duplicated.

However, there are also municipalities where cable distribution coverage exists partly or entirely outside the area covered by an exchange with co-installed operators.

Figure 6 – Example of a municipality with co-installed operators and cable distribution network operators



Therefore the following will have to be considered:

- On the one hand, whether the geographical limits should be based on administrative boundaries (e.g. municipalities) or on limits associated with the components of the network;

- On the other hand, what level of aggregation of the different geographical units, should be used in order to reflect the different levels of competition observed.

This could make it advisable to consider, as an alternative, the (aggregated) coverage area of the PTC network exchanges with co-installed operators and the (aggregated) coverage area of PTC network exchanges without co-installed operators as the relevant geographic unit[77].

The geographic units should still meet the following criteria:

- They should be mutually exclusive and smaller than the national territory;
- It must be possible to map the network structure of all the relevant operators and services sold on the market within the geographic units;
- They should have well defined and stable boundaries;
- They must be small enough to ensure that competition conditions do not vary significantly within the unit, yet large enough to make the task of the operators and NRA reasonable in terms of compiling and analyzing information.

Table 9 provides a comparative analysis of the two options identified for defining the geographic unit.

Table 9 – Analysis of the options for defining the geographical unit

	Municipality	Exchange
Mutually exclusive	+	+
Mapping of information	+/–(a)	–(a)
Boundary stability	+	+
Uniformity of competitive conditions	–(b)	+
Obligations in operation	–(c)	+

(a) As noted above, information relating to cable distribution operators is available by municipality (for cabled households or cable television customers). The information on ADSL access is broken down by exchange. The mapping error results from (i) attributing ADSL accesses for a given exchange to the municipality where it is located (when there may be an error with regard to exchanges located in municipalities adjacent to the municipality in question) or (ii) attributing the cable modem accesses of a given municipality to the exchanges belonging to that municipality. Since, in general, the exchange coverage area is smaller than the municipality, the error associated with mapping data for LLU-based access in the municipality where the exchange is located, will, from the outset, be smaller than the error associated with data mapping for the cable distribution networks - at municipality level - at the exchanges. Moreover, as an analysis of network coverage reveals, the error is slight in either case;

(b) Since, in general, the municipalities are larger than the coverage area of the exchanges, the municipalities have less uniform competition conditions than the exchanges;

(c) Implementation of obligations at exchange (network component) level is immediate and simpler than implementation at municipal level (e.g. there may be two accesses for the same exchange and different municipalities, making it operationally complex and commercially inappropriate, for example, to differentiate between the obligations at the same exchange).

While the above analysis points to the adoption of the exchange area as the geographic unit for the demarcation of the market, another fact that supports this option is that the pricing level of LLU-based retail broadband access offers is, as a rule, lower than that of offers supported by

[77] Using the areas associated with each individual exchange may, on the one hand, allow for a very detailed analysis but on the other hand, seems to be impractical in terms of obtaining reliable data and conducting an analysis at that level. Moreover, the geographic unit selected must be one that can reflect the competitive constraints that exist in the local market, which means that the unit must not be too broad and arbitrarily include areas with heterogeneous competitive conditions.

cable distribution networks. In other words, the principal driving force behind competition in this product market was, as at the end of 2007, the LLU - evident, for example, in the marginal market shares in areas with LLU where OSPs with LLU-based retail offers accounted for more than 50% of new broadband accesses registered between the end of 2006 and the end of 2007. This increased competitive pressure can be explained mainly by taking into account the joint supply of various services (broadband, Internet, television) – the issue in question, specifically in the case of cable distribution network offers and offers supported by the local loop (Clix) – (see Table 10), given that when the price of broadband access alone is analysed, it is not very different from that of offers based on the local loop and cable distribution networks (see Graph 10).

However, more recent data has shown a reversal in this situation, given the competition that has been exerted by ZON Multimédia after its spin-off from the PT Group.

Table 10 – Example of broadband offers based on the local loop and the cable distribution network[78]

Services	Clix	ZON Multimédia
Broadband	12 Mbps downstream speed Unlimited traffic	4 Mbps downstream speed Unlimited traffic
Television	25 channels	16 channels
TFS	Unlimited calls at night to the fixed network in Portugal	Calls to fixed network at €0.05 / min. and to the mobile network at €0.3/min
Price for all services	**€ 24.71**	**€ 33.02**

Source: Websites of the operators in June 2008. Prices excluding VAT. The figures given do not include the cost of equipment rental or activation/installation. In addition, promotional prices that are limited to a certain period are not considered.

Table 11 provides examples of the evolution of broadband offers between 2004 and 2008, showing that there has been a significant reduction in prices, with base offers in LLU areas or areas covered by cable distribution networks providing faster speeds. It can also be seen that in non-LLU areas Sonaecom's offer is more expensive than PTC's offer.

Table 11 – Examples of the evolution of broadband offers between 2004 and 2008[79]

Operator	**Year**	**Price**	**Speed**	**Name of offer**
PTC	2004	€ 29.40	512 Kbps	Sapo ADSL.PT Standard
	2008	€ 16.52	2 Mbps	Sapo ADSL
Sonaecom (LLU areas)	2004	€ 32.69	1 Mbps	Clix 1 Mb
	2008	€ 16.45	4 Mbps	Clix 4 Mb
Sonaecom (non-LLU area)	2004	€ 32.00	512 Kbps	Net ADSL Light
	2008	€ 20.65	1 Mbps	Clix ADSL 1 Mb

[78] Information compiled from the web sites of operators in June 2008 (these prices do not include VAT). The figures do not include the value of equipment rental or the value of activation / installation. Promotional values that are limited to a certain period are also not considered.

[79] Information with reference to 2008 compiled from the website in February 2008. Information with reference to 2004 compiled from the websites of operators in September 2004. Prices do not include VAT and refer solely to the internet service.

ZON Multimédia	2004	€ 29.41	512 Kbps	Netcabo 512
	2008	€ 16.52	4 Mbps	Netcabo 4 Mb

Recently, however, PTC has begun to market broadband access without telephone subscription ("Naked DSL"), available at present essentially in areas where co-installed operators or cable distribution networks exist, which would appear to be a response by the PT Group to the greater competition emerging in these areas.

2.4.2. Uniformity of competitive conditions

The option of defining the geographic market in terms of the coverage area of the exchanges seems to be an appropriate compromise between the aforementioned levels of granularity and practicality, ensuring coherence with regard to existing obligations (that is to say, it is relatively simple to distinguish obligations in relation to exchanges).

Indeed, it is undeniable that the areas covered by the cable distribution networks and/or exchanges where co-installed operators exist are those encompassing the majority of the population and where PTC faces greater competitive pressure. In the (relatively small) areas where there is cable distribution network coverage and no co-installed operators[80], from the outset the competition the PT Group faces is not as strong as that in other areas.

In addition to the presence of co-installed operators associated with the LLU and/or cable distribution network operators, other additional indicators which could result in greater or lesser competitive pressure may include, for example, the number of operators involved, the date of the first co-installation or the percentage of cabled households in the municipality where the exchange is located.

Therefore, the exchanges could be formed into groups with similar or sufficiently uniform competitive conditions, taking into account the aspects addressed above.

With regard to this issue, it is important to note that the EC, in its comments on the second round of the OFCOM Market 5 analysis, stated that[81]:

- it would have preferred the NRA to have defined each of the 5,587 exchanges as a separate market;
- acknowledging the practical difficulties involved in analysing each exchange individually, it accepted that exchanges with similar or sufficiently uniform homogeneous conditions of competition could be grouped together in order to carry out the SMP assessment;
- the number of competitors present at a given exchange, even in combination with the size of that exchange, is not, in itself sufficient for this purpose. An analysis of the

[80] And vice versa (there are areas with co-installed operators but no cable distribution network coverage).

[81] See http://circa.europa.eu/Public/irc/infso/ecctf/library?l=/uk/registeredsnotifications/uk20070733/uk-2007-0733_actepdf/_EN_1.0_&a=d.

distribution of market shares and the pricing differences observed in the different exchanges are among the essential parameters[82].

Therefore, taking the EC's comments on OFCOM's analysis of Market 5 into account, the market share is firstly analysed in terms of each exchange[83], with broadband access via cable distribution operators distributed by exchange, in accordance with the methodology described in **Annex 1**.

The results of this analysis of each exchange point can be found in **Annex 2**.

Following this analysis, in order to define and identify groupings of exchanges with similar or sufficiently homogeneous competitive conditions, the exchanges were organized into groups according to whether co-installed operators or cable distribution network operators existed in the municipality where they were located[84] and the following conditions were defined:

- Group A: No co-installed operators or cable distribution network operators;
- Group B: A single co-installed operator but no cable distribution network operators;
- Group C: No co-installed operators but at least one cable distribution network operator;
- Group D: More than one co-installed operator but no cable distribution network operators;
- Group E: A single co-installed operator and at least one cable distribution network operator;
- Group F: More than one co-installed operator and at least one cable distribution network operator.

Table 12 an Table 13 and Graph 11 show the results in terms of the characteristics of the exchanges in each group, focusing on the distribution of the PT Group market shares.

Table 12 – Characteristics of exchanges

	A	B	C	D	E	F
Number of co-installed operators	0	1	0	>1	1	>1
Number of cable distribution network operators	0	0	≥1	0	≥1	≥1
Number of exchanges	1.098	19	509	1	78	148
Average size (FTS accesses) of exchanges	649	2.374	1.152	2.602	3.901	8.503
Proportion of broadband accesses	12%	1%	19%	0%	12%	56%

[82] According to the EC, OFCOM presented information on market shares and their evolution over time, for each individual exchange .

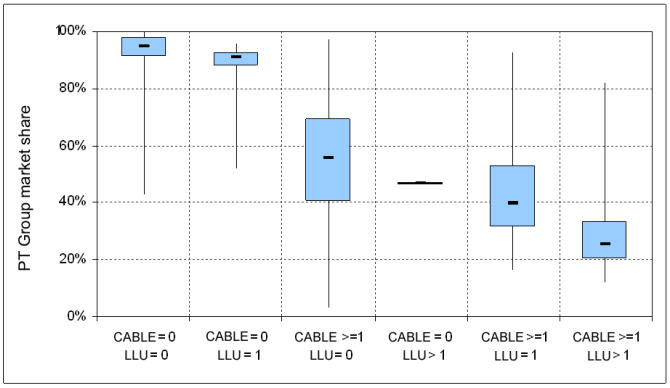
[83] Based on the exchanges, since statistical information is gathered at this level.

[84] This approach takes into account the price differences between different groups and the differences in competitive pressure recorded between them.

Table 13 – Distribution of PT Group retail market shares by exchange groupings

	A	B	C	D	E	F
Minimum	43%	52%	3%	46%	16%	12%
1st. Quartile	91%	88%	40%	46%	31%	20%
Median	94%	91%	55%	46%	40%	26%
3rd. Quartile	98%	93%	69%	46%	53%	33%
Maximum	100%	96%	97%	46%	93%	82%

Graph 11 – Distribution of PT Group retail market shares by exchange groupings



In terms of market share, the conclusions are in line with the expected trend: generally where there is a greater number of operators within the coverage area of the exchange in question, the market share of the PT Group is reduced.

From this first analysis it may be concluded that:

- The exchange areas in groups A and B can be grouped together, since they are homogenous (there is, in fact, no exchange where the market share of the PT Group is less than 50%);

- Group D is of no statistical relevance because it includes only one exchange area;

- There is some uniformity between groups C, E and F - however (i) in most exchanges in Group C, the market share of the PT Group is over 50% and (ii) in most exchanges in Group F, the market share of the PT Group is below 40%.

Accordingly, it was deemed necessary to extend the analysis of groups E, F and C.

Groups E and F

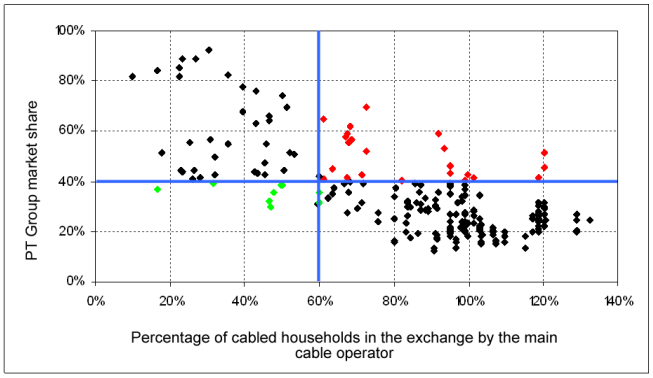
The exchanges in Groups E and F were regrouped and a significant (negative) correlation was observed in this new group - representing exchanges with at least one co-installed operator in municipalities where there is at least one cable distribution network operator - between the market share of the PT Group and the percentage of cabled households.

In practice, as would be expected, this correlation means that greater coverage of the exchange area[85] by cable distribution network operators corresponds to greater competitive pressure on the PT Group.

Taking the possibility of the multiple cabling of a single household into consideration (meaning that the sum of households cabled by all operators may result in duplicate calculations), the percentage of households cabled by the main operator in each municipality was used.

It was also concluded that with 60% cabling of households, homogeneity in the distribution of exchange market shares was maximized in two distinct groups (one group where the market share of the PT Group at each exchange was mostly above 40% and another where the share was mostly below 40%)[86] – see Graph 12.

Graph 12 – Relationship between PT Group market shares at each exchange and the percentage of households cabled by the main operator in the municipality where the exchange is located[87]



The results of this analysis are presented in Table 14 and Table 15 and Graph 13.

[85] On the basis of information on the percentage of cabled households per municipality submitted by cable network distribution operators, the percentage of cabled households per exchange (in the municipality) was estimated, considering only exchange areas covered by these operators' networks (according to GIS information submitted by the cable distribution operators). The estimate was calculated as follows: the percentage of cabled households in an exchange covered by cable distribution networks in municipality x is equal to the percentage of cabled households in municipality x divided by the percentage of FTS accesses in the entire exchange area in the municipality covered by cable distribution networks. The percentage of cabled households in the exchange area of the municipality not covered by cable distribution networks is obviously zero.

[86] The figure of 40% is used as a reference for market share since, according to the Guidelines, in EC decision-making procedures concerns regarding individual dominance have normally emerged in connection with companies holding market shares in excess of 40%. However, situations involving dominance may also exist in association with lower market shares or there may be cases of companies with higher market shares which are not considered to be dominant

[87] Nevertheless, even where the percentage of households cabled by the main operator in each municipality is used as an indicator, in some cases values of over 100% are recorded. This is due to the following factors:

- The penetration rates for cabled households calculated according to the ratio of cabled households (information provided by operators)/classic family dwellings (information provided by the INE (Statistics Portugal));

- Commercial establishments (cafes, shops, clinics, etc.), counted by operators as cabled households but not considered classic family dwellings by the INE;

- New buildings/constructions not classified as classic family dwellings by the INE but included by the operators.

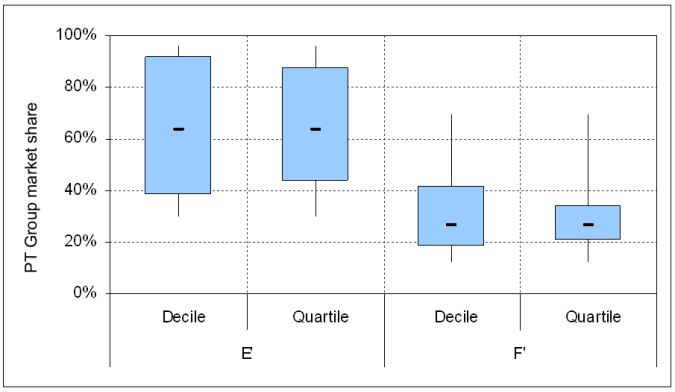
Table 14 – Characteristics of exchange

	E'	F'
Number of co-installed operators	≥1	≥1
Number of cable distribution network operators	≥1	≥1
Percentage of cabled households	≤60%	>60%
Number of exchanges	66	180
Average size (FTS accesses) of exchange	3.798	7.554
Proportion of broadband accesses	8%	61%

Table 15 – Distribution of PT Group retail market shares by exchange grouping

	E'	F'
Minimum	30%	12%
1st Decile	38%	18%
1st Quartile	44%	20%
Median	64%	27%
3rd Quartile	88%	34%
9th Decile	92%	42%
Maximum	96%	69%

Graph 13 – Distribution of PT Group retail market shares by exchange grouping



In other words, two groups can be found which are more homogenous than the former Groups E and F:

- One, comprising 180 exchanges, in approximately 85% of which the PT Group market share is less than 40% – represented by F';

- Another, comprising 66 exchanges, in approximately 85% of which the PT Group market share is over 40% – represented by E'.

Whilst not having great relevance, it appears that the "error" regarding the groupings that were formulated (in relation to the 40% reference for market share) corresponds to:

- Including in F' 25 exchange areas where the PT Group has a market share of over 40%, representing 4% of broadband access – the red areas in Graph 12;

- Including in E' 9 exchange areas where the PT Group has a market share of less than (but very close to) 40%, representing 2% of broadband access – the green areas in Graph 12.

Group C

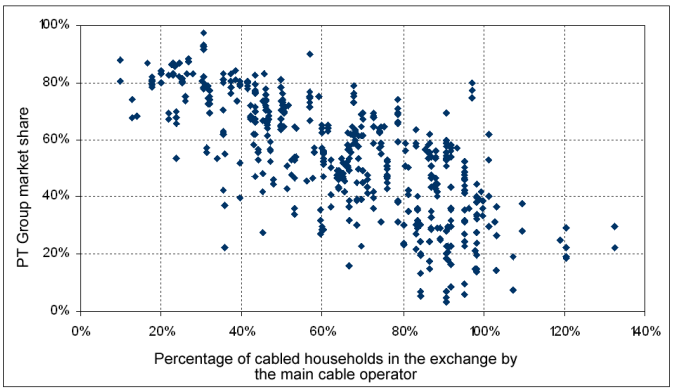
In this group there are 126 exchange areas in which the PT Group market share is less than 40%. They have, on average, 929 FTS accesses and represent around 5% of the broadband market.

Approximately 20% of the FTS lines at these 126 exchanges are situated in the Autonomous Region of Madeira, in areas where, in addition to the PT Group, only ZON Multimédia, through its subsidiary Cable TV Madeirense, has a presence.

It should be noted that the entry or expansion of operators in this Autonomous Region is hampered by the insularity that characterizes this Autonomous Region and its respective associated conditions, particularly the need for sufficient capacity for a connection to mainland Portugal, which is controlled by the PT Group and has revealed certain limitations.

Within this group of 126 exchanges no sufficiently strong relationship can be identified between the various indicators that would enable them to be grouped in any other way that would be more homogeneous.

Graph 14 – Relationship between PT Group market shares at each exchange and the percentage of households cabled by the main operator in the municipality where the exchange is located (Group C)



Accordingly, whilst there is some evidence of heterogeneity, it was judged that, given the relatively low importance of the exchanges in question (with the more pronounced exception of those located in the Autonomous Region of Madeira), there is no evidence that points to a need for this group to be subdivided.

Situations particular to municipalities mainly covered by "C" exchange areas

Certain specific situations were identified[88] where in municipalities with significant cable distribution network coverage there was only one exchange that did not have co-installed operators. In the majority of theses exchange areas, the PT Group market share was less than 40% and the weighting of FTS accesses as part of the entire FTS accesses for the municipality was less than 1.5%[89].

Therefore, from the point of view of facilitating the implementation of obligations by defining uninterrupted areas and without compromising – and, in fact, very much the reverse – the homogeneity of competitive conditions, the four exchange areas (Musgueira, Aroeira, Campanhã and Verdizela) were included in the "C areas".

[88] Namely in Musgueira (Lisbon), Aroeira (Almada), Campanhã (Porto), Verdizela (Seixal) and Landeira (Vendas Novas).
[89] The exception, both in terms of market shares and the weighting of FTS access, is the Landeira exchange.

2.4.3. Conclusions on the uniformity of competitive conditions

Taking into account the information presented above, it is considered that in the case under consideration there are two relevant geographic markets:

- areas covered by exchanges where there is at least one co-installed operator and at least one cable distribution network operator and where the percentage of households cabled by the main operators in the municipality is more than 60% – hereinafter "C areas" [90];

- the remaining areas – hereinafter "NC areas".

"C areas" comprise the coverage areas of the 184 exchanges identified in **Annex 3** and account for 61% of broadband access and 47% of FTS access. Within this grouping, there are 26 exchanges in which the PT Group market share at the end of 2007 was over 40%, and only 12 in which the PT Group market share was over 50%.

It is expected that significant developments will take place that may alter competition conditions in the exchange areas included in the "C areas" and their effects will need to be assessed in regular analyses taking place over relatively short periods of time. Any such developments that may occur are, above all, related to the introduction of fibre optics into the access network and the possible creation of new attendance points involving the transfer of loops between attendance points (the remotisation of loops from the main attendance points to secondary attendance points). ICP-ANACOM therefore intends to closely monitor and analyse in detail and in the short term the competition conditions in the exchange areas included in the "C areas", in particular in the 12 areas where the PT Group retail market share was 50% or above at the end of 2007.

According to the available information, a more complex definition of these geographic markets would not be relevant to the assessment of SMP, given the prevailing competition conditions.

It should be noted that this methodology for defining the geographic markets takes current market conditions into account and a different methodology may therefore be needed for future market analyses.

Exchange areas in which there is at least one co-installed operator, at least one cable distribution network operator and more than 60% of households have been cabled by the main operator in the exchange area[90] are identified in **Annex 3** and shall be maintained until the next review of the broadband access markets.

As previously stated, although certain municipalities are relatively large, the population is concentrated in a relatively small area that is economically attractive from a business point of view, both to cable distribution network operators and operators co-installed for purposes of LLU. Therefore, for all due purposes, the coverage area of the exchanges identified in **Annex 3** generally encompasses the coverage area of the cable distribution networks to a greater extent than the area which constitutes the municipality. It is thus considered there is an effective possibility of substitution between ADSL-supported broadband access services and services supported by cable modem.

[90] Four exchange areas are included: (a) the only exchange without co-installed operators in the municipality, (b) in which the percentage of households cabled by the main operator in the exchange area is over 60% (c) in which the weighting of FTS access in the exchange area in relation to access for the municipality as a whole is low (less than 1.5%).

2.5. Conclusion: Retail broadband access markets

Following this analysis it is considered that, in Portugal, the retail market for broadband access consists of broadband access services using ADSL, cable modems and fibre optics, provided to residential and non-residential and customers and divided into two geographic markets:

(a) areas covered by exchanges where there is at least one co-installed operator and at least one cable distribution network operator and the percentage of households cabled by the dominant operator in the municipality exceeds 60%[90];

(b) the remaining areas of national territory.

It is the view of ICP-ANACOM that the factors considered in this analysis will probably not change over the short/medium term, before the next market definition and analysis of SMP is carried out[91].

[91] The next market definition will be carried out when: (1) factors emerge which significantly change the competition conditions of the market or (2) the Recommendation is reviewed in relation to these markets or (3) within 18 months.

3. ASSESSMENT OF SMP IN THE RETAIL BROADBAND ACCESS MARKET

In accordance with Article 60(1) of Law No 14/2004 (14 of the Framework Directive), "*It is considered that an undertaking has significant market power if, either individually or jointly with others, it enjoys a position equivalent to dominance or a position of economic strength which enables it to act largely independently of competitors, customers and consumers*".

SMP may be held by just one undertaking in the market (individual dominance) or by more than one undertaking (joint dominance). Additionally, in cases where an undertaking has SMP in a specific market, it may also be considered to have SMP in a closely related market, where the links between the two markets are such that possession of market power in one can serve as a lever for the other, thereby strengthening the market power of the company (SMP leverage).

In the assessing SMP it is important to conduct an analysis based on the hypothesis that there is no current or potential regulation of SMP in the relevant market. This should be the procedure where the result of SMP analysis implies testing the need or otherwise for any regulatory intervention. Therefore, to evaluate SMP in this market, an analysis must be made of a hypothetical market where the regulation of SMP (or the "threat" of regulation of SMP) does not exist.

In this case, and in order to analyse the retail market, a scenario is assumed where there is no regulation in the upstream markets (i.e. in wholesale markets). Otherwise, the retail analysis would be biased by a set of obligations that are currently in force but may change following the market analysis.

Accordingly, in the absence of wholesale market regulation, PTC would have no incentive to provide others with access to its network, at least not under the terms defined by ICP-ANACOM which have led to the development of the “Rede ADSL PT” offer and LLU and have resulted in increased access for alternative operators based on these offers. In this context, and for the purposes of assessing market share and other criteria used in the assessment of SMP in the retail broadband access market in the absence of any regulation of the associated wholesale markets, it is necessary to define the most reasonable hypothesis for gauging the number of OSP retail accesses based on the LLU and “Rede ADSL PT” wholesale offers.

Even assuming that certain broadband access customers would not purchase this service if LLU based retail offers did not exist, it is considered that a large proportion of the retail customers of LLU-based offers were previous customers of retail offers based on the “Rede ADSL PT” or that they would have opted for them in any case in the absence of other offers. As such, it is not reasonable to disregard the PSO retail accesses based on the “Rede ADSL PT” and LLU wholesale offers, i.e. it is not reasonable to say that in the absence of regulation that these access would not exist.

In this context, until the date on which the spin-off was completed, the PTC retail offers were very similar to the retail offers based on cable modem (particularly those of the main cable distribution network operator - ZON Multimédia). This was influenced by the fact that the OSP retail accesses based on PTC wholesale offers belonged to the PTC FTS customers who, therefore, already had a copper line installed. It may therefore be assumed that these OSP retail accesses based on the "Rede ADSL PT" and LLU wholesale offers belong in their entirety to the PT Group i.e. customers would not change from PTC (the FTS provider) to cable distribution network operators to acquire a broadband access service for the same price and with the same features offered by PTC.

Table 16 – Principal PT Group retail broadband Internet access offers (including ZON Multimédia) identified in an earlier market analysis

Provider	Offer	Price		Traffic included		Additional consumption (per 100 MB)
		Monthly charge.	Activ.	National	Internat.	
Speed (Kbps): 512 / 128						
Telepac	Sapo ADSL.PT Standard	€ 29.40	€ 42.02	20 GB	2 GB	€ 0.08 (nat. traffic) € 1.26 (int. traffic.)
TV Cabo	NetCabo 512	€ 29.41	€ 21.01	20 GB	2 GB	€ 0.21 (nat. traffic) € 2.52 (int. traffic.)
Telepac	Sapo ADSL.PT Pro	€ 37.81	€ 42.02	Unlim.	4 GB	€ 1.26 (int. traffic.)
PT Prime	Telepac ADSL monoposto	€ 38.00	€ 21.05	40 GB	4 GB	€ 0.08 (nat. traffic) € 1.26 (int. traffic.)
Speed (Kbps): 256 / 128						
TV Cabo	Speed Light	€ 18.91	€ 21.01	Unlimited		15 hours included (€ 0.021 per minute)
Telepac	Sapo ADSL.PT Light	€ 18.91	€ 42.02	Unlimited		15 hours included (€ 0.21 for 10 minutes)

Source: Operator websites (information gathered in September 2004).
Note: Prices do not include VAT.
NA = Not available

However, customers who are users of FTS and cable TV and want to sign up to a broadband access service have two options in terms of technology: ADSL or cable modem. According to the "Survey of Consumer Electronic Communications" carried out by GfK Metris at the request of ICP-ANACOM[92], 54.5% of respondents said that they had FTS and cable television at home, a percentage which is considered significant.

In this context, for the purposes of assessing market share and other criteria for the assessment of SMP in the broadband retail market access without regulation of associated wholesale markets, the most reasonable assumptions concerning the number of OSP retail accesses based on the "Rede ADSL PT" and LLU wholesale offers, are as follows:

- Around half (54.5%) of the OSP retail accesses based on the "Rede ADSL PT" and LLU wholesale offers are distributed by the PT Group and the operators which provide broadband services through modem - this is calculated by taking into account the proportion of "own accesses", i.e. accesses which "in reality" belong to each of the operators;

- The other OSP retail accesses based on the "Rede ADSL PT" and LLU wholesale offers belong to the PT Group.

It should be noted that for accounting purposes the amount emerging from the GfK Metris survey may be higher than the one that should be used for the purposes of this analysis, given that a significant percentage (more specifically, about 25%[93]) of cable television accesses use DTH - which does not support the bi-directional signals needed for the broadband Internet access service - and in the case of some FTS customers this service may be supported by the cable distribution networks operators (as is the case with some Cabovisão customers). Therefore the number of accesses assigned to the PT Group may not be accurate.

In **Annex 1** a summary is provided of the options and assumptions used in the assessment of market shares in the various markets defined.

[92] This project included a survey on consumption and the perceived quality of electronic communications services for the universe of individuals over 15 years of age, resident in Portugal (mainland and Autonomous Regions), using a sample of 3,504 interviews between 01.11.2007 and 17.12.2007

[93] At the end of 2007

3.1. Criteria for the assessment of SMP

As in the previous market analysis, ICP-ANACOM has taken the Guidelines into full consideration when assessing SMP.

According to the Guidelines, "*NRAs will assess whether competition is effective. The conclusion that there is effective competition in a relevant market is equivalent to a conclusion that no operator has, individually or jointly, a dominant position in that market.*"[94].

In the same document the EC indicates that "*NRAs will conduct a forward looking, structural evaluation of the relevant market, based on existing market conditions. NRAs should determine whether the market is prospectively competitive, and thus whether any lack of effective competition is durable, by taking into account expected or foreseeable market developments over the course of a reasonable period. The actual period used should reflect the specific characteristics of the market and the expected timing for the next review of the relevant market by the NRA. NRAs should take past data into account in their analysis when such data are relevant to the developments in that market in the foreseeable future.*"[95]

In the Guidelines, the EC presents market shares as an indicator of market power, considering that it is unlikely that undertakings with a market share of less than 25% will have a dominant position in the market in question.

In past EC decisions, concerns over individual dominance have normally arisen in cases where undertakings have a market share exceeding 40%, although there may be cases of dominance when the market share is lower or cases where undertakings have higher market shares but are not considered to be dominant undertakings[96].

As the EC states in the Guidelines[97], the existence (or absence) of a dominant position cannot be determined solely by the existence of high (or low) market shares, and therefore the NRA must use other criteria. Such criteria include the following:

- The overall size of the company
- Control of infrastructures that are difficult to duplicate
- Technological advantage or superiority
- Absence of or low countervailing buying power
- Easy or privileged access to capital markets/financial resources
- Diversification of products/services
- Economies of scale
- Economies of scope
- Vertical integration
- Highly developed distribution and sales network
- Absence of potential competition
- Barriers to expansion

[94] §19
[95] §20
[96] See Guidelines § 75.
[97] § 78

The EC Guidelines also state that a dominant position may be the result of a combination of the above criteria, which may not be decisive if considered individually.

On the question of the criteria for assessing SMP, the European Regulators Group (ERG) has published a working paper on the Guidelines ("*ERG SMP Position*")[98] that develops other criteria for assessing SMP, namely:

- Excessive pricing
- Ease of entry into market
- Cost and barriers to switching
- Evidence of previous anti-competitive behaviour
- Active competition in relation to other parameters
- Existence of standards/conventions
- Customers' ability to access and use information
- Price trends and pricing behaviour
- International benchmarking

3.1.1. Criteria used to assess SMP in the broadband retail markets

According to ICP-ANACOM, the most important criteria used to assess the retail broadband access markets are:

- Market shares and market growth
- Potential future market shares
- Barriers to entry and expansion
- Economies of scale and scope
- Highly developed distribution and sales network
- Vertical integration
- Price trends and pricing behaviour
- International benchmarking
- Evidence of previous anti-competitive behaviour
- Countervailing negotiating power

- **Other criteria for the assessment of SMP**

With regard to the other criteria, an explanation follows as to why these are not considered relevant or considered less relevant in this assessment of SMP[99].

[98] "Revised ERG Working paper on the SMP concept for the new regulatory framework", October 2004 http://www.erg.eu.int/doc/publications/public_hearing_concept_smp/erg0309rev1_smp_working_doc.pdf

[99] For this purpose, the "*ERG SMP Position*" is taken into account.

Criteria not relevant to the assessment of SMP in broadband retail markets

- Existence of standards/conventions - whilst technical standards for the equipment used to provide broadband access may exist, it is considered that they have a limited impact on competition insofar as the various operators generally use the same technologies and standards.

Criteria less relevant to the assessment of SMP in retail broadband markets

- Excessive prices – although this criterion could be used to support the conclusion that SMP exists, it is not, however, a pre-requisite for its existence. There is no evidence of excessive prices in the relevant markets in question, nor in the international price comparisons detailed in Section 3.3.1.6;

- The overall size of the company - this criterion is taken into account in relation to economies of scale and scope and it therefore not considered independently;

- Advantages or technological superiority - this criterion is taken into account in relation to barriers to entry and is not considered separately;

- Diversification of products/services - this criterion is considered in relation to economies of scope;

- Active competition in relation to other parameters - this criterion is considered in relation to economies of scope;

- Customers' ability to access and use information - in general it is considered there are good facilities available to enable final consumers to access and use information on the offers available;

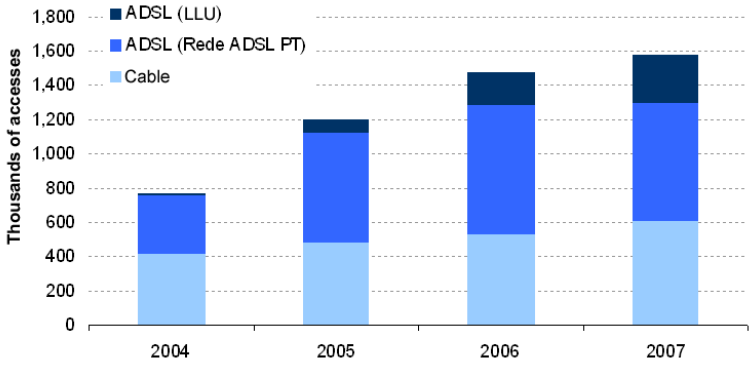
- Easy or privileged access to capital markets/financial resources - this criterion is considered in relation to economies of scope and is therefore not considered independently.

3.2. The size of the retail broadband access market[100]

The growth rate for the number of broadband accesses in Portugal has remained relatively high since 2004. At the end of 2004 there were almost 800,000 broadband accesses, over 50% of which were supported by the cable distribution network. At the end of 2007, the number of broadband accesses reached nearly 1.6 million, more than 60% of which were ADSL access.

[100] The definition of broadband established in the retail product market definition for broadband access is used (see section 2.3).

Graph 15 – Evolution of broadband access



At the end of 2007, broadband access was distributed between the two geographic markets identified in the previous section as follows:

- Around 977,000 accesses in the retail broadband access market - "C Areas" (61% of the total)
- Around 624,000 accesses in the retail broadband access market - "NC Areas" (39% of the total)

3.3. Retail broadband access market - "C areas"

3.3.1. Individual dominance

As in the previous market analysis, assessment of effective competition begins with the calculation of market share, thereby initially identifying candidates with SMP.

It is important to note that the existence of a dominant position cannot be determined solely on the basis of market share. Consequently, the NRA should conduct a thorough and comprehensive analysis of the economic characteristics of the relevant market before reaching a conclusion with regard to the existence of SMP.

In order to carry out this economic analysis of the market, ICP-ANACOM will successively examine the degree of competition between the undertakings present and the degree to which there is potential competition.

From the outset it can be revealed that, historically, the PT Group held a dominant position in the copper network that provides broadband access to end-users and was therefore able to strategically control the investments and services available to intermediate and end users.

However, as already mentioned, in C areas covered by LLU OSPs who have opted to use this wholesale offer have gained in status following the development of more competitive retail offers, in addition to competition from cable distribution network operators.

3.3.1.1. Market shares

Taking into account the current wholesale regulation, the estimated market shares in the retail broadband access market for "C areas" would be as follows:

Table 17 – Evolution of market share, considering current wholesale regulation

	2005	2006	2007
PT Group	37%	32%	25%
ZON Multimédia	39%	34%	33%
Sonaecom (including Oni and Tele2)	10%	20%	26%
Cabovisão	10%	10%	10%
Vodafone	0%	0%	1%
Other	4%	4%	4%

It should be noted that, in order to facilitate the comparison of developments in market shares, the market shares of the PT Group and ZON Multimédia in 2005 and 2006 are shown as if the companies were separate.

To estimate the market shares for the years 2005 and 2006, the exchange areas defined in **Annex 3** should be taken into account (the static perspective), rather than employing a dynamic approach in which exchange areas are identified for each year using the hypotheses assumed for the definition of the geographic market[101]. In other words, to estimate the market shares in 2005 and 2006, the 184 exchange areas in the "C areas" identified in **Annex 3** are used.

However, as mentioned at the beginning of this section, the retail market should be analysed in the absence of wholesale regulation. In this case, using hypothesis A:

- 54.5% of OSP retail accesses based on the "Rede ADSL PT" and LLU wholesale offers are shared by the PT Group and the operators providing broadband services through cable modem - this division takes account the weight of "own" accesses i.e. accesses that "really" belong to each of the operators;

- the remaining OSP retail accesses based on the "Rede ADSL PT" and LLU wholesale offers belong to the PT Group,

the market shares are as follows:

Table 18 – Evolution of market shares in the absence of wholesale regulation (hypothesis A)

	2005	2006	2007
PT Group	45%	46%	43%
ZON Multimédia	42%	39%	40%
Cabovisão	11%	12%	12%
Other	2%	3%	4%

Bearing in mind that, as already stated, the figure of 54.5% may be overestimated, the market share for the PT Group may be lower.

[101] Respectively:

(a) C areas covered by exchanges where there is at least one co-installed operator and at least one cable distribution network operator and where the percentage of households cabled by the dominant operator in the municipality exceeds 60%;

(b) the remaining areas of the country.

Assuming as an alternative hypothesis (hypothesis B) that OSP retail accesses based on the "Rede ADSL PT" and LLU wholesale offers belong entirely to the PT Group, the estimated market shares would be as follows:

Table 19 – Evolution of market shares in the absence of wholesale regulation (hypothesis B)

	2005	2006	2007
PT Group	49%	53%	53%
ZON Multimédia	39%	34%	33%
Cabovisão	10%	10%	10%
Other	2%	3%	3%

In this case, the market share for the PT Group is greater than the market share of this company for this market.

It is therefore concluded that, in the absence of regulation, the overall share of the PT Group in these areas at the end of 2007, would be between 43% and 53%, and that the PT Group would therefore be the undertaking with the largest market share[102] in the retail broadband access market in the "C areas". In a hypothetical scenario in which, from 2005 onwards, ZON Multimédia is considered separately from the PT Group, an upward trend or at least a degree of stability is evident in the PT Group market share.

The operator with the second highest share is ZON Multimédia, with figures falling since 2005 (assuming the company to be separate from the PT Group since 2005).

Since 2005, the other OSPs have seen their market share stabilise.

From the tables above, and considering only market share, there are strong indications that wholesale regulation is essential in order to ensure competition in the retail market, since without regulation the market share of the PT Group would exceed 40% (and, if ZON Multimédia and the PT Group are considered separate undertakings in the past, the market share of the PT Group would increase).

It should be noted that the 40% limit has been used in past EC decisions as the figure above which concerns may be expressed regarding dominance.

3.3.1.2. Barriers to entry and expansion

With regard to the analysis of barriers to entry and expansion, the existence of sunk costs and significant economies of scale and/or economies of scope should be examined. However, once they are present in a given market and the sunk costs have already been incurred, they become irrelevant to the analysis of entry barriers and may even be considered a barrier to market exit.

Sunk costs

Most of the operators which provide broadband retail access services in this market, including ZON Multimédia, have already made investments in capacity in order to provide such services supporting, for this purpose, sunk costs that have already been incurred. Thus, in general these

[102]Shares are calculated on the basis of the number of accesses, since "[In] *the case of products in large quantity priority is given to volume, while in the case of differentiated products (i.e. branded products) the value of sales and market share are considered the best indicators of the relative position and strength of each supplier*" (See Guidelines § 76).

operators are able to expand their activities to other customers without incurring further significant sunk costs.

Economies of scale and scope

The costs associated with the development and expansion of broadband services are subject to significant economies of scale.

The area covered by this market coincides roughly with the major urban centres and coastal areas, where the population and economic activities are highly concentrated.

On average, each exchange in this market is linked to about 8,000 operational loops, in comparison with the other exchanges which serve, on average, fewer than 1,000 operational loops. It is therefore possible to achieve lower unit costs in this market.

As far as economies of scope are concerned, it appears that the majority of operators in this market provide a variety of services, namely a telephone service, television over IP, video on demand and other added value services.

Given its characteristics, it may be attractive for operators to enter this market and invest in their own infrastructure, particularly if easy infrastructure access (including conduits) would also reduce the unit cost of investment, since it is in this area that PTC's conduit network is most extensive.

Additionally, the main operators in this market seem to have equal access to financial resources/capital markets and no situation has been identified in which one operator has an advantage over the others.

3.3.1.3. Sales and distribution network

The existence of a well developed sales and distribution network which is not easily replicated might constitute a competitive advantage.

However, the majority of operators in this market have built up their own network of shops and/or agents throughout the country.

Regarding this criterion, in addition to the PT Group and ZON Multimédia, the particular situation of Sonaecom, a sub-holding of the Sonae group, should be noted. This group is dedicated to various activities and this enables, among other things, commercial synergies to develop between its various companies, particularly in terms of distribution, which could be a major vehicle for accessing end users.

3.3.1.4. Vertical integration

The existence of vertically integrated companies may place non-integrated competitors at a competitive disadvantage. In fact, in this situation market power could be leveraged from one market to another, especially where the integrated competitor provides the non-integrated competitor with a means of essential and intermediate production or consumption. In such circumstances, it becomes more difficult for a non-integrated company to respond to the increase in demand resulting from a competitor increasing its prices.

Of the operators present in this market, particular mention should be made of the case of the PT Group, which consists of vertically integrated undertakings present in both the wholesale and retail markets. Therefore, if one of these companies has SMP in an upstream market, it has the opportunity to transfer market power to the downstream markets, thereby affecting competition. In particular, if there is difficulty in securing inputs from the wholesale market or in obtaining these inputs at a competitive price, this may further increase the barriers to entry at retail level.

With regard to the retail broadband access market, the strong presence of ZON Multimédia in the area of multimedia content should be emphasised. In this case, however, ZON Multimédia loses out to the other main economic groups active in the market because it does not have a mobile operation, which may reduce its competitiveness in relative terms.

3.3.1.5. Price trends and pricing behaviour

The level and dynamics of the competition in a relevant market can also be assessed by looking, on the one hand, at the retail pricing policy and, in addition, at changes in prices over time.

As already mentioned in sections "**Error! Reference source not found.**. **Error! Reference source not found.**" and "2.2.1.3. Cable modem", there have been very significant reductions in the prices of retail broadband access offers, whether based on LLU or provided though cable modem, or, in some cases, substantial improvements to the offers without changes in pricing, particularly in terms of available speeds.

When the various offers on the market and their respective prices (see Table 20), are compared, a variety of offers with reasonably similar prices can be found.

Table 20 – Existing offers on the market[103]

Operator	Offer	Monthly charge	Maximum speeds	
			Upstream	Downstream
PT Group	Sapo 2 Mb	16.52 €	2 Mbps	128 Kbps
ZON Multimédia	Netcabo Light	16.52 €	3 Mbps	128 Kbps
Vodafone	Duplex ADSL 4 Mbps	16.45 €	4 Mbps	512 Kbps
PT Group	Sapo 4 Mb	20.58 €	4 Mbps	256 Kbps
Cabovisão	BL 5 Mb	18.43 €	5 Mbps	–
ZON Multimédia	Netcabo Mega	20.65 €	6 Mbps	256 Kbps
Sonaecom	Clix 12 Mb	24.71 €	12 Mbps	512 Kbps
Vodafone	Duplex ADSL 12 Mbps	24.71 €	12 Mbps	512 Kbps
Cabovisão	BL 15 Mb	25.04 €	15 Mbps	–
PT Group	Sapo 16 Mb	29.40 €	16 Mbps	1024 Kbps
ZON Multimédia	Netcabo Plus	29.41 €	18 Mbps	512 Kbps
Sonaecom	Clix 24 Mb	32.98 €	24 Mbps	1024 Kbps
Vodafone	Duplex ADSL 24 Mbps	32.98 €	24 Mbps	1024 Kbps
PT Group	Sapo 24 Mb	45.04 €	24 Mbps	1024 Kbps
Cabovisão	BL 25 Mb	37.18 €	25 Mbps	–
ZON Multimédia	Netcabo Max	49.58 €	30 Mbps	1 Mbps

[103] Information taken from website in February 2008 (prices do not include VAT).

3.3.1.6. International Benchmarking

Comparing the prices charged in Portugal with those charged in other Member States, it appears that the prices charged nationally are, in general, significantly below the European average.

In an international comparison of broadband prices produced by ICP-ANACOM in November 2007[104], albeit carried out at national level rather than in terms of the geographic market analysed here, it was concluded that:

- in November 2007, the minimum price for broadband in Portugal was 32.6% below the average for the countries included in the study and was similar to prices in Austria, Sweden and Denmark, all countries with higher (fixed) broadband penetration;
- even considering the simple average minimum price charged by the various operators for the various transmission speeds, it is evident that Portugal continues to be one of the countries with the lowest prices for the majority of downstream speeds;
- the price of the most common offers (4 Mbps) is about 46% below the average for the countries that were studied and is the fourth lowest overall (rising two places in the rankings in comparison with July 2007);
- between June 2005 and November 2007, the price of 4 Mbps offers in Portugal fell by about 36%.

The results for the comparison of incumbent prices are corroborated by the results of Teligen's T-Connect application for October 2007, which enables the incumbent operators' prices for ADSL offers to be compared using a basket approach.

According to the methodology and data collected by Teligen it was found that, in general, the prices of the incumbent operator's ADSL offers in Portugal are below the average. In terms of ranking, Portugal lags behind the Eastern European countries but ranks among the first countries in the EU 15, except in the case of Basket 6 (100 Gbps/month of use).

Using the base information employed by Teligen and comparing only the monthly charges for the various offers of the incumbent operator in Portugal for October 2007[105], it may be concluded that the monthly charges of the incumbent operator's residential offers in Portugal are always below the average prices charged by its counterparts from the other EU15 countries, except in the case of 24 Mbps, as previously stated.

DECO has also carried out an international comparison of prices for broadband Internet access, covering a limited number of countries, in which it also concluded that Portugal is above average only for users with an intensive usage profile[106].

[104] Report available at http://www.anacom.pt/render.jsp?categoryId=259242&languageId=1 .

[105] All the other variables affecting the price of broadband are excluded except the download speed

[106] See http://www.deco.proteste.pt/map/src/524801.htm .

3.3.1.7. Evidence of previous anti-competitive behaviour

In the analysis made in 2005, ICP-ANACOM concluded that the PT Group companies, which at the time included ZON Multimédia, strategically controlled the conditions governing the supply of retail services.

The obligations imposed at wholesale level and the interventions that were introduced were designed to reduce the incentives for anti-competitive behaviour.

It should also be noted that the CA has had occasion to sanction anti-competitive conduct, albeit in other markets, particularly with regard to access to conduits.

3.3.1.8. Countervailing negotiating power

In the absence of wholesale regulation, retail customers have limited countervailing negotiating power, given that in practice there are only one or two alternative operators of any size providing broadband Internet access services (ZON Multimédia and Cabovisão).

With wholesale regulation and, in particular, with LLU-based retail offers available in these areas, the countervailing negotiating power of retail customers increases significantly with the greater range of choice.

3.3.1.9. Potential competition

With regard to potential competition, it should be emphasised that the possibility of access to the PTC conduits via the respective reference offer makes it easier for the alternative operators to develop their own networks, particularly fibre optic networks. The announcement by Sonaecom on 20.02.2008 of plans to invest 240 million Euros in NGN should also be noted.

Due to the fact that these are substantial investments involving economies of scale, it is expected that they will be focused, especially initially, on the area covered by the market under review, roughly coinciding with the major urban centres and coast where the population and economic activities are densely concentrated.

As such, it is expected that offers will be developed in the future that will lead to increased competition in this market.

Furthermore, the ZON Multimédia spin-off is a factor which, given the recent market situation whereby the PT Group controlled the largest cable distribution network as well as the concession network, may also prove to be a driving force for increased competition.

3.3.2. Individual dominance: Conclusion

From its analysis of the criteria that have been presented, ICP-ANACOM concludes that they are not likely to change the assumption of SMP derived from market shares and that the PT Group therefore has individual dominance in the retail broadband access market in "C areas", considered, as previously noted, in the absence of wholesale regulation.

3.3.3. Joint dominance

It is further concluded that there is no evidence of joint dominance in this market, given that the criteria set out in the Guidelines for assessing joint dominance are not met to any significant extent.

In particular, this market remains a developing market where growth has yet not stalled and technology is still evolving, and cannot therefore be characterised as a fully mature market. Furthermore, in accordance with ICP-ANACOM's position on the ZON Multimédia spin-off, there does not appear to be any evidence of links between the operators in the market.

Therefore, ICP-ANACOM concludes that there is no joint dominance.

3.3.4. Forward-looking analysis

ICP-ANACOM considers that all the factors which warrant the designation of SMP in the retail broadband access market in "C areas" will remain in the short/medium term until the next assessment of SMP[107].

3.3.5. Assessment of SMP: Conclusion

It is considered that the PT Group companies operating in the retail broadband access market in "C areas" have SMP in this market.

3.4. Retail broadband access market - "NC areas"

3.4.1. Individual Dominance

In line with the analysis of SMP in the retail broadband access market in "C areas", the analysis of effective competition begins with the calculation of market share, whereby operators eligible for notification of SMP are initially identified.

The following is an analysis of the economic characteristics of the relevant market in which the degree of competition and potential competition between the established companies is to be assessed.

3.4.1.1. Market shares

Estimating market shares by taking the current wholesale regulation into account, the market shares in the retail broadband access market covered by "NC areas" are as follows:

[107]The next analysis of SMP will be carried out when: (1) factors emerge which significantly change the competition conditions in the market and/or (2 the Recommendation is reviewed in relation to these markets and/or (3) within 18 months

Table 21 – Evolution of market share taking current wholesale regulation into account

	2005	2006	2007
PT Group	70%	69%	65%
ZON Multimédia	12%	10%	12%
Sonaecom (including Oni and Tele2)	5%	9%	9%
Cabovisão	11%	10%	10%
Vodafone	0%	0%	0%
Other	2%	3%	3%

However, as already stated, the retail market should be considered in the absence of wholesale regulation. In this case, assuming Hypothesis A:

- 54.5% of OSP retail access based on the "Rede ADSL PT" and LLU wholesale offers is shared by the PT Group and the operators providing broadband services through cable modem - this division takes into account the weight of "own" accesses" i.e. access that "really" belong to each of the operators;

- the remaining OSP retail access based on the "Rede ADSL PT" wholesale offer belongs to the PT Group,

the market shares are as follows:

Table 22 – Evolution of market shares in the absence of wholesale regulation (hypothesis A)

	2005	2006	2007
PT Group	75%	78%	75%
ZON Multimédia	12%	10%	12%
Cabovisão	12%	10%	11%
Others	1%	2%	2%

Taking into account that, as stated at the beginning of this section, the figure of 54.5% may be over-estimated, the market share for the PT Group will therefore be less.

Taking as an alternative the hypothesis (hypothesis B) that OSP retail accesses supported through the “Rede ADSL PT” offer are entirely linked to the PT Group, the market shares are as follows:

Table 23 – Evolution of market shares in the absence of wholesale regulation (hypothesis B)

	2005	2006	2007
PT Group	76%	79%	76%
ZON Multimédia	12%	10%	12%
Cabovisão	11%	10%	10%
Other	1%	2%	2%

It can be seen that on the basis of this hypothesis the market shares do not change - this is because the amount of broadband accesses which "transfer" to the PT Group has little impact.

It may therefore be concluded that the PT Group, which has the largest share of the market, has a market share significantly in excess of 40% - the threshold that has been used in past EC decisions as the figure above which concerns may be expressed about dominance.

3.4.1.2. Barriers to entry and expansion

In order to analyse barriers to entry and expansion, the existence of significant sunk costs and economies of scale and / or economies of scope should be examined.

Due to the fact that there are operators already established in the market who have already incurred some sunk costs, these costs may become irrelevant to an analysis of entry barriers and may even be considered a barrier to market exit.

However, insofar as this market mostly encompasses exchanges not covered by LLU, an operator that wants to co-install in these exchanges would have to support a significant initial cost.

Moreover, due to economies of scale and scope, and given the scale and configuration of the PTC fixed network, this operator would benefit, if all other factors were equal, from unit costs which are below those of its competitors.

In particular, the scale and configuration of the PTC fixed network enables it to develop the access network in order to provide broadband access services with relatively modest additional investments. If they intend to provide similar retail services, new operators must either develop their own access network or base their offers on the wholesale deals provided by PTC (including the "Rede ADSL PT" wholesale offer since, in practice, LLU is not an effective option for most of this market).

Therefore, a new operator intending to expand its activity will be required - all else being equal - to win a significant share of the market in order to be able compete with the incumbent operator in terms of infrastructure. However, the geographic area covered by this market is mostly characterised by low population density, making scaling difficult to achieve.

This situation was also corroborated by PTC with regard to the "Rede ADSL PT" offer. In fact, although the offer was launched in late 2000, initially with coverage limited to certain areas of central Lisbon and Porto, full coverage of national territory was only achieved 6 years later, demonstrating that expansion in these geographical areas is not immediate.

Accordingly, this criterion does not contradict the assumption of dominance that results from the calculation of market share.

3.4.1.3. Sales and distribution network

As mentioned in Section "**Error! Reference source not found.**. **Error! Reference source not found.**" the existence of a highly developed sales and distribution network may constitute a barrier to entry or a competitive advantage and it can be seen that the majority of operators in this market have built up their own network of shops and/or agents throughout the country.

Regarding this criterion, it should be recalled that Sonaecom may enjoy certain advantages in terms of access to end users, by virtue of the fact that it belongs to the Sonae Group which, amongst other business activities, is involved in large-scale distribution.

However, ICP-ANACOM does not believe that this criterion contradicts the assumption of dominance that results from the calculation of market share.

3.4.1.4. Vertical integration

As already mentioned in Section "**Error! Reference source not found.**. **Error! Reference source not found.**" the existence of vertically integrated companies may place non-integrated competitors at a competitive disadvantage, given that market power can be leveraged from one market to another, especially when the integrated competitor provides the non-integrated competitor with a means of essential and intermediate production or consumption. In such circumstances, it becomes more difficult for a non-integrated company to respond to the increase in demand resulting from a competitor increasing prices.

Within the context of this particular market, mention should be made of the PT Group, which consists of vertically integrated undertakings present in both the wholesale and retail markets. Therefore, if one of these companies has SMP in an upstream market, it has the opportunity to transfer market power to the downstream markets, thereby affecting competition. In particular, if there is difficulty in securing inputs from the wholesale market or in obtaining these inputs at a competitive price, this may further increase the barriers to entry at retail level.

This criterion does not contradict the assumption of dominance that results from the calculation of market share.

3.4.1.5. Price trends and pricing behaviour

The retail pricing policy and its evolution over time can serve as a good indicator of the level of competition in the market.

As already mentioned in Section "**Error! Reference source not found. Error! Reference source not found.**", the price of retail broadband offers based on the "Rede ADSL PT" offer have fallen significantly since 2004 and offers with much higher downstream speeds are now available for the same, or even a lower, monthly charge than the previous offers, which were provided at lower speeds.

Since PTC has followed a practice of tariff uniformity, the price reductions in the PT retail broadband access offers for "C areas" have also been extended to "NC areas".

Comparing the various offers that are available in the market under analysis and their prices (see Table 24), a wide range of offers can be seen – as already mentioned, the "Rede ADSL PT" wholesale offer now has 30 classes of service. Furthermore, there are great similarities between the offers of alternative operators and the PT Group offers - the configuration of the "Rede ADSL PT" offer at IP level, which has been the type of aggregation most commonly used by the OSPs, has not allowed for differentiation of services, in practice turning the alternative providers into re-sellers of the PT Group broadband Internet service without adding any significant value to these offers, either in terms of quality and innovation or in terms of the actual retail prices, as presented in Table 24.

Table 24 – ADSL offers in the market based on the "Rede ADSL PT" offer[108]

Operator	Offer	Monthly charge	Maximum speeds	
			Downstream	Upstream
Nortenet	Simplesnet 256 K	13.97 €	256 Kbps	–
ARTelecom	ADSL 512 Kb	22.00 €	512 Kbps	128 Kbps
Sonaecom	Clix ADSL 1 Mb	20.65 €	1 Mbps	128 Kbps
Nortenet	Simplesnet 2 Mb	16.45 €	2 Mbps	–
PT Group	Sapo 2 Mb	16.52 €	2 Mbps	128 Kbps
ARTelecom	ADSL 2 Mb	25.00 €	2 Mbps	128 Kbps
ZON Multimédia	Netcabo Light	16.52 €	3 Mbps	128 Kbps
PT Group	Sapo 4 Mb	20.58 €	4 Mbps	256 Kbps
Nortenet	Simplesnet 4 Mb	20.58 €	4 Mbps	–
ARTelecom	ADSL 4 Mb	28.00 €	4 Mbps	256 Kbps
Cabovisão	BL 5 Mb	18.43 €	5 Mbps	–
ZON Multimédia	Netcabo Mega	20.65 €	6 Mbps	256 Kbps
Nortenet	Simplesnet 8 Mb	24.71 €	8 Mbps	–
Sonaecom	Clix ADSL 8 Mb	29.67 €	8 Mbps	512 Kbps
ARTelecom	ADSL 8 Mb	34.00 €	8 Mbps	512 Kbps
Cabovisão	BL 15 Mb	25.04 €	15 Mbps	–
Nortenet	Simplesnet 16 Mb	28.84 €	16 Mbps	–
PT Group	Sapo 16 Mb	29.40 €	16 Mbps	1024 Kbps
ZON Multimédia	Netcabo Plus	29.41 €	18 Mbps	512 Kbps
Nortenet	Simplesnet 24 Mb	37.11 €	24 Mbps	–
PT Group	Sapo 24 Mb	45.04 €	24 Mbps	1024 Kbps
Sonaecom	Clix ADSL 24 Mb	45.04 €	24 Mbps	1024 Kbps
Cabovisão	BL 25 Mb	37.18 €	25 Mbps	–
ZON Multimédia	Netcabo Max	49.58 €	30 Mbps	1 Mbps

3.4.1.6. International benchmarking

See the analysis in Section 3.3.1.6.

In this case, the offers provided by the incumbent operator are of greater relevance, since in these areas ("NC areas") the most significant offers are those provided on the basis of the "Rede ADSL PT" offer and, in particular, the offers of the incumbent operator.

In this case, as previously stated, according to an international comparison of broadband prices carried out by ICP-ANACOM in November 2007, the results for the prices of offers from the incumbent operators are corroborated by the results of Teligen's T-Connect application referring to October 2007, which compares the prices of ADSL offers from the incumbent operators using a basket approach.

According to the methodology used by Teligen and the data it collected, it can been seen that, in general, the prices of the incumbent operator's ADSL offers in Portugal are below the average. In terms of rankings, Portugal lags behind the Eastern Europe countries but ranks among the first countries in the EU 15, except in the case of basket 6 (100 Gbps/month of use).

[108] Information compiled from the website in March 2008 (prices do not include VAT).

If we refer to the basis information used by Teligen and compare only the monthly charges for the various offers from the incumbent operator in Portugal in October 2007,[109] it can be concluded that the monthly charges of incumbent operator's residential offers in Portugal are always lower than the average prices charged by its counterparts in the other EU 15 countries, except in the case of 24 Mbps, as previously noted.

3.4.1.7. Evidence of previous anti-competitive behaviour

In the previous 2005 market analysis, ICP-ANACOM concluded that the PT Group companies had strategic control over the conditions governing the supply of retail services.

The obligations imposed at the wholesale level and the interventions that were introduced were designed to reduce the incentives for anti-competitive behaviour.

It is further noted that the CA has had occasion to sanction anti-competitive conduct, albeit in other markets.

3.4.1.8. Countervailing negotiating power

In this market retail customers have no countervailing negotiating power, since no other offer is available.

3.4.1.9. Potential competition

The existence of entry barriers enables a hypothetical monopolist to raise prices without attracting new competitors as a result. Records of market entries and exits will allow the size of these barriers to be gauged.

The barriers to expansion referred to in “3.4.1.2. Barriers to entry and expansion” are likewise barriers to the entry of new companies in this market.

Irrecoverable (or sunk) costs may represent another important structural barrier to entry. Such costs are particularly significant in the telecommunications market. In fact, a large investment is required to set up an efficient telecommunications network, especially in areas of lower population density and those with more complex geographical features, and a new operator can expect to recover only a small portion of this investment if it decides to abandon the market.

In this context, a potential entrant will only accept such investment costs if it expects they will be covered, along with production costs, by revenue. The incumbent operator could therefore exploit this asymmetry, in the event that a potential entrant decides to start operating in that market, by signalling to them that retail prices will be too low to cover all costs, including sunk costs, thereby discouraging the new entrant.

Additionally, PTC has, to date, been the universal service provider, meaning that it is required to provide access to the public switched telephone network (PSTN) to any user who requests it. Since the "Rede ADSL PT" offer is supported by the PSTN, it is easier for PTC to develop its ADSL network via this service (with all the associated benefits and costs) in geographical areas that are, from the outset, less profitable.

[109] All other variables affecting the price of the broadband offers have been excluded, except for download speed.

Furthermore, in this section on potential competition in the market, mention should be made of the development of offers such as "Naked DSL", which may prove important in promoting the broadband access service in these areas.

Therefore, it is important to maintain the "Rede ADSL PT" wholesale offer in order to encourage new operators to enter the market without incurring the substantial costs involved in the construction of an access network.

3.4.2. Individual dominance: conclusion

The PT Group market share, degree of market concentration, existence of barriers to expansion, lack of evidence (prices and other variables) proving the existence of effective competition amongst companies and lack of potential competition lead to the conclusion that the PT Group companies operating in this market have SMP (individual dominance).

3.4.3. Joint dominance

Given that it has been concluded that individual dominance exists in this market, there is no joint dominance.

3.4.4. Forward-looking analysis

ICP-ANACOM considers that all the factors which warrant the designation of the PT Group companies operating in the retail broadband access market in "NC areas" as undertakings with SMP will continue in the short /medium term until the next assessment of SMP[110].

3.4.5. Assessment of SMP: conclusion

It is considered that the PT Group companies operating in the retail broadband access market covering the "NC areas" have SMP in this market.

3.5. Relevant wholesale markets

According to the EC, "*the starting point for the identification of markets in this Recommendation is the definition of retail markets*" and "*Having defined retail markets, it is then appropriate to identify relevant wholesale markets*"[111].

Again according to the EC, "*regulatory controls on retail services should only be imposed where national regulatory authorities consider that relevant wholesale measures or measures regarding carrier selection or pre-selection would fail to achieve the objective of ensuring effective competition and the fulfilment of public interest objectives*"[112].

[110] The next analysis of SMP will be carried out when: (1) factors emerge which significantly changes the competition conditions of the market and/or (2) the Recommendation is reviewed with respect to these markets and/or (3) within 18 months.

[111] See EC Recommendation, considering (4).

[112] See EC Recommendation, considering (15).

Accordingly, the wholesale markets that are relevant in the context of retail broadband access markets are identified below and a competitive analysis has been carried out in order to identify potential undertakings with SMP and assess whether corrective measures would be sufficient to ensure effective competition in the broadband access markets.

4. DEFINITION OF ASSOCIATED WHOLESALE MARKETS

Following the definition and characterisation of the retail broadband access markets and the competitive pressures to which they are subject (both on the demand and supply side), and having concluded that there is a lack of effective competition in the absence of *ex-ante regulation*, in this section we will define and identify the associated wholesale markets, in accordance with the methodology adopted in the Recommendation[113].

As already mentioned in section "**Error! Reference source not found. Error! Reference source not found.**", on 17.12.2007 the EC adopted a Recommendation in which 8 relevant electronic communications markets were identified as having characteristics that warranted the imposition of ex-ante regulatory obligations.

Within this context, the EC identified two wholesale markets associated with broadband data access and related services at fixed locations:

- Market 4: Wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location.

- Market 5: Wholesale provision of broadband access.

  This market comprises non-physical or virtual network access, including "bit-stream", at a fixed location. This market is located downstream from the provision of physical access covered by Market 4 above, because wholesale broadband access can be supplied using this resource in combination with other elements.

It should be noted that the service included in Market 4 allows for both the supply of broadband and voice services. It should also be noted that, with regard to LLU-based retail offers, OSPs have continued to promote the development of offers combining broadband and voice services, and sometimes also including television services.

4.1. Wholesale provision of unbundled access vs. wholesale provision of broadband access

In the previous version of the Recommendation, the EC clearly accepted that the unbundled local loop access market and the wholesale broadband access market constituted separate markets, even though it considered that these two services would be mutually complementary. However, since the previous version of the Recommendation the EC has proposed that the existence of innovations and technological developments could provide grounds for different conclusions.

In the current version of the Recommendation, the EC maintains the position that the unbundled local loop access market and the wholesale broadband access market are separate markets, highlighting the importance of maintaining coordination and consistency in the regulation of these two markets.

Furthermore, in the current version of the Recommendation, the EC recommends that these markets be analysed together, explaining that the grounds for identifying the market for the provision of wholesale broadband access are based on the conclusion that even though

[113] See Recommendation - Explanatory Note, Section 2.1.

unbundled access to the local loop is regulated, in most Member States this is not sufficient to create effective competition in the retail market. Due to the links between these two markets, NRAs have grounds to conduct a comprehensive analysis of the broadband market in which the evaluation is sequential and, in possible cases of SMP, covers the expected impact of regulation on local loop access and on the wholesale supply of broadband access.

Currently, several companies which offer broadband networks and access services use the "Rede ADSL PT" wholesale offer because it allows them to a provide broadband coverage to users virtually anywhere in the country. However, as these companies develop their network, they tend to adopt LLU-based solutions, since this allows them greater flexibility and differentiation in the provision of broadband and makes more efficient use of the network, providing a greater return on the investment. Moreover, several OSPs continue to use the "Rede ADSL PT" offer in a complementary manner, probably where the number of customers does not currently justify an investment in the respective exchange.

It is, therefore, the position of ICP-ANACOM that the market for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location and the market for the provision of wholesale broadband access are separate product markets.

In this context, an analysis must be made of whether a potential wholesale broadband access market supported over the cable distribution networks is incorporated within the wholesale broadband access market.

4.2. Definition of the product market for the supply of wholesale broadband access

As concluded in section “2.3.2. Definition of the product market: conclusion”, the retail broadband product market is largely comprised of the broadband access services using ADSL and cable modem provided to residential and non-residential customers.

In the next section, we analyse whether:

- wholesale broadband access services supported over the public switched telephone network; and
- wholesale broadband access services supported over the cable distribution network

form part of the same wholesale broadband access market or comprise separate markets.

4.2.1. Wholesale broadband access services supported over the public switched telephone network vs. wholesale broadband access services supported over the cable distribution network

In the previous analysis of the market for the supply of wholesale broadband access, ICP-ANACOM concluded that the relevant market for the supply of wholesale broadband access included broadband access services supported over the PSTN and cable distribution networks.

This conclusion was based, on the one hand, on the substitutability which exists at retail level between the ADSL broadband access service and the broadband access service provided via cable modem and, on the other hand, a hypothetical wholesale broadband access offer

supported over the cable distribution network[114] with objective characteristics and a similar intended use to the wholesale broadband access offer supported over the PSTN.

In this context, and for purposes of analysing supply-side substitutability, the internal supply was considered:

- over the cable distribution network, in view of the fact that the broadband access services supplied using cable modem are provided on the basis of a vertical integration model, since the same entities - the network operators - operate in both the wholesale and retail markets;
- over the PSTN, in view of the fact that the dominant player - the PT Group- operates a vertical integration model and is active in both the wholesale and retail markets.

Moreover, with regard to the said market analysis, it was concluded that, irrespective of whether the broadband access services supported over the cable distribution networks are incorporated within the market for the supply of wholesale broadband access or defined as two separate markets, the conclusions on SMP remained the same[115].

In its Recommendation, the EC clearly accepts that, at retail level, there are several possibilities for achieving broadband access at a fixed location, including through the use of xDSL and cable distribution networks, and that xDSL technology continues to be the main access technology at a European level.

When analysing the wholesale inputs for broadband access, the EC clearly states that, even though there is evidence of significant improvements to cable systems, these system still provide very limited coverage, arguing that the unbundling of cable networks does not appear to be technologically possible or economically viable. As such it considers that a solution equivalent to LLU cannot be provided in terms of cable distribution networks.

With reference to previous market analyses, the EC concludes in its Recommendation that, in cases where there is a cable distribution network providing cable broadband access, network coverage is often limited and wholesale access to such networks is not a direct substitute for wholesale access offers supported by xDSL (on the demand or supply side). Accordingly, the Commission considers that there are no grounds for including this product in the market for the supply of wholesale broadband access.

[114] In its 2005 market analysis ICP-ANACOM concluded that although it was technically possible, in practice the hypothetical offer of wholesale broadband access services from a cable network distribution operator may not be economically viable, given the heavily regulated wholesale broadband access offers supported by the PSTN (including LLU) and the consequent demand for these services.

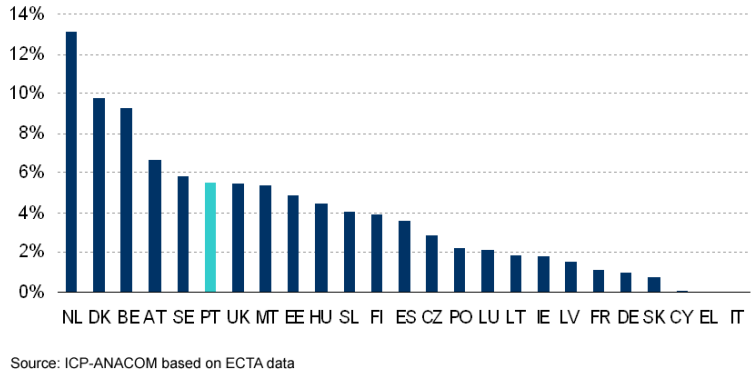
The OSPs also argued that imposing wholesale access on the cable distribution network in order to provide broadband access and diversify services (i.e. in order to achieve more than reselling), would involve more regulatory costs than benefits for the market.

The PT Group argued that any wholesale broadband offer supported by cable would not constitute a continuous data flow offer that would provide for the allocation of a specific capacity between the final customer and the operator for the supply of broadband offers as called for in the Commission Recommendation and described the limitations which it alleged would make the cable distribution network separate from the PSTN and therefore disadvantageous in terms of the wholesale supply of broadband access services.

[115] As the PT Group had, at the time, market shares of well over 50% in both cases.

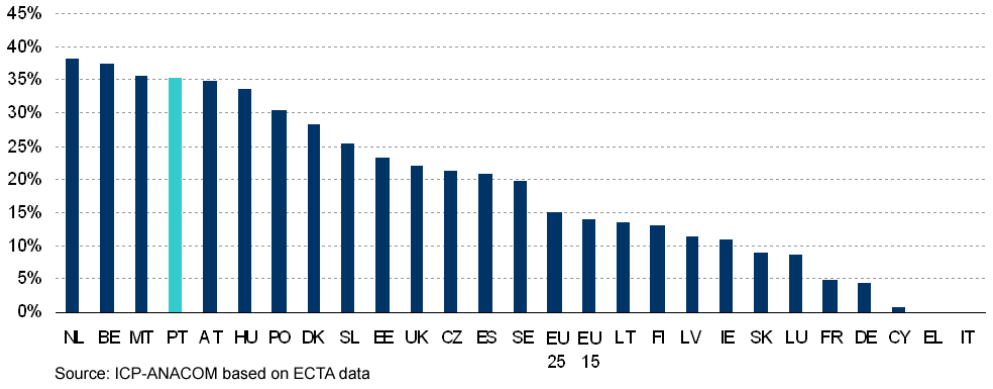
According to the available information, the level of development or deployment of cable distribution networks in Portugal continues to be one of most significant amongst Member States, as evidenced by the data already submitted in this analysis, particularly with respect to the coverage of cabled households - encompassing ¾ of all housing - and the bi-directional capability of the network. This has led to a considerable number of broadband access subscribers using this technology, although it falls short of the total ADSL Internet broadband accesses. Graph 16 shows the penetration rates for broadband access services supported by cable distribution networks in various EU member states.

Graph 16 – Penetration of broadband access services (by population) supported over cable distribution networks in the EU (September 2007)



Compared to other Member States, it appears that Portugal remains one of the countries in which access to broadband via cable modem is more significant in terms of overall broadband access and clearly exceeds the European average (see Graph 17).

Graph 17 – Proportion of broadband accesses via cable distribution networks in relation to total number of broadband accesses in the EU (September 2007)



As previously concluded, access to broadband through ADSL and access to broadband through cable modem services are substitutable at retail level, having similar features from the end user's point of view (permanent access, equivalent speeds and clear superiority over narrowband access services).

Even though there is no offer of broadband access via cable distribution networks at wholesale level, taking into account the substitutability at retail level between broadband access through ADSL and broadband access through cable modem, consideration should be given to the impact that these services have on each other at wholesale level.

To date, PTC has been obliged to provide a wholesale broadband access product supported by ADSL.

Additionally, PTC and the cable operators, as well as the operators benefiting from LLU, theoretically provide a wholesale service to their vertically integrated retail departments which is used as an input to their retail broadband products.

In the absence of regulation, the incentive to make a wholesale product available to third parties is very low. Yet even though there is no true cable distribution network wholesale offer for third parties (only internal supply), there may be sufficient indirect constraints at retail level that could lead to the conclusion that ADSL access and cable access are part of the same broadband access wholesale market.

Bearing in mind that the definition of the market is a means to an end - assessing whether final consumers are sufficiently protected through the existence of effective competition and whether or not ex-ante regulation is required - it is necessary to identify all the relevant products that might constitute sufficient constraint.

In the definition of wholesale markets situations may arise where the degree of substitutability between two products at the retail level may be such that it creates indirect constraints in terms of the wholesale prices of products. If these constraints are ignored, the wrong conclusion might be reached through overestimation of market power and markets may be regulated unnecessarily (or vice versa).

Constraints of indirect prices

An indirect pricing constraint results in a situation where, despite the reduced substitutability of products at wholesale level, an increase in wholesale input prices resulting in an increase in the price of the related retail services leads to a high rate of retail product substitution, making the wholesale price increase unprofitable. Substitution therefore results **indirectly** from factors in the associated retail market.

As a starting point, a situation is taken in which there is an increase in the price of a determined product or wholesale input (*input* A in Figure 7). As there is no significant direct substitution relationship between products/alternative wholesale inputs, there is no direct transfer of customers from the product whose price has increased to another product that could substitute it at the same price. Therefore, the operators who purchase this input will ultimately continue to use it despite the price increase, by increasing the costs of the final retail product).

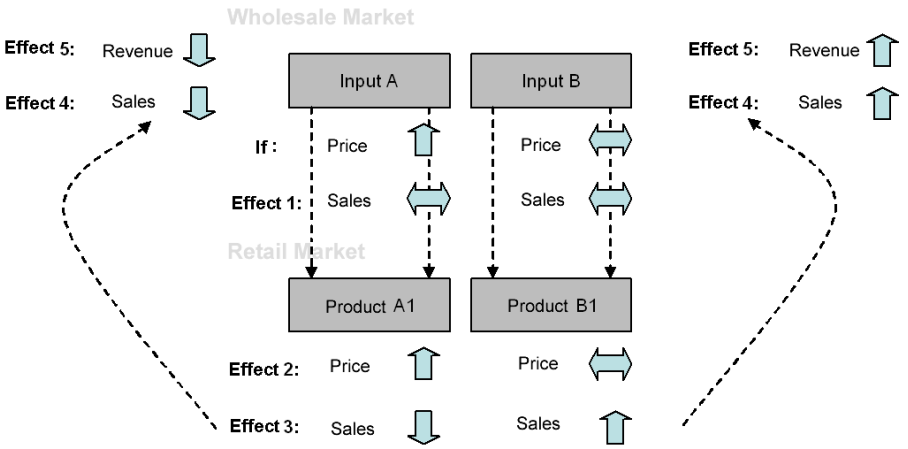
In fact, assuming that the retail market is competitive, increased costs will have to be transferred to the retail price of the final product (Effect 2 in Figure 7). If the retail price increases and other retail products exist which use other wholesale inputs and have not, therefore, increased their prices, the first product may be substituted by other products (Effect 3 Figure 7).

The fall in sales of this retail product and consequent increase in retail sales of the substitute retail products may mean that the wholesale market is also affected. A lower volume of retail sales for the product using the wholesale input which increased in price leads to a reduction in sales of this input (Effect 4 in Figure 7). Likewise, the increase in the retail sales of products using other wholesale inputs leads to an increase in their consumption. That is to say, as stated earlier, despite the lack of direct substitution between products/wholesale inputs, there may be a high level of cross demand-price elasticity between these inputs.

The possible substitution of existing consumption at retail level may result in a reduction in total revenue for the wholesale operator (Effect 5 in Figure 7) due to the increase in the price of

the inputs it controls. This makes such a decision unlikely and constitutes an indirect price constraint.

Figure 7 – Existence of indirect price constraints.



As the figure above shows, a reduction in the revenue of an operator who decides to increase the price of inputs as a result of an indirect price constraint is dependent on more conditions and effects than a situation involving direct constraint.

Once it is concluded that there are indirect constraints, their intensity must be assessed in terms of the existing secondary demand in the retail market.

First of all consideration must be given to the way in which the cost of the wholesale input affects the retail price. Here it is important to consider what proportion of the retail price results from the price of the wholesale input and how an alteration in the price of the latter influences the retail price. The greater the weight of the costs associated with the wholesale input which increases in price, the greater the alteration to the retail price which uses this input[116].

Currently, with respect to broadband offers in the market, it appears that:

- the weight of the "Rede ADSL PT" component in relation to the retail price ranges from 60% to 70%;

- the weight of LLU in relation to the retail price for broadband access offers is more complex to gauge, given the different services provided over the same loop. However, for lower speed offers, the figure is close to 50%[117].

[116] Cave, Stumpf and Valetti (2006) mention that effect of indirect constraints only becomes sufficiently high when the proportion of wholesale costs is equivalent to at least 50% of the retail price.

[117] See, for example, the weighting of the monthly charge for full access to the local loop (8.99 Euros) in relation to the monthly charge for the Vodafone 4 Mbps offer (19.9 Euros). Note that other wholesale prices have to be added to the monthly charge for the local loop, such as those associated with co-installation (namely internal connection cables, space and energy) and signal transport. Considering only the costs of (i) the local loop in the form of full access (installation and monthly fee), (ii) the co-installation in open space regime (installation and monthly fee), (iii) the internal link and (iii) the signal transport, it is estimated that the average wholesale cost, per user, incurred by the operator with the largest number of unbundled access (co-installed in about 200 MDFs with about 200,000 unbundled accesses) is about 11 Euros. Therefore, taking into account the price of the broadband access offers of this operator (in June 2008, € 16.45, € 24.71 and 32.98, excluding VAT, respectively for offers of 4 Mbps, 12 Mbps and 24 Mbps), the weighting of the wholesale component in relation to the retail price is estimated at 67%, 44% and 33% respectively.

One essential key point relates to the demand price elasticity of the retail product whose wholesale input increases in price i.e. how the retail consumption of the product decreases as the price increases.

In this regard, it has already been concluded, using the SSNIP test, that a 10% price increase by a hypothetical monopolist of a retail broadband access offer would cause users to substitute this offer with broadband access offers based on cable distribution networks, making such an increase in price unprofitable. In other words, as a result of this test it was concluded that the broadband offers supported by ADSL and cable modem were in the same relevant market. This position is obviously maintained in the event of wholesale price increases of 10% which result in increases to the retail prices of 6% to 7%. In the case of LLU, given the relatively lower weighting of the wholesale price in relation to the price of the retail offer, the indirect constraints are not as strong and there are grounds for defining and analysing the wholesale market (LLU) with and without the considering indirect constraint.

This position is, moreover, in line with the findings of the study carried out by three specialists in this area on the review of markets included in the previous Recommendation on relevant markets[118].

Internal supply and captive sales

With regard to the analysis of potential internal constraints, issues may arise in relation to internal supply and captive sales.

The issue of internal supply is linked to the existence of vertically integrated operators, i.e. operators in the wholesale market which also run operations in an associated retail market. The choice of vertical business integration is usually associated with the benefits derived from transaction costs (e.g. total control over the quality of inputs provided) or the existence of economies of scale and scope.

An operator may be completely vertically integrated without any distinction existing between the entity operating at wholesale level and those operating at retail level or they may be formally separated. In these situations of vertical integration the operator might not operate directly in the wholesale market (i.e. might not provide offers to third parties based on wholesale inputs which it produces) or, alternatively, it might provide wholesale services to third parties and, simultaneously, run an operation, directly or indirectly, in the retail market.

The concepts of internal supply and captive sales, although not coinciding[119], are related. In fact, captive sales constitute supplies occurring in a market which, during the relevant period of time for market definition, are not dependent on the prevailing conditions in that market. That is, if a wholesale supplier and a retail operator agree on the conditions of sale for a determined quantity of inputs during the period relevant to the analysis of the market, this input amount should be considered as captive sales since trading conditions existing in the wholesale market during that period will have no effect on this transaction[120].

[118] See "A review of certain markets included in the Commission's Recommendation on Relevant Markets subject to ex-ante Regulation", a study by Martin Cave, Ulrich Stumpf and Tommaso Valletti.

[119] There are captive sales in situations where there is no internal supply and the existence of internal supply does not necessarily give rise to captive sales.

[120] An example would be a situation where there is a long / medium term contract under which the parties agree the terms of sale over a fixed period.

This also applies in the case of a vertically integrated operator which, during the period relevant to the analysis, lacks the capacity to increase production and cannot sell a part of the quantity produced to third parties. However, if the production capacity of a vertically integrated operator (even where only the internal supply is being used) can be "diverted"[121] to the wholesale market during a period of time that is relevant to this analysis, thus directly influencing this market, this capacity should be considered non-captive.

It should be noted that captive sales correspond to situations that cannot directly influence the market in which they occur. However, as explained above, there exists the possibility that captive sales, for example belonging to a vertically integrated operator that does not intend to sell the wholesale inputs to third parties, can indirectly affect the wholesale market (through the retail market).

With regard to the importance of indirect price constraints, the EC believes that this factor can and should be taken into account during market analysis, albeit in terms of SMP assessment.

In the market analysis already undertaken following the publication of the EC Recommendation, mention should be made of the analysis of the market for the supply of wholesale broadband access carried out by OFCOM, in which the NRA considered the existence of indirect constraints to include cable access in the market for the supply of wholesale broadband access and subsequently took internal supply into consideration.

In its comments following notification of this market analysis, the EC took the position that if the constraints taken into consideration in the market definition phase were weak, there was a risk that they would, *a priori*, affect the assessment of SMP and the true extension of market power would be undervalued at wholesale level through the inclusion of all vertically integrated operator internal supply, irrespective of whether or not the behaviour of the incumbent operator was restricted.

The EC further considered that an increase in prices at wholesale level would be diluted when passed on at retail level, so that substitution would take place on a very small scale

in response to a small increase in the retail price – this would depend on the degree of customer reaction at retail level. Accordingly, the EC advised caution in interpreting market share based on indirect constraints.

In addition, when assessing the effect of indirect substitution, the EC considers it necessary to demonstrate that:

(a) ISPs are obliged to pass on a hypothetical increase in the wholesale price to their retail customers on the basis of the relationship between the wholesale and retail price;

(b) there is sufficient demand-side substitution at retail level based on indirect constraints to render the wholesale price increase impossible;

[121] For example, due to an increase in the price of the wholesale service, encouraging increased production so that it can be made available on the market or even the diversion of internal supply for delivery to third parties.

(c) ISP customers will not switch in any significant way to the hypothetical integrated monopolist operating at retail level, particularly if the latter does not increase its own retail prices[122].

In addition, the EC concluded that, as OFCOM only took indirect constraints into account in the market definition for the areas where it concluded that their existence may exert sufficient constraints on competition, the findings would be identical to those emerging from an assessment of the same constraints in terms of SMP assessment.

If the choice is made to include only direct constraints in the market definition and to consider the existence of indirect constraints only in assessing SMP, this will ensure that only products which are clearly substitutable are included in the market definition. However from an economic perspective, it would make sense to identify and include all the relevant competitive constraints in the market definition phase and this would not be satisfactorily achieved with this option. It would also be inconsistent with the SSNIP test. It should also be noted that indirect constraints are reflected in the elasticity of demand for wholesale inputs by companies operating at retail level and influence the wholesale market in terms of the hypothesis put forward for the SSNIP test.

Therefore, with this approach, there is a risk of formulating market definitions or even estimates of market shares which are out of step with the competitive reality of the market in question. If, however, it is recognised that in this situation the objective of market definition is solely to isolate the set of products/wholesale inputs that are directly substitutable and not necessarily to define all the competitive constraints in the market and subsequently, in the stage of SMP evaluation, all the "external" constraints (including those which are indirect) on the defined market are considered, it may also be possible to arrive at appropriate conclusions concerning the competitive reality of the market.

With regard to the option of including direct and indirect constraints in the market definition, consideration is given not only to the products/wholesale inputs which are directly substitutable, but also to those which, due to the indirect constraints exerted at retail level, might ultimately be considered to belong to the same wholesale market[123].

In this situation, it is considered that the identification and representation, within the same market, of all the constraints (direct and indirect) faced by a company that produces a particular input can be achieved more successfully by formulating a competitive characterisation during the market definition phase that is more in line with reality. Equally, the estimated market shares will be more representative of the competitive situation existing in the market.

In the final analysis, the option of whether or not to include indirect constraints in the market definition should not alter the final conclusions on SMP. That is to say, if the decision is made to consider indirect constraints when defining the market - resulting in a broader market, with reduced market shares - and if it is concluded that there is no operator with SMP in this market,

[122] According to the Commission, the hypothetical monopolist could increase wholesale prices and keep retail prices below the level of the ISPs who acquire the wholesale inputs without incurring any margin squeeze and may thereby gain customers from the ISP without losing customers to alternative platforms. As such, the increase in the wholesale price is profitable. It should be noted, however, that if the retail prices are aligned with the actual costs incurred in the provision of services (as happens, for example, in a competitive market), an increase in wholesale prices would be expected to lead to a margin squeeze. Therefore an increase in wholesale prices necessarily leads to an increase in retail prices

[123] This may be achieved through a horizontal expansion of the wholesale market to include services/inputs which ultimately influence the market indirectly or through a vertical expansion of the market, defining a single functional market encompassing the wholesale market and retail market.

by opting to use only direct constraints in the market definition – thus defining a narrower market and estimating larger market shares - any other constraints outside the defined market should bear enough weight to enable the conclusion to be reached that the market is competitive.

It should be noted, however, that there is no single way to assess the existence of SMP and given that sometimes not all the necessary and appropriate information is available, the procedural steps and the order in which they are carried out may be decisive.

In this respect, it is important to bear in mind that if market definition is used to estimate the market shares that are representative of competitive conditions in the market or when a rule or procedure is defined on the basis of estimated market shares, it is necessary to pay due consideration to all direct and indirect constraints when defining the market. Otherwise, conclusions might be reached or procedures adopted that are not appropriate to the actual conditions prevailing in the market.

It should be emphasised that indirect constraint should not, in any way, be undervalued due to the fact that it is "external" to the market. In some situations, the existence of indirect price constraints may prove more effective in ensuring competitive prices at wholesale level than direct constraints alone. The fact that an indirect constraint is associated with various levels of a product's value chain does not mean that it is any less effective. On the contrary, especially when competition at wholesale level is less intense than competition at retail level, constraints are effective precisely because their influence is not directly related to the wholesale market.

In this context, given the nature of the retail broadband market in Portugal - where broadband products supported over the cable distribution network compete with products that use ADSL technology as inputs - it is considered that the wholesale broadband market includes products supported by ADSL and products supported over the cable distribution network, even in the absence of a wholesale offer based on the cable distribution network.

It should be noted that the cable distribution networks currently cover about three quarters of all households, with one operator (ZON Multimédia) clearly distinguishable in terms of size and control over access. It is considered that any failure to include the broadband access service supported over the cable distribution network within the wholesale broadband market would result in a market definition that is too narrow.

There has also been a trend towards increased competition in the retail market, especially in areas with a higher population density, due to investments by alternative operators in LLU and increased coverage by the cable distribution networks. Consideration should also be given to the competitive effects of the ZON Multimédia spin-off.

On the question of the influence that wholesale prices may have on setting the price for the final customer, it should be noted that, as previously stated, in the estimate of wholesale costs made by ICP-ANACOM when assessing margin squeeze in the PT broadband offers, the proportion of these costs in relation to total retail price corresponds to about 60%-70%.

Finally, if internal supply were not considered, the size of the market concerned would not be very realistic. Table 25 shows that, with regard to the market for the supply of wholesale broadband access:

- In "C areas" only 2% of accesses are made available to third parties;

- In "NC areas" only 6% of accesses are made available to third parties;

Table 25 – Weighting of internal supply in the market for the supply of wholesale broadband access

	C Areas		NC Areas	
PT Group	267,137	27%	445,769	72%
- Internal supply	245,674	25%	407,285	65%
- Supply to third parties	**21,463**	**2%**	**38,484**	**6%**
Beneficiaries of RUO (internal supply)	252,711	26%	30,521	5%
Cable distribution operators	458,791	47%	147,096	24%
TOTAL	**978,639**	**100%**	**623,386**	**100%**

The situation is similar in the market for the supply of wholesale (physical) network infrastructure access at a fixed location (provision of infrastructure to third parties - LLU represents only 7% of the market).

4.2.1.1. Conclusion

In view of the above, it is concluded that the relevant market for the supply of wholesale broadband access includes broadband access services supported over the PSTN and the cable distribution networks.

The exclusion from this market of broadband access services supported by cable distribution networks should not result in a separate analysis of SMP, as this hypothesis would only strengthen the market shares of the PT Group[124]. However, it was decided that if broadband access services supported by the cable distribution network were not included in the wholesale broadband market, this would result in a market definition that would be too narrow, given the actual market situation.

In light of this, and since broadband access services via cable modem are provided using a vertical integration model, given that the network operators in the wholesale and retail markets are the same, it was considered that the concept of internal supply should be used in order to take these constraints into account in the calculation of market share.

The same applies to operators benefiting from LLU which, in theory, provide their own vertically integrated retail department with a wholesale service, which therefore acts as an input for their retail broadband products.

Obviously, the PT Group's own internal supply of broadband access is also considered.

With regard to the market for the wholesale provision of unbundled access, it may also be considered that the indirect constraints are strong enough to enable alternative infrastructures to be included in the market definition, in particular the cable distribution networks. However, this option is more questionable since, as explained in Section 4.2.1, the indirect constraints are weaker in this case[125] . Therefore, in addition to opting to include internal supply, the decision was also taken to assess the market by considering only the wholesale provision of unbundled access to third parties.

The following figures show the definition of the markets in question and the way in which market shares are estimated.

[124] Since the broadband accesses via cable distribution networks are not included for the purpose of estimating market shares.

[125] Due in particular to the lower weighting of the wholesale input (LLU) in relation to the retail price.

Figure 8 – Schematic representation of the definition of retail markets and the estimation of market shares with (left-hand graph) and without (right-hand graph) wholesale regulation

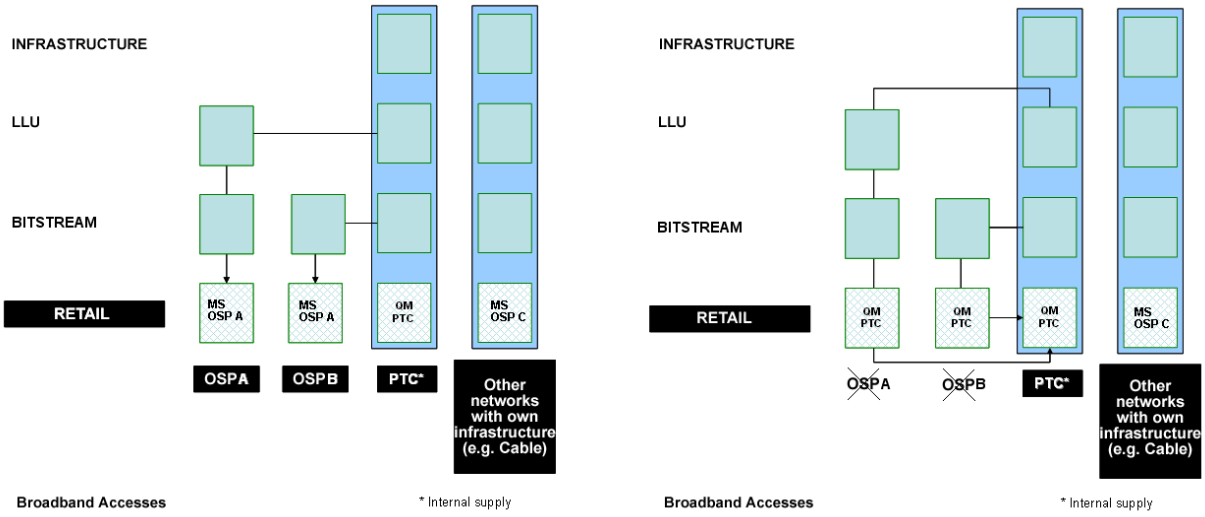


Figure 9 – Schematic representation of the definition of the market for the wholesale supply of broadband access

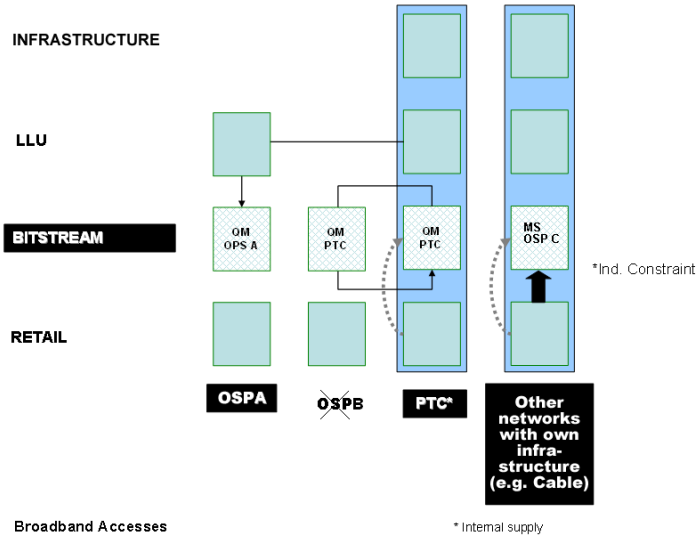
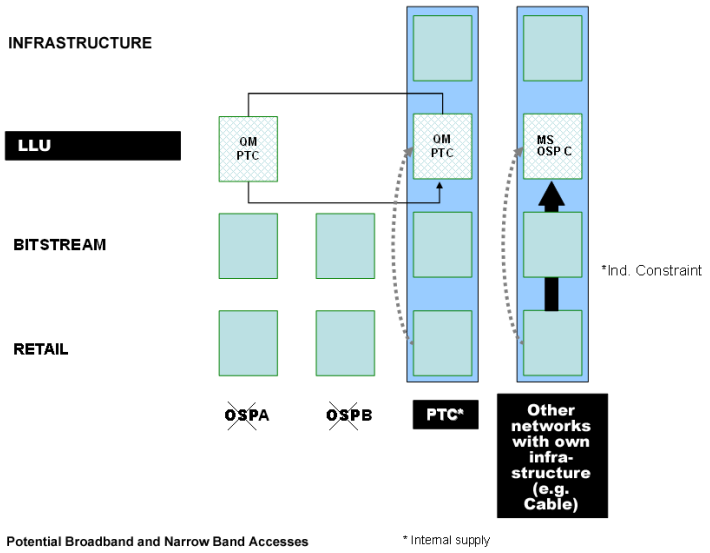


Figure 10 – Schematic representation of the definition of the market for wholesale supply of access (physical) to the network infrastructure at a fixed location



4.3. Definition of product markets: conclusion

Bearing in mind that the definition of the wholesale markets for broadband access services conforms to the relevant markets presented in the EC Recommendation and taking the principle of technological neutrality into account, following this analysis it is considered that in Portugal the product market for the wholesale supply of (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location and the market for the wholesale supply of broadband access consists of broadband access services supplied via xDSL, cable modem and fibre optics.

4.4. Definition of geographic markets

Taking into account the geographic market definition for the retail broadband access markets - (a) areas covered by exchanges where there is at least one co-installed operator and at least one cable distribution network operator and the percentage of households cabled by the county's principal operator is over 60% - the "C areas"[126]; and (b) the remaining areas – the "NC areas" - it would be expected from the outset that the geographic definition of the associated wholesale markets would be identical, even given the different competitive pressures existing in the two geographic (retail) markets.

In this context, the following markets may be defined:

4-C) The market for the supply of wholesale network infrastructure access (physical) at a fixed location, which encompasses the area covered by exchanges where there is at least one co-installed operator and at least one of cable distribution network operator and the percentage of households cabled by the county's principal operator is over 60%[127]

[126] Four exchange areas are included (a) the only exchange without co-installed operators in the municipality, (b) where the percentage of households cabled by the main operator in the exchange area exceeds 60% (c) where the weighting of FTS accesses in the exchange area in relation to total access for the municipality is low (less than 1.5%).

[127] Hereinafter referred to as the "market for the supply of wholesale broadband access in C areas".

4-NC) The market for the supply of wholesale network infrastructure access (physical) at a fixed location which encompasses the area covered by the remaining exchanges in the country

5-C) The market for the supply of wholesale broadband access which encompasses the area covering exchanges where there is at least one co-installed operator and at least one cable distribution network operator and the percentage of households cabled by the county's principal operator is over 60%[128],**Error! Bookmark not defined.**

5-NC) The market for the supply of wholesale broadband access which encompasses the area covered by the remaining exchanges in national territory[129]

However, even without other considerations, in the case of the market for the supply of wholesale network infrastructure access (physical) at a fixed location, the definition of the geographic market is questionable since in this market, in the absence of regulation, the unbundled loops belong to the PT Group. Therefore, without regulation there would be no co-installed operators. At most, the geographic market for this wholesale product market could be defined in terms of the presence or absence of alternative infrastructure supporting broadband services (at present, essentially the cable distribution network operator infrastructure).

However, even if two geographic markets are defined for the market for the supply of wholesale network infrastructure access (physical) at a fixed location, according to whether an alternative infrastructure exists, the market shares would be as follows (to estimate these market shares and for purposes of simplification, only the cable distribution infrastructure and the PTC FTS network infrastructures[130] have been taken into account, since the remaining direct access infrastructures are insignificant for this purpose and would have no impact on the conclusion):

Table 26 – Market shares in the market for the supply of wholesale network infrastructure access (physical) at a fixed location in the hypothetical definition of two geographic markets according to the existence or absence of an alternative infrastructure

	Areas with cable distribution networks	**Areas without cable distribution networks**
PT Group	62%	100%
ZON Multimédia	28%	0%
Cabovisão	8%	0%
Other	2%	0%

Thus, in terms of market share, competitive conditions in the two markets are similar (i.e. PT Group market shares are substantially above 40%), and combining them into a single market does not alter the final result of the assessment[131].

[128] Hereinafter referred to as the "market for the supply of wholesale broadband access in NC areas".
[129] With distribution of cable distribution network subscribers in each municipality by MDF in accordance with the number of FTS subscribers connected to the MDFs in the said municipality.
[130] In terms of FTS subscribers

[131] In certain situations, the terms "supply of wholesale unbundled access to the local loop" or "supply of wholesale network infrastructure access (physical) at a fixed location" may be used indiscriminately to describe the same situation, although the second market obviously has a broader scope

4.5. Markets susceptible to ex-ante regulation

The Commission considers that the markets identified for the purpose of *ex-ante regulation* should obey three cumulative criteria[132]:

- Barriers to entry and to the development of competition: persistence of high entry barriers, whether structural, legal or regulatory in nature.

- Dynamic aspects: to determine whether or not the characteristics of the market will lead to effective competition over a relevant time horizon without the need for *ex-ante* regulatory intervention. Applying this criterion requires an examination of the competitive situation underlying the barriers to entry.

- Relative effectiveness of the competition law and additional *ex-ante* regulation: the degree to which competition law alone is sufficient to overcome persistent shortcomings in the market.

Since the product markets defined for the broadband access markets are identical to the markets recommended by the EC and since, according to the Commission, the markets listed in the Recommendation were identified on the basis of the three cumulative criteria set out above[133], it is considered that the markets defined in this assessment are relevant for the purposes of *ex-ante* regulation and that the existence of SMP in these markets should therefore be assessed.

As already mentioned in Section "1.5. The process of market analysis", the assessment of SMP in these markets will be performed sequentially, with the wholesale market for the supply of unbundled access analysed initially (including an analysis of any obligations to be imposed), followed by analysis of the market for wholesale supply of broadband.

The analysis of competitive conditions in the market(s) associated with the supply of wholesale broadband access and of any obligations that should be imposed in such market(s) should take into account the expected effect of the obligations already defined for the market situated higher up in the vertical value chain.

[132] See Recommendation (5).

[133] See Recommendation (17).

5. ASSESSMENT OF SMP IN THE MARKET FOR THE SUPPLY OF WHOLESALE NETWORK INFRASTRUCTURE ACCESS (PHYSICAL) AT A FIXED LOCATION

As mentioned in Section 3, in accordance with Article 60, paragraph 1 of Law no 5/2004 (14 of the Framework Directive), "*it is considered that an undertaking has significant market power if, either individually or jointly with others, it enjoys a position equivalent to dominance, or a position of economic strength which enables it to act, largely independently of competitors, customers and consumer*".

SMP may be held by just one undertaking in the market (individual dominance) or by more than one undertaking (joint dominance). Additionally, in cases where an undertaking has SMP in a specific market, it may also be considered to have SMP in a closely related market where the links between the two markets are such that possession of market power in one market can serve as a lever for another, thereby strengthening the market power of the company (leverage of SMP).

With regard to the evaluation of SMP, the criteria mentioned in Section "**Error! Reference source not found.**. **Error! Reference source not found.**" apply equally to the assessment of SMP in wholesale markets.

Concerning the particular criteria used in the assessment of SMP in the wholesale markets, ICP-ANACOM considers the most important to be:

- Market shares and market growth
- Potential future market shares
- Barriers to entry and expansion
- Economies of scale and scope
- Vertical integration
- Price trends and pricing behaviour
- International benchmarking
- Evidence of previous anti-competitive behaviour
- Countervailing negotiating power

- **Other criteria for the assessment of SMP**

With respect to the other criteria, an explanation follows as to why they are not considered relevant or considered less relevant in this assessment of SMP[134].

<u>Criteria not relevant to the assessment of SMP in broadband wholesale markets</u>

- Existence of standards/conventions - while there may be technical standards for equipment used in the provision of broadband access, is it judged that their impact on competition is limited, because, in general, the operators use the same technologies and standards;

[134] For this purpose, the "*ERG SMP Position"* is taken into account.

- Diversification of products/services - this criterion is not considered relevant because in the market under analysis access is largely supported through the internal supply of either the PT Group itself or the cable distribution network operators;

- Highly developed sales and distribution network - the service being reviewed is only acquired at wholesale level, therefore no complex or specialist sales and distribution network is required;

Less relevant criteria in the assessment of SMP in broadband wholesale markets

- Excessive prices – although this could support the conclusion that SMP exists, it is not, however, a prerequisite. There is no evidence of excessive prices in the relevant markets in question, due to the fact they have been regulated by ICP-ANACOM[135];

- The overall size of the company - this criterion is taken into account in relation to economies of scale and scope and therefore is not considered independently;

- Advantages or technological superiority - this criterion is taken into account in relation to barriers to entry and therefore is not considered separately;

- Active competition in terms of other parameters - this criterion is considered in relation to economies of scope and therefore is not examined individually;

- Customers' ability to access and use information - it is considered that, in general, wholesale customers are well informed about the offers available;

- Easy or privileged access to capital markets - this criterion is taken into account in relation to economies of scope and therefore is not considered independently.

5.1. Individual dominance

5.1.1. Market shares

The market shares in the market for the supply of wholesale network infrastructure access (physical) at a fixed location are as follows:

[135] Moreover, comparison with international prices shows that Portugal is well positioned with regard to the installation price and monthly fee for the local loop, both in terms of full and shared access.

Table 27 – Evolution of market shares in the market for wholesale (physical) network infrastructure access at a fixed location

	2005	2006	2007
PT Group	70%	67%	64%
ZON Multimédia	23%	24%	26%
Sonaecom (com Oni e Tele2)	0%	0%	0%
Cabovisão	6%	6%	7%
Vodafone	0%	0%	0%
Others	1%	2%	2%

In this case, and in accordance with **Annex 1**, consideration must be given to all alternative infrastructures to the PSTN that are capable of providing FTS and broadband, with regard to domestic supply.

Furthermore, if the market were defined as being only the actual supply of wholesale unbundled access to the local loop (i.e., without regard to internal supply), PTC would have a 100% market share regardless of the geographic market definition, since it is the only company providing access to third parties, albeit through regulatory imposition.

In any case, the PT Group, which has the largest market share, has a market share of over 40% - the threshold that has been used in past EC decisions as the value above which concerns may be expressed regarding dominance.

5.1.2. Barriers to entry and expansion

In the analysis of barriers to entry and expansion, the existence of sunk costs and significant economies of scale and/or economies of scope should be examined. However, once they are present in a given market and the sunk costs have already been incurred, they become irrelevant to the analysis of entry barriers and may even be considered a barrier to market exit.

Sunk costs

Most operators which provide retail broadband and narrowband access services, including ZON Multimédia in part of this market, have already made investments in capacity in order to provide such services, to this end supporting sunk costs that have already been incurred. Thus, in general these operators are able to expand their activities to other customers without incurring further significant sunk costs.

Economies of scale and scope

The costs associated with the development and expansion of narrowband and broadband services are subject to significant economies of scale.

As far as economies of scope are concerned, it appears that the majority of operators in this market provide a variety of services, namely a telephone service, television over IP, video on demand and other added value services.

Given its characteristics, it may be attractive for operators to enter this market and invest in their own infrastructure, particularly if there is easy infrastructure access (including conduits).

Additionally, the main operators in this market seem to have equal access to financial resources/capital markets and no situation has been identified in which one operator has an advantage over the others.

5.1.3. Vertical integration

As already mentioned, the existence of vertically integrated companies may place non-integrated competitors at a competitive disadvantage, since market power may be leveraged from one market to another, especially when the integrated competitor provides the non-integrated competitor with a component of production or essential intermediate consumption. In these circumstances, it becomes more difficult for a non-integrated company to respond to increased demand occurring as a result of an increase in the prices a competitor.

With regard to this market, it should be emphasised that the PT Group consists of vertically integrated undertakings, present in both the wholesale and retail markets. Therefore, if one of these companies has SMP in an upstream market, it has the opportunity to transfer market power to the downstream markets, thereby affecting competition. In particular, if there is difficulty in securing inputs from the wholesale market or in obtaining these inputs at a competitive price, this may further increase the barriers to entry at retail level.

Accordingly, this criterion does not contradict the presumption of dominance that results from the calculation of market share.

5.1.4. Price trends and pricing behaviour

The retail pricing policy and its evolution over time can serve as a good indicator of the level of competition in the market.

With respect to wholesale prices, it can be seen that the only existing wholesale deals which are relevant in practice (the offer of access to conduits and LLU) have seen their prices fall only as a result of regulatory intervention.

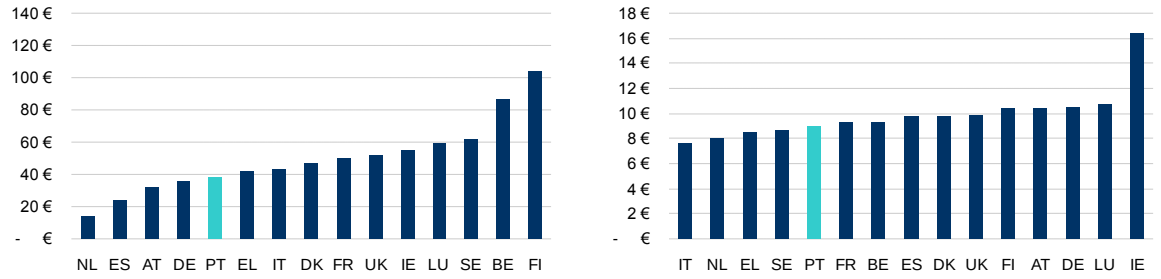
This is not indicative of a competitive market.

5.1.5. International benchmarking

With regard to the LLU, as previously mentioned, prices have been reduced on the initiative of ICP-ANACOM.

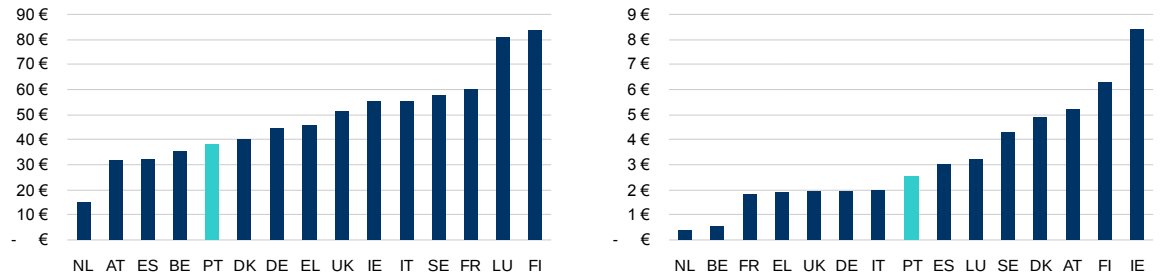
As a result of this initiative, installation prices and monthly fees for the local loop are below the EU average.

Graph 18 – Comparison of installation prices (left-hand graph) and monthly fees (right-hand graph) for full access, in the EU 15 (March 2008)



Source: *Cross-country analysis – Cullen International*.

Graph 19 – Comparison of installation prices (left graph) and monthly fees (right graph) for shared access, in the EU 15 (March 2008)



Source: *Cross-country analysis – Cullen International*.

Because these prices are imposed through regulatory intervention, this criterion is not relevant to the assessment of SMP.

5.1.6. Evidence of previous anti-competitive behaviour

As previously stated, in its 2005 analysis ICP-ANACOM concluded that the PT Group companies had strategic control over the conditions governing the supply of retail services.

The obligations imposed at the wholesale level and the interventions introduced were designed to reduce the incentives for anti-competitive behaviour.

The existence of anti-competitive behaviour, sanctioned by the CA, has also been recorded, particularly with regard to access to conduits and, more recently, rented circuits.

5.1.7. Countervailing negotiating power

In this market, as noted, the interventions aimed at improving the wholesale deals have been introduced on the initiative of ICP-ANACOM, which demonstrates that their customers have limited negotiating power.

5.1.8. Potential competition

It is only in areas of high population density and business activity that there might be some potential competition, particularly with the investment envisaged by OSPs in NGNs and the possibility that they may become open networks.

5.2. Individual dominance: conclusion

The market share of PT Group, existence of barriers to expansion, lack of evidence (prices and other variables) proving the existence of effective competition amongst undertakings and lack of potential competition leads to the conclusion that the PT Group companies operating in this market have SMP (individual dominance).

5.3. Joint dominance

Given that it has been concluded that individual dominance exists, there is no joint dominance in this market.

5.4. Forward-looking analysis

ICP-ANACOM considers that all the factors that provide grounds for the PT Group companies operating in the market for the supply of wholesale network infrastructure access (physical) at a fixed location to be designated companies with SMP will remain over the short/medium term until the next assessment of SMP[136].

5.5. Assessment of SMP: conclusion

It is considered that the PT Group companies operating in the market for the supply of wholesale network infrastructure access (physical) at a fixed location hold SMP in this market.

[136] The next SMP assessment will be carried out: (1) when factors emerge which significantly change competition conditions in the market and/or (2) when the Recommendation is reviewed in relation to these markets and/or (3) within 18 months.

6. IMPOSITION OF OBLIGATIONS

In the previous sections the retail broadband access market and the market for the supply of wholesale network infrastructure access (physical) at a fixed location were identified and it was concluded that the PT Group held SMP in these markets.

Once it has been concluded that an undertaking holds SMP in a market, it is incumbent upon ICP-ANACOM to impose one or more regulatory obligations or to maintain or modify such obligations where they already exist[137].

According to the Guidelines[138], if it is concluded that a relevant market is subject to effective competition obligations may not be imposed in that market. It is noted that the same document states that "*if the NRA has previously imposed regulatory obligations on one or more operators in that market, the NRA must withdraw such obligations and may not impose any new obligation on that undertaking(s). As stipulated in Article 16(3) of the Framework Directive, where the NRA proposes to remove existing regulatory obligations, it must give the parties affected a reasonable period of notice*".

It is the position of this Authority that, in the event of removal of existing obligations, it will be very important to consider how the existing obligations might be removed in an appropriate manner that does not affect end-users and stakeholders.

With respect to the imposition, amendment and removal of obligations, ICP-ANACOM takes into account certain principles set out in the documents of the EC, of the ERG and in Law no 5/2004, as well as the regulatory principles and objectives established for this Authority.

It is considered appropriate that these principles are made known to the market and taken into consideration before the imposition (removal) of any obligation in the market.

6.1. Principles taken into account in the imposition, amendment and removal of obligations

In order to reduce or eliminate competition problems, ICP-ANACOM is charged with selecting the obligations which directly or indirectly affect the strategic variables of dominant companies, ensuring that these obligations meet certain requirements, including:

(a) that they are appropriate to the identified problem, and are proportional and justified in the light of the basic objectives set forth in Article 5 of Law no. 5/2004 (Article 55(3), point a), of Law no. 5/2004);

(b) that they are objectively justified in respect of the networks, services or infrastructure to which they relate (Article 55(3), point b) of Law no. 5/2004);

(c) that they do not result in undue discrimination in respect of any other entity (Article 55(3), point c) of Law no. 5/2004);

[137] See Guidelines §21 and §114.
[138] See Guidelines §113.

(d) that they are transparent in relation to their purposes (Article 55(3), point d) of Law no. 5/2004).

Furthermore, ICP-ANACOM shall, in strict compliance with the national regulatory framework and the community Directives, favour proportional intervention by imposing only the minimum obligations needed to overcome the competition problems identified and to contribute effectively to the development of a competitive situation.

The ultimate goal of ICP-ANACOM with respect to regulation is to promote competition in the provision of electronic communications networks and services, resources and related services, contribute to the development of the EU internal market and promote the interests of citizens[139]. In particular, ICP-ANACOM is charged with ensuring that users derive maximum benefit in terms of choice, price and quality, ensuring no distortion or barriers to competition in the electronic communications sector, and with encouraging efficient investment in infrastructure and promoting innovation.

As noted above, in the absence of effective competition in retail markets, the existing regulatory framework favours the imposition of obligations in terms of the related wholesale markets and the imposition of regulatory measures in retail markets only as a last resort[140].

The primacy of imposing obligations at wholesale level over the imposition of obligations in retail markets has the advantage of addressing existing problems through measures imposed directly where problems are identified. In addition, the effects of these measures influence not only the wholesale markets where they are imposed but also the related retail markets, promoting competition and the existence of benefits to end-users. Finally, it must also be noted that the principle of the primacy of imposing obligations in wholesale markets should be matched with the aim of promoting efficient investment in infrastructure and the promotion of innovation.

According to Articles 67 to 72, and 74 to 76 of Law no. 5/2004 the obligations that may be imposed on companies with SMP in respect of the identified markets are:

(a) transparency in the publication of information, including reference offers;

(b) non-discrimination in the provision of access and interconnection and in the respective provision of the information;

(c) separation of accounts for specific activities related to access and/ or interconnection;

(d) responding to reasonable requests for access;

(e) price controls and cost accounting.

In the analysis and definition of the obligations imposed, as mentioned above, the principles established in the joint position of the ERG on the subject are also taken into account, as presented in the document "*Revised ERG Common Position on the approach to Appropriate*

[139] See Law no. 5/2004, Article 5.
[140] See Recommendation – Explanatory Memorandum, Section 4.

remedies in the ECNS regulatory framework"[141], of May 2006, as well as common positions on best practices in the imposition of obligations in markets 4 and 5[142].

In the Recommendation[143] of the CE it is recognised that certain identified markets are related and that there is therefore a logical sequence in their analysis.

In this respect it is stated that, in the first place, analysis should be made of the markets higher up in the vertical value chain:

"*In general, the market to be analysed first is the one that is most upstream in the vertical supply chain. Taking into account the ex-ante regulation imposed on that market (if any), an assessment should be made as to whether there is still SMP on a forward-looking basis on the related downstream market(s). This methodology has become known as the "modified greenfield approach". Thus the NRA should work its way along the vertical supply chain until it reaches the stage of the retail market(s). A downstream market should only be subject to direct regulation if competition on that market still exhibits SMP in the presence of wholesale regulation on the related upstream market(s)."*

The EC suggests[144], in particular that, with regard to the supply of wholesale broadband access, it is preferable that the NRA start by examining the regulation that should be imposed in respect of the market for unbundled access to the local loop:

"For example, with regard to wholesale broadband access, it is recommended that NRAs first analyse the market for local loop unbundling. Taking into account regulation imposed on that market, the market for wholesale broadband access should then be analysed. If that market continues to exhibit SMP on a forward looking basis despite the presence of LLU regulation (unless the NRA finds that the market no longer fulfils the three-criteria test and excludes it from regulation on that basis), appropriate regulation on the wholesale broadband access market should be imposed."

Also according to the Commission, "*particularly in the early stages of implementation of the new framework, the Commission would not expect NRAs to withdraw existing regulatory obligations on SMP operators which have been designed to address legitimate regulatory needs which remain relevant, without them presenting clear evidence that those obligations have achieved their purpose and are therefore no longer required since competition is deemed to be effective on the relevant market"*[145]. While not obviously directly linked with the initial phase of implementing the new framework, ICP-ANACOM will consider this recommendation when removing existing obligations, providing due grounds as to why they are no longer necessary, and taking into account the measures needed to ensure that their removal is performed in a way that is appropriate for the markets and their stakeholders, especially the end user.

In relation to the removal or alteration of regulatory obligations the ERG[146] particularly argues that: *"When an NRA removes an obligation or replaces one obligation with another, it should*

[141] Available at http://www.erg.eu.int/doc/meeting/erg_06_33_remedies_common_position_june_06.pdf.
[142] Available at http://erg.eu.int/doc/publications/erg_06_70_rev1_wla_cp_6_june_07.pdf
and at http://erg.eu.int/doc/publications/erg_06_69rev1_wba_cp.pdf.
[143] See Recommendation – Explanatory Memorandum, Section 2.5.
[144] See Recommendation – Explanatory Memorandum, Section 2.5.
[145] See Guidelines §119.
[146] See "Revised ERG Common Position on the approach to appropriate remedies in the ECNS regulatory framework", Section 5.6.2.

give an appropriate period of notice before the change takes effect, in order to avoid undue disruption to the market players."

According to the EC Guidelines *"if an NRA finds that a relevant market is subject to effective competition, it is not allowed to impose obligations on any operator on that relevant market under Article 16. If the NRA has previously imposed regulatory obligations on one or more operators in that market, the NRA must withdraw such obligations and may not impose any new obligation on that undertaking(s). As stipulated in Article 16(3) of the Framework Directive, where the NRA proposes to remove existing regulatory obligations, it must give the parties affected a reasonable period of notice"*[147].

This is also reflected in paragraph 3 of Article 59 of Law no 5/2004.

6.2. Imposition of obligations in the wholesale provision of access (physical) to the network infrastructure at a fixed location

6.2.1. Current obligations

As noted above, on 30 March 2005 ICP-ANACOM approved the final decision on the analysis of the market concerned and taking utmost account of the Guidelines, the Authority concluded that PT Group had SMP in the market, whereby it was appropriate, proportionate and justified to impose the obligations contained in Table 28 (all obligations were grounded in article 66 of Law no. 5/2004, given a lack of effective competition in the market).

Table 28 – Current obligations imposed on the companies of PT Group operating in the relevant market

Obligation	Wholesale provision of unbundled access (including shared access) to metallic loops and sub-loops to provide broadband and voice services
Access to and use of specific resources networks	▪ Access to local loops and sub-loops and related facilities ▪ Negotiate in good faith with companies requesting access ▪ Not withdraw access already granted to determined resources
Transparency in the publication of information, including reference offers	▪ Publication of RUO ▪ Prior notice of 30 days of changes in supply
Non-discrimination in the provision of access and interconnection and in the provision of the respective information	▪ No undue discrimination in the provision of access to local loops and sub-loops and associated facilities
Separation of accounts for specific activities related to access and / or interconnection	▪ Costing system and accounting separation
Price control and cost accounting	▪ Setting cost oriented prices ▪ Maintaining the adopted methodology for estimating costs ▪ Possibility of moving towards forward-looking long-term incremental cost models
Financial reporting	▪ Provision of accounting records (AAS) including data on revenue from third parties

In the following sections of the document, based on the obligations outlined above and taking into account the principles relevant to the imposition of obligations in the relevant markets and the grounds for the existence of SMP in this market, this Authority will consider whether it is

[147] § 113.

appropriate to maintain or amend the obligations currently in force, testing them against the principles and requirements of Law no. 5/2004 and in the light of current market conditions.

It is noted that the current competitive problems will be taken into consideration along with those that might arise in respect of the market under analysis and over the period which will elapse until the next analysis of the market[148]. It is noted that ICP-ANACOM is examining the issues related to the evolution to NGN independently and may shortly set out a position with respect to this matter. Naturally, obligations arising out of this market analysis and specific analysis regarding evolution to NGN could be defined in this context. Therefore, the imposition of general obligations in the present analysis (e.g. obligation to grant access to and use of specific network resources) does not prejudice to the specification and implementation of these obligations in separate documents. With respect to NGN, the EC's position is[149]:

"*Deployment of NG access networks modifies the competitive environment in a number of markets, in particular LLU and wholesale broadband access. However, as long as competitive conditions have not changed, the move to NGNs does not provide an opportunity to roll back regulation on existing services. For some time, competitors will have an ongoing need for access to copper at the MDF level or to bitstream type services at different levels in the network.*"

and that:

"*In applying remedies, regulators need to find ways to promote the deployment of new and more efficient network architectures while at the same time recognising the investments made by new entrants on the basis of current architectures. National authorities will need to carefully follow and evaluate developments in order to ensure that appropriate Access remedies are maintained for the forward-looking periods for which competition is judged to be ineffective, and to avoid undermining or discouraging efficient entry. Remedies such as duct sharing, access to dark fibre, mandated backhaul from the street cabinet, and new forms of bitstream access, could be considered where these are appropriate, bearing in mind that, in line with Article 8 of the Framework Directive, remedies should aim, inter alia, at stimulating economically efficient investment in infrastructure. This may call for some transitional arrangements to be considered, to allow time for adaptation of existing business models.*"

6.2.2. Access to and use of specific resources networks

6.2.2.1. Consequences arising from any removal of the obligation

From the assessment of SMP in the retail broadband access market it is evident that one of the factors which has recently led to the reduction of the market share and power of the PT Group is the provision of local loop unbundling, with all the associated obligations and interventions by ICP-ANACOM As shown in the assessment of SMP in the retail broadband access market in "C areas", in the absence of the obligation of local loop unbundling (and in the absence of provision of wholesale broadband access), the PT Group market share would be 50%. In these circumstances it is essential to maintain the obligation of local loop unbundling, which is one of the means of access that contributes most to the promotion of innovation and efficient

[148] The next analysis of the market will be carried out as soon as: (1) something happens which significantly changes the competition conditions of the market or (2) once the Recommendation is reviewed with respect to these markets or (3) within the space of 18 months.
[149] Recommendation – Explanatory Memorandum, Section 3.3.

investment in infrastructure and also contributes to the long-term commitment of the operators that benefit from it.

This form of access could, in certain situations, to be called into question, particularly due to investments by the dominant operator in NGN and also to the roll out of attendance points and the reassignment of the main attendance accesses points as secondary attendance points. In this context, the need for detailed and timely information on developments in the access network is essential so that the OSPs can assess their impact and evaluate different investment options. These aspects will be examined carefully by this Authority in the context of the above analysis of the NGNs.

ICP-ANACOM considers that the removal of the obligation to grant access to and use of specific networks is not appropriate and may have adverse effects on the market. It is felt, in particular, that if the obligation concerned has been removed the PT Group would have an incentive to not guarantee this access, or at least not to grant it in appropriate conditions.

It is noted that a company with SMP in a given market, especially in the particular case of wholesale provision of unbundled access, in order to leverage its market power, has significant incentive to deny access to its network or to refuse to negotiate in reasonable conditions, with companies which operate (or are planning to offer services) in adjacent retail markets and which compete with it in those markets. This problem covers both situations of outright refusal to negotiate and the provision of goods and services in conditions that are not reasonable.

Faced with a possible situation of lack of access to and use of specific network resources used in the unbundling of the local loop, there would also be significant changes in competitive terms in all the associated wholesale markets. These changes would have a real impact on all current unbundled accesses and would also have significant future repercussions. That is, the markets would be impacted not only according to the number of accesses which are already unbundled but also by accesses which would no longer be unbundled. It is noted that the number of accesses unbundled each quarter still remains high. Given the available information and considering the analysis of present market conditions, large fluctuations are not expected to occur in the number of loops unbundled in the future.

Among the wholesale markets lower down the value chain which would be most affected are the wholesale market for the provision of broadband access and the voice markets related to the market for public telephone network access at a fixed location. With respect to the wholesale provision of broadband access, it must be considered that, taking the concept of internal supply and the existence of indirect price constraints into account, calculated market shares include Internet broadband access provided by the operators co-installed in the context of the LLU. It is noted that, if the calculation of market shares (simulating a hypothetical unavailability of the supply of unbundled access) failed to take account of these accesses, around 26% of the accesses in “C areas” or 5% of the accesses in “NC areas”, would be in question, corresponding to a clear deterioration of actual and prospective competitive conditions.

Besides the obvious deterioration of competitive conditions the fact that all the investment made by alternative operators based on the continued expansion of the LLU cannot be put at risk must be considered. In particular, consideration is given to the trend in the number of local exchanges where there are co-installed operators as set out in Graph 5. Here too there would be a real potential effect on all investment that has been made, as well as adverse effects on the future investment by alternative operators. This contradicts the principles of promoting

investment and innovation, considering the existence of an "investment ladder" with the LLU constituting a key "rung" of this ladder.

Moreover, in this analysis it has been identified that the provision of LLU-based retail offers has led to significant competition in the retail market, and the alternative operators who use these offers have succeeded in achieving significant increases in their share of the retail market, presenting a range of very competitive offers. The removal of the obligation to provide access to and use of specific network resources would allow the operator with SMP to deny (or to provide but with unreasonable terms) access to basic resources for the provision of said retailers offers, leading to a significant reduction of competition in the market retailing, thereby allowing significant gains to be made through such a refusal.

It should be noted that the unavailability of LLU-based retail offers would also imply significant disadvantages for end users who would no longer have the same range of options, in terms of price, quality and bundled services included, with respect to subscription to offers. In this respect it should be mentioned that the unavailability of LLU-based offers would not only affect the retail broadband Internet access market but also other markets whose LLU-based bundled offers ultimately impact on the subscription television market and the markets for public telephone network access at a fixed location.

6.2.2.2. Other arguments for maintaining the obligation

In considering the whether or not to impose an obligation of access and the proportionality of that decision, ICP-ANACOM must take into account article 72, paragraph 4 of Law no. 5/2004, according to which the assessment of the proportionality of this obligation involves in particular, the analysis of the "*technical and economic viability of using or installing competing facilities, in the light of the rate of market development, taking into account the nature and type of interconnection and access involved; the feasibility of providing the access proposed, in relation to the capacity available; initial investment by the facility owner, bearing in mind the risks involved in making the investment; the need to safeguard competition in the long term*".

In this respect, considering that the obligation of access has already been imposed and implemented in the past, account should be taken of the fact that the technical and economic feasibility of imposing this requirement has already been demonstrated by developments in this market and associated markets. Similarly there are no longer any questions regarding any risks to the investment made in order to provide the offers of access concerned. On the contrary, as already indicated, all investments made by the operator with SMP and the operators who have invested in this offer must be taken into consideration, safeguarding the maintenance of such investment and the protection of competition over the long term.

It has also been shown that it is expected that a vertically integrated company with SMP in the wholesale market might try to restrict access to their wholesale products and services to the extent that new entrants in the retail market lose market power at the retail level. By denying access, the dominant firm could conceivably increase its market power (and may charge excessive prices in the retail market). Accordingly, this company can leverage its market power in the wholesale market into the (potentially competitive) retail market. The effects on social well-being arising from this type of behaviour are clearly adverse.

In the decision of 30 March 2005, ICP-ANACOM considered the possibility of the competition development at the level of the wholesale market, given that the achievement of that development could solve the problems pinpointed. At that time it was concluded that,

"*even knowing that it is possible for competing companies to invest in their own networks, the replication of the local access network supported by metallic pairs may not be desirable and is not practicable*". In relation to this it is noted that Regulation (EC) no. 2887/2000 states that "*it would not be economically feasible for new entrants to duplicate the incumbent's metallic local access infrastructure in its entirety within a reasonable time*"[150]. Available information provided and analysis carried out by ICP-ANACOM suggests that this economic rationale remains sound. This is without prejudice to the announcement of investments in "own" infrastructure[151], particularly in NGN, by one of the main beneficiaries of the LLU - Sonaecom. These investment plans are, however, limited to certain geographical areas and do not cover the entire national territory (they cover 25% of the Portuguese population) and span a period of three years (longer than the period that is expected to elapse until the next market analysis in which the impact of such investments could be analysed).

6.2.2.3. Conclusions

In the absence of any obligation to grant access to the local loop, ICP-ANACOM concluded that the SMP company would not be expected to voluntarily maintain access to its local loops[152] - the need for Regulation (EC) no 2887/2000 to be the initial instrument of regulation as well as the issues which merit the intervention of ICP-ANACOM in this respect are evidence of this situation - while it is expected that, in the absence of any obligation to provide access to the local loop, the SMP company would refuse to negotiate according to reasonable conditions and, as a result, grant access to its local loops and sub-loops and associated resources (including co-installation in exchange areas). ICP- ANACOM therefore considers that the maintenance of the obligation to grant access to local loops and sub-loops and associated resources (including the service of co-installation at sites housing the distributors of copper pairs or the signal delivery service) based on the nature of the identified problem, is justified and proportionate

As mentioned above, ICP-ANACOM is studying the issues related to the progress to NGN and will consider in this context, the possibility of imposing, in addition to the obligation of access to conduits (arising from Law 5/2007 and which remains fundamental for the development of competition in this market), access to dark fibre, particularly in situations where access to conduits is not possible for reasons of capacity or of another order, and the possibility of unbundling the fibre optic loops. The specific conditions of co-installation at the level of street cabinets, as set out in the current offer, will also be examined in this respect. Analysis of these issues, while constituting a very specific analysis, should be seen as discrimination and detailed characterisation of the obligations outlined in this document, to be developed according to the framework of a market consultation process (which was started with the publication of the public consultation on the regulatory approach to the NGNs[153]).

Given the above factors as set out in article 72, paragraph 4, of Law no. 5/2004, ICP-ANACOM concludes that, based on experience accumulated in monitoring the LLU and in the development of these products and also based on the analysis carried out

[150] See Regulation (EC) no. 2887/2000, whereas (6).

[151] Available at http://www.sonaecom.pt/filedownload.aspx?schema=a67f9277-d23c-4f99-8642-9acd3e463b93&channel=44E65941-12EC-4115-9D0F-898A110E2077&content_id=93AD601F-8267-4AE1-95E8-50A41A1C0D5A&field=file_src&lang=pt&ver=1.

[152] The position of Portugal Telecom in response to the public consultation on competition in local access through LLU is recorded. The consultation was launched by ICP-ANACOM on 10.07.2000 (available at http://www.anacom.pt/template15.jsp?categoryId=35914).

[153] See http://www.anacom.pt/render.jsp?contentId=598151.

throughout this document, it is fully established that it is feasible for the PT Group to grant access to local loops and associated resources.

Concerning the need to safeguard competition over the long term, it is concluded that, in view of the fact that the PTC possesses a significant part of the accesses to the final customer, access to the local loop is an essential service for enabling companies to compete with PTC and includes, but is not limited to, offers of broadband services. Setting an appropriate access price allows competitors to evolve in terms of investment in their own infrastructure while allowing the supply of competitive retail services, with clear benefits for the end user. This fact has been demonstrated by developments in the wholesale market in question and also in markets lower down the vertical value chain, particularly in the retail broadband Internet access market with a substantial increase in competition in areas where there are LLU-based offers, which is also the basis of the proposed geographic division of the respective wholesale market.

The aforementioned article 72 of Law no. 5/2004 provides for various types of obligations of access which may be imposed. Additionally, and in light of said article 72, paragraph 2 of Law no. 5/2004, it is the position of ICP-ANACOM that the PT Group will continue to be subject to obligations to negotiate in good faith with companies requesting access and not withdraw access where already granted to determined resources.

The obligations of access to local loops and sub-loops and associated facilities are currently met by the conditions currently offered by PT Group through the LLU and it is the position of this Authority that these obligations should continue to be maintained, subject to conditions as may be specified and detailed in separate documents, including, in particular, in respect of NGN.

Therefore, in light of the above, it is the position of this Authority that all obligations with respect to granting of the access to and use of specific network resources imposed by the decision of 30 March 2005 remain reasonable, appropriate, proportionate and justified. Consequently, all these obligations will be maintained.

It is noted that the obligation of access will not in itself be sufficient. ICP- ANACOM believes it will be necessary to maintain additional obligations established in Law no. 5/2004 in order to overcome the potential problems of competition, such as excessive prices or discriminatory practices, ensuring the availability of access on reasonable terms which are appropriate to the conditions prevailing in the markets relevant to this analysis. These issues are addressed in the next sections.

In the meantime, since there are already retail offers supported by that offer and since experience has already been amassed, there will be certain aspects of the LLU which merit review or updating, with special attention to: (a) improvements in information to be made available with respect to the access network and changes in the network; (b) forecast plans; (c) entry of cable to exchanges through the conduits of PTC; (d) re-scheduling of local loop unbundling; (e) periods of access to exchanges; (f) levels of quality of service, including for Premium services; (g) compensation for non-compliance with levels of quality of service; (h) undue closure of faults; and (i) possibility of OSPs installing faster xDSL technologies.

6.2.3. Non-discrimination

6.2.3.1. Consequences of potential removal of the obligation

Where an obligation to provide access is imposed on a company there is a strong incentive for the company to set out the conditions according to which wholesale services are provided or the conditions under which access is granted to other companies that have operations in the retail market (especially if that company is vertically integrated or owns retail operations).

If the conditions of supply to these companies are poorer or the prices higher this will adversely affect the quality of services provided by alternative operators at retail level or significantly increase the costs of these operators compared to the costs of the retail divisions of the operator with SMP. As such, the competitiveness of alternative operators in retail is substantially reduced, resulting in a form of leverage of market power from the wholesale level into the retail market.

By way of example a situation could be considered where an operator with SMP in the market for the wholesale provision of unbundled access discriminates against alternative operators relative to their division with operations in other markets located lower down the vertical chain of value. Special note should be taken of the possible effects on the market of the wholesale provision of unbundled access and thereafter on the retail broadband access market. A poorer quality of service than that provided to the retail business divisions of the operator with SMP might mean that the alternative operators are unable to provide a new access in the same period of time or are unable to guarantee a time-frame for repairing faults that is equivalent to that provided by the operator with SMP in the market for the wholesale provision of unbundled access (even if only for internal supply), and consequently in the retail broadband access market. As already stated, this kind of discriminatory behaviour also enables the operator with SMP or its subsidiaries to assume a position of advantage in other markets whose LLU-based offers ultimately influence, in particular, the market for subscription television and markets for public telephone network access at a fixed location.

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Considering the incentive to adopt discriminatory behaviour in terms of provision of access to and use of specific network resources and the impact of such discrimination on the markets, it is taken that the maintenance of the obligation of non-discrimination is justified, appropriate and proportionate in the view of the (reduced) existing costs.

6.2.3.2. Other arguments for keeping the obligation

According to articles 66 and 70 of Law no. 5/2004[154], ICP-ANACOM may impose obligations of non-discrimination in the provision of access where appropriate.

There are issues that have been raised by alternative operators that are related to differences in terms of supply times of the services of local loop unbundling and supply times of similar or related services in the retail markets. These issues have arisen mainly when better quality services in terms of providing installation and, above all, fault repair, are at issue. These issues are now being analysed by ICP-ANACOM. In this regard it is clarified that the existence of non-discrimination is not only ensured through equal treatment with respect to more common cases through equal treatment when more specific supplies or supplies related to market segments that have other needs and uses of services are at stake.

The ERG has also stated[155] that there are several ways of putting competitors at a disadvantage though discrimination in terms of quality of services provided by a wholesale operator with SMP. To prevent this occurring the ERG supports the existence of an obligation of non-discrimination which guarantees that, in equivalent conditions, the services and information provided by the operator with SMP to competing operators are of the same quality as that guaranteed to the SMP operator's own departments and subsidiary businesses.

Moreover, in a scenario of evolution to NGN this obligation is of fundamental importance in terms of information that the PT Group has regarding plans for the development of its own network, and the information it makes available to third parties, including the beneficiaries of the LLU. This issue is addressed in more detail in Section **Error! Reference source not found.**.

6.2.3.3. Conclusions

As already mentioned in the decision of 30 March 2005, the obligation of non-discrimination was principally aimed at preventing the PT Group - a vertically integrated company - from discriminating in favour of its own retail activities and at ensuring that rival companies who purchase wholesale products from the PT Group are able to compete on equal terms in the retail market. Another objective of this Authority in the imposition of the obligation of non-discrimination was to prevent differential treatment in identical circumstances of the various competitors of the PT Group.

It is still understood that this obligation is objectively justified since it ensures that rivals of the PT Group, and so the consumers, are not at a disadvantage in relation to the services of the PT Group or other competitors who are in similar circumstances.

ICP-ANACOM will consider, also on a separate document, the possibility of imposing equivalent access conditions, to be followed by PT Group and by the offers' recipients (namely RACO and RUO).

[154] Article 66 sets out the remit of the NRA with respect to the imposition, maintenance, alteration or removal of obligations. Article 70 describes, in particular, the obligation of non-discrimination.

[155] Revised ERG Common Position on the approach to appropriate remedies in the ECNS regulatory framework ("Remedies" document).

6.2.4. Transparency

6.2.4.1. Consequences of any removal of the obligation

Transparency is a natural complement to non-discrimination, since the ability to identify behaviour with possible adverse effects, through the use of discriminatory practices, depends on the ability to detect such behaviour. Thus, if the obligation of transparency is removed, the ability to detect and prove discriminatory behaviour would be significantly affected. Which is to say that abolishing the obligation of transparency would undermine the effectiveness of non-discrimination, leading to the consequences that have been identified as resulting from any removal of that obligation (see section **Error! Reference source not found.**) and adversely affect markets.

Taking this into account, it is clearly important to maintain an appropriate and easily accessible reference offer, containing all the information necessary so that alternative operators which use or plan to use the wholesale services concerned can do so with visibility and efficiently.

To ensure the visibility and ease of consultation of the offer (especially when the offer is amended) it is considered that it remains necessary to properly identify the changes made to the offer. To ensure fulfilment of these objectives, it is considered that amendments made to the reference offer at the initiative of PTC have to be notified one month in advance of the time they are due to come into force. Only in this way is it possible to continue to ensure that operators have time to make decisions and carry out operational activities or actions related to strategic changes resulting from alterations that may be made to the offer, when these changes are instigated at the initiative of PTC.

6.2.4.2. Other arguments for keeping the obligation

Regulation (EC) no. 2887/2000 establishes that the company with SMP within the said regulatory framework should publish a reference offer for unbundled local loop access. As already mentioned, PTC published this offer which was the subject of interventions and determinations of ICP- ANACOM. Law no. 5/2004 maintains this obligation, setting out in article 69 thereof that "*where an operator is subject to the obligation to offer unbundled access to the local loop, it shall publish the respective reference offer for access to the local loop (RUO)"* and specifying the items that shall be included in the offer.

The ERG also argues that[156] that, whereas it is particularly complex for an NRA to control the quality of services provided, when it imposes an obligation of non-discrimination it makes sense to support this obligation through an obligation of transparency. In this respect, the ERG indicates that the obligation of transparency could consist of the obligation to provide minimum levels of quality of wholesale service, and periodically report the levels of the performance of such quality to the NRA and, where appropriate, to other operators. The ERG further believes that the reported levels of performance should include services to alternative operators and the services provided by the operator with SMP to its own companies so as to monitor compliance with the obligation of non-discrimination.

[156] Revised ERG Common Position on the approach to appropriate remedies in the ECNS regulatory framework ("Remedies" document).

The ERG also argues that it is preferable to publish the levels of performance since this increases the confidence of market players in the effectiveness of non-discrimination.

Documents drawn up by ERG[157] mention, in particular, that the most critical issues to be considered by the NRA in relation to the quality of services provided at wholesale level are related to:

(a) the identification of all the quality of service indicators;

(b) the minimum level defined for each of the quality of service indicators;

(c) compensation for non-compliance with quality of service, and

(d) the form in which these indicators are to be made available.

The ERG indicates that in the case of the LLU the minimum comparative criteria to be considered between services provided under the offers and services provided downstream are the levels of service associated with the provision of wholesale and retail broadband access.

Furthermore, as stated above, with the roll out of attendance points of care and the relocation of accesses from primary attendance points to secondary attendance points, the provision of detailed and timely information on developments in the access network becomes crucially important and is essential so that OSPs are able to assess its impact and evaluate different investment options. Therefore, it is considered that PTC should provide OSPs with detailed and timely information on developments in the access network prior to the implementation of alterations which may affect existing conditions with respect to the investment decisions of the OSPs. In this case, it is important, also taking into account non-discrimination, that the PT Group inform the beneficiaries of the LLU with reasonable advance notice as to (i) the date on which it plans to install a new attendance point so that the needs of co-installation (firm requests) of the beneficiaries of LLU be taken into account, as far as possible, in the design of the attendance point, (ii) whether or not there is space in the conduit between the primary and secondary attendance points, and (iii) the loops to be relocated..

This issue will be dealt with in a separate document.

6.2.4.3. Conclusions

Considering the analysis, it is concluded that the obligation of transparency must be maintained. It is especially concluded that its removal would jeopardize the effectiveness of non-discrimination, which may in turn lead to significant losses for the wholesale markets for the supply of services related to the unbundling of the local loop and other associated markets.

In this regard, it is seen that the maintenance of a reference offer which contains all the necessary information and in a model that is appropriate for the efficient procurement of the wholesale services concerned is essential for the proper functioning of the LLU. It is likewise seen that the ease of accessibility to the offer and prior knowledge and identification of changes to the offer are important conditions for the proper enforcement of the transparency obligation. As such it is concluded that the offer should remain available on the web site of PT Group, should duly identify the changes and should give the market notice of such changes a month in

[157] For example, ERG Best Practices on Regulatory Regimes in wholesale unbundled access and bitstream Access.

advance of the date on which they are due to come into force[158]. It is obvious that all the obligations with respect to information to be included in the reference offer and made available to the market, as set out in Regulation (EC) no. 2887/2000 of the European Parliament and Council of 18 December 2000 on the LLU, are also retained.

It is likewise concluded that quality of service is an essential component of any wholesale reference offer, and it is crucial that account be taken of how the various aspects related to this characteristic of the offer operate in order to ensure the existence of competitive and appropriate conditions and to ensure the provision of retail services that meet the needs of end users. For this purpose the reference offer must be clear about quality of service indicators, set the minimum level for each of these indicators and specify the compensation due in the event of non-compliance.

In this respect, it is considered that how performance in terms of quality of service of wholesale offers is presented to the NRA, the operators and end users is quite important to the effectiveness of the obligation of transparency. ICP-ANACOM has been carrying out a detailed examination of this issue and will be in a position to specify, in a separate document, the form in which such information is to be disclosed.

6.2.5. Price control and cost accounting

6.2.5.1. Consequences arising from any removal of the obligation

To date, prices of the LLU and associated resources have been regulated according to the principle of cost orientation of prices. The use of this type of pricing rationale has already been explained in the decision of 30 March 2005. It should also be noted that in applying this principle, ICP-ANACOM has based its estimates of costs on:

(a) the analytical accounting system of PTC, audited annually;

(b) the budgeted costs and the current costs of resources consumed and activities needed for the provision of services;

and also keeping European Union practices as an additional reference. Consideration is also given to the criteria of economic efficiency when assessing prices.

Therefore, if the obligation of cost accounting were removed, an important tool for setting prices in respect of the reference offer in question would be lost. Without this important instrument markets would be in a state of greater uncertainty in relation to the wholesale prices established. It is noted that this greater uncertainty goes against the principle of achieving visibility and efficiency in the conditions of the wholesale offer.

In this regard it is noted that, to date, all reductions in LLU prices have been imposed by ICP-ANACOM and are not a result of PTC initiatives.

It is also noted that, as indicated in the analysis of 30 March 2005, the access network of twisted metallic pairs is characterised by a lack of competition and, as demonstrated in the analysis contained in this document, there is no expectation of the competitive

[158] When such changes are on the initiative of PTC.

conditions prevailing in this market improving significantly[159], leading to reduced incentives for the SMP company to operate efficiently and reduce costs. In the absence of an obligation of price control and cost accounting, there would be no possibility of simultaneously promoting competition in the market and incentivising efficiency by the SMP operator.

In respect of this obligation, ICP-ANACOM will continue to monitor the evolution of the market and methods used for setting prices, noting, too, the evolution in terms of current European practice, not ruling out the future possibility of a price assessment that considers (possibly in conjunction with the results of the analytical accounting model already established) the results of forward looking - long run incremental cost models (FL- LRIC) ICP-ANACOM will also continue its stringent scrutiny of costs based on efficiency criteria and with reference to prices practiced in other comparable Member States.

6.2.5.2. Conclusions

In light of the above, ICP-ANACOM considers that is objectively justified and proportionate to the degree of competition in the market analysed to maintain the obligation of cost orientation of wholesale prices and accounting of these costs.

It is concluded that maintaining the obligation of cost orientation of prices promotes and decisively contributes to the existence of efficient and sustainable competition in the market for the wholesale provision of unbundled access, incentivising competition and efficiency throughout the vertical value chain and associated markets. As such significant benefits to end users are ensured in terms of the diversity, quality and price of the offers provided by operators.

6.2.6. Separation of accounts

6.2.6.1. Consequences arising from any removal of the obligation

As with the transparency obligation, the obligation of accounting separation is essential to ensure compliance with and the effectiveness of the obligations of non-discrimination and price control and cost accounting. If the obligation of separation of account were removed the adverse effects of the removal of obligations set forth above would affect the relevant markets.

It should be noted, for example, that with the absence of the obligation of separation of accounts, it would be difficult for ICP-ANACOM to properly monitor compliance with the obligations associated with the prices and costs of the company with SMP, making it also very difficult to identify situations of cross-subsidisation.

6.2.6.2. Other arguments for keeping the obligation

As indicated in the analysis of 30 March 2005, the accounting format and the methodology adopted must obey the requirements conveyed to PTC by ICP-ANACOM, with this Authority periodically reviewing these requirements in order to improve the costing system and the information provided, without prejudice to any rules which may be defined in future

[159] In a period of time relevant to this analysis.

It remains the position that this is a measure which is objectively justified given the need to ensure non-discrimination (allowing the analysis of wholesale prices and internal transfer prices) and prevent cross-subsidisation.

This is a proportional provision in that it only requires the provision of information with a level of detail sufficient to enable the achievement of the objective of verifying the other obligations.

6.2.6.3. Conclusions

It is concluded that the obligation of separation of accounts should be maintained to ensure effective monitoring of non-discrimination. As such, the position is maintained that this is a proportionate, appropriate and justified obligation.

6.2.7. Financial reporting

6.2.7.1. Consequences arising from any removal of the obligation

In order to check compliance with the obligations set out above, namely the obligations of transparency, non-discrimination, separation of accounts and cost accounting, and in accordance with paragraph 3 of Article 71 of Law no. 5/2004, the company with SMP shall make their accounting records, including data on revenue from third parties, available to ICP-ANACOM

Accordingly, if there is no obligation of financial reporting, the effectiveness of the above obligations would be undermined, leading to significant adverse impacts on the wholesale market for the supply of unbundled access and related markets.

In line with the analysis made in 2005, the position is taken that the accounting records which are needed for proper compliance with the obligation of financial reporting comprise the analytical accounting system which should be submitted in the terms defined specifically in this respect.

6.2.7.2. Conclusions

It is concluded that maintaining the obligation of financial reporting is necessary, appropriate and proportionate.

6.3. Conclusion

For the purposes of *ex-ante* regulation and in accordance with the principles of competition law, the following wholesale market which covers the entire national territory has been identified.

(a) wholesale provision of access (physical) to network infrastructure at a fixed location.

Having analysed the market above and taking maximum account of the Guidelines, ICP-ANACOM concludes that PT Group has SMP in the identified relevant market and therefore

that obligations should be imposed as set out in Table 29 (all obligations are grounded in Article 66 of Law no. 5/2004, given that there is no effective competition in this market).

Table 29 – Obligations to be imposed on companies with SMP in the relevant market

Obligation	**Wholesale provision of (physical) to network infrastructure at a fixed location.**
Access to and use of specific resources networks	▪ Access to local loops and sub-loops and associated resources (including co- installation at the level of MDFs and street cabinets, signal transport and access to conduits) ▪ Possibility of imposing access to dark fibre where access to conduits is not possible ▪ Negotiate in good faith with companies requesting access ▪ Not withdraw access already granted to determined resources ▪ Possibility of imposing obligations on access to fibre optic, following the evolution to next generation access networks, by way of specific decision.
Transparency in the publication of information, including reference offers	▪ Publication of RUO and RCAO ▪ Clear identification of amendments made to the offer ▪ Prior notice of 30 days of changes in supply ▪ Provision and publication of indicators and performance levels in respect of quality of service in wholesaler offers ▪ Provision to OSPs of detailed and timely information on developments in the access network
Non-discrimination in the provision of access and interconnection and in the provision of the respective information	▪ No undue discrimination in the provision of access to local loops and sub-loops and associated facilities[160] ▪
Separation of accounts for specific activities related to access and / or interconnection	▪ Costing system and accounting separation
Price control and cost accounting	▪ Setting cost oriented prices ▪ Maintaining the adopted methodology for estimating costs ▪ Possibility of moving towards forward-looking long-term incremental cost models
Financial reporting	▪ Provision of accounting records (AAS) including data on revenue from third parties

As noted above, ICP-ANACOM considers that the established obligations may require further detail, specification or clarification with regard to their implementation, which will be provided in separate documents, subject to the consultation process.

Table 30 sets out a comparison between the obligations imposed in the analysis carried out in 2005 and the present analysis.

[160] With the possibility of imposing equivalent access conditions to be followed by the PT Group and by the beneficiaries of the offers (in particular RCAO and RUO) in access to them.

Table 30 – Comparison of obligations imposed in 2005 with the obligations set out in the present analysis of the market - Wholesale provision of access (physical) to the network infrastructure at a fixed location

Wholesale provision of access (physical) to network infrastructure at a fixed location.	**Decision of 30 March 2005**	**Current market analysis**
Scope of geographic market	**National**	**National**
Obligation		
Access to and use of specific resources networks	✓	✓
▪ Access to local loops and sub-loops and associated resources (including co-installation at the level of MDFs and street cabinets, signal transport)	✓	✓
▪ Access to conduits		✓
▪ Possibility of imposing access to dark fibre where access to conduits is not possible		✓ **(a)**
▪ Negotiate in good faith with companies requesting access	✓	✓
▪ Not withdraw access already granted to determined resources	✓	✓
▪ Possibility of imposing obligations on access to fibre optic, following the evolution to next generation access networks, by way of specific decision.		✓ **(a)**
Transparency in the publication of information, including reference offers	✓	✓
▪ Publication of reference offers on PT Group website	✓	✓
▪ Clear identification of amendments made to the offer	✓	✓
▪ Prior notice of 30 days of changes in supply	✓	✓
▪ Provision to OSPs of detailed and timely information on developments in the access network		✓
▪ Provision and publication of indicators and performance levels in respect of quality of service in wholesaler offers	✓	✓
Non-discrimination in the provision of access and interconnection and in the provision of the respective information	✓	✓
▪ No undue discrimination in the provision of access to local loops and sub-loops and associated facilities	✓	✓
Separation of accounts for specific activities related to access and / or interconnection	✓	✓
▪ Costing system and accounting separation	✓	✓
Price control and cost accounting	✓	✓
▪ Setting cost oriented prices	✓	✓
▪ Maintaining the adopted methodology for estimating costs	✓	✓
▪ Possibility of moving towards forward-looking long-term incremental cost models	✓	✓
Financial reporting	✓	✓
▪ Provision of accounting records (AAS) including data on revenue from third parties	✓	✓
✓ **- Appropriate obligation** **(a) – Via specific decision taken in the context of a market consultation process.**		

7. ASSESSMENT OF SMP IN THE MARKETS FOR THE WHOLESALE PROVISION OF BROADBAND ACCESS

As mentioned in Section 3, in accordance with Article 60, paragraph 1 of Law No. 5 / 2004 (14 of the Framework Directive), "*it is considered that an undertaking has significant market power if, either individually or jointly with others, it enjoys a position equivalent to dominance, or a position of economic strength which enables it to act, largely independently of competitors, customers and consumers.*".

SMP may be held by just one undertaking in the market (individual dominance) or by more than one undertaking (joint dominance). Additionally, in cases where an undertaking has SMP in a specific market, it may also be considered to have SMP in a closely related market where the links between the two markets are such that possession of market power in one market can serve as a lever for another, thereby strengthening the market power of the company (leverage of SMP).

With respect to the criteria for assessing SMP in the markets for wholesale broadband access provision the points made in the introduction to section "5. ASSESSMENT OF SMP IN THE MARKET FOR THE SUPPLY OF WHOLESALE NETWORK INFRASTRUCTURE ACCESS (PHYSICAL) AT A FIXED LOCATION" also apply here.

It is therefore considered that the most relevant criteria used in the assessment of SMP in the market for the supply of wholesale broadband access are as follows:

- Market shares and market growth
- Potential future market shares
- Barriers to entry and expansion
- Economies of scale and scope
- Vertical integration
- Price trends and pricing behaviour
- International benchmarking
- Evidence of previous anti-competitive behaviour
- Countervailing negotiating power

It should be noted that the assessment of SMP in these markets takes into account the conclusions reached during the assessment of SMP made with respect to wholesale provision of access (physical) to the network infrastructure at a fixed location and the obligations imposed with respect to this market. In this context and in particular, consideration is given to the existence of a regulated wholesale offer of access to the local loop through which certain operators provide their retail offers, as well as the regulated offer of access to conduits.

7.1. Wholesale broadband access provision in "C areas"

7.1.1. Individual Dominance

As happened with the retail market, the analysis of effective competition will begin with the calculation of market share. This first stage will thus identify candidates with SMP.

The following is an analysis of the economic characteristics of the relevant market in which the degree of competition and potential competition between the established companies is to be assessed.

7.1.1.1. Market shares

Following the request for information made by ICP-ANACOM to OSPs on the provision of wholesale offers, two operators reported that they provided wholesale service - COLT has a wholesale broadband offer supported through the LLU and OniTelecom provides a wholesale offer supported through the "Rede ADSL PT" service. However, these offers have a very residual character since, according to COLT, no service has yet been acquired by any other provider, and OniTelecom's offer is designed to meet very particular needs[161]. On this issue, it should be noted that Sonaecom has announced plans to provide a wholesale offer, depending on the future evolution of supportable services.

Accordingly, at this time, PTC is the only significant provider of wholesale broadband access services supported over the PSTN.

As explained above, it is considered that existing competition in the retail market between the broadband offers supported over the copper network and broadband offers supported over the cable distribution network leads to indirect constraints at wholesale level, even while there is no wholesale offer based on the cable distribution networks.

Given these constraints and since broadband access services via cable modem are provided using a vertical integration model, since the network operators in the wholesale and retail markets are one and the same, it was considered that the concept of internal provision should be used in order to take these constraints into account in the calculation of market share.

The same applies to operators benefiting from LLU, which in theory provide their own vertically integrated retail department with a wholesale service, which therefore acts as an input for their retail broadband products. Furthermore these operators, which do not in practice provide wholesale broadband access, are ready to do so (and this in fact already happens with COLT) and so they are in a position to compete with PTC in this market.

In this context, it is estimated that the market shares with respect to the supply of wholesale broadband access covered by "C areas", according to the assumptions above, among them the inclusion of internal supply, are as follows:

Table 31 – Evolution of market shares: wholesale provision of broadband access in "C areas"

	2005	2006	2007
PT Group	41%	35%	27%
ZON Multimédia	39%	34%	33%

[161] "*Of retailers of Indirect Voice of the Wholesale Business Unit of Oni*"

Sonaecom (with Oni and Tele2)	8%	19%	25%
Cabovisão	10%	10%	10%
Vodafone	0%	0%	1%
Other	2%	3%	3%

The analysis of market shares shows that in this market the operators with the largest market shares (PT Group and ZON Multimédia) have had their share cut. It therefore appears that since 2005 the majority of operators have seen their market shares fall or stabilise, with the exception of Sonaecom which has increased its market share, mainly due to use of the LLU.

ZON Multimédia, which has the largest market share, has a market share of less than 40% - the threshold that has been used in past EC decisions as the value above which concerns may be expressed regarding dominance. Even where account is taken of the acquisitions notified by ZON Multimédia to the CA, the market share of the company remains below this threshold, although it is getting close to it.

However, the reduction seen in the market share of this operator is apparent but tended to stabilise in 2007, given that the beneficiary operators of the LLU have increased their presence in the market and it is expected that this trend will continue over the period that is relevant to this market analysis.

7.1.1.2. Barriers to entry and expansion

In the analysis of barriers to entry and expansion, the existence of sunk costs and significant economies of scale and/or economies of scope should be examined. However, once they are present in a given market and the sunk costs have already been incurred, they become irrelevant to the analysis of entry barriers and may even be considered a barrier to market exit.

Sunk costs

Most of the operators which provide broadband retail access services in this market, including ZON Multimédia, have already made investments in capacity in order to provide such services supporting, for this purpose, sunk costs that have already been incurred. Thus, in general these operators are able to expand their activities to other customers without incurring further significant sunk costs.

In this respect the conclusions of the analysis of the market for the provision of wholesale access (physical) to the network infrastructure at a fixed location are relevant, with the alternative operators having used the reference offer for access to conduits and the reference offer for access to the local loop, particularly in the areas of highest population density.

Economies of scale and scope

The costs associated with the development and expansion of broadband services are subject to significant economies of scale.

The area covered by this market coincides roughly with the major urban centres and coastal areas, where the population and economic activities are highly concentrated.

On average, each exchange in this market is linked to about 8,000 operational loops, in comparison with the other exchanges which on average serve fewer than 1,000 operational loops. It is therefore possible to achieve lower unit costs in this market.

As far as economies of scope are concerned, it appears that the majority of operators in this market provide several services: telephone service, television over IP, "video on demand" and other added value services.

With the characteristics of this market there is, as mentioned, some appeal to the entry of operators, either investing in their own infrastructure, or renting from PTC.

In addition, the main operators in this market seem to have equal access to financial resources / capital markets and no situation has been identified in which one operator has an advantage over the others.

7.1.1.3. Vertical integration

The existence of vertically integrated companies may place non-integrated competitors at a competitive disadvantage. In fact, in this situation market power could be leveraged from one market to another, especially where the integrated competitor provides the non-integrated competitor with a means of essential and intermediate production or consumption. In such circumstances, it becomes more difficult for a non-integrated company to respond to the increase in demand resulting from a competitor increasing prices.

Of the operators present in this market, particular mention should be made of the case of the PT Group, which consists of vertically integrated undertakings present in both the wholesale and retail markets. Here there is evidence of the possibility (indeed, the reality of the market) of operators using upstream wholesale deals, notably the reference offer for access to conduits and the RUO, chiefly in areas of higher population density.

In addition, the other cable distribution network operators are also vertically integrated operators and the OSP beneficiaries of the LLU are, in this market and ultimately, vertically integrated operators supplying themselves with wholesale broadband access.

7.1.1.4. Price trends and pricing behaviour

It appears that, as a result of the competition faced by PTC at retail level and given the "retail-minus" rule imposed with the aim of preventing margin squeeze, the company has, on its own initiative, significantly reduced the prices of the "Rede ADSL PT" wholesale offer, giving viability to retail offers at more competitive levels.

7.1.1.5. International benchmarking

There is no comparable data, at a wholesale level that enables price comparison, given the wide range of offers and their options with respect to the supply of wholesale broadband access at EU level.

7.1.1.6. Countervailing negotiating power

In its 2005 analysis ICP-ANACOM concluded that the PT Group companies had strategic control over the conditions governing the supply of retail services.

The obligations imposed at the wholesale level and the interventions introduced were designed to reduce the incentives for anti-competitive behaviour.

Anti-competitive behaviour linked to the PT Group, albeit in other markets, is further noted; at that time the Group included ZON Multimédia, sanctioned by the CA.

7.1.1.7. Potential competition

Given the possibility of other operators besides PT Group emerging with wholesale offers of broadband access, the countervailing negotiating power of PT Group and ZON Multimédia is relatively less in this market.

7.1.1.8. Potential competition

With regard to potential competition, it should be emphasised that the possibility of access to the PTC conduits via the respective reference offer makes it easier for the alternative operators to develop their own networks, particularly fibre optic networks. The announcement by Sonaecom on 20.02.2008 of plans to invest 240 million Euros in NGN should also be noted.

Due to the fact that these are substantial investments involving economies of scale, it is expected that they will be focused, especially initially, on the area covered by the market under review, roughly coinciding with the major urban centres and coast where the population and economic activities are densely concentrated.

As such, it is expected that offers will be developed in the future that will lead to increased competition in this market.

7.1.2. Individual dominance: conclusion

According to the analysis of the criteria previously presented, ICP-ANACOM concludes that these are not likely to alter the conclusions giving basis to the market shares. Therefore, no operator is deemed to have individual dominance in the market for wholesale broadband access provision in "C areas".

7.1.3. Joint dominance

Paragraphs 3 and 4 of Article 60 of Law no. 5/2004 contain provisions concerning collective dominance, derived from the transposition of Article 14 and Annex II of the Framework Directive.

Article 14 of the Framework Directive provides a guide for the assessment of joint dominance, which must be carried out *"... in accordance with Community law and taking into the utmost account the guidelines on market analysis and the assessment of significant market power*."

Annex II of the Framework Directive states:

- *Mature market*
- *Stagnant or moderate growth in demand*
- *Low elasticity of demand*
- *Homogeneous product*
- *Similar cost structures*

- *Similar market shares*
- *Lack of technical innovation, mature technology*
- *Absence of excess capacity*
- *High barriers to entry*
- *Lack of countervailing buying power*
- *Lack of potential competition*
- *Various kinds of informal or other links between the undertakings concerned*
- *Retaliatory mechanisms*
- *Lack of or reduced scope for price competition"*

Accordingly, Annex II provides an analysis of the possibility of joint dominance focusing on the structural features of the market and how they encourage parallel or aligned anti-competitive behaviour[162].

In the analysis carried out by ICP-ANACOM consideration was given to the fact that there are structural features in the market which may favour some kind of coordination between the PT Group and ZON Multimédia. Particular account was taken, without prejudice to the completion of the spin-off, of certain informal links which persist between the two companies. Furthermore, as indicated in the position of ICP-ANACOM on the spin-off, the two companies have common shareholders.

Even in this respect, it was found that there are relations of interdependence between these two companies in terms of established contracts which remain in force after the completion of the *spin-off*, whereby there is potential for retaliation on the part of these two entities.

Nonetheless, several structural elements of the market have been identified which show that at present a position of joint dominance does not exist. In particular, this Authority notes that this particular market is still in development and cannot therefore be characterised as a fully mature market where demand is stagnant.

It is also evident that in these areas there is a strong presence of co-installed operators under the LLU and that these operators offer a significant increase in potential competition due to the fact that they can more easily initiate provision of a wholesale broadband access offer. This situation leads to an increase in the bargaining power of operators wishing to provide broadband access retail services based on an offer of this type and significant scope for the development of competition in the market.

In this regard, it was also considered that the geographical areas associated with this market are those with more appealing investment conditions, particularly due to higher income among end users and higher population density, with emphasis on the existence of relevant potential competition, not only from co-installed operators under the LLU, but also from operators who will develop offers using BWA.

Consideration was also given to the fact that this is not a homogeneous product, which is borne out by the existence of various types of local access, various traffic aggregation modes generated though these accesses and a plethora of related services such as VoIP and

[162] Cf. Whereas 26 of Framework Directive, "*Two or more undertakings can be found to enjoy a joint dominant position not only where structural or other links exist between them but also where the structure of the relevant market is conducive to coordinated effects, that is, it encourages parallel or aligned anti-competitive behaviour on the market..*"

IP TV, and so forth. It should be noted, moreover, that the wholesale "ADSL PT Network" has evolved in order to cater for the provision of various types of product. Some of the developments seen at the level of the "Rede ADSL PT" wholesale offer are also related to the development of different technical solutions for the provision of broadband Internet access services, showing that this is a service with a high potential for technological development.

It was concluded that, despite the existence of some factors that may favour coordination between the two companies, all other structural features of the market already mentioned suggest that at present, in the light of available information, there is no reason to believe that there is joint dominance between the PT Group and ZON Multimédia. Nonetheless, ICP-ANACOM will keep a close watch on market developments, bearing in mind those factors that favour or encourage any coordination between the entities specified.

Therefore, ICP-ANACOM concludes that there is no joint dominance.

7.1.4. Forward-looking analysis

ICP-ANACOM considers that all the factors which warrant the designation of SMP in the retail broadband access market in “C areas” will remain in the short/medium term until the next assessment of SMP[163].

7.1.5. Assessment of SMP: Conclusion

It is considered that the market for the supply of wholesale broadband access in “C areas” is competitive.

7.2. Wholesale broadband access provision in “NC areas”

7.2.1. Individual Dominance

The analysis of effective competition will begin with the calculation of market shares. This first stage will thus identify candidates with SMP.

The following is an analysis of the economic characteristics of the relevant market in which the degree of competition and potential competition between the established companies is to be assessed.

7.2.1.1. Market shares

The PT Group has over ⅔ of the accesses in this market, resulting in a market share of around70%, which is considerably higher than 40% - the threshold that has been used in past decisions of the EC as the value above which it may be considered that concerns about situations of dominance arise.

[163] The next SMP assessment will be carried out when: (1) something happens which significantly change competition conditions in the market and/or (2) the Recommendation is reviewed in relation to these markets; and/or (3) within 18 months.

Table 32 – Evolution of market shares: wholesale provision of broadband access in "NC areas"

	2005	2006	2007
PT Group	75%	76%	72%
ZON Multimédia	12%	10%	12%
Sonaecom (with Oni and Tele2)	1%	4%	5%
Cabovisão	11%	10%	10%
Vodafone	0%	0%	0%
Other	1%	2%	2%

7.2.1.2. Barriers to entry and expansion

PTC, as the universal service provider of electronic communications, has expanded its telephone network to less densely populated areas, even including some areas where costs could be greater than the benefits derived from providing services.

Supported over this network, the incremental cost of providing the "Rede ADSL PT" wholesale service is significantly lower than what would be incurred by an operator which built a dedicated root network for this purpose.

That is to say, due to economies of scale and scope, and given the scale and configuration of the PTC fixed network, this operator would benefit, if all other factors were equal, from unit costs which are below those of its competitors.

Thus, even with the possibility of accessing wholesale offers such as the reference offer for access to conduits or the RUO, in most of these areas there are substantial barriers to entry and expansion.

In conclusion, a new operator intending to expand its activity will be required to win a significant share of the market in order to be able compete with the incumbent operator in terms of infrastructure. However, the geographic area covered by this market is mostly characterised by low population density, making scaling difficult to achieve.

This situation was also found for PTC with regard to the "Rede ADSL PT" offer. In fact, although the offer was launched in late 2000, initially with coverage limited to certain areas of central Lisbon and Porto, full coverage of national territory was only achieved 6 years later, demonstrating that expansion into these geographical areas is not quick.

Accordingly, this criterion does not contradict the presumption of dominance that results from the calculation of market share - it strengthens it.

7.2.1.3. Vertical integration

As mentioned in other sections, the existence of vertically integrated companies may place non-integrated competitors at a competitive disadvantage, since market power may be leveraged from one market to another, especially when the integrated competitor provides the non-integrated competitor with a component of production or essential intermediate consumption. In such circumstances, it becomes more difficult for a non-integrated company to respond to the increase in demand resulting from a competitor increasing prices.

With regard to this market, it is emphasised that the PT Group alone consists of vertically integrated undertakings present in both the wholesale and retail markets. Therefore, if one of

these companies has SMP in an upstream market, it has the opportunity to transfer market power to the downstream markets, thereby affecting competition. In particular, if there is difficulty in securing inputs from the wholesale market or in obtaining these inputs at a competitive price, this may further increase the barriers to entry at retail level.

Accordingly, this criterion does not contradict the presumption of dominance that results from the calculation of market share.

7.2.1.4. Price trends and pricing behaviour

It appears that, as a result of the competition faced by PTC at retail level in the "C areas" and given the "retail- minus" rule imposed with the aim of preventing margin squeeze, and the implementation of harmonised prices countrywide, the company has, on its own initiative, significantly reduced the prices of the "Rede ADSL PT" wholesale service.

7.2.1.5. International benchmarking

There is no comparable data, at a wholesale level that enables price comparison, given the wide range of options at EU level.

7.2.1.6. Evidence of previous anti-competitive behaviour

In its 2005 analysis ICP-ANACOM concluded that the PT Group companies had strategic control over the conditions governing the supply of retail services.

The obligations imposed at the wholesale level and the interventions introduced were designed to reduce the incentives for anti-competitive behaviour.

There is also record of the existence of anti-competitive behaviour, sanctioned by the CA, particularly in markets situated higher up the value chain: access to conduits.

7.2.1.7. Countervailing negotiating power

In this market, operators have no countervailing negotiating power since, in addition to the conduit access and local loop access offers - which in these areas, require large investments, involving economies of scale and an investment over an extended period of time - there is no other offer available apart from the "Rede ADSL PT".

7.2.1.8. Potential competition

With regard to potential competition, it should be emphasised that the possibility of access to the PTC conduits makes it easier for the alternative operators to develop their own networks.

Due to the fact that these are substantial investments involving economies of scale, it is expected that they will be focused, especially initially, on the "C areas" which roughly coincide with the major urban and coastal centres where population and economic activities are densely concentrated.

Therefore, no extensive development of offers is expected that would increase competition in the geographic area covered by the market under analysis in the near future.

7.2.2. Individual dominance: conclusion

The PT Group market share, degree of market concentration, existence of barriers to expansion, lack of evidence (prices and other variables) proving the existence of effective competition amongst companies and lack of potential competition lead to the conclusion that the PT Group companies operating in this market have SMP (individual dominance).

7.2.3. Joint dominance

Since it has been concluded that individual dominance exists, there is no joint dominance in this market.

7.2.4. Forward-looking analysis

ICP-ANACOM considers that all the factors which warrant the designation of the PT Group companies operating in the retail broadband access market in "NC areas" as undertakings with SMP will continue in the short /medium term until the next assessment of SMP[164].

7.2.5. Assessment of SMP: Conclusion

It is considered that the PT Group companies operating in the wholesale broadband access market covering the "NC areas" have SMP in this market.

[164] The next SMP assessment will be carried out when: (1) something happens which significantly change competition conditions in the market and/or (2) the Recommendation is reviewed in relation to these markets; and/or (3) within 18 months.

8. IMPOSTION OF OBLIGATIONS IN THE MARKETS FOR THE WHOLESALE PROVISION OF BROADBAND ACCESS

With respect to the supply of wholesale broadband access it was considered that, due to the existence of different competitive conditions, there were grounds for defining two geographic markets:

5-C) The market for the supply of wholesale broadband access which encompasses the area covering exchanges where there is at least one co-installed operator and at least one cable distribution network operator and the percentage of households cabled by the principal operator in the area of the exchange is over 60%[165]

5-NC) The market for the supply of wholesale broadband access which encompasses the area covered by the remaining exchanges in national territory[166]

In the market for the supply of wholesale broadband access in "NC areas", it is further considered that the companies of the PT Group have SMP, enabling them to act independently of the parties which "participate" in the market concerned With respect to the market for the supply of wholesale broadband access in "C areas" it was concluded that no company has SMP.

Once it has been concluded that an undertaking holds SMP in a market, it is incumbent upon ICP-ANACOM to impose one or more regulatory obligations or to maintain or modify such obligations where they already exist[167].

According to the Guidelines[168] when it is concluded that a relevant market is subject to effective competition obligations may not be imposed in that market. It is noted that the same document states that "*if the NRA has previously imposed regulatory obligations on one or more operators in that market, the NRA must withdraw such obligations and may not impose any new obligation on that undertaking(s). As stipulated in Article 16(3) of the framework Directive, where the NRA proposes to remove existing regulatory obligations, it must give the parties affected a reasonable period of notice.*"

This is precisely the case of the provision of wholesale broadband access in "C areas", and it is very important to consider how existing obligations might be removed in an appropriate manner which does not adversely affect end users and stakeholders

Bearing in mind that:

(a) the two identified geographic markets associated with the supply of wholesale broadband access result from a single market identified in the analysis of 2005;

(b) the existing obligations are applied in a uniform manner in both the markets identified herein;

(c) as stated above, the analysis indicates that SMP persists in one of the markets, whereby obligations should continue to be applied, while in the other, there is no longer SMP, and so no obligations should be applied;

[165] Hereinafter referred to as the "market for the supply of wholesale broadband access in the C areas".
[166] Hereinafter referred to as "the market for the supply of wholesale broadband access in the NC areas".
[167] See Guidelines §21 and §114.
[168] See Guidelines §113.

it is considered that any analysis related to the imposition / removal of obligations in the wholesale supply of broadband access must begin with the consideration of the effective possibility of implementing a regulatory framework, with respect to existing obligations in these two markets.

In this regard it is noted that the geographic definition of markets in question is, among other factors, dependent on the existence of operators co-installed in the attendance points of the PTC network. There is a clear relationship between the development of the LLU and the dynamics of the identified geographic markets related to the supply of wholesale broadband access. It is noted that this dynamic is appropriate given the analysis set out in this document for the identified wholesale and retail markets. There is also alignment with the positions of the EC regarding the consideration of regulations imposed at higher levels of the vertical value chain associated with a particular service.

Considering that regulations imposed on the supply of wholesale broadband access can, to a certain extent, be divided into the different exchange areas of PTC and also considering that, as has been identified, the geographical separation of these markets is to some extent, dependent on the development of LLU in the same exchange areas, it is concluded that there is a practical possibility of applying different regulation to the geographic markets defined, given that the geographical exchange/attendance point areas with respect to the LLU and with respect to the “Rede ADSL PT" wholesale offer coincide.

ICP-ANACOM has analysed whether the possible application of regulation by different geographical areas at an attendance point level would result in some kind of barrier or restriction on the implementation of the operators' commercial policies. This is because, in a first analysis, it might be concluded that the level of granularity of the geographical area would be too low, resulting in a lack of continuity in the geographical implementation of regulation. Analysis of this issue has led to the conclusion that the current flexibility in terms of the commercial policies of operators is maintained.

It is noted that if an operator only intends to provide LLU-based offers, as was the case of Tele2 in 2007, it can continue to select the exchange areas in which it plans to develop this type of offer. The solution, by which final consumers are informed as to whether or not they are covered by the offers provided, may continue to be implemented as it is today. An end user can make a provisional check using their address or fixed telephone number (where applicable), and with subsequent confirmation provided by the operator which provides the service if the initial information is confirmed.

It must be ascertained, however, if the quality or the level of detail of the information which the operators use can be improved so that they are able to provide a more reliable and detailed provisional check. This issue is being examined by ICP-ANACOM.

If the operators intend to provide a set of offers to end users, based on the LLU and the "Rede ADSL PT" wholesale offer, this provision could continue to follow current commercial policy (the provision of offers with different characteristics by geographical areas, according to whether or not the operator has invested in the LLU). It is noted that these different geographical areas correspond exactly to the coverage area of exchange areas and is also in line with the definition of markets established in this document. In this situation, as now, the end user can easily identify what type of offer applies to his/her particular situation by carrying out the provisional check already mentioned, subject to later confirmation from the operator providing the service.

In the imposition, amendment and removal of obligations in these markets, ICP-ANACOM takes into consideration the same principles as already presented in "Section 6. ". As mentioned, these principles result from documents of the EC, the ERG, and Law no. 5/2004 and also from the regulatory principles and objectives established with respect to this Authority.

Finally, ICP-ANACOM notes with satisfaction that there is a market (or a part of a previously defined market) where it is appropriate to remove the obligations which were imposed on the PT Group. This results from an increase in competition that has brought benefits to end users, due to the development of various wholesale offers consequent, at least in part, to the obligations which were imposed on the companies of the PT Group in terms of wholesale services with respect to conduit access, the LLU and the "Rede ADSL PT" offer. The development of effective competition is, indeed, one of the ultimate goals of imposing obligations in markets.

Accordingly, in light of the above and calling attention to the fact that it has been noted that there are markets where regulation should continue, it is to be made clear that ICP-ANACOM will make the imposition and enforcement of these obligations in a detailed and rigorous manner a priority. It is ICP-ANACOM's view that the successful accomplishment of this objective will be an important step towards the development of further competition in the markets where regulation is maintained, ensuring advantages and benefits for end users and for operators, resulting in net gains in social well-being.

8.1. Current obligations

As noted above, on 24 June 2005 ICP-ANACOM approved the final decision on the analysis of the market concerned and taking utmost account of the Guidelines, the Authority concluded that the PT Group had SMP in the market and so it was appropriate, proportionate and justified to impose the obligations contained in Table 33 (all obligations were grounded in Article 66 of Law no. 5/2004, bearing in mind the lack of effective competition in the market).

Table 33 – Obligations imposed on companies identified with SMP in the relevant market - Market 12

Obligation	Wholesale provision of broadband access, including broadband access services supported over the public switched telephone network and cable distribution networks
Access to and use of specific resources networks	▪ Access to PSTN at different points ▪ Negotiate in good faith with companies requesting access ▪ Not withdraw access already granted to determined resources
Transparency in the publication of information, including reference offers	▪ Publication of the broadband access reference offer ("Rede ADSL PT"), with clear identification of amendments enacted between versions, with inclusion of SLAs and compensation for non-compliance
Non-discrimination in the provision of access and interconnection and in the provision of the respective information	▪ No undue discrimination in providing network access ▪ 30 days notice of alterations to wholesale offers – extended to 2 months for significant changes ▪ Launch of retail offers influenced by the existence of equivalent wholesale offers in the "Rede ADSL PT" ▪ Submit information on maximum, average and minimum deadlines for the delivery and repair of faults and the degree of availability (broken down by type of installation and operator)
Separation of accounts for specific activities related to access and / or interconnection	▪ Costing system and accounting separation
Price control and cost accounting	▪ Set cost-oriented prices (broadband access services via the public switched telephone network) ▪ Price control ("retail-minus")
Financial reporting	▪ Provision of accounting records (AAS) including data on revenue from third parties

These obligations were imposed at a national level, covering both of the markets identified and analysed in the present analysis. As mentioned above, in the following sections, analysis will be made as to whether existing obligations in the market where PT Group still holds SMP merit alteration, and the most appropriate way in which the obligations imposed in the 2005 market analysis may be removed in the geographic market where SMP no longer exists.

It is noted that the obligations of non-discrimination and price control achieved through a "retail minus" rule were imposed with reference to the retail offers of PT Group, which at the time included ZON Multimédia. That is, in practical terms, the launch of retail offers by ZON Multimédia was conditional on the existence of equivalent wholesale offers in the "Rede ADSL PT" offer. The "retail minus" rule also used the retail broadband access offers of ZON Multimédia as a reference. With the completion of the spin-off of ZON Multimédia and given that, following the analysis of this market, ZON Multimédia is not deemed to have SMP, the above position of ICP-ANACOM with regard to the spin-off of ZON Multimédia and the impact on market analysis is confirmed, in accordance with determination of 3 April 2008[169]. That is, the above obligations that previously applied to ZON Multimédia cease to apply, not only because it is no longer part of the PT Group, but also because, at this time, it does not have SMP in any of the markets considered ("C areas" and "NC areas").

[169] Available at http://www.anacom.pt/template31.jsp?categoryId=272931.

8.2. Imposition of obligations on the provision of broadband access in the "NC areas"

8.2.1. Access to and use of specific resources networks

8.2.1.1. Considering the possible amendment of the obligation

It should first be reaffirmed that, according to the analysis undertaken with respect to the definition of the market and assessment of SMP, it is not expected that the use, installation and widespread extension of resources will be technically and economically feasible in the geographical areas concerned prior to the next analysis of market, where such resources would compete with the PSTN infrastructure of the companies of the PT Group. As such the development of competition in the market through the development of alternative infrastructure is not possible.

Therefore, as mentioned in the case of the supply of wholesale broadband access, considering existing incentives, it is expected that a vertically integrated company with SMP in the wholesale market might try to restrict access to their products and wholesale services so that new entrants in the retail market lose market power at retail level. Given the size of the PT' Group's network and the consequent economies of scale that companies in this group have in providing services, refusal to supply wholesale broadband access services, or its provision under unreasonable conditions, severely restricts competition in the downstream markets.

In this respect consideration is given to the comments of the ERG[170] regarding the suitability of there being an obligation to grant access to the network resources of the SMP operator under reasonable and appropriate conditions: "*The availability of a bitstream product on reasonable terms gives entrants access to the incumbent's economies of scale in the local access network, which is the root cause of their market power. Together with appropriate access remedies it allows entrants to build a customer base for their services which in turn may give the critical mass that allows those competitors the chance to invest in their own infrastructure so that competition would become self sustaining*".

In this situation it must considered that the obligation to grant access has already been imposed and implemented whereby its technical and economic feasibility has been demonstrated. Here, relevant questions do not arise with respect to possible risks to investments made to provide access to the network resources in question. As in the situation of the wholesale provision of local loop access, consideration must be given to the investments made by the SMP operator and other operators who have invested in this service, safeguarding its maintenance as appropriate and promoting the protection of competition over the long term. In this regard it is noted, as mentioned earlier, that when considering the possibility of maintaining or imposing an obligation to provide access and the proportionality of that decision, ICP-ANACOM must account the provisions of paragraph 4, Article 72 of Law no. 5/2004, according to which the assessment of the proportionality of this obligation shall be made subject to the analysis of "*the technical and economic viability of using or installing competing facilities, in the light of the rate of market development and taking into account the nature and type of interconnection and access involved; the feasibility of providing the proposed access, in relation to the available*

[170] See Revised ERG Common Position on the approach to appropriate remedies in the ECNS regulatory framework ("Remedies" document), Section 4.2.3.

capacity; the initial investment by the facility owner, taking into account the risks involved in making such investment; the need to safeguard competition over the long term".

In light of the above, this Authority continues to hold the position that maintaining the obligation of providing access at different points of the network, enabling control over the main features of the offer by the OSPs will help promote greater certainty and visibility, as well as greater competition in the provision of broadband services over the long term. This leads to an ultimate benefit for end users and gives the parties involved the opportunity to optimise the network infrastructure in their possession in addition to the existing downstream offers.

That is to say, any removal of the obligation to grant access to and use of specific network resources would lead to a significant reduction of competition in the retail broadband access market, particularly in areas where there are no LLU-based offers, to the detriment of end users and alternative operators.

It should be noted that, although PTC launched the "Rede ADSL PT" wholesale offer on its own initiative at the end of 2000, before the companies of the PT Group started to provide retail ADSL services, respecting the obligation of non-discrimination to which it was subject at the time, this Authority has been forced to intervene with respect to the conditions of the offer on several occasions to ensure reasonable and appropriate conditions of access.

These interventions have not only related to the specific conditions under which access is granted but also to the components of the network to which access should be granted.

Note that in this case the interventions of this Authority led to the extension of access points in the "Rede ADSL PT" wholesale offer to the ATM network[171] and to the provision of access to the wholesale provision of an exclusive line for broadband services ("Naked DSL")[172]. In fact, given the characteristics of this market where in practice PTC is the only operator with infrastructure, it is essential that users residing in more sparsely populated areas and less privileged populations are able to benefit from greater competition and see the total cost of broadband internet access reduced. Therefore it was concluded that the provision of a "Naked DSL" offer could be important to enable people living in these areas to have access to a greater range of retail offers (also at a lower price.

It is considered that the maintenance of access at different points of the network constitutes an important additional step towards the promotion of investment in "own" infrastructure, particularly through use of the LLU. This position is in line with the principle that the SMP company should submit an offer that is sufficiently unbundled to ensure that products / services that are not necessary for the service requested do not have to be purchased.

In line with this approach, and considering all the arguments presented in the public consultation on the wholesale provision of the naked digital subscriber line[173], it was concluded that the provision of a "Naked DSL" wholesale offer on reasonable terms should be included, as happened with the granting of access to the ATM network, as a specific obligation related to the wholesale market under consideration.

[171] See decision at http://www.anacom.pt/template31.jsp?categoryId=209542.

[172] See documents related to the public consultation carried out with respect to this issue at: http://www.anacom.pt/template15.jsp?categoryId=239262.

[173] See Consultation and Report on the public consultation on naked digital subscriber lines ("Naked DSL") at http://www.anacom.pt/template31.jsp?categoryId=248782.

In this respect note is made of the position of the ERG presented in the document concerning the imposition of remedies in the relevant markets[174] in which it is stated that "*as bitstream access can be granted at various points of the network hierarchy (points of handover of traffic), the points in the network at which the wholesale broadband access will need to be supplied will depend on national circumstances such as the network topology and the state of broadband competition, but the following characteristics should be kept in mind: bitstream access is an access product that allows new entrants to differentiate (directly or indirectly) their services by altering (directly or indirectly) technical characteristics and/or the use of their own network, which is definitely more than resale, where the incumbent is in control of the technical parameters and manages the service, whereas the new entrant can only market a commercially similar service*". In the same paragraph it is said that "*when defining the appropriate point of access, NRAs should take the perspective of market parties. The NRA thus has to assess the reasonableness of the requested points of handover asked for by the new entrants and weigh them in relation to the possibilities of the network hierarchy. Furthermore, the state of competition, i.e., the number of market players, the existence of alternative networks and infrastructure and the long run benefit for the consumer of having more choice have to be taken into account*".

It is also important that the "Rede ADSL PT" offer evolves to include more efficient transport and access technologies, particularly when these are used by PTC to provide equivalent retail services. This is the case of broadband access offers based on Ethernet technologies, an option that has been recently introduced into the offer and which should be provided on a non-discriminatory basis.

Indeed, and in keeping with the above, the ERG[175] upholds that "t*o the extent that it is reasonable and relevant, access should be available at the regional delivery handover point when possible for all efficient technology options: for example, IP, ATM, Ethernet.*"

This aspect may come to assume greater importance in the context of evolution towards NGN, which will be examined in a separate document and with respect to which the possibility of imposing, under certain circumstances, a wholesale offer for access to optic loops may be assessed.

8.2.1.2. Conclusions

Taking into account the above factors as set out in paragraph 4 of Article 72 of Law no. 5/2004, ICP-ANACOM concludes that, based on the experience accumulated from supervising the LLU, the development of these products and on the analysis provided throughout this document, it has not been fully established that it is feasible for the PT Group to grant access to network resources that constitute the wholesale provision of broadband Internet access.

The aforementioned Article 72 of Law no. 5/2004 provides for various types of obligation which may be imposed Furthermore, and in light of that Article 72, paragraph 2 of Law no. 5/2004, it is the position of ICP-ANACOM that the PT Group shall remain subject to the obligations of negotiating in good faith with companies that request access and not withdraw access to the resources in question where this has already been granted.

[174] Revised ERG Common Position on the approach to appropriate remedies in the ECNS regulatory framework ("Remedies" document), Section 4.2.3.
[175] See ERG Common position on Wholesale broadband access.

In line with the above, this Authority considers that all obligations related to granting access to and use of specific network resources imposed pursuant to the decision of 24 June 2005 remain reasonable, appropriate, proportionate and justified. Consequently all these obligations shall be maintained. In addition, considering the analysis contained in this document all the whereases and arguments set forth in the public consultation on the wholesale provision of an exclusive broadband line[176], it was considered that the provision of a "Naked DSL" wholesale offer on reasonable terms should be included as a specific obligation related to the wholesale market under consideration.

In this regard, ICP-ANACOM may intervene in the implementation of this obligation and as a result of the inclusion by PTC of conditions on the provision of the "Naked DSL" functionality in the "Rede ADSL PT" wholesale offer, in order to amend some of the conditions set out therein, so as to better adapt them to the interests of the market. This will be enacted in a separate document. In this respect there are relevant aspects such as the possibility of:

- Direct installation of a "Naked DSL" access on active loops without ADSL;
- The declaration of termination of FTS to be presented by the final customer to PTC to provide for the maintenance of ADSL service; or
- Implementation of synchronization between the provision of "Naked DSL" functionality and portability.

Consideration will also be given to the references of the ERG regarding the appropriateness of the imposition of intermediate levels of access to the network of the SMP operator, supported over various technology platforms, which is governed by the principles considered with regard to the imposition of obligations in the relevant markets, in particular, the promotion of efficient investment in infrastructure by alternative operators: "*Due to the time scales involved, which will differ according to market conditions within each Member State, other remedies may need to be imposed to provide a sufficient number of intermediate steps for new entrants. For example, certain backhaul services (ATM backhaul, ATM broadband conveyance, other backbone transport) may be required, according to national circumstances. Over time, access products may change. More generally, when implementing the ladder NRAs need to adjust ("customise") it in terms of timing, pricing and product design to national circumstances and take into account structural/exogenous factors such as disparity of population density or the existence/non-existence of alternative network infrastructures as well as the development of the market"*[177].

It is noted that, as with the supply of wholesale network infrastructure access (physical) at a fixed location, the imposition of an obligation of access will not in itself be sufficient. It is considered that in particular it may be necessary to maintain additional obligations pursuant to Law no. 5/2004 in order that potential competition problems such as excessive pricing or discriminatory practices may be avoided, ensuring the existence of access under reasonable conditions in line with those existing in the markets relevant to this analysis.

There may also be a need to adapt the "Rede ADSL PT" offer in order to accommodate faster services, for example, VDSL and other services that may emerge with the development of NGN.

[176] See Consultation and Report on the public consultation on naked digital subscriber lines ("Naked DSL") at http://www.anacom.pt/template31.jsp?categoryId=248782.

[177] See Revised ERG Common Position on the approach to appropriate remedies in the ECNS regulatory framework, Section 4.2.3.

These issues are addressed in the next sections.

8.2.2. Non-discrimination

8.2.2.1. Consequences arising from any removal of the obligation

As mentioned in the 2005 analysis of the provision of wholesale broadband access and in the analysis contained in this document of the supply of wholesale network infrastructure access (physical) at a fixed location, when an obligation of access is imposed there is a tendency for there to be an incentive for the SMP company to discriminate between the offers made available to their own departments or subsidiaries or affiliated companies and those made available to other companies. This competition problem includes the discriminatory use or retention of information, discrimination through quality, delaying tactics and undue demands, besides the possibility of discrimination in terms of pricing.

As a result of these actions the retail activities of alternative operators would be jeopardised, which may lead to a reduction in the quality of services provided by the alternative operators at the retail level or an increase in the costs of these operators compared to the costs of the retail division of the SMP operator. Consequently the competitiveness of alternative operators at a retail level is substantially reduced, providing a way in which the power of the SMP operator in the wholesale market might be leveraged into the retail market.

As an example, a situation could be envisaged where an operator with SMP in the market to supply wholesale broadband access discriminates against alternative operators in favour of their own division operating in the retail market for broadband internet access. Poorer service than that provided to the retail division of the SMP operator means that the alternative operators cannot set up a new access or guarantee the repair of faulty within periods of time equivalent to those offered by the retail division of the operator with SMP in the retail market. This would lead to a reduction of effective competition in the retail market which is clearly to the detriment of the alternative operators and end users.

So, as provided in Articles 66 and 70 of Law no. 5/2004[178], ICP-ANACOM takes the position that it is objectively justifiable to maintain the obligation of non-discrimination to which PTC is subject with respect to the "Rede ADSL PT" offer, in order that the PT Group may not, in similar circumstances, discriminate in favour of its own services or its subsidiaries or affiliated companies. As demonstrated, given the existing incentives, the size of the PT Group in this market and its vertical integration, the condition of non-discrimination is particularly important, since it prevents the leveraging of market power into adjacent markets.

Likewise, it is the position of ICP-ANACOM that the specifications of the non-discrimination obligation as defined by this Authority continue to be suitable, reasonable and proportionate. Accordingly, the view remains that it is essential for the SMP company to provide interested companies which provide broadband access networks and services and ICP-ANACOM with at least 30 days advance notice of any alteration made on its own initiative to the conditions of the wholesale offer, thereby allowing these companies to adapt or appropriately publicise their respective retail offers. Furthermore, in exceptional situations, where the company with SMP makes changes to the wholesale offer which impact the offers of the OSPs, notably by the introduction of new classes of access, changes to the speeds of existing access classes, changes

[178] Article 66 sets out the powers of the NRA with respect to the imposition, maintenance, alteration or removal of obligations. Article 70 describes, in particular, the obligation of non-discrimination.

to the prices of offers, changes to the contention rate or to other technical characteristics and changes involving the migration of customers or discontinuity of offers, the obligation is that 2 months notice prior to the execution of such alterations must be given. In line with this position, it remains appropriate and necessary to maintain the obligation that PTC must provide timely notification to the alternative operators if pilot tests are to be carried out, so that these operators are given the opportunity to participate in such tests.

In this market, where there is no alternative infrastructure and while the OSPs lack the opportunity to control the features of their offers through wholesale offers, particularly in terms of speed, if the companies of the PT Group launch a retail broadband offer over any of the technologies/distribution networks encompassed by the wholesale broadband access market, it remains necessary, justified and proportionate to ensure that, prior to such launch, wholesale offers are published that allow the replication of such offers by the OSPs. In line with the above, a minimum defined period of 30 days is maintained, which period shall commence on the publication of the respective wholesale offers before the commercial launch of the retail offers, except in the case of alterations made to wholesale offers which impact the alternative operators, in which case this minimum period is extended to 2 months, as stated above.

Obviously, the existence of the obligation of non-discrimination implies that the company with SMP is required to provide the other companies that offer broadband access networks and services the same conditions as those offered internally, for similar services. This means, more specifically, that there can be no difference between levels of performance with respect to the quality of service, such as the times taken to supply the service and repair faults, provided to competitors and of similar activities of the dominant company, based on the practice in both the wholesale market in question and in the associated retail market.

It should be noted that the obligation of non-discrimination and the existing specifications with respect to compliance therewith implies lower costs and is proportional. As it is appropriate in order to ensure conditions of equality and competition, it should be maintained.

It has been explained previously that to ensure that compliance with an obligation of non-discrimination, it is important that it is accompanied by the imposition of obligations of transparency and separation of accounts.

8.2.2.2. Other arguments for keeping the obligation

In this document it has already been mentioned, with respect to the imposition of obligations in the market for the wholesale provision of unbundled access, that the ERG argues[179] that there are several ways in which competitors may be placed at a disadvantage by discrimination with respect to the quality of services provided by a wholesale operator with SMP, arguing therefore for the imposition of an obligation of non-discrimination.

8.2.2.3. Conclusions

Considering the incentives to engage in discriminatory behaviour in terms of provision of access to and use of specific network resources and the consequences of such discrimination in the markets, it is considered that the maintenance of this obligation is justified, appropriate and proportionate in the light of existing (reduced) costs.

[179] Revised ERG Common Position on the approach to appropriate remedies in the ECNS regulatory framework ("Remedies" document).

8.2.3. Transparency

8.2.3.1. Consequences arising from any removal of the obligation

It has already been stated that the obligation of transparency is a natural complement to the obligation of non-discrimination, enabling the detection of any existing discriminatory behaviour. For this reason, it has been affirmed that if the obligation of transparency were removed, such removal would significantly affect the ability to detect and prove discriminatory behaviour, which could compromise the effectiveness of the obligation of non-discrimination and consequently allow a resurgence of the factors stemming from dominance. Subsequently it is expected that the problems associated with such dominance would arise, negatively impacting the markets.

Accordingly, it is the position of ICP-ANACOM that the obligation of transparency be maintained Furthermore, it is considered that in this market, this obligation must be associated with (the maintenance of) an appropriate and easily accessible reference offer, containing all the information necessary for alternative operators which use or plan to use the wholesale services concerned to be able to do so visibly and efficiently.

It is the position of ICP-ANACOM that the information currently gathered under the "Rede ADSL PT" wholesale offer generally remains relevant and appropriate, and so it should continue to be submitted to this Authority. However, there are some simplifications that can be introduced, resulting in a significant reduction in the amount of information submitted without detracting from the ability of ICP-ANACOM to carry out the analyses which it considers necessary in order to carry out proper supervision of the market.

As such, it is considered that information need no longer be gathered on minimum time periods associated with the installation and all the time periods associated with the termination of broadband access.

In addition, it is evident that, contrary to the stipulations of the obligations imposed by this Authority, PTC is currently not submitting itemised information on the accesses according to the type of aggregated traffic carried in local accesses (IP or ATM bundling). This situation should be rectified by PTC.

Considering the recent introduction of the "Naked DSL" functionality and taking into account that this access has characteristics which differ from those of normal accesses and that it is important to supervise the development of this functionality in detail, it is also considered that data on the number of accesses provided by PTC must include itemised information on "Naked DSL" accesses. With respect to the "Naked DSL" functionality, in addition to information on the number of accesses provided by PTC, itemised information should also be provided on installation times for this type of access and the time taken to change local access with FTS POTS into "Naked DSL" accesses (given that the periods established in the wholesale offer are different from the periods established for other types of accesses).

The remaining information on quality of service, including information about times for fault repair, should continue to be delivered on an aggregated basis for all accesses Nonetheless, if the number of complaints about the quality of the service provided for any of the types of local accesses becomes significant, or if such action is deemed appropriate to prevent discrimination in the provision of wholesale services over the various types of existing

accesses, this Authority may still decide to establish the scope/provision of information in itemised form.

Finally, considering the importance of taking into account the provision of relevant retail services, as stated above, in order to monitor the possible existence of discrimination, it is the position of ICP-ANACOM that the companies of the PT Group which use the "Rede ADSL PT" wholesale offer should provide information on installation[180] and repair times[181] for the broadband accesses and retail services which it provides (in itemised form).

This position will be detailed and implemented through a separate determination, within the scope of the publication of the SLAs (*Service Level Agreement*s).

8.2.3.2. Other arguments for keeping the obligation

Under Article 67 of Law no. 5/2004, the NRA may require the publication, in an appropriate manner, of information relating to the provision of access and interconnection of the operator, in particular, accounting information, technical specifications, network characteristics and terms and conditions of supply and use, including prices.

In accordance with Article 68 of the same law, the NRA may determine, particularly for those companies that are also subject to obligations of non-discrimination, the publication of reference offers of access, including the manner of their disclosure.

It is noted that the requirement to publish a reference offer has two main objectives: (i) to contribute to transparency in the monitoring of potential anti-competitive behaviour and (ii) to publicise the terms and conditions under which other companies may acquire wholesale access services. The publication of a reference offer will further allow agreements to be negotiated more quickly. This plays an important role in the prevention of possible conflicts and increasing the confidence of purchasers of wholesale services, insofar as it helps ensure that such purchasers are fully aware of all the key conditions associated with the provision of the service, and contributes to the assurance that such services are provided on a non-discriminatory basis.

Accordingly the PT Group will continue to publish the reference offer for broadband access (currently the "Rede ADSL PT" offer) on its website and keep this offer up to date, thereby contributing to increased visibility with respect to the conditions of supply. The PT Group will further clearly indicate changes effected in the different versions of the offer. In order to ensure non-discrimination and transparency, the reference offer shall also include SLAs and details of compensation due in the event of non-compliance with the levels agreed.

Once again reference is made to the position of the ERG in terms of the importance of supporting the obligation of non-discrimination through an obligation of transparency.

The ERG states in particular that minimum levels quality be defined for wholesale services, ensuring their enforcement through the periodic provision/ disclosure to the NRA, and, where appropriate, to other operators and end users, as to the levels of performance achieved with respect to the quality of the services encompassed by the wholesale offers.

[180] Average and maximum time for the installation of broadband accesses, for 100% and 95% of occurrences.

[181] Average and maximum time to restore the broadband service, respectively for 100% and 95% of occurrences (in linear time and in working time).

It is also noted that the ERG highlights that it is important that the reported levels of performance allow for services provided to the alternative operators to be distinguished from services provided by the operator with SMP to its own companies, in order to monitor compliance with the obligation of non-discrimination.

In this respect and according to the ERG, in the case of the supply of wholesale broadband access, the minimum comparative criteria to be considered between services provided with respect to the offers and those services provided downstream, are the levels of service associated with the service provided at retail level.

8.2.3.3. Conclusions

Following the imposition of obligations to grant access and non-discrimination, ICP-ANACOM concludes that the imposition of the obligation of transparency is a necessary and proportionate measure in order to confirm the principle of non-discrimination, which is justified and has lower implementation costs insofar as only the publication of information needed to ensure the absence of conditions adverse to competition is required. By promoting the application of this kind of obligation, it is ensured that:

(a) relevant information is provided to interested parties in due time, promoting greater visibility, security and certainty associated with the environment in which the companies seeking access develop their businesses and facilitating market entry, which ultimately benefits competition and the end user;

(b) there is less information asymmetry between the regulator and the regulated company and better enforcement of the obligation of transparency.

Considering this analysis, it is concluded that the obligation of transparency should be maintained. In particular, it is concluded that, as in the case of the market for the wholesale provision of unbundled access, its removal would jeopardize the effectiveness of the obligation of non-discrimination, to the possible detriment of the relevant markets involved.

Here, too, it is concluded that the maintenance of a reference offer which contains all the necessary information in forms that are appropriate to the efficient procurement of the wholesale services concerned is essential for the proper functioning of the wholesale market for the provision of broadband Internet access. It is likewise concluded, also in light of the comments and conclusions set out in the section on the imposition of the obligation non-discrimination, that the ease of accessibility to the offer, prior knowledge and identification of changes to the offer are important conditions for the proper enforcement of the transparency obligation. As such it is concluded that the offer should remain available on the web site of the PT group, should duly identify changes effected and give the market notice of such changes one month in advance of the date on which they are due to be implemented.

It is also concluded that the way in which the levels of performance in respect of the quality of service of wholesale offers are reported to the NRA, to the operators and end users is very important, in order that there is effective enforcement of the obligation of transparency. ICP-ANACOM has examined this issue in detail, taking into account the common positions of the ERG.

In this respect, it was found that the information compiled in relation to the current "Rede ADSL PT" wholesale offer generally continues to be relevant and appropriate, while there are

some simplifications that may be introduced, which will be the subject of a separate analysis and decision.

8.2.4. Price control and cost accounting

8.2.4.1. Consequences arising from any removal of the obligation

Facing a market where: (i) there is no effective competition, (ii) there are relevant barriers to entry, (iii) the development of competition is not expected and (iv) in which the operator with SMP can act independently of other market agents, it is expected that this operator has every incentive to set prices for wholesale offers at a level significantly higher than the costs incurred through the provision of the services.

In these circumstances, the removal of the obligation of price control and cost accounting would result in higher (excessive) prices for this essential input for the competition which could prevent the development of sustainable competition and simultaneously motivate both the SMP operator and the operators who are granted access to the network to make inappropriate and inefficient infrastructure investments.

In the absence of the obligation of price control and cost accounting, the NRA will have many problems ascertaining whether wholesale prices are set in line with the costs incurred by the SMP operator. Difficulties will arise with respect to the appropriateness of the pricing level defined and with respect to the structure and composition of the wholesale tariff.

This absence could also give rise to a lack of consistency in wholesale prices (between service classes or between the different modes of the "Rede ADSL PT" wholesale offer) which may result in some operators being put at a disadvantage in comparison to others, depending on the type of services which they offer, with no real grounds for such a situation.-{}-

Without effective control of these issues it can also be expected that the SMP operator has no real incentive to achieve increases in efficiency and cost savings.

Furthermore, the existence of inconsistency and inefficiency in pricing at wholesale level prevents the operators from providing retail services from developing truly competitive services, which ultimately jeopardises the interests of end users.

If it was decided to amend the obligation under analysis in a way that removed or significantly limited it, another major problem could arise: regardless of the level at which wholesale prices are set, there is always the possibility that the operator with SMP might engage in practices that result in the margins of alternative operators being squeezed, if these practices are not ex ante controlled by the NRA.

A margin squeeze ultimately leads to the alternative operators eventually being forced out of the retail market, giving impetus to the transfer of the situation of wholesale market SMP to the retail market. At the end of the day the long term effect will be to harm the end users.

To sum up, any removal of the obligation of price control and cost accounting could lead to significant damage to the wholesale broadband access supply markets - in “NC areas” - and the associated retail markets, particularly in the retail market for broadband Internet access. This sort of damage would have a significant and widespread impact on the alternative wholesale operators and end users and leading to incentives for inefficient and inappropriate investment.

8.2.4.2. Other arguments for keeping the obligation

Article 74 of Law no. 5/2004 allows the NRA to impose obligations of cost amortisation and price control[182], where a potential lack of effective competition leads to the prices being maintained at an excessively high level or the application of margin being squeezed to the detriment of end users.

It is noted that, as mentioned in the analysis conducted throughout this document, the access networks used for the provision of broadband services are characterised, with respect to the market under review, by a lack of effective competition, while the existence of high entry barriers indicate that there is little likelihood of future competition. In the absence of effective competition, the SMP company has little incentive to reduce costs and operate efficiently, since these high costs can be passed on to the wholesale customers through excessive prices and ultimately to consumers who have no alternative choice.

Under Law no. 5/2004, ICP-ANACOM is charged with ensuring that the mechanisms of cost amortisation or the methodologies used for setting prices promote efficiency and sustainable competition, maximising benefits for the consumer. The prices available in comparable competitive markets may also be taken into account here.

In relation to this it is noted that, given the lack of current and prospective competition, the objective of price regulation should be to provide competing companies with network access for the provision of retail broadband at prices that would be charged were the market in fact competitive, while allowing the company with SMP to obtain a reasonable rate of return on its investments.

ICP-ANACOM has regulated the price of the "Rede ADSL PT" offer with reference to a rule of "retail-minus" whose methodology has been updated and clarified by determination of 3 October 2007[183]. The adoption of this measure has led to a reduction in the prices of individual offers (retail and wholesale), with obvious advantages in terms of competition and end-users.

Obviously these reductions in prices have occurred because of pressure exerted on the companies of the PT Group, initially by the retail offers of broadband access based on the LLU - and, to a lesser extent (geographical) by retail offers of broadband access from the cable distribution network operators - then later, following the conclusion of the spin-off of ZON Multimédia, also due to pressure exerted by the offers of broadband launched in the meantime by ZON Multimédia.

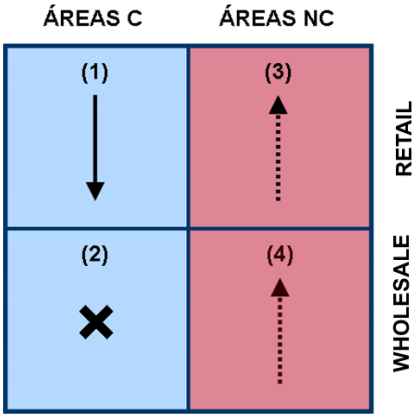
These offers are naturally mostly available in the “C areas”. The question that arises with the implementation of a "retail-minus" rule in “NC areas” is whether it will have the same degree of effectiveness in terms of reducing wholesale and retail prices, given the fact that PTC faces only limited competition from operators based on the LLU and cable distribution network operators. In fact, the companies of the PT Group apply uniform pricing throughout the national territory. Therefore, provided that this practice is maintained and in the light of the competition faced by the companies of the PT Group in “C areas”, in the event that these companies decide to reduce the price, the reduction will be to an equal amount in “C areas” and in remaining areas. This means that the end users in “NC areas” can also benefit from the existence of competition in “C areas”.

[182] Including the obligation of cost orientation of prices and the obligation to adopt cost accounting systems, for the purpose of providing specific types of access or interconnection.
[183] See http://www.anacom.pt/template31.jsp?categoryId=254403.

In terms of the "Rede ADSL PT" offer and without prejudice to the conclusions of the market analysis and the obligations with respect to “C areas”, in “NC areas” the price of this wholesale offer has also fallen, in view of the defined margin.

However, PTC may on its own initiative and taking into account the business strategy most suitable to its circumstances, set lower retail prices in areas where it faces greater competition (“C areas”) while keeping prices higher in those areas where competition is lower (“NC areas”). That is, in “NC areas” PTC could raise retail prices and increase the price of the "Rede ADSL PT" offer, and still be in compliance with the "retail-minus" rule (see Figure 11).

Figure 11 – Existence of indirect price constraints



In the “C areas” the competitive pressure is due to incentives to lower retail prices (1). As the obligation of wholesale provision of broadband access is removed, the impact of this retail price reduction on the wholesale prices (2) has no practical application. Any behaviour not in harmony with the competition laws is appraised by the CA.

There is less competitive pressure in the “NC areas” (3), and there may not be any incentives to lower retail prices to the levels that may exist in the “C areas”. PTC can also decide to raise retails prices in the “NC areas”, and consequently increase the wholesale price provided this is compatible with the “retail-minus” rule”.

The threat of new operators entering the market, by investing in LLU, may not be credible in parts of these areas, since the population density and household income cannot justify the investment either by cable distribution network operators or by beneficiary operators of the LLU.

It is held that the existence of tariff homogeneity (in retail and wholesale prices) in the “NC areas” could be a way of guaranteeing that the users living in regions where there is no competition might benefit from the indirect effects of the competition in the “C areas”. But the imposition of an obligation of this nature, especially in the retail segment, does not seem to be possible. So as there are exchange areas in the “area NC” with co-installed operators or areas covered by cable distribution network operators who represent around 85% of the broadband access in these zones it may be expected that there is also some pressure on the retail market in these areas. This will reduce the PT Group’s incentives to raise retail and, consequently, wholesale, prices. Even so, if the ICP-ANACOM considers that the interests of users in these zones are being harmed it may impose obligations of wholesale price orientation for those costs in the wake of a detailed analysis of recurrent costs, in particular on forward-looking long-run incremental cost models (FL-LRIC), bearing in mind the operation of an efficient operator.

This situation could raise issues of social cohesion that may be addressed by establishing a rule that impedes prices increases for the “Rede ADSL PT” offer, with particular reference to the prices of the offer in previous years or through interventions in other areas. ICP-ANACOM

will also closely examine the costs of the "Rede ADSL PT" offer, not setting aside the imposition of an obligation of cost orientation of prices. Forward-looking long-term incremental cost models (FL-LRIC) may also be adopted in these circumstances, bearing in mind the operation of an efficient operator.

Nonetheless, it is evident that, if appropriate and necessary, it remains possible to intervene in the setting of prices of the "Rede ADSL PT" wholesale offer in the event that the premises explained are not realised and end users in these geographic areas do not obtain the maximum benefit in terms of choice, price and quality.

It is noted that in case of the "Naked DSL", in view of the importance that this offer can have in the development of offers that are appealing to end users who are located in more remote and less developed areas or where there is less likelihood that competition supported by higher levels of the value chain will develop, the setting of wholesale prices will be based on the principle cost orientation of prices.

The complexity of operating the "retail-minus" rule could increase, especially following the provision of bundled services[184], and so ICP-ANACOM will monitor this issue and may update the defined "retail-minus" rule at a future date.

Regarding the control of alternative operators suffering margin squeeze, it should be stated, as stated above, that the grounds for this specific aspect of the obligation of price control and cost accounting and the detail thereof has already been duly explained in various decisions of ICP-ANACOM[185].

Finally, ICP-ANACOM takes the position that the access price of the "Rede ADSL PT" offer should remain consistent with the price of shared access, with respect to non-discrimination and cost orientation. It is also important to maintain the existence of internal consistency in the "Rede ADSL PT" wholesale offer, while retaining reasonable margin between the costs incurred by operators with respect to the various options of that offer (i.e., the offer with ATM aggregation, the offer with IP aggregation and the provision of "Naked DSL") and a justified price difference between the various classes of local access (especially in the case of IP bundling[186].

This possibility is, moreover, also advocated by the ERG which asserts that "*as a consequence of economies of scope and scale, cost-based bitstream pricing may give rise to an eviction price in respect of the upstream (unbundled loop and shared access) services. Consequently, NRAs may need to impose additional controls to ensure the maintenance of a margin sufficient to avoid this. In principle, such controls could be imposed as a remedy to SMP in either market*"[187].

Accordingly, ICP-ANACOM will also closely monitor the issue of the margin between the prices of the "Rede ADSL PT" service and prices of the LLU and may still intervene where there are grounds.

[184] Or even aggregated with other products / services not related to electronic communications market.

[185] See ICP-ANACOM decisions of 3.10.2007, 31.10.2007, 7.02.2008 on this subject at: http://www.anacom.pt/template31.jsp?categoryId=268122.

[186] This position was expressed and substantiated in the ICP-ANACOM decision of 13.10.2005 on amendments to the "Rede ADSL PT" offer introduced by PT Comunicações on 23 August 2005.

[187] Cf. ERG Best Practices on Regulatory Regimes in bitstream Access.

8.2.4.3. Conclusions

It is considered that the obligation of price control and cost accounting is objectively justified in that it allows prices to be established based on costs, avoiding situations of excessive pricing and margin squeeze, and allowing the development of competition, while promoting, *ceteris paribus*, the application of prices available in comparable competitive markets, thereby helping to protect the consumer interest.

This obligation is a proportional response to the scale of competition in the relevant market, as it allows the competitors of the PT Group to purchase broadband access services at prices which allow them to develop competitive retail services to the benefit of consumers. Furthermore, this condition allows the PT Group to derive a rate of return approaching what is available in a competitively efficient market.

It should also be noted that since the geographic scope of the market in question is limited compared to the scope of the market for supply of wholesale broadband access defined in 2005, the impact of the obligation of price control and cost accounting is also limited.

8.2.5. Separation of accounts

8.2.5.1. Consequences arising from any removal of the obligation

As upheld with respect to the imposition of obligations on the wholesale supply of unbundled access, the removal of the obligation of separation of accounts could mean that the negative impacts identified related to the analysis of the effects of the removal of the obligations of non-discrimination and price control and cost accounting, would affect the relevant markets. This would happen basically because, as with the transparency obligation, the obligation of accounting separation is essential to ensure compliance with and the effectiveness of the obligations of non-discrimination and price control and cost accounting.

It should be noted, in particular, that the absence of the obligation of separation of accounts would make it difficult for ICP-ANACOM to properly monitor compliance with the obligations associated with the prices and costs of the company with SMP, making it also very difficult to identify situations of cross-subsidisation.

8.2.5.2. Other arguments for keeping the obligation

As indicated in the study of 24 June 2005 it remains the position that this is a measure which is objectively justified given the need to ensure non-discrimination (allowing the analysis of wholesale prices and internal transfer prices) and prevent cross-subsidisation.

This is a proportional measure in that it only requires the provision of information with a level of detail sufficient to enable the achievement of the objective of verifying the other obligations

It is noted that the format and accounting methodology adopted shall meet the requirements that were conveyed to PTC by ICP-ANACOM in this respect, whereby this Authority will perform periodic reviews of these requirements in order to improve the costing and information system provided.

8.2.5.3. Conclusions

It is concluded that the obligation of separation of accounts should be maintained to ensure effective monitoring of the obligation of non-discrimination. As such, the position is maintained that this is a proportionate, appropriate and justified obligation.

8.2.6. Financial reporting

8.2.6.1. Consequences arising from any removal of the obligation and conclusions

In order to check compliance with the obligations set out above, namely the obligations of transparency, non-discrimination, separation of accounts and cost accounting, and in accordance with paragraph 3 of Article 71 of Law no. 5/2004, the company with SMP shall make their accounting records, including data on revenue from third parties, available to ICP-ANACOM

Accordingly, if there is no obligation of financial reporting, the effectiveness of the above obligations would be undermined, leading to significant adverse impacts on the wholesale market for the supply of unbundled access and related markets.

In line with the analysis undertaken in 2005, the position is taken that the accounting records which are needed for proper compliance with the obligation of financial reporting comprise the analytical accounting system which should be submitted in the terms defined specifically in this respect.

8.2.6.2. Conclusions

It is concluded that maintaining the obligation of financial reporting is necessary, appropriate and proportionate.

8.3. Conclusion

For the purposes of *ex-ante* regulation and in accordance with the principles of competition law, the following wholesale market has been identified as relevant:

5-NC) Wholesale broadband access provision in “NC areas”

Having analysed this market and taking maximum account of the Guidelines, ICP- ANACOM concludes that PT Group has SMP in the identified relevant market and therefore that obligations should be imposed as set out in Table 34 (all obligations are grounded in Article 66 of Law no. 5/2004, given that there is no effective competition in this market)).

Table 34 – Obligations to be imposed on companies with SMP in the relevant market

Obligation	Wholesale broadband access provision in "NC areas"
Access to and use of specific resources networks	▪ Access to PSTN at different points ▪ Negotiate in good faith with companies requesting access ▪ Not withdraw access already granted to determined resources ▪ Provide access to the naked digital subscriber line wholesale offer ("Naked DSL") ▪ Possibility of imposing obligations on access to fibre optic, following the evolution to next generation access networks, by way of specific decision.
Transparency in the publication of information, including reference offers	▪ Publication of the broadband access reference offer ("Rede ADSL PT"), with clear identification of amendments enacted between versions, with inclusion of SLAs and compensation for non-compliance ▪ Submit information on maximum, average deadlines for the delivery and repair of faults and the degree of availability (broken down by type of installation and operator) ▪ Itemise the information sent by the different modes of the "Rede ADSL PT" offer – IP, ATM, "Naked DSL".
Non-discrimination in the provision of access and interconnection and in the provision of the respective information	▪ No undue discrimination in providing network access[188] ▪ 30 days notice of alterations to wholesale offers – extended to 2 months for significant changes ▪ Launch of retail offers influenced by the existence of equivalent wholesale offers in the "Rede ADSL PT"
Separation of accounts for specific activities related to access and / or interconnection	▪ Costing system and accounting separation
Price control and cost accounting	▪ Price control ("retail-minus") ▪ Where necessary and appropriate to ensure price consistency which encourage competition and efficient investment; ▪ Control of the pricing of the "Naked DSL" wholesale offer, based on the principle of cost orientation of prices[189]. ▪
Financial reporting	▪ Provision of accounting records (AAS) including data on revenue from third parties

ICP-ANACOM considers that the established obligations may require further detail, specification or clarification with regard to their implementation, which will be provided in separate documents, subject to the consultation process.

Table 35 sets out a comparison between the obligations imposed in the analysis carried out in 2005 and the present analysis.

[188] Including geographic price differentiation.
[189] With possibility of expanding standard offers.

Table 35 – Comparison of obligations imposed in 2005 with the obligations set out in the present analysis of the market - Wholesale provision of broadband access in "NC areas"

Wholesale broadband access provision in "NC areas"	**Decision of 30 March 2005**	**Current market analysis**
Scope of geographic market	**National**	**Sub-national**
Obligation		
Access	✓	✓
▪ Access to PSTN at different points	✓	✓
▪ Negotiate in good faith with companies requesting access	✓	✓
▪ Not withdraw access already granted to determined resources	✓	✓
▪ Provide access to the naked digital subscriber line wholesale offer ("Naked DSL")	(1)	✓
▪ Possibility of imposing obligations on access to fibre optic, following the evolution to next generation access networks, by way of specific decision.		✓ (3)
Transparency and non-discrimination	✓	✓
▪ Publication of the broadband access reference offer ("Rede ADSL PT"), with clear identification of amendments enacted between versions, with inclusion of SLAs and compensation for non-compliance	✓	✓
▪ Submit information on maximum, average deadlines for the delivery and repair of faults and the degree of availability (broken down by type of installation and operator)	✓	✓
▪ Itemise the information sent by the different modes of the "Rede ADSL PT" offer – IP, ATM, "Naked DSL".		✓
▪ Provision and publication of indicators and performance levels in respect of quality of service in wholesaler offers		✓
▪ No undue discrimination in providing network access	✓	✓
▪ 30 days notice of alterations to wholesale offers – extended to 2 months for significant changes	✓	✓
▪ Launch of retail offers influenced by the existence of equivalent wholesale offers in the "Rede ADSL PT"	✓	✓
▪ Control ex ante of competition conditions	✓ (2)	✗
Separation of accounts	✓	✓
▪ Costing system and accounting separation	✓	✓
Price control and cost accounting	✓	✓
▪ Setting cost oriented prices	✓	✓ (4)
▪ Price control ("retail-minus")	✓	✓
▪ Where necessary and appropriate to ensure price consistency (particularly for LLU prices) which encourage competition and efficient investment;	✓	✓
▪ Control of the pricing of the "Naked DSL" wholesale offer, based on the principle of cost orientation of prices.		✓
Financial reporting	✓	✓
▪ Provision of accounting records (AAS) including data on revenue from third parties	✓	✓

✓ - Obligation exists.
✗ - Obligation removed by decision of 26.06.2008.

(1) – PTC currently provides an NDSL offer following a recommendation from ICP-ANACOM.
(2) – Implemented by the decision of 03.10.2007.
(3) – Via specific decision taken in the context of a market consultation process.
(4) – Possibility.

8.4. Removal of obligations on the provision of broadband access in the "C areas"

It has been already stated that where it is concluded that a market is subject to effective competition, obligations may not be imposed on companies operating in that market. It is noted however that if there are obligations already imposed on a company, the removal of these obligations must be reported to the parties affected with a reasonable period of notice. It is likewise considered that a gradual transition should be ensured, in accordance with the key principles of, on the one hand, ensuring that in a competitive market companies can compete freely and, on the other hand, ensuring that end users and other market stakeholders are protected

Without prejudice to the above, including the removal of all obligations existing in the market, the analysis detailed below seeks to demonstrate that the removal of obligations is appropriate and does not have significant negative implications for the market concerned or related markets. A further objective of the analysis is to identify the most appropriate way of removing the existing obligations, including assessing whether or not there should be a transition period, during which some obligations would continue to remain in force. The grounds for the existence of a transition period are that this will be necessary to protect end users and operators who have invested in the market and the fact that they may require a period of time to adjust their offers, objectives and strategies to the new situation.

8.4.1. Access to and use of specific resources networks

As a result of the analysis of the definition of the market and assessment of SMP, it emerged that in the geographical areas associated with this market the market had developed to the extent that widespread use, installation and roll out of resources in competition with the PSTN infrastructure belonging to the companies of the PT Group is expected before the next analysis of the market. It is envisaged that the development of this alternative infrastructure will be supported, above all, through investment in the LLU or own infrastructure, particularly in the context of the NGNs, but also in the context of cable distribution networks.

As has been seen, given the existence of internal constraints on prices and internal supply, it can be argued that the accesses based on the LLU and cable distribution networks must be considered at the level of the supply of wholesale broadband access, leading to the conclusion that, in the geographical areas in question, effective competition either already exists or will develop.

It is thus concluded that:

(a) Even removing the current obligation to grant access to and use of specific network resources currently in operation, as a result of the existence of operators with infrastructure at a higher level of the value chain and in view of the investment already made by PTC in opening up its network in support of ADSL services, incentives remain for PTC to continue to provide wholesale broadband access services.

It is noted that where there are operators with the possibility of providing the same type of service (including, operators who have invested in LLU) to alternative operators who may waive the "Rede ADSL PT" wholesale offer the PT Group would lose wholesale revenue and remain in the same situation at retail level. In this situation, the decision to terminate the supply of wholesale broadband Internet access would be unprofitable, since in the light the existence of competition at wholesale level, such a decision would not lead to increased revenue in the retail market.

(b) Even if PTC and other wholesale operators with investments in LLU do not provide any wholesale broadband Internet access it will be possible for operators who currently use the "Rede ADSL PT" wholesale offer to compete effectively in the retail market for broadband Internet access using their own infrastructure derived from investment in the LLU. In this situation, it may be concluded that the decision to remove the obligation to grant access is in line with the principle of encouraging investment in the network itself whenever possible and appropriate.

It is also envisaged that investments made by the alternative operators who use the "Rede ADSL PT" wholesale offer will not be lost, since they can be used for the same or another wholesale offer of equal scope, or even be used by these operators to scale the "investment ladder" by investing in LLU. Nonetheless, and where this occurs, it must be ensured that the alternative operators are informed of the possible termination by PTC of the provision of the service for access with an appropriate period of notice.

Furthermore, the investments made by PTC will be recovered even if the company chooses not to provide wholesale broadband access to third parties in these areas, since it will continue to provide access to its own companies and to use some of the investments made under the wholesale provision, which remains mandatory in the “NC areas”.

In this line of reasoning is important to consider that economies of scale resulting from the dimension of the network of PT Group, in any of the situations mentioned, will still continue to be transferred to the alternative operators who resort to investment in their own infrastructure or to any other LLU-based wholesale offers which may emerge. This is because investment in LLU enables the operators to also benefit from the economies and efficiencies of the PT Group's network.

In this analysis ICP-ANACOM took into consideration that the obligation of access implies that the conditions of access are appropriate and reasonable. Considering the above analysis of the existence of incentives for the PT Group to maintain a wholesale operation, the view is taken that these incentives are also in keeping with the existence of reasonable competitive conditions. It is noted that, otherwise the alternative operators who are currently supported through the "Rede ADSL PT" wholesale offer will seek new ways to access the end user by contacting operators already co-installed in these areas or themselves investing in the LLU.

Without prejudice to the above, it is important to take into account what the removal of the obligation of access would mean to the market, with the premise that the PT Group would not continue to provide the service of supplying broadband access, and another operator with infrastructure at a higher level of the value chain does move to provide such services.

Table 36 – Distribution of broadband access in "areas C" at the end of 2007

Type of Access	2007	
	Number	%
LLU Accesses	252,711	26%
Cable Accesses	458,791	47%
"Rede ADSL PT" Accesses (PT Group)	245,674	25%
"Rede ADSL PT" Accesses (LLU operators)	15,152	2%
"Rede ADSL PT" Accesses (other operators)	6,311	1%
Total	978,639	100%

It can be seen that in the geographic market in question, only 2% of OSP broadband accesses are supported through the "Rede ADSL PT" offer, representing only around 21 thousand accesses. Of this number, it is considered that almost 15 thousand could be easily transferred to the LLU, since they belong to operators which have already invested in terms of this offer. There are also around 500 accesses belonging to an operator which has invested in cable distribution networks.

It can therefore be concluded that, given the small number of accesses that can actually be affected, the impact (if any) of the removal of the obligation in question will always be minimal (although it may be relevant for each of the affected accesses) and not significant for the market.

As already mentioned, where the obligation to grant access is removed in order to ensure that investments made by alternative operators with respect to the "Rede ADSL PT" are employed, there must be a guarantee that they are informed of any cessation by the PT Group of the broadband access wholesale offer with an appropriate period of notice.

It is considered appropriate to establish a transition period of one year, beginning on the date of the publication of the final decision on the analysis in this document, during which period PTC shall continue to provide access to the services in question and may not enact changes in supply which constitute a tightening or deterioration of conditions of access currently provided to beneficiaries of the "Rede ADSL PT" wholesale offer[190].

PTC can only withdraw access to the "Rede ADSL PT" wholesale offer or aggravate the access conditions in a given geographical area after giving due notice 6 months before the date on which it intends such a decision to take effect (this notice may be made during the period of one year in which the offer may not be modified, that is, within the limit, if the PT Group announces six months after the final decision comes into force that it intends to terminate the offer or aggravate its conditions, this may come into effect six months after the notice has been given).

Following this period the conditions of access and provision of services (if any) will be established by means of commercial negotiation between interested operators.

The periods established allow alternative operators to negotiate the provision of the same service by other companies that have infrastructure at a higher level of the vertical value chain, to negotiate with PTC in order to maintain the service on mutually favourable terms, given the degree of (alternative) bargaining power that they possess or even opt to undertake investments in the LLU.

[190] Note that, for example, an increase in the price of services is a deterioration of conditions of access.

A similar approach was also followed by OFCOM which decided that the notification of termination of the provision of the supply of wholesale broadband access had to be given 12 months in advance, during which period the access conditions with respect to access already provided should be maintained.

It is likewise considered that this would be an appropriate period so that any migration of customers to other wholesale offers or even other operators may occur without negative impact on end users. Here, ICP-ANACOM will carry out detailed supervision of how such possible migration may occur and intervene without delay should it identify any risk of damage or inconvenience to users or risk to the development of healthy competition.

ICP-ANACOM considered the possibility of the transition period of one year applying only to accesses that are currently provided as part of the "Rede ADSL PT" wholesale offer, but decided that this transition should also apply to new accesses that will be provided in the meantime, during the specified period. This means that during this one year period beneficiaries of the "Rede ADSL PT" wholesale offer can gain customers in the knowledge, however, that when this period expires (commencing from the publication date of the final decision), access may cease. For this purpose, as mentioned previously, there are alternative investments by operators which, where possible, should be preserved and safeguarded by ICP-ANACOM. These investments are also related to the prospects for providing new access. It was considered that the period of one year would be sufficient, considering the specifics of this situation, for operators to incorporate the new regulatory framework into their commercial policy and business development strategy, which should also take the future into account and may include a continuation in the supply of new retail accesses.

8.4.1.1. Conclusions

Taking into account the analysis carried out throughout the document and the arguments presented in this section, this Authority concludes that there are no relevant negative implications for the defined market resulting from the removal of the obligation to grant access to and use of specific network resources, given, in particular, the number of accesses involved and existing alternatives.

It was identified in particular that PTC has some incentive to maintain the supply of these services according to reasonable and competitive conditions. This incentive stems from the possibility of other LLU-based operators having the option of developing competing wholesale offers, leading to a reduction in the wholesale revenue of the PT Group. Moreover, some of the beneficiaries of the LLU have informed ICP-ANACOM that they have wholesale offers albeit still in very early stages or even without any customers, but which, depending on developments in the market, they are likely to consider the development of alternative wholesale offers. Therefore, the alternative operators supported through the "Rede ADSL PT" wholesale offer may also negotiate the supply of wholesale broadband access with these operators. In addition, it was found that the possibility remains that alternative operators will make investments in the LLU, opting to scale the "investment ladder".

Another relevant issue duly considered by ICP-ANACOM is the fact that it was concluded that, given the number of accesses that can actually be affected, the impact (if any) of the removal of the obligation in question will be limited and not significant for the market.

With respect to the manner in which the operators who currently use the "Rede ADSL PT" wholesale offer in these geographic areas should be notified and the amount of prior notice

required, it was considered sufficient and appropriate to establish a transition period of one year, during which the services currently provided should continue to be provided under conditions that are no worse. It is also established that, even after the transition period of one year has elapsed, PTC may only remove access to the service in question or impose worse conditions of access by means of giving due notice 6 months in advance of the date when the decision is to come into effect.

8.4.2. Non-discrimination

The fact of the removal of the obligation to grant access means, *a priori*, that having an obligation of non-discrimination becomes much less important. Assuming that there are operators who are able to provide a wholesale broadband access offer through the LLU (with the economies of scale and efficiency of the PT Group network) or that there is the possibility of operators investing directly in the LLU, it would not be profitable for PTC to engage in discrimination with respect to the provision of services. As already mentioned, this is due to the fact that existing competition and the competition that is expected to develop at wholesale level will prevent it from achieving a position of advantage in the retail market due to the actions in markets located higher up in the vertical value chain.

That is to say, in this situation, the discriminatory use or retention of information, discrimination in terms of quality, delaying tactics and undue demands, as well as any discrimination in terms of pricing, do not directly lead to an advantageous situation in the retail market for company that engages in such actions. This is due to the fact that it is considered that the operators are able to serve the end user via other means, whereby their activity is not undermined. It should be noted, however, that the occurrence of certain possible discriminatory actions could give grounds for *ex post* intervention by ICP-ANACOM and/or the CA.

However as with the obligation of access, there needs to be a transition period during which the obligation of non-discrimination shall continue to apply. It is considered that this transition period should be the same for all the obligations. Therefore, a transition period of 12 months following the final decision of ICP-ANACOM shall also apply in this case, and only after this time shall the obligation of non-discrimination cease to apply. This signifies that during said period, the company with SMP is required to offer the other companies that offer broadband access networks and services the same conditions as those offered internally for similar services. It also signifies, more specifically, that the prices and levels of performance with respect to quality of service, such as periods for service commencement and repair of faults, available to the competing companies must be identical to those available with respect to the same activities of the dominant company, based on practices not only in the wholesale market in question, but also in the associated retail market.

During this transition period, too, the company with SMP will continue to give prior notice of no less than 30 days to interested companies which offer broadband networks and access services and to ICP-ANACOM in the event that said SMP company enacts alterations, on its initiative, to the conditions of the wholesale offer, thereby allowing these companies to adapt their retail offers or publicise them in an appropriate manner. This period of advance notice is extended to 2 months if the amendment has an impact on offers from OSPs, including through the introduction of new access classes, changes to the speeds of existing access classes, changes

to the pricing of offers, changes to the contention rate or other technical characteristics and changes involving the migration of customers or discontinuity of offers[191].

It is noted however that in the transition period established for this market, there is no control of the competitive conditions of the retail offers launched by the PT Group in this market. Therefore, from the publication date of the final decision, the companies of the PT Group operating in the retail market of broadband Internet access in "areas C" are free to define the conditions of their retail offers in "areas C" without any being subject to ex ante control of the existing competitive conditions.

It is considered that there should be no longer ex ante control of the competitive conditions of the companies of PT Group because:

(a) firstly, as noted above, since it has been concluded that the market is competitive, from the outset, no obligations should be imposed in this context that prevent companies from competing efficiently and freely, except those which result from the need to ensure provision to alternative operators over a transitional period, so that such operators can find reasonable alternatives;

(b) as was seen in the analysis of the retail market associated with these areas, there is significant competition, mainly from offers of alternative operators based on the LLU (e.g. Sonaecom) and cable distribution networks (e.g. ZON Multimédia), and so it is important, even by increasing existing competition in the market and providing a wider range of attractive offers to end users, that the offers of the PT Group are now given room to compete with complete flexibility in these areas;

(c) in the event that, for some period of time, there are retail offers from the PT Group in the market which do not respect the minimum competitive conditions currently taken into consideration by this Authority, this is deemed a very specific situation lasting for a period of time that will not have structural implications for the market over the long term, since the alternative operators are able to use other alternatives to reach the end user and there will be no incentive for the PT Group on its own to maintain this position for a relevant time period.

8.4.2.1. Conclusions

Taking into account the analysis carried out throughout the document and the arguments presented in this section, this Authority concludes that the removal of the obligation of non-discrimination is appropriate.

It is concluded in particular that, in this situation, the discriminatory use or retention of information, discrimination in terms of quality, delaying tactics and undue demands, as well as any discrimination in terms of pricing, do not directly lead to an advantageous situation in the retail market for wholesale provision company that engages in such actions. It is specifically considered that the fact that the alternative operators are able to serve the end user through other means that their business is not undermined in the long term and that such actions would lead to a loss of revenue for the operator which engages in them.

[191] It is noted that, as mentioned, these alterations to the wholesale offer may never lead to a regression or worsening of the conditions of access currently defined in the "Rede ADSL PT" wholesale offer.

It is likewise concluded that, as in the situation of the obligation of access, there should be a transition period of 12 months during which the obligation of non-discrimination shall continue to apply. Accordingly, during this period PTC must continue to guarantee the same real conditions of access to the services as it provides to itself (or its affiliates) for similar services. During this transition period the minimum periods required between notification of changes in the wholesale offer and the date on which these changes take effect (1 month or 2 months, depending on the degree of change, with the period being 6 months in the circumstances in which the conditions of the offer are worsened, described above) shall continue to apply.

It is further concluded that from the publication date of the final decision on this analysis, the retail offers of broadband access from the companies of the PT Group cease to be subject, in "areas C", to any type of ex ante control with respect to their competitive condition.

8.4.3. Transparency

ICP-ANACOM has already stated in this document that transparency is a natural complement to non-discrimination, enabling the detection of any discriminatory behaviour. As soon as it has been shown that it is appropriate to remove the obligation of non- discrimination it is fairly clear that the obligation of transparency should also be removed.

The removal of the requirement of transparency implies that PTC is no longer obliged to release and publish a reference offer. Likewise, the information that is currently provided, as imposed under the previous analysis of the market for the supply of wholesale broadband access with respect to the number of accesses and the information provided on indicators of the quality of services provided also ceases to be an obligation (except with regard to the need for statistical information for the purposes of monitoring the market).

It should be noted, however, that given the transition period during which the obligations for access and non-discrimination remain in force, it is also entirely appropriate that this period should apply in the case of the obligation of transparency. Therefore, for 12 months following the publication of the final decision, PTC shall continue to publish and make available, under the same conditions, a reference offer in addition to the information which it already provide to ICP-ANACOM and the market.

8.4.3.1. Conclusions

It is likewise concluded that the removal of the obligation of transparency is a correct and appropriate measure for the market. The transition period of 12 months established for the obligations of granting access to and use of specific network resources shall also be applied to the obligation of transparency.

8.4.4. Price control and cost accounting

ICP-ANACOM concludes that in the market covered by "areas C" there is effective competition in the provision of wholesale services and no operator is able to act independently of other market agents. It is therefore expected that there is no incentive for any operator to set prices for wholesale deals at a level significantly higher than the costs incurred in providing the services. In this event, as has been explained, the alternative operators would seek alternative ways to serve the end user meaning that the operator's decision would be rendered

unprofitable. It is therefore appropriate to remove the obligation of price control and cost accounting, which removal constitutes a correct measure in view of the reality of the market.

In relation to this it is also noted that it has been concluded that, as of the approval date of the final decision, there will not be any ex ante control of the competitive conditions of the retail offers launched by the PT Group in this market. Ex ante assessment will then cease with respect to the possible squeeze of the margins of the alternative operators, taking into account the access conditions at wholesale level and the conditions of retail offers. It is noted that in its 2005 decision ICP-ANACOM argued that "*when the OLOs can access points closer to the end user, developing and maximizing the use of their network, with distinct productive factors, the practical application of a "retail-minus" rule may no longer be necessary*". Accordingly, the decision now taken is in line with the arguments put forward on that occasion. As already indicated in this analysis, the obligation of ex ante control of the competitive conditions of the retails offers launched by the PT Group is removed without a transition period, i.e. from the publication date of the final decision on this analysis of markets

The same may not occur with respect to the rest of the specifications of the obligation of price control and cost accounting, in particular the need to ensure consistent pricing between different classes of local access, between different options of the "Rede ADSL PT" wholesale offer or even between the access price of the "Rede ADSL PT" offer and the price of shared access. In these situations, the indicated transition period of 12 months shall apply. At the end of this period PTC shall no longer be bound to comply with the specifications of the obligation of price control and cost accounting since this will not be necessary to ensure that there is no discrimination once the transition period associated with this last requirement terminates.

8.4.4.1. Conclusions

ICP-ANACOM concludes that the removal of the specifications relating to the obligation of price control and cost accounting is appropriate and does not have negative implications for the market. This Authority establishes that the transition period of 12 months should also be applied with respect to this obligation.

Regarding the existence of a transition period during which compliance with these specifications shall be ensured, two situations are identified:

(a) As already mentioned, it is concluded that in "areas C" the obligation of ex ante control of the competitive conditions of the retail offers of broadband access launched by the PT Group should be removed without the application of any transition period;

(b) The remaining specifications of the obligation, in particular, the price consistency between the various classes of local access, between different modes of the "Rede ADSL PT" wholesale offer or even between the access price of the "Rede ADSL PT" offer and the price of shared access shall remain in force during the transition period of 12 months.

8.4.5. Separation of accounts

The obligation of accounting separation was also related to the need to ensure the compliance with the obligation of non-discrimination and the obligation of price control and cost accounting, including controlling the existence of situations of cross-subsidisation. With the removal of these obligations having already been judged appropriate, it is then evident that the

removal of the obligation of accounting separation, in view of the conditions prevailing in the market, is appropriate.

The existence of a transition period of 12 months, during which some of the current obligations in the market shall remain in force, including the obligations of non-discrimination and transparency, signifies that, during said transition period, the obligation of accounting separation should continue to apply.

It is noted the obligation of accounting separation is removed only with respect to the market under analysis. Other obligations, imposed by ICP-ANACOM in other areas, notably with respect to cost auditing, are clearly not covered by the present decision.

8.4.5.1. Conclusions

The Authority concludes that the removal of the obligation of accounting separation is appropriate for the market under consideration. However, given the transition period, during which some of the current obligations in the market shall remain in force, said period shall continue to apply to the obligation in question.

8.4.6. Financial reporting

Considering the removal of the obligations of transparency, non-discrimination, accounting separation and cost accounting and the lack of any company with SMP[192] in the market, it is also clear that it is appropriate to remove the obligation of financial reporting.

The transition period of 12 months during which the obligations continue to apply shall be considered for the obligation of financial reporting.

It is noted that in this situation, too, the obligation of financial reporting is removed only with respect to the market under analysis. Other obligations of this type, imposed by ICP-ANACOM in other areas, are obviously not covered by the present decision.

8.4.6.1. Conclusions

It is concluded that it is appropriate to remove the obligation of financial reporting, although the transition period of 12 months shall apply to this obligation.

8.5. Conclusion

For the purposes of ex ante regulation and in accordance with the principles of competition law, the following wholesale market has been identified as relevant:

5-C) Wholesale broadband access provision in “areas C”.

Having analysed this market and paying the utmost heed to the Guidelines, ICP-ANACOM concludes that no company has SMP in the relevant market and, therefore, that all obligations

[192] In accordance with paragraph 3 of Article 71 of law no. 5 / 2004, the company with SMP shall provide ICP-ANACOM with their accounting records including data on revenue from third parties.

imposed on PT Group shall be removed pursuant to the terms and conditions detailed in the sections above.

Table 37 sets out a comparison between the obligations imposed in the analysis carried out in 2005 and the obligations it is intended to remove.

Table 37 – Comparison of obligations imposed in 2005 with the obligations it is intended to remove under the present analysis of the market - Wholesale provision of broadband access in "areas C"

Wholesale broadband access market in "C areas"	**Decision of 30 de March 2005**	**Current market analysis**	
Scope of the geographic market	**National**	**Sub-national**	
Obligations	-	**C areas**	**NC areas**
▪ Access to PSTN at different points	✓	✘	✓
▪ Negotiate in good faith with companies requesting access	✓	✘	✓
▪ Not withdraw access already granted to determined resources	✓	✘	✓
▪ Provide access to the naked digital subscriber line wholesale offer ("Naked DSL")	✓	✘	✓
Transparency and non-discrimination	(1)	✘	✓
▪ Publication of the broadband access reference offer ("Rede ADSL PT"), with clear identification of amendments enacted between versions, with inclusion of SLAs and compensation for non-compliance	✓	✘	✓
▪ Submit information on maximum, average and minimum deadlines for the delivery and repair of faults and the degree of availability (broken down by type of installation and operator)	✓	✘	✓
▪ Itemise the information sent by the different modes of the "Rede ADSL PT" offer – IP, ATM, "Naked DSL".	✓	✘	✓
▪ Provision and publication of indicators and performance levels in respect of quality of service in wholesaler offers		✘	✓
▪ No undue discrimination in providing network access		✘	✓
▪ 30 days notice of alterations to wholesale offers, extended to 2 months for significant changes to wholesale offers; extended to 6 months if the offer is to be terminated or its conditions worsened.	✓	✘	✓
▪ Launch of retail offers influenced by the existence of equivalent wholesale offers in the "Rede ADSL PT"	✓	✘	✓
▪ Control ex ante of competition conditions	✓	✘	✓
Separation of accounts	✓ (2)	✘ (3)	✘ (3)
▪ Costing system and accounting separation	✓	✘	✓
Price control and cost accounting	✓	✘	✓
▪ Setting cost oriented prices	✓	✘	✓
▪ Price control ("retail-minus")	✓	✘	✓ (4)
▪ Where necessary and appropriate to ensure price consistency (particularly for LLU prices) which encourage competition and efficient investment;	✓	✘ (5)	✓
▪ Control of the pricing of the "Naked DSL" wholesale offer, based on the principle of cost orientation of prices.	✓	✘	✓
Financial reporting		✘	✓

▪ Provision of accounting records (AAS) including data on revenue from third parties	✓	✘	✓
▪ Access to PSTN at different points	✓	✘	✓

✓ **- Obligation exists.**

✘ **- No obligation after 1 year transition period during which the PT Group may not exacerbate the offer's conditions; it may only withdraw access or worsen the offer's conditions after a 6-month prior warning.**

(1) – PTC currently provides an NDSL offer following a recommendation from ICP-ANACOM.

(2) – Implemented by the decision of 03.10.2007

(3) - Obligation removed by decision of 26.06.2008.

(4) – Possibility.

(5) – Obligation absent with immediate effect.

9. ASSESSMENT OF THE NEED TO REGULATE RETAIL MARKETS IN VIEW OF THE OBLIGATIONS IMPOSED ON WHOLESALE MARKETS

In the retail broadband access market in the "C areas" it was demonstrated that with the existing obligations there is no dominance. Therefore, since the obligations relating to the market for the supply of wholesale network infrastructure access (physical) at a fixed location remain in force in these areas, with particular relevance to the obligations of access to conduits and local loop unbundling, it is the position of ICP-ANACOM that this wholesale regulation will be sufficient to ensure competition in the retail markets.

In the retail broadband access market in "NC areas", all obligations in respect of the "Rede ADSL PT" shall be maintained, while the possibility remains that OSPs may invest in the LLU. However, as shown in the present analysis, with respect to the "Rede ADSL PT" offer PTC has maintained a market share in excess of 90%. That is to say, even with its obligations in the wholesale market it is essential to maintain the *ex ante* assessment of any margin squeeze, particularly through the imposition of the "retail-minus" rule.

FINAL NOTE:

ICP-ANACOM considers that the obligations established in this document may require further detail, specification or clarification with regard to their implementation, and this will be provided in separate documents, subject to the consultation process.

ANNEX 1 – NOTE ON METHODOLOGY

The present Annex summarises the options and premises used in the estimation of market shares, and these are explained and justified in the analysis.

1. Available information

ICP-ANACOM had access to the following relevant information for the purposes of estimating market share:

- Information on ADSL broadband accesses, with the following level of itemisation:
    - Quarterly wholesale, broken down by operator, by MDF and by class of service (with respect to the "Rede ADSL PT" wholesale offer);
    - Quarterly wholesale, broken down by operator and by MDF (with respect to the RUO);
    - Six months retail, broken down by operator, by class of speed and by NUTS II;
    - Quarterly retail on the number of IP TV customers of PTC (presentation of results).
- Information on cable modem broadband accesses (retail) broken down by operator.

2. Need for compatibility with respect to the various data available

3. The detail of the analysis in geographic terms requires that certain presumptions are made for the purposes of estimating market share, particularly in order to ensure compatibility between the various available data.

4. Therefore, and taking into account that it was decided to define the exchange area as the relevant geographic unit in the estimation of market share, the options and premises detailed below were used.

5. Options and premises assumed

Base data

In the estimation of market shares, in the context of both the wholesale and retail markets:

- The wholesale data relating to ADSL accesses were used, with the distribution of broadband accesses with respect to the MEO service of PTC[193] by exchange areas, on the presumption that in 2007 these accesses were associated only with exchanges with co-installed operators (principles exchange areas where there as ADSL2+ technology), and bearing in mind the proportion of broadband accesses in these exchange areas;

[193] It is noted that these broadband accesses are not included in the information on wholesale offers.

- The data relating to broadband access supported through cable modem are first distributed by municipality in terms of the number of customers of the cable television service (provided by cable distribution networks)[194]) of each operator, and then by the exchanges in the municipality covered by cable distribution networks, in terms of the number of FTS accesses of each exchange area.

It is assumed that there is perfect matching of the areas covered by the exchanges and the coverage area of the municipalities.

Retail information

Besides the base scenario referred to in the previous sector, valid in a scenario where wholesale regulation is maintained, assessment is made of the retail market shares taking into account the absence of regulation, assuming that:

- **Scenario 1**: The accesses supported by the "Rede ADSL PT" and LLU wholesale offers would be counted as PT Group broadband accesses;

- **Scenario 2**: The accesses supported through the "Rede ADSL PT" and LLU wholesale offers will be attributed to PT Group, in the first place, depending on the number of customers who only have FTS[195], while the remaining accesses[196] are distributed among PT Group and the cable distribution network operators depending on the weight of the "own" accesses of each operator.

Wholesale information

Market for wholesale provision of broadband access

In estimating the market shares in the market for the wholesale supply of broadband access and taking into account the base data referred to in Section **Error! Reference source not found.**, the concept of internal supply was used, whereby it was considered that:

- The "Rede ADSL PT" and MEO accesses contracted by the companies of the PT group are counted as wholesale accesses of PT Group;

- The broadband access supported over the networks of each cable distribution network operator are counted as wholesale accesses of these operators:

- The "Rede ADSL PT" accesses provided by PTC to third parties are counted as wholesale accesses of PT Group;

- The LLU accesses provided by PTC to third parties are counted as wholesale accesses of each of these (third) operators.

[194] That is to say, customers of the DTH television service are excluded.

[195] That is to say, it assumed that the customers who do not have cable television and have contracted the FTS will support broadband services over the local loops of copper pairs.

[196] Of customers who have FTS and cable television.

Wholesale provision of access (physical) to network infrastructure at a fixed location

In estimating the market shares in the market for the market for the wholesale network infrastructure access (physical) at a fixed location, use was also made of the concept of internal supply, with consideration given, for the purposes of estimating market share, to all active accesses at a fixed location, irrespective of the support infrastructure, that allow the use of broadband accesses. Account was thus taken of:

- all active accesses of the cable distribution networks, regardless of the type of service contracted[197], which are counted as wholesale accesses belonging to each one of the cable distribution network operators[198];

- all accesses in use with reference to the PTC network are counted as the wholesale accesses of the PT Group (including accesses unbundled to third parties)[199];

- Any other active accesses supported over other infrastructure, such as FWA, are counted as wholesale accesses of the operators possessing such accesses.

Each basic or primary ISDN access was counted as a single access.

[197] Except for DTH accesses which do not support broadband service accesses.
[198] Quarterly information broken down by operator and municipality.
[199] Half-yearly information, broken down by MDF.

ANNEX 2 – DETAILED INFORMATION BY EXCHANGE AREA

The table below gives the detailed information by exchange for the end of 2007, relating to:

- the number of co-installed operators (for all purposes, only alternative operators are considered while Oni, Tele2 and Sonaecom are considered as a single operator);
- The number of cable distribution network operators in the municipality which the exchange belongs to; and
- the market share of the PT Group in each exchange area, taking into account the definition of the retail broadband access product market.

The identification of each exchange area is regarded as confidential.

GR	MDF	MUNICIPALITIES	# CO-INSTALLED OPERATORS	# CABLE OPERATORS	CABLE COVERAGE ON EXCHANGE AREA	PT GROUP MS
41	MDF1	ABRANTES	2	2	82%	41%
41	MDF2	ABRANTES	0	0	0%	100%
41	MDF3	ABRANTES	0	0	0%	98%
41	MDF4	ABRANTES	0	0	0%	95%
41	MDF5	ABRANTES	0	0	0%	100%
41	MDF6	ABRANTES	0	0	0%	98%
41	MDF7	ABRANTES	0	0	0%	100%
41	MDF8	ABRANTES	0	0	0%	98%
41	MDF9	ABRANTES	0	0	0%	95%
41	MDF10	ABRANTES	0	0	0%	95%
41	MDF11	ABRANTES	0	0	0%	98%
41	MDF12	ABRANTES	0	0	0%	95%
41	MDF13	ABRANTES	0	0	0%	90%
41	MDF14	ABRANTES	0	0	0%	95%
41	MDF15	ABRANTES	0	0	0%	94%
41	MDF16	ABRANTES	0	0	0%	95%
43	MDF17	ABRANTES	0	0	0%	89%
34	MDF18	ÁGUEDA	0	0	0%	89%
34	MDF19	ÁGUEDA	2	1	70%	29%

34	MDF20	ÁGUEDA	0	0	0%	96%
34	MDF21	ÁGUEDA	0	0	0%	93%
34	MDF22	ÁGUEDA	0	0	0%	93%
34	MDF23	ÁGUEDA	0	0	0%	95%
34	MDF24	ÁGUEDA	0	0	0%	88%
34	MDF25	ÁGUEDA	0	1	70%	45%
34	MDF26	ÁGUEDA	0	1	70%	49%
32	MDF27	AGUIAR DA BEIRA	0	0	0%	89%
32	MDF28	AGUIAR DA BEIRA	0	0	0%	90%
32	MDF29	AGUIAR DA BEIRA	0	0	0%	88%
68	MDF30	ALANDROAL	0	0	0%	93%
68	MDF31	ALANDROAL	0	0	0%	95%
68	MDF32	ALANDROAL	0	0	0%	100%
68	MDF33	ALANDROAL	0	0	0%	100%
68	MDF34	ALANDROAL	0	0	0%	96%
34	MDF35	ALBERGARIA-A-VELHA	1	1	52%	52%
34	MDF36	ALBERGARIA-A-VELHA	0	0	0%	93%
34	MDF37	ALBERGARIA-A-VELHA	0	0	0%	88%
89	MDF38	ALBUFEIRA	2	1	39%	68%
89	MDF39	ALBUFEIRA	0	1	39%	80%
89	MDF40	ALBUFEIRA	0	0	0%	86%
89	MDF41	ALBUFEIRA	0	1	39%	80%
89	MDF42	ALBUFEIRA	1	1	39%	78%
89	MDF43	ALBUFEIRA	0	0	0%	95%
89	MDF44	ALBUFEIRA	0	1	39%	79%
65	MDF45	ALCÁCER DO SAL	0	0	0%	100%
65	MDF46	ALCÁCER DO SAL	1	0	0%	96%
65	MDF47	ALCÁCER DO SAL	0	0	0%	100%
65	MDF48	ALCÁCER DO SAL	0	0	0%	81%

65	MDF49	ALCÁCER DO SAL	0	0	0%	97%
65	MDF50	ALCÁCER DO SAL	0	0	0%	100%
65	MDF51	ALCÁCER DO SAL	0	0	0%	100%
65	MDF52	ALCÁCER DO SAL	0	0	0%	100%
65	MDF53	ALCÁCER DO SAL	0	0	0%	100%
65	MDF54	ALCÁCER DO SAL	0	0	0%	94%
65	MDF55	ALCÁCER DO SAL	0	0	0%	100%
49	MDF56	ALCANENA	0	1	39%	81%
49	MDF57	ALCANENA	0	0	0%	88%
49	MDF58	ALCANENA	0	0	0%	94%
49	MDF59	ALCANENA	0	1	39%	84%
44	MDF60	ALCOBAÇA	0	0	0%	88%
44	MDF61	ALCOBAÇA	0	0	0%	87%
62	MDF62	ALCOBAÇA	2	1	60%	36%
62	MDF63	ALCOBAÇA	0	0	0%	94%
62	MDF64	ALCOBAÇA	0	1	60%	51%
62	MDF65	ALCOBAÇA	0	1	60%	55%
62	MDF66	ALCOBAÇA	0	1	60%	29%
62	MDF67	ALCOBAÇA	0	1	60%	56%
62	MDF68	ALCOBAÇA	0	1	60%	52%
62	MDF69	ALCOBAÇA	0	0	0%	93%
62	MDF70	ALCOBAÇA	0	1	60%	53%
62	MDF71	ALCOBAÇA	0	1	60%	47%
62	MDF72	ALCOBAÇA	0	1	60%	55%
62	MDF73	ALCOBAÇA	0	1	60%	56%
01	MDF74	ALCOCHETE	2	2	84%	30%
01	MDF75	ALCOCHETE	0	2	84%	20%
01	MDF76	ALCOCHETE	0	2	84%	5%
81	MDF77	ALCOUTIM	0	0	0%	96%

81	MDF78	ALCOUTIM	0	0	0%	94%
81	MDF79	ALCOUTIM	0	0	0%	97%
63	MDF80	ALENQUER	0	0	0%	94%
63	MDF81	ALENQUER	2	1	67%	59%
63	MDF82	ALENQUER	2	1	67%	41%
63	MDF83	ALENQUER	0	1	67%	64%
63	MDF84	ALENQUER	0	0	0%	92%
63	MDF85	ALENQUER	0	0	0%	92%
63	MDF86	ALENQUER	0	0	0%	90%
63	MDF87	ALENQUER	0	0	0%	94%
63	MDF88	ALENQUER	0	0	0%	95%
79	MDF89	ALFÂNDEGA DA FÉ	0	0	0%	100%
79	MDF90	ALFÂNDEGA DA FÉ	0	0	0%	94%
79	MDF91	ALFÂNDEGA DA FÉ	0	0	0%	79%
79	MDF92	ALFÂNDEGA DA FÉ	0	0	0%	92%
79	MDF93	ALFÂNDEGA DA FÉ	0	0	0%	96%
54	MDF94	ALIJÓ	0	0	0%	96%
59	MDF95	ALIJÓ	0	0	0%	95%
59	MDF96	ALIJÓ	0	0	0%	100%
59	MDF97	ALIJÓ	0	0	0%	95%
59	MDF98	ALIJÓ	0	0	0%	96%
59	MDF99	ALIJÓ	0	0	0%	95%
59	MDF100	ALIJÓ	0	0	0%	100%
59	MDF101	ALIJÓ	0	0	0%	91%
82	MDF102	ALJEZUR	0	0	0%	96%
82	MDF103	ALJEZUR	0	0	0%	90%
82	MDF104	ALJEZUR	0	0	0%	95%
82	MDF105	ALJEZUR	0	0	0%	94%
82	MDF106	ALJEZUR	0	0	0%	97%

84	MDF107	ALJUSTREL	0	0	0%	90%
84	MDF108	ALJUSTREL	0	0	0%	95%
84	MDF109	ALJUSTREL	0	0	0%	97%
84	MDF110	ALJUSTREL	0	0	0%	100%
84	MDF111	ALJUSTREL	0	0	0%	58%
01	MDF112	ALMADA	2	2	103%	16%
01	MDF113	ALMADA	0	2	103%	36%
01	MDF114	ALMADA	2	2	103%	15%
01	MDF115	ALMADA	2	2	103%	23%
01	MDF116	ALMADA	2	2	103%	16%
01	MDF117	ALMADA	2	2	103%	18%
71	MDF118	ALMEIDA	0	0	0%	82%
71	MDF119	ALMEIDA	0	0	0%	97%
71	MDF120	ALMEIDA	0	0	0%	93%
71	MDF121	ALMEIDA	0	0	0%	100%
71	MDF122	ALMEIDA	0	0	0%	93%
71	MDF123	ALMEIDA	0	0	0%	88%
43	MDF124	ALMEIRIM	0	2	70%	65%
43	MDF125	ALMEIRIM	0	0	0%	92%
43	MDF126	ALMEIRIM	0	2	70%	69%
43	MDF127	ALMEIRIM	0	2	70%	61%
43	MDF128	ALMEIRIM	0	0	0%	98%
86	MDF129	ALMODÔVAR	0	0	0%	100%
86	MDF130	ALMODÔVAR	0	0	0%	94%
86	MDF131	ALMODÔVAR	0	0	0%	85%
86	MDF132	ALMODÔVAR	0	0	0%	83%
86	MDF133	ALMODÔVAR	0	0	0%	86%
86	MDF134	ALMODÔVAR	0	0	0%	100%
86	MDF135	ALMODÔVAR	0	0	0%	100%

86	MDF136	ALMODÔVAR	0	0	0%	94%
43	MDF137	ALPIARÇA	0	1	75%	64%
45	MDF138	ALTER DO CHÃO	0	0	0%	91%
45	MDF139	ALTER DO CHÃO	0	0	0%	97%
45	MDF140	ALTER DO CHÃO	0	0	0%	100%
45	MDF141	ALTER DO CHÃO	0	0	0%	89%
36	MDF142	ALVAIÁZERE	0	0	0%	94%
36	MDF143	ALVAIÁZERE	0	0	0%	86%
36	MDF144	ALVAIÁZERE	0	0	0%	84%
36	MDF145	ALVAIÁZERE	0	0	0%	90%
84	MDF146	ALVITO	0	0	0%	95%
84	MDF147	ALVITO	0	0	0%	99%
01	MDF148	AMADORA	2	1	106%	22%
01	MDF149	AMADORA	2	1	106%	20%
01	MDF150	AMADORA	2	1	106%	18%
01	MDF151	AMADORA	2	1	106%	20%
01	MDF152	AMADORA	2	1	106%	21%
55	MDF153	AMARANTE	1	1	23%	45%
55	MDF154	AMARANTE	0	0	0%	76%
55	MDF155	AMARANTE	0	1	23%	83%
55	MDF156	AMARANTE	0	1	23%	83%
55	MDF157	AMARANTE	0	1	23%	87%
55	MDF158	AMARANTE	0	0	0%	94%
53	MDF159	AMARES	0	2	39%	74%
53	MDF160	AMARES	0	0	0%	89%
53	MDF161	AMARES	0	0	0%	91%
31	MDF162	ANADIA	0	1	35%	63%
31	MDF163	ANADIA	1	1	35%	55%
31	MDF164	ANADIA	0	1	35%	70%

31	MDF165	ANADIA	0	0	0%	89%
31	MDF166	ANADIA	0	1	35%	62%
31	MDF167	ANADIA	0	1	35%	42%
34	MDF168	ANADIA	0	1	35%	62%
95	MDF169	ANGRA DO HEROISMO	0	1	79%	66%
95	MDF170	ANGRA DO HEROISMO	0	1	79%	74%
95	MDF171	ANGRA DO HEROISMO	0	1	79%	69%
95	MDF172	ANGRA DO HEROISMO	0	1	79%	66%
95	MDF173	ANGRA DO HEROISMO	0	1	79%	71%
95	MDF174	ANGRA DO HEROISMO	0	1	79%	69%
95	MDF175	ANGRA DO HEROISMO	0	1	79%	59%
36	MDF176	ANSIÃO	0	0	0%	97%
36	MDF177	ANSIÃO	0	0	0%	92%
36	MDF178	ANSIÃO	0	0	0%	86%
36	MDF179	ANSIÃO	0	0	0%	95%
36	MDF180	ANSIÃO	0	0	0%	91%
36	MDF181	ANSIÃO	0	0	0%	91%
36	MDF182	ANSIÃO	0	0	0%	100%
36	MDF183	ANSIÃO	0	0	0%	100%
58	MDF184	ARCOS DE VALDEVEZ	0	0	0%	88%
58	MDF185	ARCOS DE VALDEVEZ	0	0	0%	93%
58	MDF186	ARCOS DE VALDEVEZ	0	0	0%	100%
58	MDF187	ARCOS DE VALDEVEZ	0	0	0%	93%
58	MDF188	ARCOS DE VALDEVEZ	0	0	0%	90%
35	MDF189	ARGANIL	1	0	0%	79%
35	MDF190	ARGANIL	0	0	0%	94%
35	MDF191	ARGANIL	0	0	0%	95%
35	MDF192	ARGANIL	0	0	0%	100%
35	MDF193	ARGANIL	0	0	0%	92%

39	MDF194	ARGANIL	0	0	0%	95%
54	MDF195	ARMAMAR	0	0	0%	93%
54	MDF196	ARMAMAR	0	0	0%	97%
56	MDF197	AROUCA	0	0	0%	95%
56	MDF198	AROUCA	0	0	0%	85%
56	MDF199	AROUCA	0	0	0%	92%
56	MDF200	AROUCA	0	0	0%	95%
66	MDF201	ARRAIOLOS	0	0	0%	90%
66	MDF202	ARRAIOLOS	0	0	0%	97%
66	MDF203	ARRAIOLOS	0	0	0%	100%
66	MDF204	ARRAIOLOS	0	0	0%	91%
66	MDF205	ARRAIOLOS	0	0	0%	96%
45	MDF206	ARRONCHES	0	0	0%	98%
45	MDF207	ARRONCHES	0	0	0%	96%
45	MDF208	ARRONCHES	0	0	0%	100%
01	MDF209	ARRUDA DOSVINHOS	0	0	0%	92%
01	MDF210	ARRUDA DOSVINHOS	0	0	0%	88%
01	MDF211	ARRUDA DOSVINHOS	0	0	0%	98%
63	MDF212	ARRUDA DOSVINHOS	0	1	59%	75%
34	MDF213	AVEIRO	0	2	84%	29%
34	MDF214	AVEIRO	2	2	84%	26%
34	MDF215	AVEIRO	0	2	84%	32%
34	MDF216	AVEIRO	0	2	84%	36%
34	MDF217	AVEIRO	0	2	84%	36%
34	MDF218	AVEIRO	1	2	84%	32%
34	MDF219	AVEIRO	1	2	84%	30%
34	MDF220	AVEIRO	1	2	84%	32%
34	MDF221	AVEIRO	0	2	84%	40%
42	MDF222	AVIS	0	0	0%	90%

42	MDF223	AVIS	0	0	0%	99%
42	MDF224	AVIS	0	0	0%	94%
63	MDF225	AZAMBUJA	0	0	0%	96%
63	MDF226	AZAMBUJA	0	1	51%	72%
63	MDF227	AZAMBUJA	1	1	51%	70%
63	MDF228	AZAMBUJA	0	0	0%	90%
54	MDF229	BAIÃO	0	0	0%	98%
54	MDF230	BAIÃO	0	0	0%	95%
55	MDF231	BAIÃO	0	0	0%	95%
55	MDF232	BAIÃO	0	0	0%	87%
52	MDF233	BARCELOS	0	0	0%	96%
52	MDF234	BARCELOS	0	0	0%	91%
52	MDF235	BARCELOS	0	0	0%	94%
53	MDF236	BARCELOS	0	0	0%	94%
53	MDF237	BARCELOS	0	1	47%	70%
53	MDF238	BARCELOS	0	1	47%	68%
53	MDF239	BARCELOS	1	1	47%	30%
53	MDF240	BARCELOS	0	0	0%	91%
53	MDF241	BARCELOS	0	0	0%	94%
53	MDF242	BARCELOS	0	0	0%	90%
53	MDF243	BARCELOS	0	0	0%	89%
53	MDF244	BARCELOS	0	1	47%	67%
53	MDF245	BARCELOS	0	0	0%	95%
85	MDF246	BARRANCOS	0	0	0%	96%
01	MDF247	BARREIRO	2	2	91%	13%
01	MDF248	BARREIRO	0	2	91%	18%
01	MDF249	BARREIRO	0	2	91%	3%
01	MDF250	BARREIRO	0	2	91%	5%
01	MDF251	BARREIRO	0	2	91%	28%

01	MDF252	BARREIRO	0	2	91%	7%
01	MDF253	BARREIRO	2	2	91%	12%
44	MDF254	BATALHA	0	0	0%	90%
44	MDF255	BATALHA	0	1	43%	82%
44	MDF256	BATALHA	0	0	0%	89%
44	MDF257	BATALHA	0	0	0%	92%
44	MDF258	BATALHA	0	0	0%	92%
58	MDF259	BATALHA	0	0	0%	85%
84	MDF260	BEJA	0	0	0%	97%
84	MDF261	BEJA	0	1	62%	50%
84	MDF262	BEJA	0	0	0%	94%
84	MDF263	BEJA	2	1	62%	33%
84	MDF264	BEJA	0	1	62%	37%
84	MDF265	BEJA	0	1	62%	41%
84	MDF266	BEJA	0	0	0%	98%
84	MDF267	BEJA	0	1	62%	50%
84	MDF268	BEJA	0	1	62%	53%
84	MDF269	BEJA	0	0	0%	100%
84	MDF270	BEJA	0	0	0%	100%
84	MDF271	BEJA	0	0	0%	97%
84	MDF272	BEJA	0	0	0%	100%
84	MDF273	BEJA	0	0	0%	100%
75	MDF274	BELMONTE	0	1	34%	53%
75	MDF275	BELMONTE	0	0	0%	95%
01	MDF276	BENAVENTE	0	0	0%	43%
63	MDF277	BENAVENTE	0	1	93%	57%
63	MDF278	BENAVENTE	1	1	93%	53%
63	MDF279	BENAVENTE	0	0	0%	94%
62	MDF280	BOMBARRAL	0	1	44%	57%

62	MDF281	BOMBARRAL	0	1	44%	57%
68	MDF282	BORBA	0	1	53%	54%
68	MDF283	BORBA	0	1	53%	64%
76	MDF284	BOTICAS	0	0	0%	90%
76	MDF285	BOTICAS	0	0	0%	88%
76	MDF286	BOTICAS	0	0	0%	85%
53	MDF287	BRAGA	0	2	76%	48%
53	MDF288	BRAGA	2	2	76%	24%
53	MDF289	BRAGA	0	2	76%	47%
53	MDF290	BRAGA	0	0	0%	91%
53	MDF291	BRAGA	0	2	76%	47%
53	MDF292	BRAGA	0	2	76%	50%
53	MDF293	BRAGA	0	2	76%	51%
53	MDF294	BRAGA	0	2	76%	43%
53	MDF295	BRAGA	1	2	76%	28%
53	MDF296	BRAGA	0	2	76%	47%
53	MDF297	BRAGA	0	0	0%	93%
53	MDF298	BRAGA	0	0	0%	96%
53	MDF299	BRAGA	0	2	76%	52%
53	MDF300	BRAGA	0	2	76%	45%
53	MDF301	BRAGA	0	2	76%	47%
53	MDF302	BRAGA	0	2	76%	53%
73	MDF303	BRAGANÇA	0	1	27%	87%
73	MDF304	BRAGANÇA	0	0	0%	100%
73	MDF305	BRAGANÇA	1	1	27%	89%
73	MDF306	BRAGANÇA	0	1	27%	88%
73	MDF307	BRAGANÇA	0	0	0%	100%
73	MDF308	BRAGANÇA	0	0	0%	100%
73	MDF309	BRAGANÇA	0	0	0%	100%

73	MDF310	BRAGANÇA	0	0	0%	93%
73	MDF311	BRAGANÇA	0	0	0%	95%
73	MDF312	BRAGANÇA	0	0	0%	100%
73	MDF313	BRAGANÇA	0	0	0%	100%
73	MDF314	BRAGANÇA	0	0	0%	96%
73	MDF315	BRAGANÇA	0	0	0%	100%
78	MDF316	BRAGANÇA	0	0	0%	100%
53	MDF317	CABECEIRAS DE BASTO	0	0	0%	79%
53	MDF318	CABECEIRAS DE BASTO	0	0	0%	78%
62	MDF319	CADAVAL	0	1	36%	55%
62	MDF320	CADAVAL	0	1	36%	22%
62	MDF321	CADAVAL	0	1	36%	37%
62	MDF322	CADAVAL	0	0	0%	95%
62	MDF323	CADAVAL	0	0	0%	85%
62	MDF324	CALDAS DA RAINHA	0	0	0%	97%
62	MDF325	CALDAS DA RAINHA	0	2	88%	44%
62	MDF326	CALDAS DA RAINHA	2	2	88%	28%
62	MDF327	CALDAS DA RAINHA	0	2	88%	40%
62	MDF328	CALDAS DA RAINHA	0	0	0%	90%
62	MDF329	CALDAS DA RAINHA	0	0	0%	98%
62	MDF330	CALDAS DA RAINHA	0	2	88%	42%
62	MDF331	CALDAS DA RAINHA	0	2	88%	42%
62	MDF332	CALDAS DA RAINHA	0	0	0%	96%
95	MDF333	CALHETA (R.A.A.)	0	0	0%	97%
95	MDF334	CALHETA (R.A.A.)	0	0	0%	100%
91	MDF335	CALHETA (R.A.M.)	0	1	60%	65%
91	MDF336	CALHETA (R.A.M.)	0	1	60%	62%
91	MDF337	CALHETA (R.A.M.)	0	1	60%	64%
91	MDF338	CALHETA (R.A.M.)	0	1	60%	57%

91	MDF339	CÂMARA DE LOBOS	0	1	79%	31%
91	MDF340	CÂMARA DE LOBOS	0	1	79%	38%
91	MDF341	CÂMARA DE LOBOS	0	1	79%	39%
58	MDF342	CAMINHA	0	1	31%	73%
58	MDF343	CAMINHA	0	1	31%	79%
58	MDF344	CAMINHA	0	1	31%	75%
68	MDF345	CAMPO MAIOR	0	1	53%	64%
68	MDF346	CAMPO MAIOR	0	0	0%	98%
31	MDF347	CANTANHEDE	0	1	37%	81%
31	MDF348	CANTANHEDE	0	1	37%	76%
31	MDF349	CANTANHEDE	0	0	0%	96%
31	MDF350	CANTANHEDE	0	1	37%	79%
31	MDF351	CANTANHEDE	0	0	0%	90%
31	MDF352	CANTANHEDE	0	0	0%	97%
31	MDF353	CANTANHEDE	0	0	0%	91%
39	MDF354	CANTANHEDE	0	1	37%	83%
78	MDF355	CARRAZEDA DE ANSIÃES	0	0	0%	93%
78	MDF356	CARRAZEDA DE ANSIÃES	0	0	0%	100%
78	MDF357	CARRAZEDA DE ANSIÃES	0	0	0%	96%
78	MDF358	CARRAZEDA DE ANSIÃES	0	0	0%	98%
78	MDF359	CARRAZEDA DE ANSIÃES	0	0	0%	97%
32	MDF360	CARREGAL DO SAL	0	0	0%	94%
32	MDF361	CARREGAL DO SAL	0	0	0%	90%
43	MDF362	CARTAXO	1	1	43%	76%
43	MDF363	CARTAXO	0	1	43%	79%
43	MDF364	CARTAXO	0	1	43%	76%
43	MDF365	CARTAXO	0	1	43%	77%
43	MDF366	CARTAXO	0	0	0%	98%
43	MDF367	CARTAXO	0	0	0%	96%

43	MDF368	CARTAXO	0	1	43%	77%
43	MDF369	CARTAXO	0	1	43%	77%
01	MDF370	CASCAIS	2	1	120%	32%
01	MDF371	CASCAIS	2	1	120%	30%
01	MDF372	CASCAIS	1	1	120%	45%
01	MDF373	CASCAIS	2	1	120%	24%
01	MDF374	CASCAIS	2	1	120%	27%
01	MDF375	CASCAIS	0	1	120%	18%
01	MDF376	CASCAIS	2	1	120%	29%
01	MDF377	CASCAIS	1	1	120%	52%
01	MDF378	CASCAIS	2	1	120%	22%
01	MDF379	CASCAIS	0	1	120%	22%
01	MDF380	CASCAIS	0	1	120%	29%
01	MDF381	CASCAIS	0	1	120%	19%
36	MDF382	CASTANHEIRA DE PÊRA	0	0	0%	92%
72	MDF383	CASTELO BRANCO	0	1	80%	30%
72	MDF384	CASTELO BRANCO	0	0	0%	84%
72	MDF385	CASTELO BRANCO	2	1	80%	25%
72	MDF386	CASTELO BRANCO	0	0	0%	94%
72	MDF387	CASTELO BRANCO	0	0	0%	99%
72	MDF388	CASTELO BRANCO	0	0	0%	100%
72	MDF389	CASTELO BRANCO	0	0	0%	100%
72	MDF390	CASTELO BRANCO	0	0	0%	91%
72	MDF391	CASTELO BRANCO	0	0	0%	83%
72	MDF392	CASTELO BRANCO	0	0	0%	100%
72	MDF393	CASTELO BRANCO	0	0	0%	95%
72	MDF394	CASTELO BRANCO	0	0	0%	100%
72	MDF395	CASTELO BRANCO	0	0	0%	92%
72	MDF396	CASTELO BRANCO	0	0	0%	97%

74	MDF397	CASTELO BRANCO	0	0	0%	100%
55	MDF398	CASTELO DE PAIVA	0	0	0%	94%
55	MDF399	CASTELO DE PAIVA	0	0	0%	91%
45	MDF400	CASTELO DE VIDE	0	0	0%	96%
45	MDF401	CASTELO DE VIDE	0	0	0%	97%
32	MDF402	CASTRO DAIRE	0	0	0%	88%
32	MDF403	CASTRO DAIRE	0	0	0%	93%
32	MDF404	CASTRO DAIRE	0	0	0%	95%
32	MDF405	CASTRO DAIRE	0	0	0%	98%
81	MDF406	CASTRO MARIM	0	0	0%	93%
81	MDF407	CASTRO MARIM	0	0	0%	96%
81	MDF408	CASTRO MARIM	0	0	0%	93%
86	MDF409	CASTRO VERDE	0	0	0%	100%
86	MDF410	CASTRO VERDE	1	0	0%	89%
86	MDF411	CASTRO VERDE	0	0	0%	88%
86	MDF412	CASTRO VERDE	0	0	0%	79%
86	MDF413	CASTRO VERDE	0	0	0%	97%
86	MDF414	CASTRO VERDE	0	0	0%	95%
71	MDF415	CELORICO DA BEIRA	0	0	0%	100%
71	MDF416	CELORICO DA BEIRA	0	0	0%	99%
71	MDF417	CELORICO DA BEIRA	1	0	0%	95%
71	MDF418	CELORICO DA BEIRA	0	0	0%	92%
71	MDF419	CELORICO DA BEIRA	0	0	0%	100%
53	MDF420	CELORICO DE BASTO	0	0	0%	87%
53	MDF421	CELORICO DE BASTO	0	0	0%	97%
55	MDF422	CELORICO DE BASTO	0	0	0%	84%
55	MDF423	CELORICO DE BASTO	0	0	0%	84%
55	MDF424	CELORICO DE BASTO	0	0	0%	90%
49	MDF425	CHAMUSCA	0	0	0%	92%

49	MDF426	CHAMUSCA	0	0	0%	100%
49	MDF427	CHAMUSCA	0	0	0%	96%
49	MDF428	CHAMUSCA	0	0	0%	94%
49	MDF429	CHAMUSCA	0	0	0%	100%
49	MDF430	CHAMUSCA	0	0	0%	94%
49	MDF431	CHAMUSCA	0	0	0%	96%
76	MDF432	CHAVES	0	0	0%	100%
76	MDF433	CHAVES	0	0	0%	89%
76	MDF434	CHAVES	0	1	31%	97%
76	MDF435	CHAVES	1	1	31%	93%
76	MDF436	CHAVES	0	1	31%	92%
76	MDF437	CHAVES	0	0	0%	93%
76	MDF438	CHAVES	0	1	31%	93%
76	MDF439	CHAVES	0	0	0%	100%
76	MDF440	CHAVES	0	0	0%	89%
76	MDF441	CHAVES	0	1	31%	93%
76	MDF442	CHAVES	0	0	0%	91%
76	MDF443	CHAVES	0	0	0%	97%
55	MDF444	CINFÃES	0	0	0%	90%
55	MDF445	CINFÃES	0	0	0%	92%
55	MDF446	CINFÃES	0	0	0%	98%
55	MDF447	CINFÃES	0	0	0%	97%
39	MDF448	COIMBRA	0	3	87%	47%
39	MDF449	COIMBRA	0	0	0%	93%
39	MDF450	COIMBRA	2	3	87%	29%
39	MDF451	COIMBRA	0	0	0%	91%
39	MDF452	COIMBRA	1	3	87%	39%
39	MDF453	COIMBRA	0	0	0%	89%
39	MDF454	COIMBRA	0	3	87%	54%

39	MDF455	COIMBRA	2	3	87%	28%
39	MDF456	COIMBRA	0	3	87%	48%
39	MDF457	COIMBRA	0	3	87%	51%
39	MDF458	COIMBRA	2	3	87%	31%
39	MDF459	COIMBRA	0	3	87%	43%
39	MDF460	COIMBRA	1	0	0%	92%
39	MDF461	COIMBRA	0	0	0%	95%
39	MDF462	COIMBRA	0	0	0%	90%
39	MDF463	CONDEIXA-A-NOVA	2	1	23%	44%
49	MDF464	CONSTÂNCIA	0	0	0%	94%
49	MDF465	CONSTÂNCIA	0	0	0%	91%
43	MDF466	CORUCHE	0	0	0%	96%
43	MDF467	CORUCHE	0	0	0%	92%
43	MDF468	CORUCHE	0	0	0%	93%
43	MDF469	CORUCHE	0	0	0%	95%
43	MDF470	CORUCHE	0	0	0%	94%
43	MDF471	CORUCHE	0	0	0%	93%
43	MDF472	CORUCHE	0	0	0%	97%
43	MDF473	CORUCHE	0	0	0%	97%
43	MDF474	CORUCHE	0	0	0%	100%
92	MDF475	CORVO	0	0	0%	97%
75	MDF476	COVILHÃ	0	0	0%	97%
75	MDF477	COVILHÃ	0	0	0%	98%
75	MDF478	COVILHÃ	2	1	64%	37%
75	MDF479	COVILHÃ	0	1	64%	49%
75	MDF480	COVILHÃ	0	0	0%	98%
75	MDF481	COVILHÃ	0	0	0%	100%
75	MDF482	COVILHÃ	0	0	0%	93%
75	MDF483	COVILHÃ	0	0	0%	96%

75	MDF484	COVILHÃ	0	1	64%	49%
75	MDF485	COVILHÃ	0	1	64%	43%
75	MDF486	COVILHÃ	0	1	64%	43%
75	MDF487	COVILHÃ	0	0	0%	87%
75	MDF488	COVILHÃ	0	1	64%	46%
75	MDF489	COVILHÃ	0	1	64%	48%
75	MDF490	COVILHÃ	0	0	0%	100%
45	MDF491	CRATO	0	0	0%	96%
45	MDF492	CRATO	0	0	0%	85%
45	MDF493	CRATO	0	0	0%	97%
45	MDF494	CRATO	0	0	0%	83%
45	MDF495	CRATO	0	0	0%	93%
84	MDF496	CUBA	0	1	99%	42%
84	MDF497	CUBA	0	0	0%	97%
68	MDF498	ELVAS	0	0	0%	91%
68	MDF499	ELVAS	0	0	0%	100%
68	MDF500	ELVAS	2	1	43%	63%
68	MDF501	ELVAS	0	0	0%	97%
68	MDF502	ELVAS	0	0	0%	92%
68	MDF503	ELVAS	0	1	43%	62%
68	MDF504	ELVAS	0	1	43%	58%
68	MDF505	ELVAS	0	0	0%	97%
49	MDF506	ENTRONCAMENTO	2	1	97%	31%
02	MDF507	ESPINHO	2	2	104%	19%
53	MDF508	ESPOSENDE	0	1	46%	76%
53	MDF509	ESPOSENDE	0	1	46%	78%
53	MDF510	ESPOSENDE	0	1	46%	78%
53	MDF511	ESPOSENDE	0	1	46%	75%
53	MDF512	ESPOSENDE	0	1	46%	72%

34	MDF513	ESTARREJA	0	1	48%	45%
34	MDF514	ESTARREJA	1	1	48%	36%
34	MDF515	ESTARREJA	0	1	48%	46%
68	MDF516	ESTREMOZ	0	0	0%	98%
68	MDF517	ESTREMOZ	2	1	72%	39%
68	MDF518	ESTREMOZ	0	0	0%	100%
68	MDF519	ESTREMOZ	0	0	0%	90%
68	MDF520	ESTREMOZ	0	0	0%	100%
68	MDF521	ESTREMOZ	0	0	0%	100%
66	MDF522	ÉVORA	0	0	0%	86%
66	MDF523	ÉVORA	0	2	63%	48%
66	MDF524	ÉVORA	0	2	63%	49%
66	MDF525	ÉVORA	2	2	63%	35%
66	MDF526	ÉVORA	0	0	0%	94%
66	MDF527	ÉVORA	0	2	63%	47%
66	MDF528	ÉVORA	1	2	63%	45%
66	MDF529	ÉVORA	0	0	0%	100%
66	MDF530	ÉVORA	0	0	0%	94%
66	MDF531	ÉVORA	0	0	0%	97%
66	MDF532	ÉVORA	0	0	0%	99%
66	MDF533	ÉVORA	0	0	0%	99%
66	MDF534	ÉVORA	0	0	0%	98%
66	MDF535	ÉVORA	0	2	63%	49%
66	MDF536	ÉVORA	0	0	0%	96%
66	MDF537	ÉVORA	0	2	63%	48%
53	MDF538	FAFE	0	0	0%	84%
53	MDF539	FAFE	1	1	45%	43%
53	MDF540	FAFE	0	0	0%	89%
53	MDF541	FAFE	0	0	0%	89%

53	MDF542	FAFE	0	0	0%	92%
89	MDF543	FARO	0	1	92%	56%
89	MDF544	FARO	0	0	0%	93%
89	MDF545	FARO	0	1	92%	56%
89	MDF546	FARO	0	0	0%	90%
89	MDF547	FARO	2	1	92%	35%
89	MDF548	FARO	0	0	0%	100%
89	MDF549	FARO	1	1	92%	59%
89	MDF550	FARO	0	1	92%	57%
89	MDF551	FARO	0	1	92%	58%
89	MDF552	FARO	0	0	0%	91%
89	MDF553	FARO	0	1	92%	54%
55	MDF554	FELGUEIRAS	0	0	0%	92%
55	MDF555	FELGUEIRAS	0	1	18%	79%
55	MDF556	FELGUEIRAS	1	1	18%	52%
55	MDF557	FELGUEIRAS	0	1	18%	80%
55	MDF558	FELGUEIRAS	0	1	18%	79%
55	MDF559	FELGUEIRAS	0	1	18%	82%
55	MDF560	FELGUEIRAS	0	1	18%	78%
55	MDF561	FELGUEIRAS	0	1	18%	81%
84	MDF562	FERREIRA DO ALENTEJO	0	0	0%	89%
84	MDF563	FERREIRA DO ALENTEJO	0	0	0%	97%
84	MDF564	FERREIRA DO ALENTEJO	0	0	0%	96%
84	MDF565	FERREIRA DO ALENTEJO	0	1	103%	31%
84	MDF566	FERREIRA DO ALENTEJO	0	0	0%	96%
84	MDF567	FERREIRA DO ALENTEJO	0	0	0%	97%
84	MDF568	FERREIRA DO ALENTEJO	0	0	0%	97%
49	MDF569	FERREIRA DO ZÊZERE	0	0	0%	90%
49	MDF570	FERREIRA DO ZÊZERE	0	0	0%	91%

49	MDF571	FERREIRA DO ZÊZERE	0	0	0%	89%
33	MDF572	FIGUEIRA DA FOZ	0	1	68%	76%
33	MDF573	FIGUEIRA DA FOZ	2	1	68%	28%
33	MDF574	FIGUEIRA DA FOZ	0	1	68%	73%
33	MDF575	FIGUEIRA DA FOZ	0	0	0%	96%
33	MDF576	FIGUEIRA DA FOZ	0	0	0%	91%
33	MDF577	FIGUEIRA DA FOZ	0	0	0%	93%
33	MDF578	FIGUEIRA DA FOZ	0	0	0%	88%
33	MDF579	FIGUEIRA DA FOZ	0	0	0%	95%
33	MDF580	FIGUEIRA DA FOZ	0	0	0%	91%
33	MDF581	FIGUEIRA DA FOZ	0	1	68%	75%
33	MDF582	FIGUEIRA DA FOZ	0	1	68%	79%
71	MDF583	FIGUEIRA DE CASTELO RODRIGO	0	0	0%	100%
71	MDF584	FIGUEIRA DE CASTELO RODRIGO	0	0	0%	100%
71	MDF585	FIGUEIRA DE CASTELO RODRIGO	0	0	0%	100%
71	MDF586	FIGUEIRA DE CASTELO RODRIGO	0	0	0%	95%
71	MDF587	FIGUEIRA DE CASTELO RODRIGO	0	0	0%	96%
71	MDF588	FIGUEIRA DE CASTELO RODRIGO	0	0	0%	100%
36	MDF589	FIGUEIRÓ DOS VINHOS	0	0	0%	91%
71	MDF590	FORNOS DE ALGODRES	0	0	0%	91%
71	MDF591	FORNOS DE ALGODRES	0	0	0%	98%
79	MDF592	FREIXO DE ESPADA À CINTA	0	0	0%	95%
79	MDF593	FREIXO DE ESPADA À CINTA	0	0	0%	100%
79	MDF594	FREIXO DE ESPADA À CINTA	0	0	0%	94%
45	MDF595	FRONTEIRA	0	0	0%	97%
45	MDF596	FRONTEIRA	0	0	0%	97%
45	MDF597	FRONTEIRA	0	0	0%	94%
91	MDF598	FUNCHAL	1	1	89%	28%
91	MDF599	FUNCHAL	0	1	89%	25%

91	MDF600	FUNCHAL	1	1	89%	29%
91	MDF601	FUNCHAL	0	1	89%	26%
91	MDF602	FUNCHAL	0	1	89%	29%
72	MDF603	FUNDÃO	0	0	0%	89%
72	MDF604	FUNDÃO	0	0	0%	92%
75	MDF605	FUNDÃO	0	0	0%	98%
75	MDF606	FUNDÃO	0	1	52%	53%
75	MDF607	FUNDÃO	0	0	0%	88%
75	MDF608	FUNDÃO	0	0	0%	83%
75	MDF609	FUNDÃO	0	0	0%	91%
75	MDF610	FUNDÃO	0	0	0%	99%
75	MDF611	FUNDÃO	0	0	0%	96%
75	MDF612	FUNDÃO	0	1	52%	48%
75	MDF613	FUNDÃO	0	0	0%	100%
75	MDF614	FUNDÃO	0	0	0%	93%
75	MDF615	FUNDÃO	0	0	0%	95%
41	MDF616	GAVIÃO	0	0	0%	96%
41	MDF617	GAVIÃO	0	0	0%	95%
41	MDF618	GAVIÃO	0	0	0%	100%
45	MDF619	GAVIÃO	0	0	0%	97%
35	MDF620	GÓIS	0	0	0%	82%
35	MDF621	GÓIS	0	0	0%	100%
35	MDF622	GÓIS	0	0	0%	95%
49	MDF623	GOLEGÃ	0	0	0%	99%
49	MDF624	GOLEGÃ	0	0	0%	94%
02	MDF625	GONDOMAR	0	0	0%	97%
02	MDF626	GONDOMAR	0	2	80%	23%
02	MDF627	GONDOMAR	1	2	80%	16%
02	MDF628	GONDOMAR	1	2	80%	34%

02	MDF629	GONDOMAR	0	0	0%	91%
02	MDF630	GONDOMAR	0	0	0%	94%
02	MDF631	GONDOMAR	2	2	80%	16%
02	MDF632	GONDOMAR	0	2	80%	24%
38	MDF633	GOUVEIA	0	0	0%	96%
38	MDF634	GOUVEIA	0	1	44%	53%
38	MDF635	GOUVEIA	0	0	0%	97%
38	MDF636	GOUVEIA	0	1	44%	55%
38	MDF637	GOUVEIA	0	0	0%	92%
65	MDF638	GRÂNDOLA	0	0	0%	99%
65	MDF639	GRÂNDOLA	0	0	0%	89%
65	MDF640	GRÂNDOLA	0	0	0%	69%
69	MDF641	GRÂNDOLA	0	0	0%	100%
69	MDF642	GRÂNDOLA	0	1	53%	46%
69	MDF643	GRÂNDOLA	1	1	53%	51%
69	MDF644	GRÂNDOLA	0	0	0%	96%
69	MDF645	GRÂNDOLA	0	0	0%	100%
69	MDF646	GRÂNDOLA	0	1	53%	34%
69	MDF647	GRÂNDOLA	0	0	0%	100%
69	MDF648	GRÂNDOLA	0	1	53%	36%
69	MDF649	GRÂNDOLA	0	1	53%	54%
69	MDF650	GRÂNDOLA	0	1	53%	53%
71	MDF651	GUARDA	0	1	60%	28%
71	MDF652	GUARDA	0	1	60%	30%
71	MDF653	GUARDA	0	0	0%	96%
71	MDF654	GUARDA	2	1	60%	31%
71	MDF655	GUARDA	1	1	60%	42%
71	MDF656	GUARDA	0	0	0%	100%
71	MDF657	GUARDA	0	0	0%	96%

71	MDF658	GUARDA	0	0	0%	95%
71	MDF659	GUARDA	0	0	0%	98%
75	MDF660	GUARDA	0	0	0%	99%
75	MDF661	GUARDA	0	0	0%	100%
53	MDF662	GUIMARÃES	2	1	46%	66%
53	MDF663	GUIMARÃES	0	0	0%	85%
53	MDF664	GUIMARÃES	0	1	46%	65%
53	MDF665	GUIMARÃES	0	1	46%	64%
53	MDF666	GUIMARÃES	0	1	46%	61%
53	MDF667	GUIMARÃES	2	1	46%	32%
53	MDF668	GUIMARÃES	0	1	46%	66%
53	MDF669	GUIMARÃES	1	1	46%	64%
53	MDF670	GUIMARÃES	0	1	46%	66%
53	MDF671	GUIMARÃES	0	0	0%	88%
53	MDF672	GUIMARÃES	0	1	46%	67%
92	MDF673	HORTA	0	1	41%	81%
92	MDF674	HORTA	0	1	41%	81%
92	MDF675	HORTA	0	1	41%	80%
92	MDF676	HORTA	0	1	41%	79%
92	MDF677	HORTA	0	1	41%	80%
92	MDF678	HORTA	0	1	41%	78%
77	MDF679	IDANHA-A-NOVA	0	0	0%	100%
77	MDF680	IDANHA-A-NOVA	0	0	0%	95%
77	MDF681	IDANHA-A-NOVA	0	0	0%	99%
77	MDF682	IDANHA-A-NOVA	0	0	0%	90%
77	MDF683	IDANHA-A-NOVA	0	0	0%	97%
77	MDF684	IDANHA-A-NOVA	0	0	0%	100%
77	MDF685	IDANHA-A-NOVA	0	0	0%	100%
77	MDF686	IDANHA-A-NOVA	0	0	0%	94%

77	MDF687	IDANHA-A-NOVA	0	0	0%	100%
77	MDF688	IDANHA-A-NOVA	0	0	0%	100%
77	MDF689	IDANHA-A-NOVA	0	0	0%	98%
77	MDF690	IDANHA-A-NOVA	0	0	0%	100%
77	MDF691	IDANHA-A-NOVA	0	0	0%	100%
34	MDF692	ÍLHAVO	0	2	60%	35%
34	MDF693	ÍLHAVO	0	2	60%	32%
34	MDF694	ÍLHAVO	0	2	60%	27%
34	MDF695	ÍLHAVO	1	2	60%	31%
82	MDF696	LAGOA	0	2	65%	47%
82	MDF697	LAGOA	0	0	0%	93%
82	MDF698	LAGOA	0	0	0%	94%
82	MDF699	LAGOA	0	2	65%	48%
82	MDF700	LAGOA	0	2	65%	52%
82	MDF701	LAGOA	0	2	65%	47%
96	MDF702	LAGOA (R.A.A)	0	1	83%	59%
96	MDF703	LAGOA (R.A.A)	0	1	83%	64%
96	MDF704	LAGOA (R.A.A)	0	1	83%	58%
82	MDF705	LAGOS	0	2	67%	57%
82	MDF706	LAGOS	0	0	0%	96%
82	MDF707	LAGOS	0	0	0%	96%
82	MDF708	LAGOS	0	0	0%	93%
82	MDF709	LAGOS	2	2	67%	39%
82	MDF710	LAGOS	0	2	67%	49%
82	MDF711	LAGOS	0	2	67%	53%
82	MDF712	LAGOS	0	2	67%	58%
92	MDF713	LAJES DAS FLORES	0	0	0%	100%
92	MDF714	LAJES DAS FLORES	0	0	0%	99%
92	MDF715	LAJES DO PICO	0	0	0%	95%

92	MDF716	LAJES DO PICO	0	0	0%	99%
92	MDF717	LAJES DO PICO	0	0	0%	93%
92	MDF718	LAJES DO PICO	0	0	0%	91%
54	MDF719	LAMEGO	0	0	0%	88%
54	MDF720	LAMEGO	0	0	0%	91%
54	MDF721	LAMEGO	1	0	0%	91%
54	MDF722	LAMEGO	0	0	0%	94%
54	MDF723	LAMEGO	0	0	0%	98%
54	MDF724	LAMEGO	0	0	0%	97%
54	MDF725	LAMEGO	0	0	0%	95%
44	MDF726	LEIRIA	0	0	0%	89%
44	MDF727	LEIRIA	0	0	0%	89%
44	MDF728	LEIRIA	0	0	0%	93%
44	MDF729	LEIRIA	0	2	68%	63%
44	MDF730	LEIRIA	0	0	0%	92%
44	MDF731	LEIRIA	0	0	0%	92%
44	MDF732	LEIRIA	0	0	0%	92%
44	MDF733	LEIRIA	0	0	0%	93%
44	MDF734	LEIRIA	0	0	0%	95%
44	MDF735	LEIRIA	0	2	68%	63%
44	MDF736	LEIRIA	1	2	68%	62%
44	MDF737	LEIRIA	0	0	0%	88%
44	MDF738	LEIRIA	2	2	68%	40%
44	MDF739	LEIRIA	0	0	0%	87%
44	MDF740	LEIRIA	0	0	0%	89%
44	MDF741	LEIRIA	0	2	68%	59%
44	MDF742	LEIRIA	0	0	0%	90%
44	MDF743	LEIRIA	0	0	0%	92%
44	MDF744	LEIRIA	0	0	0%	97%

44	MDF745	LEIRIA	0	2	68%	63%
44	MDF746	LEIRIA	0	2	68%	60%
44	MDF747	LEIRIA	1	2	68%	56%
44	MDF748	LEIRIA	0	0	0%	89%
44	MDF749	LEIRIA	0	0	0%	85%
01	MDF750	LISBON	3	2	119%	27%
01	MDF751	LISBON	3	2	119%	27%
01	MDF752	LISBON	2	2	119%	24%
01	MDF753	LISBON	2	2	119%	24%
01	MDF754	LISBON	3	2	119%	28%
01	MDF755	LISBON	3	2	119%	27%
01	MDF756	LISBON	2	2	119%	27%
01	MDF757	LISBON	2	2	119%	20%
01	MDF758	LISBON	2	2	119%	27%
01	MDF759	LISBON	2	2	119%	21%
01	MDF760	LISBON	3	2	119%	28%
01	MDF761	LISBON	2	2	119%	25%
01	MDF762	LISBON	0	2	119%	25%
01	MDF763	LISBON	3	2	119%	30%
01	MDF764	LISBON	2	2	119%	22%
01	MDF765	LISBON	3	2	119%	42%
01	MDF766	LISBON	2	2	119%	32%
01	MDF767	LISBON	2	2	119%	31%
01	MDF768	LISBON	2	2	119%	27%
01	MDF769	LISBON	3	2	119%	32%
89	MDF770	LOULÉ	0	1	72%	36%
89	MDF771	LOULÉ	0	1	72%	68%
89	MDF772	LOULÉ	0	0	0%	96%
89	MDF773	LOULÉ	0	0	0%	100%

89	MDF774	LOULÉ	0	0	0%	97%
89	MDF775	LOULÉ	0	0	0%	93%
89	MDF776	LOULÉ	0	0	0%	90%
89	MDF777	LOULÉ	0	1	72%	42%
89	MDF778	LOULÉ	0	1	72%	40%
89	MDF779	LOULÉ	1	1	72%	69%
89	MDF780	LOULÉ	0	1	72%	69%
89	MDF781	LOULÉ	0	0	0%	97%
89	MDF782	LOULÉ	1	1	72%	52%
89	MDF783	LOULÉ	0	1	72%	68%
89	MDF784	LOULÉ	0	1	72%	59%
89	MDF785	LOULÉ	0	0	0%	93%
89	MDF786	LOULÉ	0	0	0%	92%
89	MDF787	LOULÉ	0	1	72%	64%
01	MDF788	LOURES	0	3	95%	31%
01	MDF789	LOURES	2	3	95%	21%
01	MDF790	LOURES	0	3	95%	32%
01	MDF791	LOURES	2	3	95%	20%
01	MDF792	LOURES	0	3	95%	44%
01	MDF793	LOURES	0	3	95%	42%
01	MDF794	LOURES	0	3	95%	27%
01	MDF795	LOURES	2	3	95%	24%
01	MDF796	LOURES	1	3	95%	43%
01	MDF797	LOURES	0	3	95%	44%
01	MDF798	LOURES	0	3	95%	44%
01	MDF799	LOURES	0	3	95%	23%
01	MDF800	LOURES	2	3	95%	19%
01	MDF801	LOURES	2	3	95%	21%
01	MDF802	LOURES	2	3	95%	22%

01	MDF803	LOURES	1	3	95%	38%
61	MDF804	LOURINHÃ	0	2	20%	80%
61	MDF805	LOURINHÃ	0	0	0%	90%
61	MDF806	LOURINHÃ	0	0	0%	96%
61	MDF807	LOURINHÃ	0	0	0%	88%
61	MDF808	LOURINHÃ	0	2	20%	83%
61	MDF809	LOURINHÃ	0	2	20%	84%
61	MDF810	LOURINHÃ	0	2	20%	83%
39	MDF811	LOUSÃ	0	1	22%	83%
39	MDF812	LOUSÃ	0	0	0%	94%
55	MDF813	LOUSADA	2	1	10%	82%
55	MDF814	LOUSADA	0	1	10%	88%
55	MDF815	LOUSADA	0	1	10%	81%
41	MDF816	MAÇÃO	0	0	0%	76%
41	MDF817	MAÇÃO	0	0	0%	96%
41	MDF818	MAÇÃO	0	0	0%	92%
41	MDF819	MAÇÃO	0	0	0%	95%
41	MDF820	MAÇÃO	0	0	0%	98%
41	MDF821	MAÇÃO	0	0	0%	86%
74	MDF822	MAÇÃO	0	0	0%	92%
74	MDF823	MAÇÃO	0	0	0%	100%
78	MDF824	MACEDO DE CAVALEIROS	0	0	0%	89%
78	MDF825	MACEDO DE CAVALEIROS	0	0	0%	100%
78	MDF826	MACEDO DE CAVALEIROS	0	0	0%	97%
78	MDF827	MACEDO DE CAVALEIROS	0	0	0%	82%
78	MDF828	MACEDO DE CAVALEIROS	0	0	0%	100%
78	MDF829	MACEDO DE CAVALEIROS	0	0	0%	100%
78	MDF830	MACEDO DE CAVALEIROS	0	0	0%	89%
78	MDF831	MACEDO DE CAVALEIROS	0	0	0%	100%

78	MDF832	MACEDO DE CAVALEIROS	0	0	0%	95%
78	MDF833	MACEDO DE CAVALEIROS	0	0	0%	93%
91	MDF834	MACHICO	0	1	81%	35%
91	MDF835	MACHICO	0	1	81%	40%
91	MDF836	MACHICO	0	1	81%	42%
91	MDF837	MACHICO	0	1	81%	50%
92	MDF838	MADALENA	0	0	0%	93%
92	MDF839	MADALENA	0	0	0%	89%
92	MDF840	MADALENA	0	0	0%	91%
01	MDF841	MAFRA	0	1	23%	86%
01	MDF842	MAFRA	0	0	0%	92%
01	MDF843	MAFRA	0	0	0%	98%
01	MDF844	MAFRA	0	0	0%	97%
01	MDF845	MAFRA	1	1	23%	82%
01	MDF846	MAFRA	0	0	0%	96%
01	MDF847	MAFRA	0	0	0%	90%
01	MDF848	MAFRA	0	0	0%	98%
61	MDF849	MAFRA	0	0	0%	98%
61	MDF850	MAFRA	0	0	0%	91%
61	MDF851	MAFRA	0	0	0%	90%
61	MDF852	MAFRA	0	0	0%	90%
61	MDF853	MAFRA	1	0	0%	91%
61	MDF854	MAFRA	0	0	0%	92%
61	MDF855	MAFRA	1	1	23%	86%
02	MDF856	MAIA	2	2	100%	42%
02	MDF857	MAIA	2	2	100%	18%
02	MDF858	MAIA	0	2	100%	36%
02	MDF859	MAIA	3	2	100%	23%
02	MDF860	MAIA	0	2	100%	39%

02	MDF861	MAIA	0	2	100%	33%
32	MDF862	MANGUALDE	0	1	31%	56%
32	MDF863	MANGUALDE	1	1	31%	39%
32	MDF864	MANGUALDE	0	0	0%	89%
32	MDF865	MANGUALDE	0	1	31%	57%
75	MDF866	MANTEIGAS	0	0	0%	97%
55	MDF867	MARCO DE CANAVESES	0	0	0%	93%
55	MDF868	MARCO DE CANAVESES	0	0	0%	95%
55	MDF869	MARCO DE CANAVESES	0	0	0%	90%
55	MDF870	MARCO DE CANAVESES	0	0	0%	94%
55	MDF871	MARCO DE CANAVESES	1	0	0%	52%
55	MDF872	MARCO DE CANAVESES	0	0	0%	92%
55	MDF873	MARCO DE CANAVESES	0	0	0%	91%
55	MDF874	MARCO DE CANAVESES	0	0	0%	92%
44	MDF875	MARINHA GRANDE	0	1	87%	56%
44	MDF876	MARINHA GRANDE	0	1	87%	59%
44	MDF877	MARINHA GRANDE	1	1	87%	36%
44	MDF878	MARINHA GRANDE	0	1	87%	62%
44	MDF879	MARINHA GRANDE	0	0	0%	94%
44	MDF880	MARINHA GRANDE	0	0	0%	87%
45	MDF881	MARVÃO	0	0	0%	97%
45	MDF882	MARVÃO	0	0	0%	92%
45	MDF883	MARVÃO	0	0	0%	93%
02	MDF884	MATOSINHOS	2	2	110%	20%
02	MDF885	MATOSINHOS	2	2	110%	20%
02	MDF886	MATOSINHOS	0	2	110%	38%
02	MDF887	MATOSINHOS	0	2	110%	37%
02	MDF888	MATOSINHOS	2	2	110%	18%
02	MDF889	MATOSINHOS	2	2	110%	16%

02	MDF890	MATOSINHOS	0	2	110%	28%
31	MDF891	MEALHADA	0	1	28%	83%
31	MDF892	MEALHADA	0	0	0%	91%
31	MDF893	MEALHADA	2	1	28%	41%
31	MDF894	MEALHADA	0	0	0%	90%
79	MDF895	MEDA	0	0	0%	100%
79	MDF896	MEDA	0	0	0%	95%
79	MDF897	MEDA	0	0	0%	96%
79	MDF898	MEDA	0	0	0%	89%
51	MDF899	MELGAÇO	0	0	0%	88%
51	MDF900	MELGAÇO	0	0	0%	90%
51	MDF901	MELGAÇO	0	0	0%	88%
51	MDF902	MELGAÇO	0	0	0%	82%
51	MDF903	MELGAÇO	0	0	0%	100%
86	MDF904	MÉRTOLA	0	0	0%	96%
86	MDF905	MÉRTOLA	0	0	0%	100%
86	MDF906	MÉRTOLA	0	0	0%	100%
86	MDF907	MÉRTOLA	0	0	0%	93%
86	MDF908	MÉRTOLA	0	0	0%	100%
86	MDF909	MÉRTOLA	0	0	0%	94%
86	MDF910	MÉRTOLA	0	0	0%	85%
86	MDF911	MÉRTOLA	0	0	0%	100%
86	MDF912	MÉRTOLA	0	0	0%	100%
54	MDF913	MESÃO FRIO	0	0	0%	96%
54	MDF914	MESÃO FRIO	0	0	0%	95%
31	MDF915	MIRA	0	0	0%	85%
31	MDF916	MIRA	0	1	24%	82%
31	MDF917	MIRA	0	0	0%	89%
31	MDF918	MIRA	0	1	24%	87%

39	MDF919	MIRANDA DO CORVO	0	0	0%	90%
39	MDF920	MIRANDA DO CORVO	0	0	0%	92%
73	MDF921	MIRANDA DO DOURO	0	0	0%	96%
73	MDF922	MIRANDA DO DOURO	0	0	0%	100%
73	MDF923	MIRANDA DO DOURO	0	0	0%	88%
73	MDF924	MIRANDA DO DOURO	0	0	0%	97%
73	MDF925	MIRANDA DO DOURO	0	0	0%	97%
73	MDF926	MIRANDA DO DOURO	0	0	0%	100%
73	MDF927	MIRANDA DO DOURO	0	0	0%	100%
73	MDF928	MIRANDA DO DOURO	0	0	0%	96%
78	MDF929	MIRANDELA	0	0	0%	94%
78	MDF930	MIRANDELA	0	0	0%	98%
78	MDF931	MIRANDELA	0	0	0%	89%
78	MDF932	MIRANDELA	0	0	0%	100%
78	MDF933	MIRANDELA	0	0	0%	96%
78	MDF934	MIRANDELA	0	0	0%	96%
78	MDF935	MIRANDELA	0	0	0%	100%
78	MDF936	MIRANDELA	1	0	0%	91%
78	MDF937	MIRANDELA	0	0	0%	95%
78	MDF938	MIRANDELA	0	0	0%	90%
78	MDF939	MIRANDELA	0	0	0%	94%
78	MDF940	MIRANDELA	0	0	0%	98%
78	MDF941	MOGADOURO	0	0	0%	100%
79	MDF942	MOGADOURO	0	0	0%	89%
79	MDF943	MOGADOURO	0	0	0%	100%
79	MDF944	MOGADOURO	0	0	0%	90%
79	MDF945	MOGADOURO	0	0	0%	94%
79	MDF946	MOGADOURO	0	0	0%	100%
79	MDF947	MOGADOURO	0	0	0%	100%

79	MDF948	MOGADOURO	0	0	0%	100%
32	MDF949	MOIMENTA DA BEIRA	0	0	0%	100%
54	MDF950	MOIMENTA DA BEIRA	0	0	0%	97%
54	MDF951	MOIMENTA DA BEIRA	0	0	0%	94%
54	MDF952	MOIMENTA DA BEIRA	0	0	0%	99%
01	MDF953	MOITA	2	2	115%	14%
01	MDF954	MOITA	2	2	115%	18%
51	MDF955	MONÇÃO	0	0	0%	92%
51	MDF956	MONÇÃO	0	0	0%	92%
51	MDF957	MONÇÃO	0	0	0%	96%
51	MDF958	MONÇÃO	0	0	0%	92%
82	MDF959	MONCHIQUE	0	0	0%	91%
82	MDF960	MONCHIQUE	0	0	0%	100%
82	MDF961	MONCHIQUE	0	0	0%	96%
55	MDF962	MONDIM DE BASTO	0	0	0%	92%
55	MDF963	MONDIM DE BASTO	0	0	0%	87%
55	MDF964	MONDIM DE BASTO	0	0	0%	89%
45	MDF965	MONFORTE	0	0	0%	98%
45	MDF966	MONFORTE	0	0	0%	91%
45	MDF967	MONFORTE	0	0	0%	97%
68	MDF968	MONFORTE	0	0	0%	96%
53	MDF969	MONTALEGRE	0	0	0%	93%
53	MDF970	MONTALEGRE	0	0	0%	100%
53	MDF971	MONTALEGRE	0	0	0%	83%
76	MDF972	MONTALEGRE	0	0	0%	90%
76	MDF973	MONTALEGRE	0	0	0%	97%
76	MDF974	MONTALEGRE	0	0	0%	94%
76	MDF975	MONTALEGRE	0	0	0%	98%
76	MDF976	MONTALEGRE	0	0	0%	97%

76	MDF977	MONTALEGRE	0	0	0%	86%
65	MDF978	MONTEMOR-O-NOVO	0	0	0%	95%
65	MDF979	MONTEMOR-O-NOVO	0	0	0%	98%
65	MDF980	MONTEMOR-O-NOVO	0	0	0%	92%
66	MDF981	MONTEMOR-O-NOVO	0	0	0%	97%
66	MDF982	MONTEMOR-O-NOVO	0	1	66%	46%
66	MDF983	MONTEMOR-O-NOVO	0	1	66%	42%
66	MDF984	MONTEMOR-O-NOVO	0	0	0%	99%
66	MDF985	MONTEMOR-O-NOVO	0	0	0%	97%
66	MDF986	MONTEMOR-O-NOVO	0	1	66%	51%
39	MDF987	MONTEMOR-O-VELHO	1	0	0%	91%
39	MDF988	MONTEMOR-O-VELHO	0	0	0%	92%
39	MDF989	MONTEMOR-O-VELHO	0	1	14%	68%
39	MDF990	MONTEMOR-O-VELHO	0	0	0%	87%
39	MDF991	MONTEMOR-O-VELHO	0	0	0%	91%
39	MDF992	MONTEMOR-O-VELHO	0	0	0%	95%
01	MDF993	MONTIJO	0	2	86%	15%
01	MDF994	MONTIJO	0	2	86%	17%
01	MDF995	MONTIJO	0	0	0%	100%
01	MDF996	MONTIJO	2	2	86%	19%
01	MDF997	MONTIJO	0	2	86%	24%
65	MDF998	MONTIJO	0	0	0%	94%
65	MDF999	MONTIJO	0	0	0%	95%
66	MDF1000	MORA	0	0	0%	96%
66	MDF1001	MORA	0	0	0%	100%
66	MDF1002	MORA	0	0	0%	100%
66	MDF1003	MORA	0	0	0%	92%
66	MDF1004	MORA	0	0	0%	98%
31	MDF1005	MORTÁGUA	0	0	0%	100%

31	MDF1006	MORTÁGUA	0	0	0%	87%
31	MDF1007	MORTÁGUA	0	0	0%	73%
31	MDF1008	MORTÁGUA	0	0	0%	79%
31	MDF1009	MORTÁGUA	0	0	0%	78%
85	MDF1010	MOURA	0	0	0%	97%
85	MDF1011	MOURA	0	0	0%	94%
85	MDF1012	MOURA	0	0	0%	100%
85	MDF1013	MOURA	0	0	0%	98%
85	MDF1014	MOURA	0	0	0%	74%
85	MDF1015	MOURA	0	0	0%	100%
85	MDF1016	MOURA	0	0	0%	98%
66	MDF1017	MOURÃO	0	0	0%	100%
66	MDF1018	MOURÃO	0	0	0%	100%
66	MDF1019	MOURÃO	0	0	0%	95%
59	MDF1020	MURÇA	0	0	0%	100%
59	MDF1021	MURÇA	0	0	0%	93%
59	MDF1022	MURÇA	0	0	0%	93%
34	MDF1023	MURTOSA	0	1	13%	68%
34	MDF1024	MURTOSA	0	1	13%	74%
62	MDF1025	NAZARÉ	0	1	98%	15%
62	MDF1026	NAZARÉ	1	1	98%	22%
62	MDF1027	NAZARÉ	0	1	98%	21%
32	MDF1028	NELAS	0	0	0%	93%
32	MDF1029	NELAS	0	1	58%	47%
32	MDF1030	NELAS	0	0	0%	81%
45	MDF1031	NISA	0	0	0%	91%
45	MDF1032	NISA	0	0	0%	91%
45	MDF1033	NISA	0	0	0%	100%
45	MDF1034	NISA	0	0	0%	100%

45	MDF1035	NISA	0	0	0%	96%
45	MDF1036	NISA	0	0	0%	98%
45	MDF1037	NISA	0	0	0%	94%
96	MDF1038	NORDESTE	0	0	0%	94%
96	MDF1039	NORDESTE	0	0	0%	93%
96	MDF1040	NORDESTE	0	0	0%	90%
62	MDF1041	ÓBIDOS	0	1	24%	53%
62	MDF1042	ÓBIDOS	0	1	24%	68%
62	MDF1043	ÓBIDOS	0	1	24%	68%
62	MDF1044	ÓBIDOS	0	1	24%	65%
62	MDF1045	ÓBIDOS	0	1	24%	70%
82	MDF1046	ODEMIRA	0	0	0%	100%
83	MDF1047	ODEMIRA	0	0	0%	100%
83	MDF1048	ODEMIRA	0	0	0%	93%
83	MDF1049	ODEMIRA	0	0	0%	100%
83	MDF1050	ODEMIRA	0	0	0%	91%
83	MDF1051	ODEMIRA	0	0	0%	98%
83	MDF1052	ODEMIRA	0	0	0%	99%
83	MDF1053	ODEMIRA	0	0	0%	95%
83	MDF1054	ODEMIRA	0	0	0%	90%
83	MDF1055	ODEMIRA	1	0	0%	93%
83	MDF1056	ODEMIRA	0	0	0%	98%
83	MDF1057	ODEMIRA	0	0	0%	98%
83	MDF1058	ODEMIRA	0	0	0%	96%
83	MDF1059	ODEMIRA	0	0	0%	97%
83	MDF1060	ODEMIRA	0	0	0%	93%
83	MDF1061	ODEMIRA	0	0	0%	95%
83	MDF1062	ODEMIRA	0	0	0%	83%
01	MDF1063	ODIVELAS	2	1	129%	24%

01	MDF1064	ODIVELAS	2	1	129%	20%
01	MDF1065	ODIVELAS	2	1	129%	27%
01	MDF1066	ODIVELAS	2	1	129%	20%
01	MDF1067	OEIRAS	2	2	103%	22%
01	MDF1068	OEIRAS	2	2	103%	21%
01	MDF1069	OEIRAS	0	2	103%	27%
01	MDF1070	OEIRAS	0	2	103%	14%
01	MDF1071	OEIRAS	3	2	103%	20%
01	MDF1072	OEIRAS	2	2	103%	22%
01	MDF1073	OEIRAS	2	2	103%	22%
01	MDF1074	OEIRAS	2	2	103%	25%
01	MDF1075	OEIRAS	2	2	103%	35%
72	MDF1076	OLEIROS	0	0	0%	100%
72	MDF1077	OLEIROS	0	0	0%	100%
72	MDF1078	OLEIROS	0	0	0%	100%
72	MDF1079	OLEIROS	0	0	0%	98%
72	MDF1080	OLEIROS	0	0	0%	100%
72	MDF1081	OLEIROS	0	0	0%	92%
72	MDF1082	OLEIROS	0	0	0%	75%
89	MDF1083	OLHÃO	0	1	67%	56%
89	MDF1084	OLHÃO	0	1	67%	62%
89	MDF1085	OLHÃO	2	1	67%	58%
89	MDF1086	OLHÃO	0	1	67%	62%
56	MDF1087	OLIVEIRA DE AZEMÉIS	0	0	0%	91%
56	MDF1088	OLIVEIRA DE AZEMÉIS	0	0	0%	86%
56	MDF1089	OLIVEIRA DE AZEMÉIS	0	0	0%	89%
56	MDF1090	OLIVEIRA DE AZEMÉIS	0	0	0%	75%
56	MDF1091	OLIVEIRA DE AZEMÉIS	0	2	133%	30%
56	MDF1092	OLIVEIRA DE AZEMÉIS	0	0	0%	82%

56	MDF1093	OLIVEIRA DE AZEMÉIS	2	2	133%	25%
56	MDF1094	OLIVEIRA DE AZEMÉIS	0	0	0%	91%
56	MDF1095	OLIVEIRA DE AZEMÉIS	0	2	133%	22%
56	MDF1096	OLIVEIRA DE AZEMÉIS	0	0	0%	90%
56	MDF1097	OLIVEIRA DE AZEMÉIS	0	0	0%	83%
32	MDF1098	OLIVEIRA DE FRADES	0	0	0%	96%
32	MDF1099	OLIVEIRA DE FRADES	1	0	0%	89%
34	MDF1100	OLIVEIRA DO BAIRRO	0	1	47%	57%
34	MDF1101	OLIVEIRA DO BAIRRO	0	1	47%	59%
34	MDF1102	OLIVEIRA DO BAIRRO	0	1	47%	56%
34	MDF1103	OLIVEIRA DO BAIRRO	0	1	47%	52%
38	MDF1104	OLIVEIRA DO HOSPITAL	0	0	0%	95%
38	MDF1105	OLIVEIRA DO HOSPITAL	0	0	0%	94%
38	MDF1106	OLIVEIRA DO HOSPITAL	0	0	0%	94%
38	MDF1107	OLIVEIRA DO HOSPITAL	0	1	39%	52%
38	MDF1108	OLIVEIRA DO HOSPITAL	0	1	39%	40%
44	MDF1109	OURÉM	0	0	0%	82%
49	MDF1110	OURÉM	0	1	42%	67%
49	MDF1111	OURÉM	0	1	42%	67%
49	MDF1112	OURÉM	0	0	0%	94%
49	MDF1113	OURÉM	0	0	0%	87%
49	MDF1114	OURÉM	0	1	42%	68%
49	MDF1115	OURÉM	0	0	0%	94%
49	MDF1116	OURÉM	0	0	0%	94%
49	MDF1117	OURÉM	0	0	0%	91%
49	MDF1118	OURÉM	0	1	42%	72%
49	MDF1119	OURÉM	0	0	0%	85%
49	MDF1120	OURÉM	0	0	0%	100%
49	MDF1121	OURÉM	0	1	42%	68%

86	MDF1122	OURIQUE	0	0	0%	100%
86	MDF1123	OURIQUE	0	0	0%	98%
86	MDF1124	OURIQUE	0	0	0%	97%
86	MDF1125	OURIQUE	0	0	0%	100%
86	MDF1126	OURIQUE	0	0	0%	100%
56	MDF1127	OVAR	2	2	83%	23%
56	MDF1128	OVAR	0	2	83%	30%
56	MDF1129	OVAR	0	2	83%	22%
56	MDF1130	OVAR	1	2	83%	20%
56	MDF1131	OVAR	0	2	83%	27%
55	MDF1132	PAÇOS DE FERREIRA	0	1	31%	80%
55	MDF1133	PAÇOS DE FERREIRA	0	1	31%	82%
55	MDF1134	PAÇOS DE FERREIRA	0	1	31%	79%
55	MDF1135	PAÇOS DE FERREIRA	1	1	31%	57%
55	MDF1136	PAÇOS DE FERREIRA	0	1	31%	78%
01	MDF1137	PALMELA	0	0	0%	100%
01	MDF1138	PALMELA	0	0	0%	90%
01	MDF1139	PALMELA	0	0	0%	100%
01	MDF1140	PALMELA	0	0	0%	100%
01	MDF1141	PALMELA	2	2	107%	16%
01	MDF1142	PALMELA	0	2	107%	7%
01	MDF1143	PALMELA	2	2	107%	15%
01	MDF1144	PALMELA	0	2	107%	19%
01	MDF1145	PALMELA	0	0	0%	100%
65	MDF1146	PALMELA	0	0	0%	95%
65	MDF1147	PALMELA	0	0	0%	90%
65	MDF1148	PALMELA	0	0	0%	96%
65	MDF1149	PALMELA	0	0	0%	91%
65	MDF1150	PALMELA	0	0	0%	98%

35	MDF1151	PAMPILHOSA DA SERRA	0	0	0%	86%
35	MDF1152	PAMPILHOSA DA SERRA	0	0	0%	98%
35	MDF1153	PAMPILHOSA DA SERRA	0	0	0%	100%
35	MDF1154	PAMPILHOSA DA SERRA	0	0	0%	96%
35	MDF1155	PAMPILHOSA DA SERRA	0	0	0%	93%
02	MDF1156	PAREDES	0	0	0%	100%
02	MDF1157	PAREDES	0	1	32%	77%
02	MDF1158	PAREDES	0	1	32%	69%
02	MDF1159	PAREDES	0	0	0%	91%
02	MDF1160	PAREDES	0	0	0%	100%
02	MDF1161	PAREDES	1	1	32%	50%
55	MDF1162	PAREDES	1	1	32%	43%
51	MDF1163	PAREDES DE COURA	0	0	0%	94%
51	MDF1164	PAREDES DE COURA	0	0	0%	87%
36	MDF1165	PEDRÓGÃO GRANDE	0	0	0%	90%
36	MDF1166	PEDRÓGÃO GRANDE	0	0	0%	91%
39	MDF1167	PENACOVA	0	0	0%	95%
39	MDF1168	PENACOVA	0	0	0%	92%
39	MDF1169	PENACOVA	0	0	0%	89%
39	MDF1170	PENACOVA	0	0	0%	91%
39	MDF1171	PENACOVA	0	0	0%	100%
55	MDF1172	PENAFIEL	0	0	0%	92%
55	MDF1173	PENAFIEL	0	1	26%	74%
55	MDF1174	PENAFIEL	0	0	0%	95%
55	MDF1175	PENAFIEL	0	1	26%	75%
55	MDF1176	PENAFIEL	2	1	26%	41%
55	MDF1177	PENAFIEL	0	0	0%	94%
55	MDF1178	PENAFIEL	0	0	0%	95%
55	MDF1179	PENAFIEL	0	0	0%	94%

55	MDF1180	PENAFIEL	0	1	26%	75%
55	MDF1181	PENAFIEL	0	0	0%	92%
32	MDF1182	PENALVA DO CASTELO	0	0	0%	100%
32	MDF1183	PENALVA DO CASTELO	0	0	0%	97%
77	MDF1184	PENAMACOR	0	0	0%	93%
77	MDF1185	PENAMACOR	0	0	0%	98%
77	MDF1186	PENAMACOR	0	0	0%	97%
77	MDF1187	PENAMACOR	0	0	0%	92%
54	MDF1188	PENEDONO	0	0	0%	94%
39	MDF1189	PENELA	0	0	0%	94%
39	MDF1190	PENELA	0	0	0%	83%
62	MDF1191	PENICHE	0	1	68%	45%
62	MDF1192	PENICHE	0	1	68%	39%
62	MDF1193	PENICHE	0	1	68%	30%
62	MDF1194	PENICHE	0	1	68%	30%
62	MDF1195	PENICHE	0	1	68%	39%
54	MDF1196	PESO DA RÉGUA	0	1	26%	83%
54	MDF1197	PESO DA RÉGUA	1	1	26%	44%
54	MDF1198	PESO DA RÉGUA	0	0	0%	96%
71	MDF1199	PINHEL	0	0	0%	96%
71	MDF1200	PINHEL	0	0	0%	92%
71	MDF1201	PINHEL	0	0	0%	95%
71	MDF1202	PINHEL	0	0	0%	93%
71	MDF1203	PINHEL	0	0	0%	98%
71	MDF1204	PINHEL	0	0	0%	98%
36	MDF1205	POMBAL	0	0	0%	93%
36	MDF1206	POMBAL	0	0	0%	92%
36	MDF1207	POMBAL	0	0	0%	90%
36	MDF1208	POMBAL	0	0	0%	93%

36	MDF1209	POMBAL	0	0	0%	89%
36	MDF1210	POMBAL	0	0	0%	91%
36	MDF1211	POMBAL	0	0	0%	89%
36	MDF1212	POMBAL	0	0	0%	88%
36	MDF1213	POMBAL	0	0	0%	95%
36	MDF1214	POMBAL	2	1	42%	44%
36	MDF1215	POMBAL	0	0	0%	92%
36	MDF1216	POMBAL	0	0	0%	94%
36	MDF1217	POMBAL	0	0	0%	91%
96	MDF1218	PONTA DELGADA	0	1	91%	69%
96	MDF1219	PONTA DELGADA	0	1	91%	55%
96	MDF1220	PONTA DELGADA	0	1	91%	55%
96	MDF1221	PONTA DELGADA	0	1	91%	53%
96	MDF1222	PONTA DELGADA	0	1	91%	58%
96	MDF1223	PONTA DELGADA	0	1	91%	51%
96	MDF1224	PONTA DELGADA	0	1	91%	56%
96	MDF1225	PONTA DELGADA	0	1	91%	54%
96	MDF1226	PONTA DELGADA	0	1	91%	60%
96	MDF1227	PONTA DELGADA	0	1	91%	54%
96	MDF1228	PONTA DELGADA	0	1	91%	54%
96	MDF1229	PONTA DELGADA	0	1	91%	53%
96	MDF1230	PONTA DELGADA	0	1	91%	60%
96	MDF1231	PONTA DELGADA	0	1	91%	59%
91	MDF1232	PONTA DO SOL	0	1	58%	55%
91	MDF1233	PONTA DO SOL	0	1	58%	57%
58	MDF1234	PONTE DA BARCA	0	0	0%	93%
58	MDF1235	PONTE DA BARCA	0	0	0%	92%
58	MDF1236	PONTE DA BARCA	0	0	0%	94%
58	MDF1237	PONTE DE LIMA	0	0	0%	88%

58	MDF1238	PONTE DE LIMA	1	0	0%	88%
58	MDF1239	PONTE DE LIMA	0	0	0%	88%
58	MDF1240	PONTE DE LIMA	0	0	0%	94%
58	MDF1241	PONTE DE LIMA	0	0	0%	92%
58	MDF1242	PONTE DE LIMA	0	0	0%	93%
42	MDF1243	PONTE DE SOR	0	0	0%	100%
42	MDF1244	PONTE DE SOR	0	0	0%	97%
42	MDF1245	PONTE DE SOR	0	0	0%	100%
42	MDF1246	PONTE DE SOR	0	0	0%	89%
42	MDF1247	PONTE DE SOR	0	0	0%	94%
42	MDF1248	PONTE DE SOR	0	0	0%	97%
42	MDF1249	PONTE DE SOR	0	0	0%	96%
45	MDF1250	PORTALEGRE	0	1	50%	65%
45	MDF1251	PORTALEGRE	0	0	0%	81%
45	MDF1252	PORTALEGRE	0	1	50%	63%
45	MDF1253	PORTALEGRE	0	0	0%	100%
45	MDF1254	PORTALEGRE	0	1	50%	71%
45	MDF1255	PORTALEGRE	0	1	50%	65%
45	MDF1256	PORTALEGRE	2	1	50%	38%
45	MDF1257	PORTALEGRE	0	0	0%	100%
45	MDF1258	PORTALEGRE	0	1	50%	67%
66	MDF1259	PORTEL	0	0	0%	100%
66	MDF1260	PORTEL	0	1	91%	20%
66	MDF1261	PORTEL	0	0	0%	100%
66	MDF1262	PORTEL	0	0	0%	100%
66	MDF1263	PORTEL	0	1	91%	23%
66	MDF1264	PORTEL	0	0	0%	100%
66	MDF1265	PORTEL	0	0	0%	95%
66	MDF1266	PORTEL	0	0	0%	100%

82	MDF1267	PORTIMÃO	0	2	88%	46%
82	MDF1268	PORTIMÃO	0	2	88%	54%
82	MDF1269	PORTIMÃO	0	2	88%	47%
82	MDF1270	PORTIMÃO	0	2	88%	44%
82	MDF1271	PORTIMÃO	0	2	88%	43%
82	MDF1272	PORTIMÃO	0	2	88%	56%
82	MDF1273	PORTIMÃO	2	2	88%	33%
82	MDF1274	PORTIMÃO	0	2	88%	54%
02	MDF1275	PORTO	2	2	99%	34%
02	MDF1276	PORTO	3	2	99%	28%
02	MDF1277	PORTO	2	2	99%	20%
02	MDF1278	PORTO	0	2	99%	39%
02	MDF1279	PORTO	2	2	99%	20%
02	MDF1280	PORTO	1	2	99%	40%
02	MDF1281	PORTO	1	2	99%	37%
02	MDF1282	PORTO	2	2	99%	24%
02	MDF1283	PORTO	2	2	99%	39%
02	MDF1284	PORTO	2	2	99%	22%
02	MDF1285	PORTO	2	2	99%	27%
44	MDF1286	PORTO DEMÓS	0	1	45%	83%
44	MDF1287	PORTO DEMÓS	0	0	0%	95%
44	MDF1288	PORTO DEMÓS	0	0	0%	89%
44	MDF1289	PORTO DEMÓS	0	1	45%	83%
44	MDF1290	PORTO DEMÓS	0	1	45%	83%
49	MDF1291	PORTO DEMÓS	0	0	0%	100%
91	MDF1292	PORTO MONIZ	0	0	0%	93%
91	MDF1293	PORTO MONIZ	0	0	0%	93%
91	MDF1294	PORTO SANTO	0	1	65%	54%
53	MDF1295	PÓVOA DE LANHOSO	0	0	0%	83%

53	MDF1296	PÓVOA DE LANHOSO	0	0	0%	87%
53	MDF1297	PÓVOA DE LANHOSO	0	0	0%	79%
53	MDF1298	PÓVOA DE LANHOSO	0	0	0%	83%
53	MDF1299	PÓVOA DE LANHOSO	0	0	0%	95%
52	MDF1300	PÓVOA DE VARZIM	0	1	68%	62%
52	MDF1301	PÓVOA DE VARZIM	0	1	68%	62%
52	MDF1302	PÓVOA DE VARZIM	0	1	68%	61%
52	MDF1303	PÓVOA DE VARZIM	0	1	68%	59%
52	MDF1304	PÓVOA DE VARZIM	1	1	68%	36%
52	MDF1305	PÓVOA DE VARZIM	2	1	68%	55%
52	MDF1306	PÓVOA DE VARZIM	0	0	0%	93%
96	MDF1307	POVOAÇÃO	0	0	0%	85%
96	MDF1308	POVOAÇÃO	0	0	0%	91%
96	MDF1309	POVOAÇÃO	0	0	0%	86%
74	MDF1310	PROENÇA-A-NOVA	0	0	0%	98%
74	MDF1311	PROENÇA-A-NOVA	0	0	0%	100%
74	MDF1312	PROENÇA-A-NOVA	0	0	0%	92%
74	MDF1313	PROENÇA-A-NOVA	0	0	0%	95%
74	MDF1314	PROENÇA-A-NOVA	0	0	0%	97%
66	MDF1315	REDONDO	0	0	0%	100%
66	MDF1316	REDONDO	0	0	0%	97%
66	MDF1317	REDONDO	0	0	0%	94%
66	MDF1318	REDONDO	0	0	0%	100%
66	MDF1319	REGUENGOS DE MONSARAZ	0	0	0%	98%
66	MDF1320	REGUENGOS DE MONSARAZ	0	0	0%	93%
66	MDF1321	REGUENGOS DE MONSARAZ	0	0	0%	100%
66	MDF1322	REGUENGOS DE MONSARAZ	0	0	0%	96%
66	MDF1323	REGUENGOS DE MONSARAZ	0	0	0%	98%
54	MDF1324	RESENDE	0	0	0%	95%

54	MDF1325	RESENDE	0	0	0%	90%
54	MDF1326	RESENDE	0	0	0%	95%
91	MDF1327	RIBEIRA BRAVA	0	1	51%	51%
91	MDF1328	RIBEIRA BRAVA	0	1	51%	43%
59	MDF1329	RIBEIRA DE PENA	0	0	0%	91%
59	MDF1330	RIBEIRA DE PENA	0	0	0%	94%
96	MDF1331	RIBEIRA GRANDE	0	1	66%	51%
96	MDF1332	RIBEIRA GRANDE	0	1	66%	50%
96	MDF1333	RIBEIRA GRANDE	0	1	66%	57%
96	MDF1334	RIBEIRA GRANDE	0	1	66%	62%
96	MDF1335	RIBEIRA GRANDE	0	1	66%	62%
96	MDF1336	RIBEIRA GRANDE	0	1	66%	58%
96	MDF1337	RIBEIRA GRANDE	0	1	66%	53%
43	MDF1338	RIO MAIOR	0	1	50%	81%
43	MDF1339	RIO MAIOR	0	0	0%	97%
43	MDF1340	RIO MAIOR	0	1	50%	81%
43	MDF1341	RIO MAIOR	0	1	50%	74%
43	MDF1342	RIO MAIOR	0	0	0%	91%
43	MDF1343	RIO MAIOR	0	1	50%	78%
43	MDF1344	RIO MAIOR	0	0	0%	97%
59	MDF1345	SABROSA	0	0	0%	88%
71	MDF1346	SABUGAL	0	0	0%	92%
71	MDF1347	SABUGAL	0	0	0%	88%
71	MDF1348	SABUGAL	0	0	0%	96%
71	MDF1349	SABUGAL	0	0	0%	92%
71	MDF1350	SABUGAL	0	0	0%	87%
71	MDF1351	SABUGAL	0	0	0%	93%
71	MDF1352	SABUGAL	0	0	0%	91%
71	MDF1353	SABUGAL	0	0	0%	93%

71	MDF1354	SABUGAL	0	0	0%	100%
75	MDF1355	SABUGAL	0	0	0%	87%
43	MDF1356	SALVATERRA DE MAGOS	0	0	0%	94%
43	MDF1357	SALVATERRA DE MAGOS	0	0	0%	88%
63	MDF1358	SALVATERRA DE MAGOS	0	0	0%	94%
63	MDF1359	SALVATERRA DE MAGOS	0	0	0%	88%
63	MDF1360	SALVATERRA DE MAGOS	0	0	0%	91%
63	MDF1361	SALVATERRA DE MAGOS	0	0	0%	91%
32	MDF1362	SANTA COMBA DÃO	0	0	0%	95%
32	MDF1363	SANTA COMBA DÃO	0	0	0%	93%
32	MDF1364	SANTA COMBA DÃO	0	0	0%	97%
91	MDF1365	SANTA CRUZ	0	1	87%	29%
91	MDF1366	SANTA CRUZ	0	1	87%	28%
91	MDF1367	SANTA CRUZ	0	1	87%	35%
91	MDF1368	SANTA CRUZ	0	1	87%	33%
95	MDF1369	SANTA CRUZ DA GRACIOSA	0	0	0%	99%
95	MDF1370	SANTA CRUZ DA GRACIOSA	0	0	0%	97%
92	MDF1371	SANTA CRUZ DAS FLORES	0	0	0%	99%
02	MDF1372	SANTA MARIA DA FEIRA	0	2	91%	29%
02	MDF1373	SANTA MARIA DA FEIRA	0	2	91%	22%
02	MDF1374	SANTA MARIA DA FEIRA	1	2	91%	19%
02	MDF1375	SANTA MARIA DA FEIRA	0	2	91%	18%
02	MDF1376	SANTA MARIA DA FEIRA	0	2	91%	23%
02	MDF1377	SANTA MARIA DA FEIRA	1	2	91%	33%
56	MDF1378	SANTA MARIA DA FEIRA	0	0	0%	79%
56	MDF1379	SANTA MARIA DA FEIRA	0	2	91%	20%
56	MDF1380	SANTA MARIA DA FEIRA	0	2	91%	30%
56	MDF1381	SANTA MARIA DA FEIRA	0	2	91%	30%
56	MDF1382	SANTA MARIA DA FEIRA	0	0	0%	84%

56	MDF1383	SANTA MARIA DA FEIRA	0	0	0%	82%
56	MDF1384	SANTA MARIA DA FEIRA	0	2	91%	23%
56	MDF1385	SANTA MARIA DA FEIRA	1	2	91%	30%
56	MDF1386	SANTA MARIA DA FEIRA	0	0	0%	89%
56	MDF1387	SANTA MARIA DA FEIRA	1	2	91%	31%
54	MDF1388	SANTA MARTA DE PENAGUIÃO	0	0	0%	96%
54	MDF1389	SANTA MARTA DE PENAGUIÃO	0	0	0%	88%
59	MDF1390	SANTA MARTA DE PENAGUIÃO	0	0	0%	98%
91	MDF1391	SANTANA	0	1	74%	63%
91	MDF1392	SANTANA	0	1	74%	62%
91	MDF1393	SANTANA	0	1	74%	64%
91	MDF1394	SANTANA	0	1	74%	57%
41	MDF1395	SANTARÉM	0	0	0%	100%
43	MDF1396	SANTARÉM	0	0	0%	86%
43	MDF1397	SANTARÉM	0	0	0%	93%
43	MDF1398	SANTARÉM	0	0	0%	92%
43	MDF1399	SANTARÉM	0	0	0%	91%
43	MDF1400	SANTARÉM	0	2	81%	56%
43	MDF1401	SANTARÉM	0	2	81%	51%
43	MDF1402	SANTARÉM	0	0	0%	90%
43	MDF1403	SANTARÉM	0	0	0%	98%
43	MDF1404	SANTARÉM	0	2	81%	59%
43	MDF1405	SANTARÉM	0	0	0%	95%
43	MDF1406	SANTARÉM	2	2	81%	37%
43	MDF1407	SANTARÉM	0	0	0%	96%
43	MDF1408	SANTARÉM	0	0	0%	93%
43	MDF1409	SANTARÉM	0	0	0%	93%
43	MDF1410	SANTARÉM	0	0	0%	94%
43	MDF1411	SANTARÉM	0	0	0%	94%

49	MDF1412	SANTARÉM	0	0	0%	94%
69	MDF1413	SANTIAGO DO CACÉM	0	0	0%	99%
69	MDF1414	SANTIAGO DO CACÉM	0	0	0%	93%
69	MDF1415	SANTIAGO DO CACÉM	0	1	66%	36%
69	MDF1416	SANTIAGO DO CACÉM	0	0	0%	99%
69	MDF1417	SANTIAGO DO CACÉM	0	0	0%	96%
69	MDF1418	SANTIAGO DO CACÉM	0	1	66%	16%
69	MDF1419	SANTIAGO DO CACÉM	0	0	0%	94%
69	MDF1420	SANTIAGO DO CACÉM	0	0	0%	100%
69	MDF1421	SANTIAGO DO CACÉM	0	1	66%	32%
69	MDF1422	SANTIAGO DO CACÉM	0	1	66%	39%
69	MDF1423	SANTIAGO DO CACÉM	0	0	0%	100%
69	MDF1424	SANTIAGO DO CACÉM	0	0	0%	100%
69	MDF1425	SANTIAGO DO CACÉM	0	0	0%	93%
02	MDF1426	SANTO TIRSO	0	0	0%	86%
52	MDF1427	SANTO TIRSO	0	1	86%	55%
52	MDF1428	SANTO TIRSO	0	1	86%	53%
52	MDF1429	SANTO TIRSO	0	0	0%	96%
52	MDF1430	SANTO TIRSO	0	0	0%	92%
52	MDF1431	SANTO TIRSO	0	1	86%	58%
52	MDF1432	SANTO TIRSO	1	1	86%	31%
52	MDF1433	SANTO TIRSO	0	0	0%	90%
52	MDF1434	SANTO TIRSO	1	0	0%	88%
89	MDF1435	SÃO BRÁS DE ALPORTEL	0	1	30%	81%
56	MDF1436	SÃO JOÃO DA MADEIRA	1	2	121%	24%
54	MDF1437	SÃO JOÃO DA PESQUEIRA	0	0	0%	100%
54	MDF1438	SÃO JOÃO DA PESQUEIRA	0	0	0%	100%
54	MDF1439	SÃO JOÃO DA PESQUEIRA	0	0	0%	97%
54	MDF1440	SÃO JOÃO DA PESQUEIRA	0	0	0%	96%

54	MDF1441	SÃO JOÃO DA PESQUEIRA	0	0	0%	100%
32	MDF1442	SÃO PEDRO DO SUL	0	0	0%	96%
32	MDF1443	SÃO PEDRO DO SUL	0	0	0%	91%
32	MDF1444	SÃO PEDRO DO SUL	0	0	0%	92%
32	MDF1445	SÃO PEDRO DO SUL	0	0	0%	97%
92	MDF1446	SÃO ROQUE DO PICO	0	0	0%	81%
92	MDF1447	SÃO ROQUE DO PICO	0	0	0%	88%
92	MDF1448	SÃO ROQUE DO PICO	0	0	0%	78%
91	MDF1449	SÃO VICENTE	0	1	70%	61%
91	MDF1450	SÃO VICENTE	0	1	70%	69%
91	MDF1451	SÃO VICENTE	0	1	70%	67%
41	MDF1452	SARDOAL	0	0	0%	94%
32	MDF1453	SÁTÃO	0	0	0%	95%
32	MDF1454	SÁTÃO	0	0	0%	94%
32	MDF1455	SÁTÃO	0	0	0%	91%
32	MDF1456	SÁTÃO	0	0	0%	95%
38	MDF1457	SEIA	0	0	0%	98%
38	MDF1458	SEIA	0	1	45%	42%
38	MDF1459	SEIA	0	1	45%	28%
38	MDF1460	SEIA	0	1	45%	48%
38	MDF1461	SEIA	1	1	45%	47%
38	MDF1462	SEIA	0	0	0%	97%
38	MDF1463	SEIA	0	0	0%	99%
01	MDF1464	SEIXAL	2	2	96%	16%
01	MDF1465	SEIXAL	2	2	96%	17%
01	MDF1466	SEIXAL	2	2	96%	27%
01	MDF1467	SEIXAL	2	2	96%	14%
01	MDF1468	SEIXAL	0	2	96%	36%
54	MDF1469	SERNANCELHE	0	0	0%	100%

54	MDF1470	SERNANCELHE	0	0	0%	100%
54	MDF1471	SERNANCELHE	0	0	0%	86%
84	MDF1472	SERPA	0	0	0%	100%
84	MDF1473	SERPA	0	0	0%	99%
84	MDF1474	SERPA	0	0	0%	94%
84	MDF1475	SERPA	0	0	0%	100%
84	MDF1476	SERPA	0	0	0%	100%
84	MDF1477	SERPA	0	0	0%	97%
84	MDF1478	SERPA	0	0	0%	99%
36	MDF1479	SERTÃ	0	0	0%	92%
74	MDF1480	SERTÃ	0	0	0%	91%
74	MDF1481	SERTÃ	0	0	0%	94%
74	MDF1482	SERTÃ	0	0	0%	96%
74	MDF1483	SERTÃ	0	0	0%	97%
01	MDF1484	SESIMBRA	0	1	84%	30%
01	MDF1485	SESIMBRA	0	1	84%	7%
01	MDF1486	SESIMBRA	0	1	84%	25%
01	MDF1487	SESIMBRA	0	1	84%	20%
01	MDF1488	SESIMBRA	2	1	84%	18%
01	MDF1489	SESIMBRA	0	1	84%	24%
01	MDF1490	SESIMBRA	0	1	84%	13%
01	MDF1491	SETÚBAL	0	2	98%	15%
01	MDF1492	SETÚBAL	0	2	98%	14%
01	MDF1493	SETÚBAL	0	2	98%	38%
01	MDF1494	SETÚBAL	0	2	98%	40%
01	MDF1495	SETÚBAL	0	2	98%	19%
65	MDF1496	SETÚBAL	0	2	98%	28%
65	MDF1497	SETÚBAL	1	2	98%	32%
65	MDF1498	SETÚBAL	0	2	98%	28%

65	MDF1499	SETÚBAL	0	2	98%	32%
65	MDF1500	SETÚBAL	0	2	98%	24%
65	MDF1501	SETÚBAL	0	2	98%	40%
65	MDF1502	SETÚBAL	1	2	98%	24%
65	MDF1503	SETÚBAL	0	2	98%	34%
65	MDF1504	SETÚBAL	0	2	98%	34%
65	MDF1505	SETÚBAL	1	2	98%	34%
65	MDF1506	SETÚBAL	0	2	98%	45%
65	MDF1507	SETÚBAL	2	2	98%	21%
65	MDF1508	SETÚBAL	2	2	98%	24%
34	MDF1509	SEVER DO VOUGA	0	0	0%	95%
34	MDF1510	SEVER DO VOUGA	0	0	0%	90%
34	MDF1511	SEVER DO VOUGA	0	0	0%	91%
82	MDF1512	SILVES	0	1	75%	64%
82	MDF1513	SILVES	0	0	0%	91%
82	MDF1514	SILVES	0	1	75%	59%
82	MDF1515	SILVES	0	0	0%	93%
82	MDF1516	SILVES	0	1	75%	31%
82	MDF1517	SILVES	0	1	75%	58%
82	MDF1518	SILVES	1	0	0%	93%
82	MDF1519	SILVES	0	0	0%	99%
82	MDF1520	SILVES	0	1	75%	55%
82	MDF1521	SILVES	0	0	0%	93%
69	MDF1522	SINES	0	0	0%	88%
69	MDF1523	SINES	0	0	0%	100%
69	MDF1524	SINES	0	1	88%	29%
01	MDF1525	SINTRA	2	1	95%	20%
01	MDF1526	SINTRA	2	1	95%	27%
01	MDF1527	SINTRA	0	1	95%	46%

01	MDF1528	SINTRA	0	1	95%	46%
01	MDF1529	SINTRA	0	1	95%	50%
01	MDF1530	SINTRA	0	1	95%	24%
01	MDF1531	SINTRA	0	1	95%	48%
01	MDF1532	SINTRA	2	1	95%	20%
01	MDF1533	SINTRA	1	1	95%	38%
01	MDF1534	SINTRA	0	1	95%	10%
01	MDF1535	SINTRA	0	1	95%	41%
01	MDF1536	SINTRA	0	1	95%	52%
01	MDF1537	SINTRA	2	1	95%	21%
01	MDF1538	SINTRA	2	1	95%	20%
01	MDF1539	SINTRA	0	1	95%	31%
01	MDF1540	SINTRA	0	1	95%	36%
01	MDF1541	SINTRA	0	1	95%	46%
01	MDF1542	SINTRA	1	1	95%	39%
01	MDF1543	SINTRA	2	1	95%	18%
01	MDF1544	SINTRA	0	1	95%	6%
01	MDF1545	SINTRA	0	1	95%	53%
01	MDF1546	SINTRA	2	1	95%	20%
01	MDF1547	SINTRA	1	1	95%	39%
01	MDF1548	SINTRA	0	1	95%	49%
01	MDF1549	SINTRA	2	1	95%	22%
01	MDF1550	SINTRA	2	1	95%	35%
01	MDF1551	SINTRA	1	1	95%	46%
01	MDF1552	SINTRA	0	1	95%	46%
61	MDF1553	SOBRAL DE MONTE AGRAÇO	0	0	0%	91%
39	MDF1554	SOURE	1	0	0%	86%
39	MDF1555	SOURE	0	0	0%	89%
39	MDF1556	SOURE	0	0	0%	89%

39	MDF1557	SOURE	0	0	0%	89%
68	MDF1558	SOUSEL	0	0	0%	97%
68	MDF1559	SOUSEL	0	0	0%	99%
68	MDF1560	SOUSEL	0	0	0%	96%
68	MDF1561	SOUSEL	0	0	0%	96%
35	MDF1562	TÁBUA	0	0	0%	89%
35	MDF1563	TÁBUA	0	0	0%	94%
35	MDF1564	TÁBUA	0	0	0%	93%
54	MDF1565	TABUAÇO	0	0	0%	98%
54	MDF1566	TABUAÇO	0	0	0%	95%
54	MDF1567	TAROUCA	0	0	0%	97%
54	MDF1568	TAROUCA	0	0	0%	90%
81	MDF1569	TAVIRA	0	1	25%	81%
81	MDF1570	TAVIRA	0	1	25%	81%
81	MDF1571	TAVIRA	0	0	0%	96%
81	MDF1572	TAVIRA	0	1	25%	80%
81	MDF1573	TAVIRA	0	1	25%	80%
81	MDF1574	TAVIRA	2	1	25%	56%
89	MDF1575	TAVIRA	0	0	0%	100%
53	MDF1576	TERRAS DE BOURO	0	0	0%	71%
53	MDF1577	TERRAS DE BOURO	0	0	0%	89%
53	MDF1578	TERRAS DE BOURO	0	0	0%	92%
53	MDF1579	TERRAS DE BOURO	0	0	0%	84%
53	MDF1580	TERRAS DE BOURO	0	0	0%	91%
49	MDF1581	TOMAR	0	0	0%	93%
49	MDF1582	TOMAR	0	1	45%	67%
49	MDF1583	TOMAR	0	1	45%	74%
49	MDF1584	TOMAR	0	0	0%	92%
49	MDF1585	TOMAR	0	0	0%	98%

49	MDF1586	TOMAR	0	0	0%	92%
49	MDF1587	TOMAR	0	0	0%	97%
49	MDF1588	TOMAR	1	1	45%	42%
32	MDF1589	TONDELA	0	0	0%	96%
32	MDF1590	TONDELA	0	0	0%	94%
32	MDF1591	TONDELA	0	0	0%	94%
32	MDF1592	TONDELA	0	0	0%	93%
32	MDF1593	TONDELA	0	1	32%	72%
32	MDF1594	TONDELA	0	1	32%	75%
32	MDF1595	TONDELA	0	0	0%	95%
32	MDF1596	TONDELA	0	0	0%	94%
32	MDF1597	TONDELA	0	1	32%	74%
79	MDF1598	TORRE DE MONCORVO	0	0	0%	100%
79	MDF1599	TORRE DE MONCORVO	0	0	0%	97%
79	MDF1600	TORRE DE MONCORVO	0	0	0%	98%
79	MDF1601	TORRE DE MONCORVO	0	0	0%	96%
79	MDF1602	TORRE DE MONCORVO	0	0	0%	100%
79	MDF1603	TORRE DE MONCORVO	0	0	0%	92%
79	MDF1604	TORRE DE MONCORVO	0	0	0%	100%
79	MDF1605	TORRE DE MONCORVO	0	0	0%	100%
49	MDF1606	TORRES NOVAS	0	0	0%	92%
49	MDF1607	TORRES NOVAS	0	1	51%	70%
49	MDF1608	TORRES NOVAS	0	1	51%	71%
49	MDF1609	TORRES NOVAS	0	1	51%	65%
49	MDF1610	TORRES NOVAS	0	0	0%	95%
49	MDF1611	TORRES NOVAS	0	1	51%	70%
49	MDF1612	TORRES NOVAS	0	0	0%	93%
49	MDF1613	TORRES NOVAS	0	1	51%	72%
49	MDF1614	TORRES NOVAS	2	1	51%	44%

49	MDF1615	TORRES NOVAS	0	0	0%	96%
61	MDF1616	TORRES VEDRAS	0	0	0%	91%
61	MDF1617	TORRES VEDRAS	0	0	0%	93%
61	MDF1618	TORRES VEDRAS	0	0	0%	93%
61	MDF1619	TORRES VEDRAS	0	2	43%	47%
61	MDF1620	TORRES VEDRAS	0	0	0%	91%
61	MDF1621	TORRES VEDRAS	0	0	0%	91%
61	MDF1622	TORRES VEDRAS	0	0	0%	92%
61	MDF1623	TORRES VEDRAS	0	2	43%	62%
61	MDF1624	TORRES VEDRAS	0	0	0%	97%
61	MDF1625	TORRES VEDRAS	1	0	0%	85%
61	MDF1626	TORRES VEDRAS	0	2	43%	71%
61	MDF1627	TORRES VEDRAS	0	2	43%	70%
61	MDF1628	TORRES VEDRAS	0	2	43%	67%
61	MDF1629	TORRES VEDRAS	0	2	43%	66%
61	MDF1630	TORRES VEDRAS	0	0	0%	94%
61	MDF1631	TORRES VEDRAS	0	0	0%	89%
61	MDF1632	TORRES VEDRAS	0	0	0%	90%
61	MDF1633	TORRES VEDRAS	2	2	43%	43%
61	MDF1634	TORRES VEDRAS	0	0	0%	91%
71	MDF1635	TRANCOSO	0	0	0%	94%
71	MDF1636	TRANCOSO	0	0	0%	93%
71	MDF1637	TRANCOSO	0	0	0%	100%
71	MDF1638	TRANCOSO	0	0	0%	95%
71	MDF1639	TRANCOSO	0	0	0%	97%
71	MDF1640	TRANCOSO	0	0	0%	96%
02	MDF1641	TROFA	0	1	17%	87%
02	MDF1642	TROFA	1	1	17%	84%
52	MDF1643	TROFA	1	1	17%	37%

34	MDF1644	VAGOS	0	0	0%	93%
34	MDF1645	VAGOS	0	1	22%	69%
34	MDF1646	VAGOS	0	1	22%	67%
56	MDF1647	VALE DE CAMBRA	0	0	0%	92%
56	MDF1648	VALE DE CAMBRA	0	1	56%	45%
51	MDF1649	VALENÇA	0	0	0%	94%
51	MDF1650	VALENÇA	0	0	0%	78%
51	MDF1651	VALENÇA	2	0	0%	46%
02	MDF1652	VALONGO	1	1	117%	20%
02	MDF1653	VALONGO	1	1	117%	25%
02	MDF1654	VALONGO	2	1	117%	25%
02	MDF1655	VALONGO	1	1	117%	26%
76	MDF1656	VALPAÇOS	0	0	0%	100%
78	MDF1657	VALPAÇOS	0	0	0%	94%
78	MDF1658	VALPAÇOS	0	0	0%	100%
78	MDF1659	VALPAÇOS	0	0	0%	100%
78	MDF1660	VALPAÇOS	0	0	0%	97%
78	MDF1661	VALPAÇOS	0	0	0%	91%
78	MDF1662	VALPAÇOS	0	0	0%	89%
95	MDF1663	VELAS	0	0	0%	98%
95	MDF1664	VELAS	0	0	0%	99%
95	MDF1665	VELAS	0	0	0%	94%
95	MDF1666	VELAS	0	0	0%	99%
95	MDF1667	VELAS	0	0	0%	98%
65	MDF1668	VENDAS NOVAS	0	1	86%	56%
65	MDF1669	VENDAS NOVAS	1	1	86%	39%
66	MDF1670	VIANA DO ALENTEJO	0	0	0%	97%
66	MDF1671	VIANA DO ALENTEJO	0	0	0%	90%
66	MDF1672	VIANA DO ALENTEJO	0	0	0%	95%

58	MDF1673	VIANA DO CASTELO	0	0	0%	83%
58	MDF1674	VIANA DO CASTELO	0	1	61%	64%
58	MDF1675	VIANA DO CASTELO	1	0	0%	91%
58	MDF1676	VIANA DO CASTELO	0	1	61%	63%
58	MDF1677	VIANA DO CASTELO	1	1	61%	65%
58	MDF1678	VIANA DO CASTELO	0	0	0%	84%
58	MDF1679	VIANA DO CASTELO	0	0	0%	93%
58	MDF1680	VIANA DO CASTELO	0	0	0%	86%
58	MDF1681	VIANA DO CASTELO	0	1	61%	65%
58	MDF1682	VIANA DO CASTELO	0	1	61%	65%
58	MDF1683	VIANA DO CASTELO	2	1	61%	41%
58	MDF1684	VIANA DO CASTELO	0	0	0%	86%
84	MDF1685	VIDIGUEIRA	0	0	0%	91%
84	MDF1686	VIDIGUEIRA	0	0	0%	80%
84	MDF1687	VIDIGUEIRA	0	0	0%	82%
84	MDF1688	VIDIGUEIRA	0	1	70%	39%
84	MDF1689	VIDIGUEIRA	0	1	70%	23%
53	MDF1690	VIEIRA DO MINHO	0	0	0%	88%
53	MDF1691	VIEIRA DO MINHO	0	0	0%	100%
53	MDF1692	VIEIRA DO MINHO	0	0	0%	92%
53	MDF1693	VIEIRA DO MINHO	0	0	0%	100%
53	MDF1694	VIEIRA DO MINHO	0	0	0%	92%
95	MDF1695	VILA DA PRAIA DA VITÓRIA	0	1	57%	67%
95	MDF1696	VILA DA PRAIA DA VITÓRIA	0	1	57%	75%
95	MDF1697	VILA DA PRAIA DA VITÓRIA	0	1	57%	77%
95	MDF1698	VILA DA PRAIA DA VITÓRIA	0	1	57%	73%
95	MDF1699	VILA DA PRAIA DA VITÓRIA	0	1	57%	75%
95	MDF1700	VILA DA PRAIA DA VITÓRIA	0	1	57%	90%
95	MDF1701	VILA DA PRAIA DA VITÓRIA	0	1	57%	71%

53	MDF1702	VILA DE REI	0	0	0%	77%
53	MDF1703	VILA DE REI	0	0	0%	96%
53	MDF1704	VILA DE REI	0	0	0%	89%
74	MDF1705	VILA DE REI	0	0	0%	93%
74	MDF1706	VILA DE REI	0	0	0%	94%
82	MDF1707	VILA DO BISPO	0	0	0%	94%
82	MDF1708	VILA DO BISPO	0	0	0%	95%
82	MDF1709	VILA DO BISPO	0	0	0%	98%
02	MDF1710	VILA DO CONDE	0	0	0%	97%
02	MDF1711	VILA DO CONDE	0	1	69%	50%
02	MDF1712	VILA DO CONDE	0	0	0%	86%
02	MDF1713	VILA DO CONDE	0	1	69%	58%
52	MDF1714	VILA DO CONDE	0	1	69%	54%
52	MDF1715	VILA DO CONDE	0	0	0%	94%
52	MDF1716	VILA DO CONDE	0	1	69%	62%
52	MDF1717	VILA DO CONDE	0	0	0%	96%
52	MDF1718	VILA DO CONDE	0	0	0%	93%
52	MDF1719	VILA DO CONDE	0	0	0%	97%
52	MDF1720	VILA DO CONDE	2	1	69%	57%
52	MDF1721	VILA DO CONDE	0	0	0%	94%
96	MDF1722	VILA DO PORTO	0	0	0%	100%
96	MDF1723	VILA DO PORTO	0	0	0%	97%
78	MDF1724	VILA FLOR	0	0	0%	100%
78	MDF1725	VILA FLOR	0	0	0%	97%
78	MDF1726	VILA FLOR	0	0	0%	93%
78	MDF1727	VILA FLOR	0	0	0%	89%
78	MDF1728	VILA FLOR	0	0	0%	96%
01	MDF1729	VILA FRANCA DE XIRA	2	1	101%	28%
01	MDF1730	VILA FRANCA DE XIRA	2	1	101%	26%

01	MDF1731	VILA FRANCA DE XIRA	0	1	101%	30%
01	MDF1732	VILA FRANCA DE XIRA	0	1	101%	53%
01	MDF1733	VILA FRANCA DE XIRA	2	1	101%	24%
01	MDF1734	VILA FRANCA DE XIRA	2	1	101%	42%
63	MDF1735	VILA FRANCA DE XIRA	0	1	101%	40%
63	MDF1736	VILA FRANCA DE XIRA	0	1	101%	62%
63	MDF1737	VILA FRANCA DE XIRA	2	1	101%	29%
96	MDF1738	VILA FRANCA DO CAMPO	0	1	97%	80%
96	MDF1739	VILA FRANCA DO CAMPO	0	1	97%	77%
96	MDF1740	VILA FRANCA DO CAMPO	0	1	97%	74%
96	MDF1741	VILA FRANCA DO CAMPO	0	1	97%	80%
49	MDF1742	VILA NOVA DA BARQUINHA	0	0	0%	92%
49	MDF1743	VILA NOVA DA BARQUINHA	0	0	0%	95%
51	MDF1744	VILA NOVA DE CERVEIRA	0	0	0%	81%
51	MDF1745	VILA NOVA DE CERVEIRA	0	0	0%	89%
52	MDF1746	VILA NOVA DE FAMALICÃO	0	0	0%	92%
52	MDF1747	VILA NOVA DE FAMALICÃO	0	2	50%	73%
52	MDF1748	VILA NOVA DE FAMALICÃO	0	0	0%	96%
52	MDF1749	VILA NOVA DE FAMALICÃO	0	0	0%	90%
52	MDF1750	VILA NOVA DE FAMALICÃO	0	2	50%	72%
52	MDF1751	VILA NOVA DE FAMALICÃO	0	2	50%	74%
52	MDF1752	VILA NOVA DE FAMALICÃO	0	2	50%	73%
52	MDF1753	VILA NOVA DE FAMALICÃO	0	0	0%	91%
52	MDF1754	VILA NOVA DE FAMALICÃO	0	2	50%	76%
52	MDF1755	VILA NOVA DE FAMALICÃO	0	2	50%	76%
52	MDF1756	VILA NOVA DE FAMALICÃO	1	2	50%	74%
52	MDF1757	VILA NOVA DE FAMALICÃO	0	0	0%	89%
52	MDF1758	VILA NOVA DE FAMALICÃO	0	0	0%	90%
52	MDF1759	VILA NOVA DE FAMALICÃO	2	2	50%	38%

79	MDF1760	VILA NOVA DE FOZ CÔA	0	0	0%	97%
79	MDF1761	VILA NOVA DE FOZ CÔA	0	0	0%	97%
79	MDF1762	VILA NOVA DE FOZ CÔA	0	0	0%	100%
79	MDF1763	VILA NOVA DE FOZ CÔA	0	0	0%	100%
79	MDF1764	VILA NOVA DE FOZ CÔA	0	0	0%	100%
79	MDF1765	VILA NOVA DE FOZ CÔA	0	0	0%	95%
02	MDF1766	VILA NOVA DE GAIA	2	3	92%	19%
02	MDF1767	VILA NOVA DE GAIA	1	3	92%	19%
02	MDF1768	VILA NOVA DE GAIA	0	3	92%	29%
02	MDF1769	VILA NOVA DE GAIA	0	3	92%	35%
02	MDF1770	VILA NOVA DE GAIA	2	3	92%	18%
02	MDF1771	VILA NOVA DE GAIA	0	3	92%	36%
02	MDF1772	VILA NOVA DE GAIA	0	3	92%	23%
02	MDF1773	VILA NOVA DE GAIA	0	3	92%	9%
02	MDF1774	VILA NOVA DE GAIA	0	3	92%	17%
02	MDF1775	VILA NOVA DE GAIA	1	3	92%	17%
02	MDF1776	VILA NOVA DE GAIA	2	3	92%	17%
02	MDF1777	VILA NOVA DE GAIA	0	3	92%	16%
02	MDF1778	VILA NOVA DE GAIA	0	3	92%	43%
02	MDF1779	VILA NOVA DE GAIA	0	3	92%	32%
02	MDF1780	VILA NOVA DE GAIA	1	3	92%	29%
32	MDF1781	VILA NOVA DE PAIVA	0	0	0%	100%
32	MDF1782	VILA NOVA DE PAIVA	0	0	0%	100%
32	MDF1783	VILA NOVA DE PAIVA	0	0	0%	88%
39	MDF1784	VILA NOVA DE POIARES	0	0	0%	82%
59	MDF1785	VILA POUCA DE AGUIAR	0	0	0%	95%
59	MDF1786	VILA POUCA DE AGUIAR	0	0	0%	91%
59	MDF1787	VILA POUCA DE AGUIAR	0	0	0%	91%
59	MDF1788	VILA POUCA DE AGUIAR	0	0	0%	91%

59	MDF1789	VILA POUCA DE AGUIAR	0	0	0%	89%
54	MDF1790	VILA REAL	0	0	0%	96%
59	MDF1791	VILA REAL	0	1	46%	67%
59	MDF1792	VILA REAL	0	1	46%	72%
59	MDF1793	VILA REAL	0	0	0%	90%
59	MDF1794	VILA REAL	0	1	46%	66%
59	MDF1795	VILA REAL	0	0	0%	92%
59	MDF1796	VILA REAL	0	1	46%	74%
59	MDF1797	VILA REAL	0	1	46%	70%
59	MDF1798	VILA REAL	2	1	46%	55%
59	MDF1799	VILA REAL	0	1	46%	74%
81	MDF1800	VILA REAL DE SANTO ANTÓNIO	0	1	23%	86%
81	MDF1801	VILA REAL DE SANTO ANTÓNIO	1	1	23%	89%
72	MDF1802	VILA VELHA DE RÓDÃO	0	0	0%	100%
72	MDF1803	VILA VELHA DE RÓDÃO	0	0	0%	97%
72	MDF1804	VILA VELHA DE RÓDÃO	0	0	0%	96%
72	MDF1805	VILA VELHA DE RÓDÃO	1	0	0%	96%
53	MDF1806	VILA VERDE	0	0	0%	100%
53	MDF1807	VILA VERDE	0	0	0%	88%
53	MDF1808	VILA VERDE	0	0	0%	93%
53	MDF1809	VILA VERDE	0	0	0%	92%
53	MDF1810	VILA VERDE	0	0	0%	88%
53	MDF1811	VILA VERDE	0	0	0%	91%
53	MDF1812	VILA VERDE	0	0	0%	97%
53	MDF1813	VILA VERDE	0	1	40%	79%
68	MDF1814	VILA VIÇOSA	0	0	0%	99%
68	MDF1815	VILA VIÇOSA	0	0	0%	100%
68	MDF1816	VILA VIÇOSA	0	0	0%	95%
73	MDF1817	VIMIOSO	0	0	0%	100%

73	MDF1818	VIMIOSO	0	0	0%	87%
73	MDF1819	VIMIOSO	0	0	0%	78%
73	MDF1820	VIMIOSO	0	0	0%	100%
73	MDF1821	VIMIOSO	0	0	0%	100%
73	MDF1822	VIMIOSO	0	0	0%	90%
73	MDF1823	VINHAIS	0	0	0%	100%
73	MDF1824	VINHAIS	0	0	0%	100%
73	MDF1825	VINHAIS	0	0	0%	100%
73	MDF1826	VINHAIS	0	0	0%	100%
73	MDF1827	VINHAIS	0	0	0%	100%
73	MDF1828	VINHAIS	0	0	0%	100%
73	MDF1829	VINHAIS	0	0	0%	96%
78	MDF1830	VINHAIS	0	0	0%	94%
78	MDF1831	VINHAIS	0	0	0%	100%
32	MDF1832	VISEU	0	2	71%	41%
32	MDF1833	VISEU	0	0	0%	96%
32	MDF1834	VISEU	0	2	71%	46%
32	MDF1835	VISEU	0	0	0%	93%
32	MDF1836	VISEU	0	0	0%	95%
32	MDF1837	VISEU	0	0	0%	93%
32	MDF1838	VISEU	0	2	71%	43%
32	MDF1839	VISEU	0	0	0%	98%
32	MDF1840	VISEU	0	0	0%	96%
32	MDF1841	VISEU	0	0	0%	97%
32	MDF1842	VISEU	0	2	71%	47%
32	MDF1843	VISEU	0	0	0%	90%
32	MDF1844	VISEU	1	2	71%	43%
32	MDF1845	VISEU	2	2	71%	31%
53	MDF1846	VIZELA	1	1	35%	82%

53	MDF1847	VIZELA	0	1	35%	81%
53	MDF1848	VIZELA	0	1	35%	80%
53	MDF1849	VIZELA	0	1	35%	83%
32	MDF1850	VOUZELA	0	0	0%	98%
32	MDF1851	VOUZELA	0	0	0%	90%
32	MDF1852	VOUZELA	0	0	0%	93%
32	MDF1853	VOUZELA	0	0	0%	93%

ANNEX 3 – EXCHANGES WHERE THERE IS AT LEAST ONE CO-INSTALLED OPERATOR AND WHERE THERE IS AT LEAST ONE OPERATOR OF CABLE DISTRIBUTION NETWORKS AND WHERE THE PERCENTAGE OF HOUSEHOLDS CABLED BY THE PRINCIPAL OPERATOR IN THE MUNICIPALITY IS GREATER THAN 60%

01AB01 - Abóboda
01AU01 - Agualva
01AQ01 - Albarraque
01AD01 - Alcabideche
01AO01 - Alcochete
01AJ01 - Aldeia de Juzo
01AF01 - Alfragide
01AG01 - Algés
01AH01 - Alhandra
01AA01 - Almada
01AV01 - Alverca
01AM01 - Amadora
01LX01 - Amoreiras
01LX10 - Areeiro
01CH02 - Aroeira
01BB01 - Baixa da Banheira
01BA01 - Barreiro
01LX02 - Belém
01LX03 - Benfica
01BO01 - Bobadela
01CC01 - Cacém
01CM01 - Camarate
01LX11 - Campo Pequeno
01CN01 - Caneças
01CA01 - Caparica
01CV01 - Carcavelos
01CX01 - Carnaxide
01LX04 - Carnide
01CS01 - Cascais
01LX12 - Castelo
01CH01 - Charneca
01LX13 - Chelas
01CL01 - Colares
01CR01 - Corroios
01CP01 - Cruz de Pau
01DM01 - Damaia
01ES01 - Estoril
01LX05 - Estrela
01FJ01 - Feijó

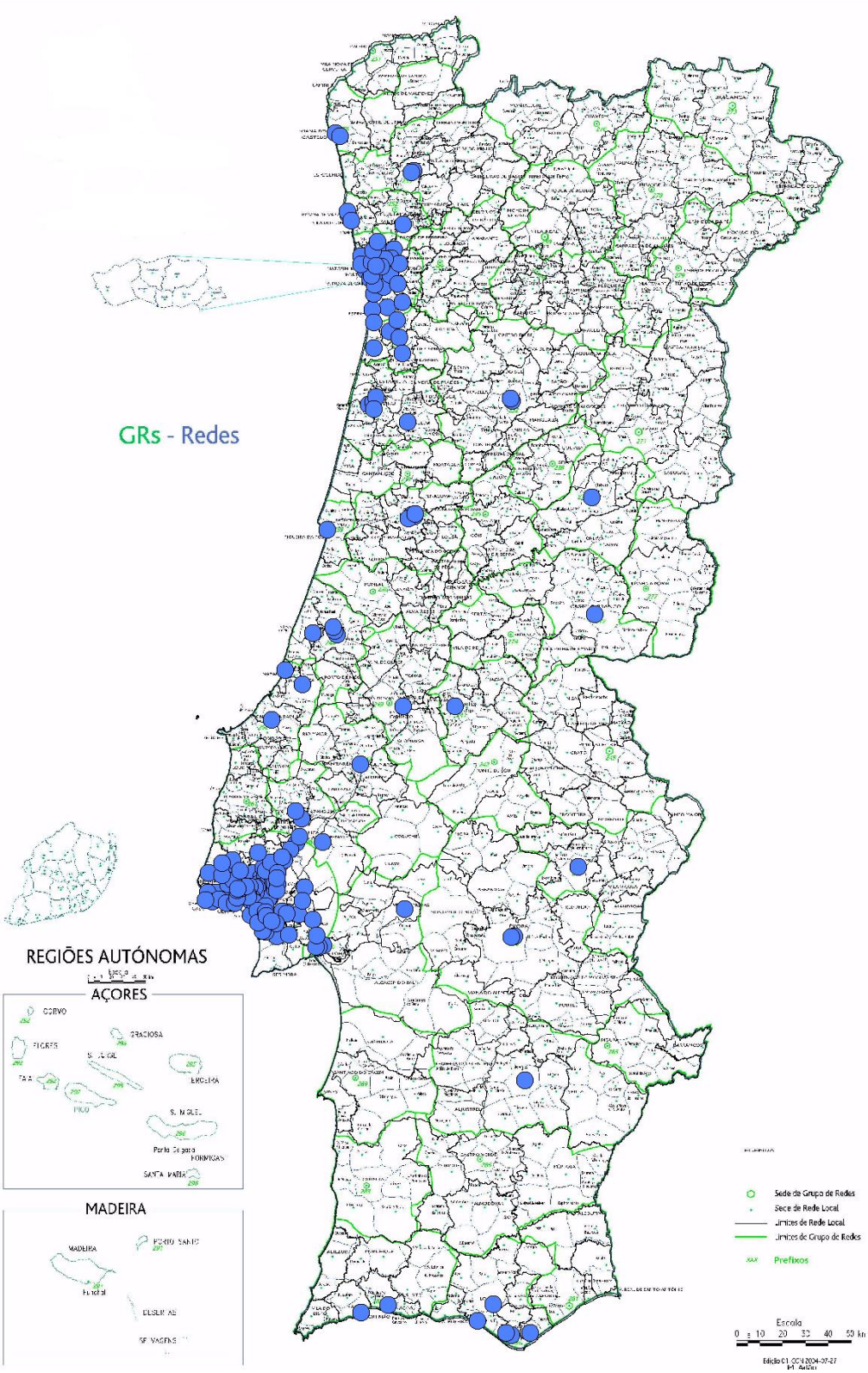
01FF01 - Fernão Ferro
01LX14 - Graça
01LX06 - Laranjeiras
01LV01 - Linda-a-Velha
01LU01 - Loures
01LS01 - Lousa
01LX15 - Lumiar
01MH01 - Marinha
01MS01 - Massamá
01MM01 - Mem Martins
01MF01 - Miraflores
01MO01 - Moita
01MN01 - Montijo
01LX19 - Musgueira
01LX07 - Norte
01OD01 - Odivelas
01OE01 - Oeiras
01LX16 - Olivais
01LX20 - Oriente
01PM01 - Palmela
01PR01 - Parede
01LX08 - Pedrouços
01PP01 - Pero Pinheiro
01PN01 - Pinhal Novo
01LX17 - Poço do Bispo
01PO01 - Pontinha
01LX09 - Portas de Benfica
01PT01 - Portela
01PL01 - Porto Salvo
01PV01 - Póvoa de Santa Iria
01PA01 - Póvoa de Santo Adrião
01PS01 - Praia do Sol
01QE01 - Queluz
01QC01 - Quinta do Conde
01RB01 - Reboleira
01RM01 - Rio de Mouro
01SB01 - Sabugo
01SC01 - Sacavém
01SA01 - Santo António dos Cavaleiros
01SM01 - São Marcos
01SN01 - Sintra
01PL04 - Tagus Park
01TE01 - Terrugem
01TJ01 - Tojal
01TM01 - Torre da Marinha
01LX18 - Trindade

01VN01 - Venda Nova
01CH03 - Verdizela
01VA01 - Vialonga
01VC01 - Vila Chã
02AF01 - Afurada
02AN01 - Alfena
02AC01 - Arcozelo
02PT02 - Areosa
02PT03 - Boavista
02PT04 - Bonfim
02PT05 - Campanhã
02PT06 - Carvalhido
02CT01 - Castelo da Maia
02PT13 - Condominhas
02EM01 - Ermesinde
02EP01 - Espinho
02PT12 - Ferreira Dias
02PT07 - Foz
02GA01 - Gaia
02PT11 - Galiza
02GO01 - Gondomar
02GJ01 - Grijó
02JV01 - Jovim
02PT08 - Lapa
02LC01 - Leça da Palmeira
02MA01 - Maia
02MT01 - Matosinhos
02OD01 - Oliveira do Douro
02PT09 - Picaria
02RT01 - Rio Tinto
02EM03 - Sá
02EM02 - Sampaio
02SD01 - Sandim
02SO01 - Santo Ovidio
02SM01 - São Mamede de Infesta
02SH01 - Senhora da Hora
02GA02 - Simopre
02VC01 - Valongo Centro
32VZ06 - Viriato
32VZ01 - Viseu
33FG01 - Figueira da Foz
34AG01 - Águeda
34AV01 - Aveiro
34AV02 - Esgueira
34AV05 - Quinta do Simão
34AV04 - São Bernardo

39CO02 - Calhabé
39CO09 - Celas
39CO01 - Mercado
39CO03 - Santa Clara
41AB01 - Abrantes
43ST01 - Santarém
44LR03 - Gândara dos Olivais
44LR01 - Leiria
44MR01 - Marinha Grande
44LR04 - Quinta da Alçada
49ET01 - Entroncamento
52PZ01 - Póvoa de Varzim
52PZ02 - Póvoa de Varzim Centro
52SS01 - Santo Tirso
52PZ03 - Vila do Conde
53BG01 - Braga
53BG06 - Maximinos
56EZ01 - Esmoriz
56AZ01 - Oliveira de Azeméis
56OV01 - Ovar
56SM01 - São João da Madeira
56SG01 - São Jorge
56VF01 - Vila da Feira
58DQ01 - Darque
58VC01 - Viana do Castelo
62AB01 - Alcobaça
62CH01 - Caldas da Rainha
62NR01 - Nazaré
63AQ01 - Alenquer
63CG01 - Carregado
63SR01 - Samora Correia
63VX01 - Vila Franca de Xira
65SB11 - Azeda
65SB13 - Jaime Cortesão
65SB03 - Montebelo
65SB01 - Setúbal
65VN01 - Vendas Novas
65SB08 - Viso
66EV01 - Évora
66EV02 - Malagueira
68ET01 - Estremoz
72CB01 - Castelo Branco
75CL01 - Covilhã
82LG01 - Lagos
82PM01 - Portimão
84BJ01 - Beja

89FR01 - Faro
89LE01 - Loulé
89FR03 - Montenegro
89OH01 - Olhão
89QT01 - Quarteira
91FX01 - Funchal
91FX03 - Nazaré

ANNEX 4 – MAP OF THE GEOGRAPHIC LOCATION OF THE EXCHANGES IDENTIFIED IN ANNEX 3



ANNEX 5 – LIST OF ACRONYMS AND ABBREVIATIONS

AAS..... Analytical Accounting System

ADSL ..... Asymmetric Digital Subscriber Line

AP ..... Attendance Point

ATM..... Asynchronous Transfer Mode

BWA ..... Broadband Wireless Access

CA..... Competition Authority

CJEC ..... Court of Justice of the European Communities

DSL ..... Digital Subscriber Line

DSLAM ..... Digital Subscriber Line Access Multiplexer

DTH ..... Direct To Home

EC ..... European Commission

ECNS ..... Electronic Communications Networks and Services

EIC ..... End of Confidential Information

ERG ..... European Regulators Group

EU.....European Union

FL-LRIC ..... Forward-looking long-run incremental cost

FTS..... Fixed Telephone Service

FWA..... Fixed Wireless Access

Guidelines ..... Guidelines of the European Commission on the analysis and assessment of significant market power with respect to the regulatory framework for electronic communication networks and services

HSDPA ..... High-Speed Downlink Packet Access

HSUPA ..... High-Speed Uplink Packet Access

IP ..... Internet Protocol

ISDN.....Integrated Services Digital Network

ISP..... Internet Service Provider

Kbps ..... Kilobits per second

LLU..... Local Loop Unbundling

Mbps ..... Megabit per second

MDF..... Main Distribution Frame

NGN..... Next Generation Networks

NRA ..... National Regulatory Authority

NUTS ..... Nomenclature of Territorial Units for Statistics

OFCOM ..... Office of Communications

OSP ..... Operator and Service Provider (not part of PT Group)

PC..... Personal Computer

PCI ..... Peripheral Component Interconnect

PCMCIA ..... Personal Computer Memory Card International Association

SMP ..... Significant Market Power

SIC ..... Start of Confidential Information

PTC ..... PT Comunicações, S.A.

RCAO..... Reference Conduit Access Offer

Recommendation ..... Recommendation on relevant product and service markets within the electronic communications sector of the European Commission

RUO..... Reference Unbundling Offer

PSTN..... Public Switched Telephone Network

SMP ..... Significant Market Power

SSNIP..... Small but Significant Non-transitory Increase in Price

UMIC ..... Knowledge Society Agency

UMTS ..... Universal Mobile Telecommunication System

USB..... Universal Serial Bus

VAT ..... Value Added Tax