MARKETS FOR HIGH-QUALITY ELECTRONIC COMMUNICATIONS AT A FIXED LOCATION (ACCESS AND TRUNK SEGMENTS)

Definition of product markets and geographic markets, assessment of SMP and imposition, maintenance, amendment or withdrawal of regulatory obligations

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Contents

Index of Tables

Index of Figures

1. Introduction

Conclusions of the last market analysis on wholesale terminating segments and trunk segments of leased lines

1.1 By determination of 28 September 2010, the Management Board of ANACOM approved a decision on the definition of product markets and geographic markets, assessment of significant market power (SMP) and imposition, maintenance, amendment or withdrawal of regulatory obligations in retail markets and in wholesale markets for terminating segments - Market 6[1] - and for trunk segments[2] of leased lines[3].

1.2 For the purposes of *ex ante* regulation and in accordance with the principles of competition law, the following wholesale leased line markets were identified:

- Terminating segments of leased lines, irrespective of capacity and technology, covering the entire national territory - market for terminating segments;
- Trunk segments of leased lines, irrespective of capacity and technology, consisting of NC Routes - market for NC Routes[4].

1.3 Having analysed markets above, taking the utmost account of the European Commission (EC) Guidelines on market analysis and the assessment of SMP under the Community regulatory framework for electronic communications networks and services (hereinafter referred to as 'Guidelines')[5], ANACOM concluded that Grupo PT

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1 Market of Commission Recommendation 2007/879/EC, of 17 December 2007, on relevant markets - in force at the time and available at http://www.anacom.pt/render.jsp?contentId=984081. Currently referred to as Market 4 - Wholesale high-quality access provided at a fixed location - in the Recommendation in force on relevant markets - Commission Recommendation 2014/710/EU of 9 October 2014, hereinafter referred to as 'Recommendation on relevant markets'.

2 Market 14 of the 2003 Recommendation on relevant markets.

3 *Vide* http://www.anacom.pt/render.jsp?contentId=1000059. Hereinafter generally referred to as 'former market analysis'.

4 C ("Competitive") Routes were defined as routes/trunk segments between local exchanges in which at least two alternative operators active on the market are collocated, using transmission networks other than those leased by MEO, and NC (Non Competitive) Routes mean all remaining routes - vide **Chapter 3** of this document.

5 *Vide* http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2002:165:0006:0031:EN:PDF.

(now MEO)[6] held SMP in the identified relevant markets, having thus imposed on that company *ex ante* obligations relating to access, transparency, non discrimination, accounting separation, price control and financial reporting, with the level of detail identified in **Annex I** thereto.

1.4 It was concluded in the same analysis that, in Portugal, the leased lines retail market was not a relevant market susceptible to *ex ante* regulation, in line with the EC Recommendation on relevant markets, taking into account that it was concluded that the regulation of wholesale leased lines markets, including the imposition of obligations on operators holding SMP in these markets, was sufficient to ensure a competitive offer at retail level.

1.5 In the scope of the same analysis, ANACOM concluded that the market for trunk segments in C Routes[7] was competitive and, consequently, all *ex ante* obligations formerly imposed on MEO on that market should be removed[8], although a six-month transition period was deemed to be required, during which obligations would remain in force[9].

1.6 ANACOM concluded that obligations imposed at wholesale level, in the national market for terminating segments and in the market for trunk segments in NC routes, were necessary to continue to promote competition in retail leased lines markets, given that such competition was mainly based on the regulated provision of MEO's wholesale leased lines.

1.7 In compliance with obligations imposed, MEO made available and maintains the provision of the leased lines reference offer (LLRO) as well as the reference Ethernet leased lines offer (RELLO), which lay down the characteristics and conditions

6 On 29 December 2014, MEO - Serviços de Comunicações e Multimédia, S.A. (MEO) merged into PT Comunicações, S.A. (former PTC), the transfer of all assets and liabilities, and the adoption of the designation 'MEO' having taken place.

7 As far as the market for C Routes was concerned, ANACOM concluded that, as, in addition to MEO, at least two other operators were active in the wholesale leased lines market, holding their own infrastructure in those routes, barriers to entry no longer existed, and that the use in those routes of trunk segments supplied by MEO was limited.

8 In the market for trunk segments on national territory (Market 14).

9 All (formerly imposed) obligations were maintained for a 6-month period after the final decision, except for the 26% price gap between wholesale prices in C Routes and corresponding retail prices, a rule which was immediately removed.

associated to the provision by this company[10] of wholesale leased lines, both traditional and Ethernet. In remaining routes, MEO maintains a commercial offer of wholesale leased lines.

The 2014 Recommendation on relevant markets, market developments and the need to review the market analysis

The 2014 Recommendation on relevant markets

1.8 At the end of 2014, a new Recommendation on relevant markets was published - Commission Recommendation on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services[11].

1.9 Compared to the previous Recommendation, Market 6, designated market for wholesale terminating segments of leased lines, was redenominated market for wholesale high-quality access provided at a fixed location (Market 4), a market with a broader scope, beyond "traditional" leased lines.

1.10 According to the Explanatory Note accompanying the Recommendation on relevant markets[12] (hereinafter 'Explanatory Note'), Market 4 has the necessary inputs to supply at retail level high-quality accesses to business customers such as, for example, leased lines or other wholesale access products, which are generally asymmetric (and possibly with contention), provided by an operator holding a copper-based network or hybrid infrastructures (such as cable network), that meet certain quality characteristics.

[10] *Vide* http://ptwholesale.telecom.pt/GSW/PT/Canais/ProdutosServicos/OfertasReferencia/.

[11] Recommendation 2014/710/EU, available at: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014H0710&from=EN.

[12] The Recommendation on relevant markets is accompanied by an Explanatory Note, in which the Commission sets out in detail the definition of the above-mentioned markets as relevant markets for the purpose of *ex ante* regulation (available at http://ec.europa.eu/newsroom/dae/document.cfm?action=display&doc_id=7056).

Market developments

1.11 Subsequently to the 2010 market analysis, there were some developments with impact at the level of markets, namely the increasing use of Ethernet access and line offers, and the expansion of fibre optic networks owned by the main network operators competing with MEO (hereinafter OSP[13]), both at the level of transport networks (routes) and of access networks.

1.12 Among changes in the national market, the following must be highlighted:

– The proliferation of bundle offers, namely triple-play[14] services (and more recently, quadruple-play and quintuple-play[15] services), made available by main operators on the retail electronic communications market. These offerings require increased capacity of the access and transport network, and in many cases, they are based on self-owned or leased fibre optic (such as utilities, as far as the transport component is concerned).

  Without prejudice, these bundle offers chiefly target the mass market segment, and the size of the network required to provide them differs from that of the network that addresses the broader and multi-site business customer market segment, especially at access level, although both segments[16] share the core network; as such, the existence of a network does not guarantee by itself current or prospective competition, in a given market segment.

– In this respect, it must be mentioned that several operators abandoned the residential market to focus exclusively on the business market, such as AR Telecom and Oni, while others always focused solely on the business market (such as Colt and IP Telecom). On the other hand, there are operators who have a relevant coverage but show a very residual presence in the business

13 Operators and Service Providers, network operators other than MEO.

14 Standard three-service offer, including in particular the broadband or very broad band Internet access service.

15 The mobile telephone service and mobile broadband service being respectively added to the triple-play bundle.

16 That is, to address the mass consumption segment, it must be found whether demand in a given area is enough to justify its coverage, while in the business segment (and/or for customers with multiple installations) the installation of higher speed accesses in a given area that requires coverage may be justified at economic level, to serve a single customer, where revenues from this customer exceed the cost of such installation(s). This situation is more visible for high-speed internet access.

market, and are almost exclusively dedicated to the residential market - e.g. Cabovisão[17]. As a result, the analyses of Markets 3a and 3b, on the one hand, and Market 4, on the other, although in some way connected (for example, operators rely on the LLU offer, imposed in the scope of Market 3a, to supply high-quality accesses, which are covered by the scope of Market 4), may not necessarily present the same conclusions.

– The heavy (and sustained) investment on high-speed access networks (Next Generation Networks - NGN - or New Generation Access - NGA[18] - networks) both at the level of hybrid cable distribution networks[19] or fibre optic networks[20], which results from an easier access to infrastructures suitable for the accommodation of electronic communications networks, namely to ducts owned by MEO in the scope of RDAO and also to poles owned by MEO in the scope of RPAO - regulated offers in the scope of the access obligation imposed on Market 4 of the 2007 Recommendation on relevant markets - and, to a lesser extent, the investment on infrastructures of other bodies in the framework of the legal regime governing the construction, access to and set up of electronic communications networks and infrastructures, defined in Decree-Law No. 123/2009, of 21 May[21].

– The installation of high-speed electronic communications networks in rural areas (the so-called Rural NGN) by DSTelecom and Fibroglobal, using public co-financing, in 139 municipalities where no alternative infrastructure existed, and the provision of advanced services[22], after implementation of the network and start of operations[23], under the referred tenders, any interested operator

17 And ZON, before merging into Optimus.

18 Next Generation Access (NGA) networks. According to the Recommendation on NGA networks, "*Next generation access networks (NGAs) means wired access networks which consist wholly or in part of optical elements and which are capable of delivering broadband access services with enhanced characteristics (such as higher throughput) as compared to those provided over already existing copper networks. In most cases NGAs are the result of an upgrade of an already existing copper or co-axial access network*".

19 HFC (Hybrid Fibre Coax) networks, with an large fibre optic component.

20 In this respect, the former market analysis already stressed the need to monitor the evolution to next generation networks, both at the level of the transport and interconnection network and of access networks, having some OSP installed leased lines in the terminating segment component in some areas.

21 As amended by Decree-Law No. 258/2009, of 25 September, by Decree-Law no. 47/2013, of 10 July and by Law No. 82-B/2014, of 31 December. *Vide* http://www.anacom.pt/render.jsp?contentId=975261.

22 *Vide* http://www.anacom.pt/render.jsp?categoryId=332482.

23 Except in the Autonomous Region of Madeira.

being allowed access, as these are open access networks, for the provision of retail mass market services.

– The expansion of mobile broadband, currently for the recent provision of 4G/LTE services with higher speed, and for the purpose of this analysis, based on the reinforcement of capacity and the number of base stations, in many cases using self-owned fibre optic (and wireless) infrastructure. In remaining cases, these connections rely on leased capacity, especially from MEO.

– The decrease in the amount of accesses based on MEO's wholesale offers (RUO and PT ADSL Network[24]), as well as on the LLRO offer.

– The conclusion of a sharing agreement on NGA-infrastructure between Optimus and Vodafone, at the end of 2010;

– The conclusion in July 2014 of an agreement between Vodafone and MEO for the purchase of rights to the exclusive use of the PON network;

– The conclusion of contracts with main operators other than MEO for the (installation and) management of several communications networks and services (including high-quality access) of large companies and bodies, such as banks, SIBS or the Ministries for Health and Education, involving accesses in multiple locations throughout the national territory, both via self-owned networks or on the basis of MEO's wholesale offers.

1.13 In addition to developments identified above, several merger cases took place since 2013 between companies operating in markets concerned:

– On 26 August 2013, the *Autoridade da Concorrência* (AdC - the Competition Authority) adopted[25] a decision not opposing the merger operation between Kento*Unitel*Sonaecom/ ZON*Optimus[26], attaching conditions and obligations

[24] These accesses have registered a continued fall. By the end of 2007, total accesses of OSP based on this wholesale offer amounted to 59,947, having decreased to 15,159 by the end of 2015. This access is chiefly provided to non-residential customers with installations spread throughout the country and in more remote areas.

thereto, in order to ensure that effective competition was maintained in the various markets where Optimus operated, namely markets where it held fibre optic and where competition concerns had been identified[27].

This operation resulted in the establishment of NOS Comunicações, S.A. (NOS)[28].

– AdC also adopted, on 2 August 2013, a decision not opposing the merger operation which consisted in the acquisition by Altice Holdings S.A.R.L. (which controlled Cabovisão – Televisão por Cabo, S.A. (Cabovisão), through its subsidiary Altice Portugal, S. A.) of the exclusive control of Winreason, S.A.[29], through the purchase of all shares representing the respective share capital and respective subsidiaries, given that such purchase was not likely to create significant impediment to effective competition in identified relevant markets.

– Finally, the sale to Altice, S.A. (Altice), of the total shareholding of PT PORTUGAL, SGPS, S.A., by Oi, S.A. under the terms established by Oi, S.A.[30], was approved at the General Meeting of Shareholders of Portugal Telecom, SGPS SA, held on 22 January 2015.

The concentration plan by means of which Altice acquires[31] the control of Portuguese assets of PT Portugal, SGPS, S.A., through the acquisition of

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25 *Vide* http://www.concorrencia.pt/vPT/Controlo_de_concentracoes/Decisoes/Paginas/pesquisa.aspx?pNumb=5&yearNot=2013&pag=14&doc=True&est=2.

26 Merger operation which consisted in the purchase by Isabel dos Santos, indirectly, through the group of companies, respectively Kento Holding Limited and Unitel International Holdings, BV, as well as by Sonae SGPS, S.A., through Sonaecom, SGPS, S.A., of the joint control, via a vehicle-common-company, over ZON. Zon later merged into Optimus, which was also subject to the referred joint control.

27 In general, commitments undertaken by notifying parties were as follows: extension of the time-limit laid down in the "Contract for reciprocal provision of services", including all additions, concluded between Optimus and Vodafone (Optimus/Vodafone contract), liability regime in case of termination of the Optimus/Vodafone contract, elimination of loyalty periods for Optimus' 3P customers, negotiation of wholesale access to Optimus' network and option to purchase Optimus' sellable network.

28 By means of two successive processes: concentration at the level of SGPS in 2013, which resulted in ZON Optimus, SGPS, S.A. (now NOS SGPS, S.A.) and; merger by incorporation of ZON TV Cabo Portugal, S.A. into Optimus Telecomunicações, S.A., in May 2014, with the change of the company's corporate name to NOS Comunicações, S.A..

29 Winreason, S.A. was a holding which possessed shares of several companies, including Onitelecom – Infocomunicações, S.A. (Oni).

30 *Vide* http://web3.cmvm.pt/sdi2004/emitentes/docs/FR53656.pdf.

31 In the sense of article 3, paragraph 1 b) of Council Regulation (EC) No 139/2004 - JO L 24 of 29.1.2004, p.1 ("the Merger Regulation").

shares, was notified to the Commission on 25 February 2015, under article 4 of the Merger Regulation.

On 20 April 2015, the Commission communicated that it had authorized[32], pursuant to that Regulation, the proposal for acquisition of PT Portugal by Altice, having accepted Altice's commitment to divest in its current Portuguese businesses, ONI and Cabovisão.

In the Commission's opinion, these structural commitments completely remove the overlap that existed in Portugal between Altice's and PT Portugal's activities and are therefore appropriate to address any competition concerns. The Commission thus concluded that the transaction, as modified by the commitments, raises no competition concerns, the decision being conditional upon full compliance with the commitments.

On 15 September 2015, Altice communicated that it had reached an agreement with Apax France regarding the sale of Cabovisão and Oni[33], having subsequently been notified[34] to AdC the acquisition from Altice of the exclusive control of Cabovisão, Winreason, S.A. and Oni, by Cabolink S.à.r.L. (held by the Apax France investment fund), having the Competition Authority, in November 2015, adopted a decision not opposing the referred concentration[35].

The analysis in this document thus assumes the effective and full implementation of commitments undertaken, as well as the sale of Cabovisão and Oni to Apax. Where relevant, Cabovisão and Oni are designated Apax in this analysis.

1.14 Taking into account in particular the Recommendation on relevant markets and the above-mentioned evolution, and given that the former market analysis was published in September 2010, having ANACOM decided on amendments to LLRO and RELLO

[32] *Vide* http://europa.eu/rapid/press-release_IP-15-4805_en.htm.

[33] *Vide* http://altice.net/wp-content/uploads/2015/09/20150915-ALT-sale-cabo-oni.pdf.

[34] In October 2015.

[35] *Vide* http://www.concorrencia.pt/FILES_TMP/2015_46_final_net.pdf.

in June 2012[36], and given that some issues still required clarification (such as the price regulation of MAM Ethernet lines[37,38]), it was deemed that the high-quality access market required an analysis.

The Draft Decision of 19 December 2014 on wholesale leased lines

1.15 Given that there were issues which had to be dealt with as soon as possible, such as prices of MAM lines, and in the light of the national reality and market data already collected, ANACOM took the definition of the former Recommendation on relevant markets into consideration, in the scope of the draft decision (DD) of 19 December 2014 on market analysis, restricting it to the (traditional and Ethernet) leased lines market, ex-Market 6 an ex-Market14.

1.16 In fact, the Recommendation on relevant markets (2014) took effect at about the same time as the conclusion of the DD, thus ANACOM decided not to delay its publication, and to analyse high-quality access services in separate at a later stage.

1.17 However, due to amendments laid down by this review of the Recommendation on the definition and scope of the "traditional" leased lines market, with the concept of wholesale high-quality access at a fixed location - market that covers "*inputs required to supply, at retail level, high-quality access to business customers*"[39], to the market evolution in 2014[40] and 2015, and also taking into account comments received at the stage of the public consultation and prior hearing on the DD, ANACOM acknowledged the need for an analysis of all related (retail) components of the new Market 4, given their potential impact on wholesale markets themselves.

1.18 In this regard, ANACOM decided to incorporate high-quality access services (not just

[36] ANACOM Decision of 14 June 2012, on amendments to the Leased Lines Reference Offer (LLRO) and to the Reference Ethernet Leased Lines Offer (RELLO), available at http://www.anacom.pt/render.jsp?contentId=1131405.

[37] Leased lines between the Mainland and the Autonomous Regions are known as MAM lines - Mainland - Azores - Madeira connections.

[38] As provided for in ANACOM Decision of 23 July 2015 on the approval of provisional and urgent measures relating to the wholesale high-quality access market provided at a fixed location (MAM and inter-island Ethernet lines). For further details on this matter, *vide*: http://www.anacom.pt/render.jsp?contentId=1384320.

[39] Incorporating high-quality services which differ technically from "regular" leased lines, but which may be used as substitute products, especially in the point of view of the demand on the part of companies. This matter shall be more thoroughly analysed in a separate section.

[40] Year for which ANACOM still lacked full information and with the level of detail required by the date the DD was adopted.

leased lines) in the market analysis, having requested information - for the end of the first quarter of 2015 - on the provision of all high-quality access services both at wholesale and at retail level, by means of a questionnaire that was submitted to operators and providers of such services (*vide* section 'The 2015 Questionnaire').

1.19 In this respect, a careful assessment and consideration is required in order, on the one hand, to take into account the competitive dynamics of the retail market and to identify the sources of such competitive dynamics (for example, if it is based on self-owned networks or if it depends to a large extent on wholesale - regulated - offers provided by MEO) and on the other hand, to weight whether the wholesale market itself is dynamic (either through investment on self-owned networks or through access to third party infrastructures).

1.20 With respect to obligations on MAM lines and lines between the various islands of each of the Autonomous Regions (the so-called 'inter-island lines'), to trunk segments based on submarine cables owned by MEO, and more specifically as far as prices of Ethernet lines were concerned, ANACOM decided to adopt, on 23 July 2015, provisional and urgent measures to remain fully in force until this market analysis was completed, as that decision could not be postponed, for the reasons explained therein in detail[41].

1.21 On the same date, the report of the public consultation and prior hearing on the 2014 DD was approved. Arguments presented by stakeholders and ANACOM's preliminary views referred in that report are taken into account wherever possible, notwithstanding the broader scope of this analysis (which includes not only leased lines but also other means of high-quality access).

The 2015 Questionnaire

1.22 On 22 May 2015, ANACOM sent a standard questionnaire to operators[42] active in these markets, having requested comments or suggestions, questioning in particular whether operators considered that the information therein was sufficient or whether it

[41] *Vide* Decision at http://www.anacom.pt/render.jsp?contentId=1384320.

[42] APAX (Oni and Cabovisão), AR Telecom, COLT, DST SGPS (DST), Emacom, Fibroglobal, IP Telecom, MEO, NOS, REN Telecom, TATA Communications and Vodafone. DST, Fibroglobal and TATA operate only in wholesale markets.

should be complemented to accurately assess the retail and wholesale market for high-quality access at a fixed location, and what additional information should be included.

1.23 Having contributions received been analysed, a new questionnaire was drawn up, and designated '2015 Questionnaire', integrating almost all suggestions put forward by stakeholders. It is worth highlighting the greater effort to aggregate information in a single questionnaire for all operators; the extension of the deadline to complete tables on access; the clarification on the type of access to be taken into consideration; more precise and clear information on maps and tables (as well as on guidance notes for completion); less strict requirements as regards geo-referenced information[43]; simplification of table on access, without aggregation at postcode (PC) level; update of the date which information concerns; possibility of information at PC4 level (where not available for PC7).

1.24 The questionnaire was subsequently sent to operators on 10 July 2015, having been established a 20-working-day deadline for submission of information on maps and network nodes, and a 30-working-day deadline for submission of information on retail and wholesale access and on general issues related to this market.

1.25 Information included in the questionnaire can be summarised as follows:

- Access and transport network, as well as network nodes and BTS of mobile operators, including networks and nodes that were self-owned or held by third parties, by the end of the first half of 2015 (or a close date, where available information does not coincide with the end of the first half of 2015);

- Network nodes/exchanges and BTS by the end of the first half of 2015, with the respective geographic information, breaking down between self-owned nodes and those of third parties (other than MEO) and BTS, among MEO exchanges where they are collocated, and whether with their own transmission infrastructures or based on third parties other than MEO (identifying the type of transmission infrastructure connected to BTS and the provider of such connection);

[43] Maps not being required where the operator lacked a geographical information system (GIS).

- Active retail accesses, irrespective of the means and supporting technology[44], being identified the terminating point (building, customer[45] and PC7) and network node/ point of presence (PoP)[46] to which they are connected, as well as the provider of access, contention and capacity;

- Wholesale accesses, with the same level of detail as retail accesses;

- General issues related to criteria for using self-owned networks, rural NGN, high-quality accesses made available through mobile networks, connections between PoP and BTS and also matters of a prospective nature.

1.26 As such, the questionnaire was somewhat restricted as to the product definition of the market itself, leaving open in this respect:

- The issue of contention and speed, this information having been specifically requested;

- The definition of the geographic market, being relevant both maps and network nodes, and access information according to PC7 (subsequently mapped for parishes).

1.27 On the whole, questionnaires were fully completed, maps and network nodes having been submitted in GIS format. Situations of absence of specific information (in particular as regards capacity or contention) in a very small percentage of cases are without prejudice to the analysis carried out.

[44] That is, irrespective of the means on which access relies, namely fibre optic, copper pairs, coaxial cable and radio spectrum, as well as of technology (for example, xDSL, ATM, Business Services over DOCSIS, Ethernet, BWA, 3G, LTE, SDH, PDH).

[45] In the scope of the questionnaire, operators were requested to identify the building (street number, regardless of the floor number) and customer concerned by each retail (or wholesale) access, so as to avoid double counting of access (multiple connections for the same building and for the same customer), which results in minor differences (by 1% or less), compared to data submitted by operators on the volume of accesses provided.

[46] This analysis applies indiscriminately the terms PoP, local exchange and network node.

The process of market analysis

The Electronic Communications Law, ECL

1.28 According to the Electronic Communications Law (ECL)[47], it is incumbent on ANACOM (the National Regulatory Authority, NRA) to define and analyse relevant markets, to identify companies with SMP and to determine suitable regulatory measures in respect of companies providing electronic communications networks and services[48].

1.29 This procedure takes place according to the following stages (articles 55 to 61 of ECL):

– Definition of relevant markets

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

In the course of the definition of relevant markets, the NRA, having regard to national circumstances, must take due account of the Recommendation on relevant markets as well as of Guidelines.

– Analysis of relevant markets

It is incumbent on the NRA to analyse relevant markets defined pursuant to the preceding point, taking the Guidelines into account.

The market analysis procedure aims to determine whether or not a relevant market is effectively competitive. No effective competition exists where companies with SMP are identified[49].

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47 Law No. 5/2004, of 10 February, as amended and republished by Law No. 51/2011, of 13 September, and subsequently amended by Law No. 10/2013, of 28 January, by Law No. 42/2013, of 3 July, by Decree-Law No. 35/2014, of 7 March, and by Law No. 82-B/2014, of 31 December. It established the legal regime applicable to electronic communications networks and services and to associated facilities and services, and defined the assignments of the National Regulatory Authority in this field.

48 Cf. article 18 of ECL.

49 Also according to the Guidelines (§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*

A company is deemed to have SMP where, either individually or together with other entities, it enjoys a position equivalent to dominance, that is to say, a position of economic strength affording it the power to behave to an appreciable extent independently of competitors, customers and consumers[50].

– Imposition, maintenance, amendment or withdrawal of regulatory obligations

Where ICP - ANACOM finds a market to be effectively competitive, it must not impose any specific regulatory obligation, and where such obligations exist, they must be withdrawn[51].

Where ICP - ANACOM determines that a relevant market is not effectively competitive, it must impose on companies with SMP on that market the appropriate specific regulatory obligations or maintain or amend such obligations where they already exist[52].

Obligations imposed:

- Must be adjusted to the problem identified at the stage of assessment of SMP, as well as proportional and justified in the light of regulatory objectives laid down in article 5 of ECL (article 55, paragraph 3a) and article 66, paragraph 2).

- Must be objectively justifiable as regards networks, services or infrastructures concerned (article 55, paragraph 3b) of ECL).

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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."

50 According to article 3, paragraphs 1 and 2, of Law No. 19/2012, of 8 May (which approves the competition act), "*1 - The term undertaking, for the purposes of this law, shall be deemed to be any entity that has an economic activity comprising the supply of goods or services in a specific market, irrespective of its legal status or means of financing. 2 - A group of undertakings is deemed to be a single undertaking, even if the undertakings themselves are legally separate entities, where such undertakings make up an economic unit or maintain interdependence ties deriving specifically from the following: a) The undertaking so defined has a majority of the share capital; b) It has more than half of the voting rights conferred by the share capital; c) It has the power to appoint more than half of the members of the board of directors or the supervisory board; d) It has the necessary powers to manage the businesses of the group and of each of its undertakings*."

Note that, according to the judgement of the European Court of Justice, of 12 July 1984, Hydrotherm, "*the term 'undertaking' must be understood as designating an economic unit for the purpose of the subject-matter of the agreement in question even if in law that economic unit consists of several persons, natural or legal*".

51 Cf. article 5, paragraph 5f) and article 59, paragraph 3, both of ECL.

52 Cf. article 59, paragraph 4 of ECL.

- May not originate an undue discrimination as regards any entity (article 55, paragraph 3c) of ECL).
- Must be transparent relatively to the intended purposes (article 55, paragraph 3d) of ECL).

1.30 Finally, and in essence, it must be stressed that the implementation of regulation objectives to be met by ANACOM (article 5, paragraph 1 of ECL) requires that this Authority applies, in all decisions and measures adopted, regulation principles that are objective, transparent, non-discriminatory and proportional, being responsible in particular for[53]:

– Promoting regulatory predictability by ensuring a consistent regulatory approach over appropriate review periods.

– Ensuring that, in similar circumstances, there is no discrimination in the treatment of undertakings providing electronic communications networks and services.

– Safeguarding competition to the benefit of consumers and promoting, where appropriate, infrastructure-based competition.

– Promoting efficient investment and innovation in new and enhanced infrastructures, including by ensuring that any access obligation takes appropriate account of the risk incurred by the investing undertakings[54].

– Taking due account of the variety of conditions relating to competition and consumers that exist in the various national geographic areas.

– Imposing *ex ante* regulatory obligations only where no effective and sustainable competition exists, and relaxing or lifting such obligations as soon as that condition is fulfilled.

The Community framework and regulatory guidelines

1.31 This market analysis takes the utmost account of positions taken by the Commission

[53] Cf. article 5, paragraph 5 of ECL.

[54] And by permitting that cooperative arrangements between investors and parties seeking access diversify the risk of investment, ensuring at the same time that competition in the market and the principle of non-discrimination are preserved.

and by the Body of European Regulators for Electronic Communications (hereinafter BEREC[55]), more specifically, the principles laid down in the scope of ERG common position on the matter, presented in the document "Revised ERG Common Position on the approach to appropriate remedies in the ECNS regulatory framework"[56] as well as BEREC common position on best practices in remedies as a consequence of a SMP position in the relevant markets for wholesale leased lines, reviewed by the end of 2012[57].

1.32 The process of market analysis is mainly targeted at identifying whether effective competition exists in retail markets (downstream of wholesale markets), and in case an absence of competition is found, at defining the measures required (preferably) at wholesale level to remedy these competition failures[58].

1.33 In fact, the market definition exercise is not an end in itself but a means required to reach a certain end: the market definition is thus a necessary tool to assess whether users of a certain product or service are protected by an effective competition or, on the contrary, whether the imposition of *ex ante* regulation is required to ensure it.

1.34 According to the methodology adopted in the Recommendation[59], the starting point for the identification of relevant wholesale markets is the characterization of related retail markets, their geographic scope and competitive constraints to which they are subject, both on the demand-side and supply-side, from a forward-looking perspective.

1.35 As such, in a first stage, high-quality retail markets are analysed to determine whether these retail markets are competitive (from a forward-looking perspective) in the absence of regulation, taking also into account the effects of other types of regulation that apply to relevant retail markets and related wholesale markets

55 Former ERG - European Regulators Group.

56 Available at http://www.erg.eu.int/doc/meeting/erg_06_33_remedies_common_position_june_06.pdf.

57 The common position, reviewed in 2012 by BEREC, is available at http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/common_approaches_positions/1096-revised-berec-common-position-on-best-practices-in-remedies-as-a-consequence-of-a-smp-position-in-the-relevant-markets-for-wholesale-leased-lines.

58 The Recommendation on relevant markets provides that the imposition of regulatory obligations at retail level is required only in situations where NRA consider that measures that apply to the wholesale market do not guarantee an effective competition and the achievement of public interest objectives.

59 Recital (7).

throughout the relevant period[60]. In case the retail market is not effectively competitive, from a forward-looking perspective, and in the absence of *ex ante* regulation, then related wholesale markets require assessment.

1.36 Subsequently, in case competition problems are found in retail markets (in the absence of *ex ante* regulation), relevant wholesale markets of the same dimension - product market(s) and geographic market(s) - are defined, and it is assessed whether SMP exists on these markets. Lastly, the analysis focuses on regulatory obligations to be imposed on companies holding SMP on wholesale markets concerned or, in the absence of SMP, on how any obligations formerly imposed should be withdrawn.

1.37 The regulatory framework in force favours the imposition of obligations at the level of wholesale markets, and only as a last resource may regulatory measures be imposed on retail markets. This primacy has the advantage of addressing market failures by means of measures imposed directly at the source of problems - at present, the retail leased lines market continues not to show market failures so as to justify the (re) imposition of *ex ante* regulation at retail level. That is, the effects of these measures have influence not only on wholesale market(s) where they are imposed, but essentially on other downstream markets, promoting competition and general welfare, with benefits for final users, namely in the case of the market for trunk segments of leased lines, the regulation of which has great impact on several downstream markets (as such, well beyond the retail leased lines market). Lastly, it must be referred that the principle of the primacy of the imposition of obligations in wholesale markets must be in line with the target, laid down in article 5, paragraph 5 d) of ECL, of promoting efficient investment in infrastructures and innovation.

1.38 According to the so-called "modified greenfield approach", the *ex ante* market analysis and its definition must be based on a scenario of absence of regulatory obligations at the level of the market under analysis, in order to avoid circularity in obligations already defined.

[60] Recital (8).

Draft final decision and respective notification

1.39 This market analysis was submitted to the general consultation procedure laid down in article 8 of ECL, as well as to the prior hearing of interested parties, in accordance with articles 121 and 122 of the Administrative Procedure Code, in both cases for a period of 30 working days, subsequently extended for further 5 working days. An opinion from AdC was sought likewise, under article 61 of ECL.

1.40 By communication received on 27 April 2016, AdC issued its opinion, declaring that it generally agreed with ANACOM's DD. AdC specifically refers not to oppose the definition of relevant product and geographic markets nor the assessment of SMP in markets for high-quality access at a fixed location and in markets for trunk segments of leased lines, considering ANACOM's methodology to be generally fit for purpose.

1.41 Having been analysed comments received in the scope of the consultation procedure and the prior hearing on the DD, the respective report was drawn up, consisting of a summary of contributions received and the Regulatory Authority's views on the subject. The report is deemed to be an integral part of this market analysis[61].

1.42 The draft final decision was notified on 1 July 2016 to the Commission, BEREC and NRAs of other Member States, pursuant to paragraph 1 of article 57 of ECL, in compliance with article 7 of the Framework Directive.

1.43 On 13 July 2016, the Commission sent a request for information to ANACOM, having this Authority replied on 18 July 2016.

1.44 Under paragraph 3 of article 7 of the Framework Directive, the Commission presented on 28 July 2016 its observations on the notified draft decision, stressing the need for ANACOM to monitor the evolution of competition in markets for trunk segments, taking into account the relevance of new fibre optic networks and the existence of products for access to passive infrastructures, such as ducts. The

[61] By decision of 30 June 2016, ANACOM approved a draft final decision to be notified to the Commission, BEREC and NRAs of other Member States, on the definition of markets for high-quality electronic communications at a fixed location, assessment of significant market power and imposition, maintenance, amendment or withdrawal of regulatory obligations (Market 4 of Recommendation 2014/710/EU and Market 14 of Recommendation 2003/311/EC).
Vide notification at http://www.anacom.pt/render.jsp?contentId=1390427 and report at: http://www.anacom.pt/render.jsp?contentId=1381330.

Commission invited ANACOM to re-examine markets for trunk segments in a timely manner, even before the expiry of the 3-year period, when ANACOM considers that barriers to entry in this market have sufficiently been reduced.

1.45 In the scope of the comment made by the Commission, ANACOM will regularly collect detailed information on the development of the transport network infrastructure and on the supply and demand in the market for trunk segments of leased lines, in order to reassess the competitive dynamics of NC routes.

1.46 Under paragraph 5 of article 7 of the Framework Directive, ANACOM must take the utmost account of observations submitted by the Commission, BEREC and other NRAs, and is entitled to adopt the resulting draft decision. In such case, the Authority must notify the Commission and BEREC thereof.

2 Definition of the retail high-quality access market

Methodology for defining markets

2.1 This section focuses on the definition of the retail product market, taking the Commission Guidelines[62] into account.

2.2 The current regulatory framework, which complies with Community competition law, imposes that relevant markets are defined by crossing two different dimensions: the product market and the geographic market.

2.3 The definition of the product market aims at identifying all products and/or services that are sufficiently interchangeable or substitutable, not only in terms of their objective characteristics, by virtue of which they are particularly suitable for satisfying the needs of consumers, but also in terms of their prices or their intended use[63].The exercise of defining the relevant product or service market thus commences on the demand side, by grouping together products or services that are used by consumers for the same purposes/end use[64].These products and services are part of the same relevant market where the behaviour of the service providers are subject to the same type of competitive constraints on the supply side, namely, as far as the price-setting is concerned.

2.4 In this context, there are two main competitive constraints, which alternatively or together, may represent grounds for defining the product market: (i) demand-side substitution; and (ii) supply-side substitution[65,66]. A third source of competitive constraint on operator's behaviour exists, namely potential competition - this possibility will be taken into consideration where relevant.

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62 This definition shall be taken into account in the scope of related wholesale market(s), where deemed to be relevant and to the extent that the demand for wholesale services results from the demand of retail services provided to final users.

63 Cf. Guidelines, §44.

64 Idem.

65 Cf. Guidelines, §38.

66 In practise, one of the ways most commonly used to assess the existence of any demand and supply-side substitutability is to apply the so-called "hypothetical monopolist test" (SSNIP test – small but significant non-transitory increase in price) - cf. Guidelines §40-43. The theoretical analysis of the degree of substitution or complementarity between two products by means of the cross-elasticity of demand is usually a complex exercise, given that data required for its calculation are not always available.

2.5 The relevant geographic market comprises the area in which companies concerned are involved in the supply and demand of relevant products or services, in which area the conditions of competition are similar or sufficiently homogeneous relatively to neighbouring areas[67]. The definition of the geographic market assumes the use, where feasible, of the same methodology for the definition of the product market[68].

2.6 According to the Explanatory Note, it is necessary to identify the competitors of the potential SMP operator(s) and assess the area of supply of these competitors. These potential competitors may include both actual competitors already providing competing offers in the product market or operators who are likely to enter the market[69].

2.7 The importance of the principle of technological neutrality for this process of market definition is also worth emphasising. In fact, regardless of the infrastructure used by providers of high-quality access services, the assessment and definition of the product and geographic markets will be based, in particular, on the degree of restrictions imposed on the supply of services. In this respect, the Commission's position on this principle expressed in the former Explanatory Note (on the 2007 Recommendation on relevant markets) must be recalled: "*The EU's market-based approach to the regulation of services is independent of the technology used in the core network*[70] [in leased lines] (...) *when defining markets taking into account this Recommendation, NRAs should analyse on a case-by-case basis substitutability of services provided using these various technologies, thereby taking the principle of technology-neutral regulation as a starting point*" [71].

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67 Cf. Guidelines, §56: "*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*".

68 Namely the hypothetical monopolist test, which enables the identification of competitive constraints on the demand and supply-side substitutability. Cf. Guidelines, § 43: "*If an NRA chooses to have recourse to the hypothetical monopolist test, it should then apply this test up to the point where it can be established that a relative price increase within the geographic and product markets defined will not lead consumers to switch to readily available substitutes or to suppliers located in other areas*".

69 Namely in the case of a small but non-transitory price increase (SSNIP) of the hypothetical monopolist' offer on that market.

70 Core of the switching and transport network, that is, which aggregates and (inter)connects the operator's main nodes.

71 As laid down in article 5, paragraph 8 of ECL (and §2 of paragraph 1 of article 8 of the Framework Directive), the market definition must be neutral in terms of the network/technology used in the provision of services.

Definition of the high-quality access product market

2.8 The Commission refers in the current Explanatory Note that markets should be analysed regardless of the network or infrastructure used to supply services (in compliance with principles of competition law) and that alternative operators use different inputs (regardless of the underlying infrastructure).

2.9 Adopting an approach in line with the principle of technological neutrality, it is deemed that high-quality access markets must include, in principle, all products, which, irrespective of the supporting technology or infrastructure, and presenting a set of homogeneous characteristics, are deemed to be equivalent, and thus substitutable, products. In fact, the exercise of defining the relevant product or service market starts by grouping together products or services used by operators for the same purpose (end use).

2.10 In principle, and in line with former analyses of the leased line market (2005 and 2010)[72], the high-quality access market, for the purpose of the definition of the product market must integrate all types of accesses that, in a neutral way as far as the network, technology or infrastructure used as bases for these services are concerned, comprise the essential elements for the demand and supply thereof:

- Dedicated speed (uncontended) or with very low and transparent contention; and
- Guaranteed quality of service (QoS) - including availability, support, short repair time, etc).

Note that the market definition does not take account of analogue lines at retail (and wholesale) level, which is deemed to be a technologically obsolete product, showing a clear volume decrease and hardly any market expression.

2.11 As such, two retail products that differ significantly in terms of levels of QoS and product characteristics and functionalities, such as (dedicated) capacity, availability, contention and repair time, may not be deemed to be substitutes in the perspective of

[72] According to the definition (used by ANACOM in former market analyses), a leased line corresponds to a permanent and transparent physical connection between two points, for the exclusive and non-shared use of the user, with guaranteed and symmetric transmission speed, over which any type of electronic communications traffic is routed.

a final user.

2.12 Bearing these principles in mind, the high-quality access market is characterized below in greater detail, both on the demand- and supply-side.

2.13 In this context, it is important to answer the following questions related to substitutability:

- Are mass market broadband access services and high-quality access services part of the same product market?
- Are services with symmetrical or asymmetrical connections and services with or without contention (irrespective of the technology) part of the same product market?
- Is there a break in the substitutability chain as regards products with different capacities? And, closely connected, are services based on different support infrastructures part of different product markets?

Mass market broadband access service and high-quality access service

2.14 In addition to broadband access services provided on the mass market, whether to residential customers or to small and medium-sized enterprises (SMEs), there are other broadband - high-quality - access services usually made available to large companies (as well as to some medium-sized companies, or even small companies) and to the State.

2.15 The latter case includes both symmetrical and asymmetrical access products (possibly with limited contention) which meet certain quality characteristics, such as:

- Guaranteed availability and quality of service, including service level agreements (SLAs), continued customer support, redundancy and short repair time, typically oriented towards needs of business customers;
- High-quality network management, including a transport component, with low contention;
- Possibility of providing Ethernet continuity.

2.16 In fact, although many business customers may seek standard services, especially micro and small enterprises, larger business customers usually require more advanced and reliable (tailor-made) services to connect their business units and (multiple) locations, thereby allowing uninterrupted internal communication among them; in general, standard mass market broadband retail products do not meet these requirements[73]. In addition, typical customers that require high-quality products, such as large enterprises in multiple locations, prefer to purchase services from a single provider.

2.17 Typical services sought by companies include high-quality broadband Internet connection with low contention, IP telephony, data centres and backup, additional support, high availability degree and short repair time, and in the case of enterprises with multiple installations, dedicated data connections, with low (or even no) contention between the various locations to be connected at national level. Many business customers also demand a value added service, for example, of virtual private networks.

2.18 In general, the way how large companies and the State contract services differs from how services are contracted in the mass market. In the first case, services are negotiated, or the customer, not the provider, specifies the technical conditions (e.g. public tenders), and often, in a wider context, services are included in bundles (in particular with value added services such as virtual private networks - VPN, clouds, etc.). The after-sales service is also different, and in general specific managers are assigned to large enterprises and to the Public Administration. Even technical options may be different, according to the type of service required by the final users, in the case of specific business customers.

2.19 Retail high-quality services used to be provided (historically) via leased lines, which guaranteed dedicated and symmetrical capacity. However, most recently, broadband connections with guaranteed QoS (in particular those which are fibre-based, such as Ethernet connections over GPON - point-to-multipoint fibre networks) may be

[73] Although some companies may see their requirements met with such product or occasionally complement a high-quality product with mass market offers.

considered to be “equivalent” for certain companies and solutions[74].

2.20 It must be referred also that several companies have (multiple) locations to be connected in areas of the national territory where no transport or access network exists in alternative to MEO’s network, which owns fibre access in all municipalities of the national country, although in some municipalities the amount of fibre access concerns some units only, which indicates that these are primarily business customers accesses. As such, MEO is the only provider able to provide services to these companies relying (solely) on self-owned infrastructure, even in areas already covered by other operators (as these customers usually require services provided by a single operator).

2.21 As a result, conditions for demand and supply of broadband access in the mass market segment and in the business segment are different, and in line with the Explanatory Note, it is deemed that there are significant differences in the demand for access services on the part of different end customers, a clear distinction existing between the demand for mass market services and for tailor-made high-quality services, irrespective of the fixed technology. As such, two different broadband access markets are defined:

- Retail market for mass market broadband access;
- Retail market for high-quality access.

2.22 In the context of the retail market for high-quality access, it might be questioned also whether two different types of business customers could be distinguished: namely SMEs and large companies/institutional customers or customers with a single location and with multiple locations.

2.23 Although requirements of SMEs and of large companies are not, *a priori*, exactly the same, as the latter, in general, have more demanding needs (possibly with multiple locations), are better acquainted with electronic communications products and services and have greater bargaining power, operators that supply services to SMEs

[74] Copper and cable connections show some technical constraints as far as high-capacity and quality connections (low contention) are concerned, namely as regards: (i) maximum upload speed (for both cases); (ii) maximum download speed (in the case of the copper network, 24 Mbps at the most and only for loops of a limited length); and (iii) the sharing of capacity at the level of the coaxial (cable) network itself, thereby affecting the (failure to) guarantee a low contention.

do so to large companies as well, and vice-versa. It thus seems that the chain substitutability continues to exist, both on the demand- and supply-side, between non-residential customers of different sizes, which determines the definition of a single relevant market for high-quality access.

2.24 Although ANACOM acknowledges some specific characteristics which distinguish the segments of large companies and SMEs, the Authority maintains its view (already set out in prior analyses of the leased lines market) that the retail high-quality market includes any business customer, regardless of its size.

2.25 Moreover, the 2015 Questionnaire included, without any breakdown according to the type of customer, accesses provided to the Public Administration, to the State business sector and to any private company, irrespective of the size (micro enterprises, SMEs and large companies), no comments having been received on the matter.

2.26 The answer to the first question set out above is thus negative: mass market broadband access services and high-quality access services are not part of the same product market, the market for high-quality access including any type of business customer, a conclusion which is in line with the Recommendation on relevant markets.

Services with or without contention and with symmetrical or asymmetrical speed (irrespective of the technology)

On the demand-side

2.27 According to the Commission, residential customers tend to seek standard content and interpersonal communication services (that is, to use fixed/mobile telephony, to access the Internet and, increasingly, IPTV services). Many non-residential customers also seek services of a relatively standard format.

2.28 On the other hand, in most cases, companies[75], namely large ones, increasingly look for transmission capacity and guarantee of quality of service, with tailor-made

[75] Either a small, medium-sized or large enterprise, or another institution/body, referred to in general as 'companies'.

specifications to meet specific needs, for the purpose of connecting their business units, thereby enabling internal communication[76,77].

2.29 In the 2015 Questionnaire, in the scope of the issue as to which types of services were sought by business customers, operators responded that, in general, in the business market, the data services in greater demand include dedicated accesses (leased lines with symmetrical speed and no contention) to support multiple services and VPN, although a growing demand exists also for asymmetrical services.

2.30 Some operators refer that business customers seek (symmetrical) high-speed, preferably relying on fibre optic, namely for the implementation of VPN services of Layer 2 (Ethernet) and Layer 3 (IP), for Internet access and voice services provided via VoIP technology[78].

2.31 For example, **[beginning of confidential information - hereinafter BCI] [end of confidential information - hereinafter ECI]** referred that business customers give preference to multi-service VPN-IP services (to support intra-company data, voice and video communications), dedicated Internet access services, high-speed communication services based on Ethernet technology, as well as data centre and cloud services.

2.32 **[BCI] [ECI]** stresses also that business customers require fixed voice services (including primary access and VoIP), fixed Internet services (with symmetrical and guaranteed bandwidth and without symmetrical and guaranteed bandwidth), IPTV services and (IP)VPN data services. In addition, such customers seek solutions where they are able to control the network themselves[79].

2.33 **[BCI] [ECI]** refers, in addition to the access to centralised services such as, for example, electronic payment (SIBS network), video (Corporate IPTV) or voice

[76] According to the Commission, this applies especially to large companies, with several locations. However, other non-residential customers, such as SMEs with more sophisticated needs, are not excluded.

[77] In addition, customers (with multiple locations) that usually require high-quality generally prefer to purchase the different services from a single provider (one-stop shop).

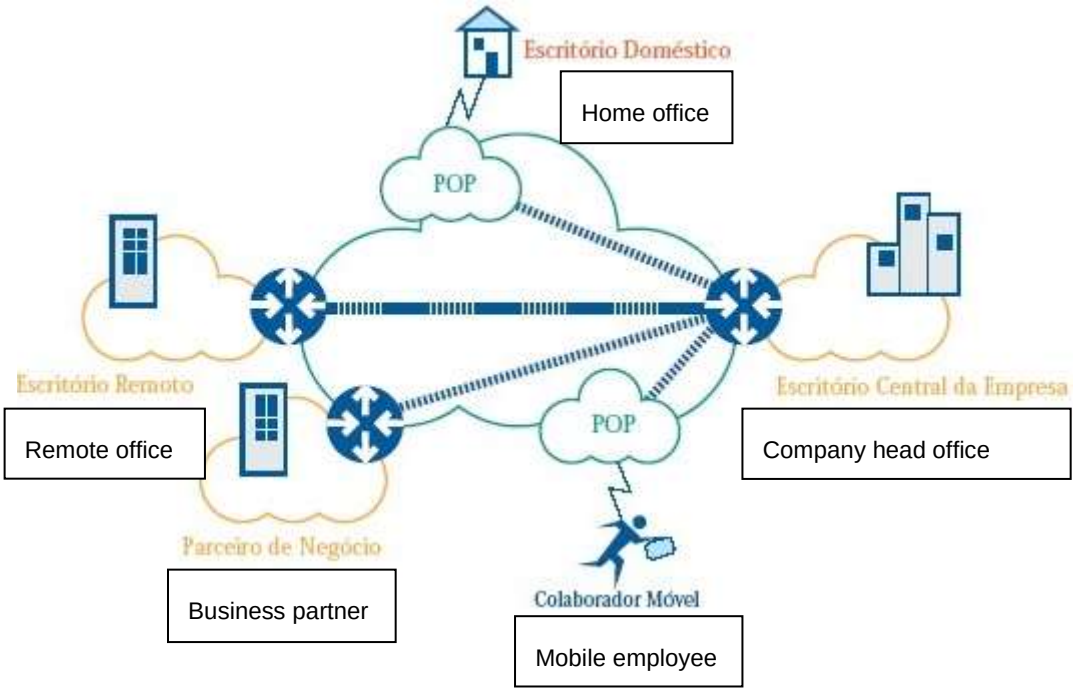
[78] As referred earlier, in practise, traditional technologies supporting electronic communications services (voice, data or even image services) have already migrated to IP-based technologies, thus Ethernet-based data networks now transfer any type of traffic. In fact, almost all broadband/Internet traffic originates and/or terminates on an Ethernet interface.

[79] Defining the IP architecture, network addressing and respective traffic routing tables.

(private and/or public) services, a demand that is more focused on connectivity/interconnection[80], always with a differentiated quality of service. This operator expects demand for these services to develop towards a growing requirement for bandwidth and improved quality of service.

2.34 In other words, nowadays, most business customers seek integrated and high-quality solutions, including access and data transport, solutions that may cover capacity management services with a higher added value than that inherent to an access/line contracted individually[81], namely VPN solutions, more advanced solutions at retail level:

Figure 1. Example of a VPN



2.35 VPN solutions[82] provide connectivity between several locations by means of a shared transmission infrastructure (which might lead to some contention) to which several

[80] Of Internet transit (IPv4 and IPv6) and interconnection of sites using VPN or providing services at Ethernet level, in point-to-point or point-to-multipoint topologies.

[81] At retail level, the reduction of the volume of contracted "traditional" leased lines could be caused by the fact that business customers seek for integrated service solutions (of greater added value), instead of contracting capacity individually (or in separate), that is, instead of contracting capacity services autonomously.

[82] There are several solutions at transport level (e.g. IP/MPLS, Ethernet) and access level (e.g., xDSL, Ethernet).

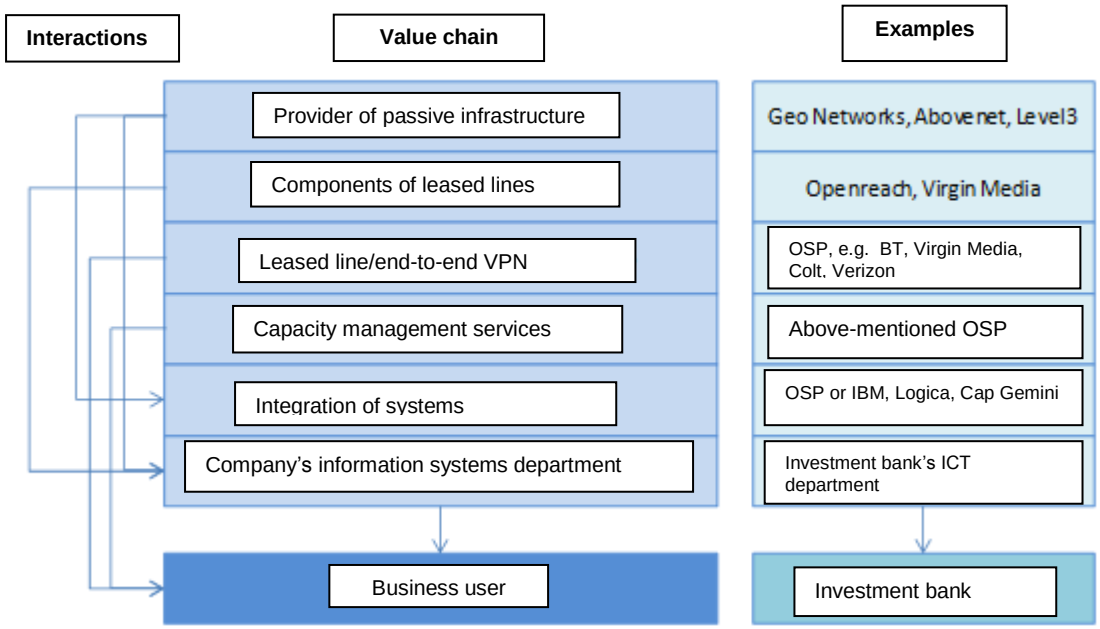
locations are interconnected through (high-quality) accesses, data security being guaranteed by specific protocols that provide the necessary confidentiality, authentication and integrity to ensure privacy of voice or data communications. VPNs are thus used by companies to establish connections between several locations, for voice or data communications, just as if dedicated lines existed between such locations[83].

2.36 This convergence around data communication networks based on Ethernet/IP technologies (e.g. MPLS), namely at the level of company networks, has led companies to increasingly require Ethernet services from network operators, acknowledging the obvious advantages of opting for high-quality accesses that are also Ethernet-based, for example, to (inter)connect their locations and for LAN purposes. These advantages may be measured in terms of efficiency and cost reduction against interconnection solutions based on traditional leased lines.

2.37 In fact, the high-quality services market (including leased lines) is part of a complex value chain, with downstream ICT (information and communication technologies) business services and upstream physical network components (*vide* example in **Figure 2**.

[83] Network resources being allocated dynamically and not in a static/dedicated fashion (as this dedicated allocation is, in some situations, a less efficient solution, namely where traffic is variable).

Figure 2. ICT services value chain and examples



Source: Adapted from the analysis of the UK leased lines market ("Ofcom Business Connectivity Market Review").

2.38 For example, a business customer may directly contract (and manage) a leased line from a network operator, or may purchase a capacity transport solution, which incorporates a leased line and may have additional functionalities adapted to its needs, but which is not managed directly by the company. Other business customers may contract dark fibre from network operators or from other bodies and use it as they please to connect different installations, although, in practise, this is a rare situation[84].

On the supply-side

2.39 Retail high-quality services have been historically provided through leased lines, in particular to ensure dedicated and symmetrical capacity but, more recently, broadband connections with guaranteed QoS (such as Ethernet connections over

[84] This need for different capacity solutions at retail level may be evidenced, for example, through the various tenders and contract awards at public administration level for the purchase of capacity solutions (e.g. the purchase by FCCN of a dark fibre optic pair between Lisbon -Braga and Leiria, the provision to INEM of the fixed data communication service - VPN private network, or the purchase by the Municipality of Palmela, of an integrated solution for voice communications, data communications and maintenance management. Source: http://www.base.gov.pt/base2/.

GPON - point-to-multipoint fibre network, or IP-MPLS-based VPN) have been considered "equivalent" and able to support the offer to certain companies and solutions.

2.40 The 2015 Questionnaire has already partially responded to the question whether services with contention and without contention (and with symmetrical or asymmetrical speed) are part of the same high-quality access market.

2.41 From responses received it may be concluded that the amount of retail high-quality accesses without contention (and symmetrical speed) exceeds that of accesses with contention (2/3 against 1/3).

2.42 As referred earlier, a distinction existed in the past between products with contention and products without contention and with symmetrical speed (commonly known as leased lines). However, in the Recommendation on relevant markets these characteristics are no longer distinctive in the market for high-quality access, insofar as contention remains at low levels (the 2015 Questionnaire included accesses with contention up to 1:20)[85].

2.43 As such, and without prejudice to the fact that, in former market analyses, contention was a fundamental characteristic in the definition of the leased line product market, in view of the extension of the product market to cover all high-quality accesses and the tendency on the demand-side for a growing importance of characteristics such as availability and capacity, both accesses with contention (up to 1:20) and without contention are included in the same relevant market, irrespective of whether speed is symmetrical.

2.44 In conclusion, ANACOM takes the view that, in the case under consideration, the Commission's position in the Recommendation on relevant markets, not segmenting the product market according to the speed symmetry and/or contention (insofar as it is low), is appropriate. As such, the response to the second question of point **2.13** is

[85] The 1:20 contention rate limit was defined on the basis of the experience associated to the provision of broadband access by means of the "PT ADSL Network" bitstream offer, where classes of access with 1:50 contention were always used to provide the service to residential customers (vide e.g. decision http://www.anacom.pt/render.jsp?contentId=526453) and classes with lower contention (1:10 and 1:20) for the provision of increased quality services, namely to micro enterprises and SMEs. For example, in the Netherlands, the regulated high-quality bitstream offer explicitly refers that classes of access with 1:20 contention (or lower) are intended for business customers.

in the affirmative: these services are part of the same product market. In terms of transport technologies used by operators, no distinction seems to exist, Ethernet currently being the most used technology.

Products with different capacities, based on different infrastructures

2.45 On the basis of the analysis to responses to the 2015 Questionnaire, there seem not to be differences in the demand for capacity, nor in the supporting infrastructure.

2.46 In fact, companies seeking for high-quality access desire to contract “capacity” services with guaranteed quality, usually irrespective of the technology and supporting infrastructure.

2.47 However, in certain situations, customers may require that the intended solution is supported on a specific infrastructure or technology (e.g. fibre optic), but this constitutes an unusual case. It will fall on the retail operator to find the best technical solution to address such demand, whether it is a 1 Mbps LLU-based leased line or a 100 Mbps access (asymmetric) based on Ethernet over fibre optic.

2.48 There is, however, evidence of a high and increasing demand for (and supply of) high-quality access with greater speed. See, for example, the distribution of retail high-quality access per (class of) speed by the end of the first half of 2015:

Table 1. Breakdown of retail accesses according to speed, data for the first half of 2015

[BCI]

Classes of Speed	Operator MEO	Operator OSP	Total
[≤24 M]	**26,654**	**20,679**	**47,333**
[<=2M]			30,172
]2M-10M[			9,492
[10M]			2,339
]10M-24M[			2,843
[24M]			857
[ND]			1,630
[>24 M]	**19,394**	**10,502**	**29,896**
]24M-100M[			1,481
[100M]			19,950
]100M-1G[			380
[>=1G]			3,344
[ND - Fibre]			4,741
Total	**46,048**	**31,181**	**77,229**

[ECI] Source: ANACOM, on the basis of the 2015 Questionnaire.

Notes: As referred above, double counting was removed (multiple connections for the same building and for the same customer), which results in some differences, although of marginal importance (by 1% or less), compared to data submitted by operators on the volume of accesses provided.

OSP data include resale, that is, accesses supplied at retail level that rely on MEO wholesale accesses, and not only on self-owned infrastructure.

ND - access for which OSP have not provided speed information.

2.49 Such higher demand is also a result of an effective migration/substitution of traditional low-speed accesses (≤24 Mbps), namely leased lines, for higher speed accesses, a typical example being OSP customers that seek, in the high-speed segment (>24 Mbps), accesses of 1 Gbps of speed or higher.

2.50 However, other operators have referred that there still is demand for low-speed services, both for voice lines (e.g. 2 Mbps) or for other types of connection with low speed requirements (e.g. M2M).

2.51 As such, given data that exists on demand, it does not seem possible to reach the conclusion that a possible segmentation of high-quality access according to speed/capacity exists, given that this demand is spread over an extremely large range. In fact, although an effective migration/substitution of lower speed access for higher speed access is taking place, a substantial volume of the former still remains, namely to support services with lower bandwidth requirements, such as “voice” services.

On the supply side

2.52 Historically, retail high-quality access services have been provided over copper leased lines (low-speed) or point-to-point fibre (high-speed), in particular to ensure dedicated and symmetrical capacity. More recently, broadband connections with guaranteed QoS (for example, Ethernet connections over GPON - point-to-multipoint fibre network, or over cable network) have been considered to be "equivalent" for certain companies and solutions, as in fact the Explanatory Note acknowledges.

2.53 Infrastructures (and technologies) supporting high-quality accesses are very varied, in most cases: in the case of high-speed, especially the fibre optic network (and GPON, SDH and Ethernet technologies); and, as regards access with lower speed, the most used networks include the copper pair network (and associated technologies, such as PDH or xDSL) or, to a lower degree, the coaxial cable distribution network (with DOCSIS 3.0 technology).

2.54 In the scope of the 2015 Questionnaire, on the issue as to which technical solutions have been used and are expected to be used to address demand from business customers, operators responded that, in general, they rely on fibre optic (Ethernet), copper and radio.

2.55 Radio technologies, however, and as referred by operators in the 2015 Questionnaire, do not provide the guarantee of a comprehensive mass access offer.

2.56 In fact, microwave-based (radio) solutions are usually used in poorly accessible areas. One of the operators referred that, as radio solutions are not scalable, as is the case with fibre optic solutions, the decision on whether radio solutions should be used to connect business customers is taken on a case-by-case basis, as this technology may be considered not to be feasible for some connections. The strategy of the referred operator is to guarantee high transport capacity for mobile data networks, the available remaining capacity for retail or wholesale services being generally used to provide access at moderate speed (lower that 20 Mbps per access) [86].

[86] This operator has 492 high-quality accesses based on radio technology (among several other thousand accesses that rely on other infrastructures).

2.57 Additionally, according to mobile operators, 4G or 3G technologies may also be used occasionally, in particular in the scope of temporary solutions, to ensure that more demanding deadlines are respected or as a backup for secure solutions[87]. In any case, their use is always assessed against necessary QoS and speed conditions, depending on the geographic area concerned.

2.58 Still as regards 4G access, one of the operators referred that its network has the possibility of creating service profiles with guaranteed bit rate (GBR – dedicated lines), considered to be the basis for business services that use 4G/FDD-LTE as access technology. However, it referred that this is a scarce resource which is only available for connections below 10 Mbps and only where there are resources in the 4G cell for connection to new customers. The same operator referred that, where larger bandwidths or connection to additional customers are found to be necessary, the change to a more scalable technology is required (e.g. fibre optic).

2.59 Some of these technologies are used in combination, either because they provide specific advantages for the global system, or for issues related to their evolution and gradual introduction in the installed network. However, notwithstanding the multiplicity of technologies and supporting physical infrastructures, the provision of high-quality access is transparent for companies and it takes place in a technologically neutral way, according to the specificities of the situation, as referred by operators in the 2015 Questionnaire.

2.60 In fact, an alternative operators referred that, according to its investment policy, it did not implement GPON networks or copper VDSL technology. It decided to implement copper-based ADSL and EFM[88] technologies, for lower speed connections. As far as high-speed accesses are concerned, this operator uses point-to-point fibre optic with SDH and Ethernet technology, and more recently, "*passive coloured networks (passive coloured optic splitters)*".

2.61 Another operator referred that it is likely that the demand for these services develops towards growing requirements related to bandwidth and higher quality of service,

[87] In fact, one of the operators identified around one hundred main accesses provided to customers using 4G technology and more than one thousand accesses relying on this technology for backup purposes.

[88] "Ethernet in the First Mile".

which adds greater pressure to the adoption of technologies for increased reliability and scalability, that is, fixed (fibre) technologies.

2.62 A third operator provides services with symmetrical and guaranteed bandwidth and without symmetrical and guaranteed bandwidth. Technical solutions to address services without symmetrical and guaranteed bandwidth are developed by this operator via copper-based solutions (including regulated ADSL offer), as well as FTTH-GPON or 3G/4G solutions, according to the needs and bandwidth required by the company. Services with symmetrical and guaranteed bandwidth are provided on the basis of leased lines supplied in offers such as LLRO (up to 2 Mbps), RELLO (over 10 Mbps), LLU and self-owned FTTH-GPON network[89]. These offers are complemented by point-to-point fibre-dedicated accesses for bandwidths greater than 100 Mbps. The network of this operator is easily scalable, as new locations may be easily added, given that its IP network may be freely configured and that its bandwidth may be quickly increased, from 10Mbps up to 1 Gbps.

2.63 On the other hand, a (smaller) operator mentioned that its business customers predominantly seek low-speed line solutions, and as such it merely makes PDH-, SDH- and IP/MPLS-based solutions available.

2.64 Moreover, it must be referred that high-quality services may be supplied via coaxial cable, which are currently able to compete at retail level and to provide services with contention[90] and symmetrical low-speed (e.g. 2 Mbps on both directions) or asymmetrical high-speed (e.g. 100 Mbps on the downstream). In fact, NOS refers, in its 2014 Report and Accounts[91] that its HFC network "*allows the provision of data services to the business market through the Business Services over DOCSIS (BSoD) technology*"[92].

2.65 Nevertheless, it is expected that, in a near future, the update of cable networks to DOCSIS 3.1 will overcome some limitations which exist today. NOS is preparing "*a plan for the implementation of the future new generation of DOCSIS – DOCSIS 3.1 -*

89 Up to 100 Mbps.

90 Given the shared capacity in a coaxial cable network and low upload bandwidths.

91 *Vide* https://www.nos.pt/institucional/Documents/Reportes%20Financeiros/NOS_RC_2014_POR.pdf.

92 And "(…) i*n 2014 NOS implemented EQAM-converging DOCSIS and VoD, allowing efficiency synergies between both services".*

together with Cable Labs. This new protocol, very similar to that used in the LTE(4G) mobile network, will allow more aggressive modelling setups such as QAM1024 and QAM4096, and enable different levels of spectrum arrangements in terms of downstream and upstream frequencies, thus making it possible to guarantee capacities up to 10 Gbit/s on the downstream and approximately 2 Gbit/s on the upstream" [93].

2.66 Data of the 2015 Questionnaire, on retail access provided during the first half of 2015, shows a clear distinction between the set of accesses at a speed not exceeding 24 Mbps (Low-speed), mostly LLU-based, and the set of accesses at speeds over 24 Mbps (High-speed), virtually all fibre-based (as evidenced in the table below, which presents the breakdown of accesses provided at retail level, according to the speed class and whether based on self-supply (or supply relying on third parties) or based on MEO offers[94]):

Table 2. Amount of retail accesses in the first half of 2015

Speed class	OSP (Supply)				Weight of MEO supply to OSP[2]	
	RUO	MEO[1]	Self-supply	Third-party	Total	RUO only
Low-speed	10,660	4,781	4,921	317	75%	52%
High-speed		297	10,070	135	3%	0%
Total	**10,660**	**5,078**	**14,991**	**452**		

Source: ANACOM, on the basis of the 2015 Questionnaire.

[1] Mainly leased lines (LLRO and RELLO) and PT ADSL Network.
[2] Weight of MEO's wholesale supply (total and RUO only) in the total amount of OSP accesses.

2.67 In close connection with this, attention must be drawn to the difference in the weight of internal supply, this means the use of self-owned infrastructure, in the two classes of speed. In fact, in the set of high-speed accesses, OSP use in practise only their own (fibre) infrastructure, as opposed to the set of low-speed accesses, for which they chiefly use MEO's wholesale supply.

[93] Vide more detailed information at http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7158005. ("*DOCSIS® 3.1 systems were designed to achieve high capacities with predictable Quality of Service (QoS) promising 2 Gbps on the upstream and 10 Gbps on the downstream. This paper describes L2VPN business services over DOCSIS® 3.1, extension of MPLS to customer premise, virtualization of Customer Premises Equipment (CPE) and interaction of the L2VPN application with SDN controller to support business service*").

[94] The volume of retail accesses based on MEO offers does not coincide with the (reported) total volume of wholesale accesses contracted by OSP from MEO, given that a (large) part of such accesses is intended to complement the OSP network and/or support other retail services, in addition to high-quality accesses.

2.68 MEO's wholesale supply includes accesses of offers regulated in the scope of Market 4, namely leased lines (e.g. LLRO) and PT ADSL network accesses - this means high-quality accesses with contention rates below 1:20, which, despite having been regulated in the scope of ex-Market 5 (now Market 3b), are now included in current Market 4, having been identified as such by operators in the 2015 Questionnaire, and being deemed as such by the Commission. Moreover, there are accesses supplied through commercial offers, although not so widespread in the marketplace.

2.69 It should be stressed that operators rely mainly on the LLU offer, regulated in the scope of ex-Market 4 (now Market 3a), and almost all this wholesale supply of low-speed accesses is based on copper infrastructure.

2.70 It may be concluded from this analysis that there is a clear segmentation between the market for low-speed access, mainly copper-based, and the market for high-speed access, which is chiefly fibre-based. As such, the answer to the third (double) question of point **2.13** is in the affirmative.

2.71 Without prejudice to this segmentation, this analysis take into account high-quality accesses based on cable and wireless infrastructures, that is, 4G and 3G radio solutions, which are mostly low-speed. In fact, all high-quality accesses reported as such by operators were taken into account, including accesses based on wireless technologies, despite the fact that, as referred, in particular by mobile operators, such technologies only occasionally allow the provision of high-quality accesses.

Definition of the retail product market - conclusion

2.72 As there is no relevant information on the demand-side that allows the conclusion that clear market segmentation exists according to the type of access infrastructure or to speed, ANACOM takes into account evidence on the supply-side, which lead to the conclusion that product market segmentation does exist, being divided according to the infrastructure/(low-[95] and high-[96]) speed.

2.73 Consequently, the retail product market includes all high-quality accesses, that is, with guaranteed QoS, irrespective of the symmetry and contention (provided it is

[95] Supported mainly, although not exclusively, on copper infrastructure.

[96] Supported mainly, although not exclusively, on fibre infrastructure.

low), as well as of technology, differing as far as speed is concerned (and supporting infrastructure), which justifies the definition of two product markets:

– Retail market for low-speed high-quality access at a fixed location (≤ 24 Mbps), irrespective of the technology, symmetry and contention (up to 1:20) - Retail market for low-speed high-quality access;

– Retail market for high-speed high-quality access at a fixed location (> 24 Mbps), irrespective of the technology, symmetry and contention (up to 1:20) - Retail market for high-speed high-quality access.

Definition of the geographic market

2.74 Having identified the relevant product market, it is now necessary to define the respective geographic dimension. To this end, it must be found whether there are geographic areas with similar competitive conditions or which are sufficiently homogeneous yet differ from those in other areas.

2.75 According to the Guidelines, "*a relevant geographic market comprises an area in which the undertakings concerned are involved in the supply and demand of the relevant products of 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*"[97].

2.76 According to the Explanatory Note[98], investment in alternative infrastructures is often uneven across the territory of a Member State and in many countries there are competing infrastructures only in parts of the country, typically in urban areas, while in other areas, a single network exists. Where this is the case, according to the Commission, the NRA is entitled, in principle, to define sub-national geographic markets.

2.77 Finally, it must be noted that the ECL already lays down that ANACOM must take into account the "(...) *variety of conditions relating to competition and consumers that exist*

[97] Cf. Guidelines §56.

[98] Cf. section 2.5.

in the various national geographic areas"[99].

2.78 As such, it must be found whether there are geographic areas with similar competition conditions or which are sufficiently homogeneous yet differ from competitive conditions in other geographic areas.

2.79 According to the Commission, the existence of several operators in a certain area is not on its own a sufficiently robust criterion to identify real differences in competitive conditions with a view to define the geographic market[100,101]. The Commission supports that, in analysing whether competition conditions in a certain area are similar or sufficiently homogeneous, it is necessary to identify structural evidence and additional behaviour, such as information on market share distribution[102].

2.80 In this analysis, the existence, in certain specific areas, of barriers to entry or of service characteristics which differ from those in other areas, could also be relevant.

2.81 The Commission refers that, as a result of that analysis, NRAs would need to identify the competitors of the operator holding potential SMP and assess the area of supply of these competitors. Competitors include both actual competitors in the relevant product market and (potential) entrants who are likely to enter the market[103].

2.82 Network coverage of operators active in the product market(s) is thus the starting point for this analysis.

Access networks in Portugal

2.83 In former market analyses, the definition of the geographic market generally followed the area covered by the incumbent's network (now MEO).

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99 Article 5, paragraph 5 e) of ECL.

100 Comments to notifications from several NRAs (*vide*, for example, Commission comments to cases UK/2007/0733 and UK/2010/1065).

101 Even though in the Recommendation on NGA (2010/572/UE) the Commission refers that there may be grounds not to impose unbundled access to the local fibre loop in geographical areas with several alternative infrastructures, such as FTTH and/or cable, in combination with competitive access offers (which may result in effective competition on the downstream).

102 And their evolution over time. Additionally, through evidence of the different retail or wholesale prices in different areas (which could suggest the existence of different competitive pressures) or of prices charged by the various operators and their evolution in relevant areas.

103 In the case of a SSNIP of the offer provided by the operator with potential SMP. *Vide* Explanatory Note – §2.5.

2.84 MEO's copper and fibre networks are national in scope, this company being required to provide the wholesale leased line service as part of its obligations as holder of SMP in markets for terminating segments throughout the national territory and for trunk segments in NC Routes[104], currently in the scope of the LLRO and RELLO offers.

2.85 However, and in line with what was explained in the former market analysis, continued investments and developments in infrastructures and networks in recent years demonstrate that there are several operators and bodies with significant coverage, in particular in the Lisbon and Oporto metropolitan areas, but also in the main urban areas of the Mainland, along the main axes of the coastline, and in connections between these areas, a lower degree of coverage existing in more interior and/or remote areas (including the Autonomous Regions).

2.86 The current situation at the level of network coverage of main operators that are active on the high-quality access market now follows, based on geo-referenced information requested in the 2015 Questionnaire.

2.87 Additional information was requested in the same Questionnaire on PoP connected via self-owned fibre transmission - MEO services not being used -, including collocated PoP (in MEO exchanges) and BTS[105], given that the latter two allow the provision of high-quality accesses in areas covered by mobile operators (which are currently integrated operators).

2.88 As such, for the purpose of this analysis, in addition to network coverage, the amount and location of fibre-connected PoP, that do not rely on MEO means of transmission, were taken into consideration (*vide* table below).

[104] It was concluded in the former market analysis that the wholesale market for trunk segments showed geographic segmentation: C Routes market and NC Routes market, which includes MAM and inter-island lines, as well as backhaul lines.

[105] Where fibre-connected.

Table 3. Amount of OSP fibre-connected PoP, in the first half of 2015

[BCI]

OSP	Amount of POP			
	Collocated in MEO AC	**Self-owned or third-party location (except MEO)**	**BTS**	**Total**
Apax				
AR Telecom				
COLT				
DSTelecom				
EMACOM				
Fibroglobal				
IP Telecom				
NOS				
TATA				
Vodafone				
Total	**663**			**5,204**

[ECI] Source: ANACOM, based on the 2015 Questionnaire.

MEO

2.89 MEO already presents a relevant fibre optic coverage in the access network, over 2 million households[106], in addition to the copper network coverage, which virtually covers the whole of the national territory. According to MEO[107], its network has "*more than 1 million km of optic fibre pair for increased coverage, speed, reliability and quality of service*".

2.90 The map below presents MEO's access network, including coverage of the VODAFONE network, for which a sharing agreement was concluded with that operator[108].

[106] Households cabled by Fibroglobal and DSTelecom, to which MEO has or will have access, have not been considered.

[107] *Vide* https://www.ptempresas.pt/pme/info/porque-a-pt-empresas.

[108] Not including rural NGN, which are open networks available to any operator, presented below. It must be noted that MEO is currently being provided access to Fibroglobal's network, and effectively using it.

Figure 3. MEO fibre access network

2.91 MEO's fibre access (and transport network)[109] shows greater capillarity compared to the network of other operators.

Vodafone

2.92 VODAFONE has developed its fibre optic infrastructure, complemented with fibre network sharing agreements, one of which was concluded with NOS (then Optimus) in 2011 and, more recently, a second one was concluded with MEO, covering already around 2 million households. VODAFONE has also access today to DSTelecom network in the North, Alentejo and Algarve areas.

[109] Which is very occasionally complemented with radio connections (especially in connections to BTS) - *vide* definition of the trunk segment market.

Figure 4. Vodafone access network

NOS

2.93 NOS holds a cable access network with a high coverage degree, over 3 million cabled households, which is complemented by a fibre optic network, covering over **[BCI] [ECI]** households, especially new installations and areas which had been covered by the former TVTel and Optimus, most of which are found in the Lisbon and Oporto metropolitan areas.

Figure 5. NOS access network

2.94 In the context of services provided to the business market (for high-quality at a fixed location[110]), and according to NOS[111]:

– Its HFC network covers over 3.2 million households and provides data services to the business market through the Business Services over DOCSIS (BSoD) technology. NOS refers also that it is currently preparing the plan for the implementation of the future generation of DOCSIS - DOCSIS 3.1 - together with Cable Labs, enabling capacities of up to 10 Gbps on the downstream and around 2 Gbps on the upstream.

– Its FTTH network is at a stage of coverage expansion - being the fixed network option for greenfield areas -, which will allow the evolution to 10 Gbit/s in the future, relying on GPON technology and providing the same services as the HFC network.

[110] 2014 Reports and Accounts.
Vide https://www.nos.pt/institucional/Documents/Reportes%20Financeiros/NOS_RC_2014_POR.pdf.

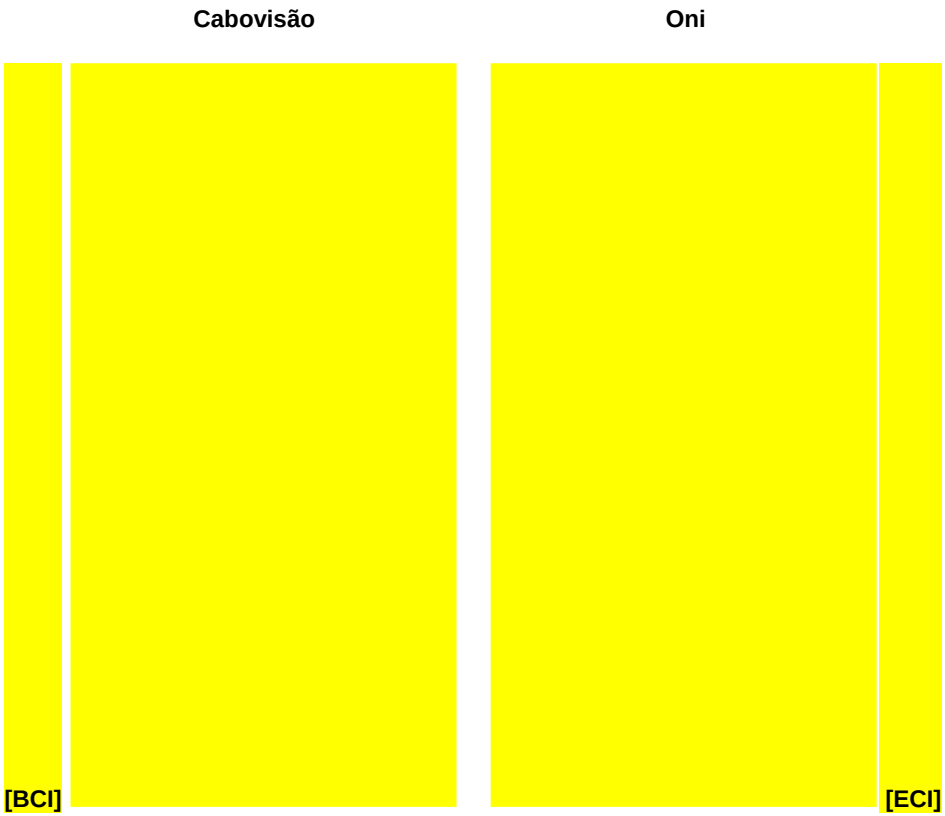
[111] According to NOS, its 4G/3G network is able to provide dedicated lines for high-demand applications as far as quality of service and guaranteed bit rate are concerned, the 4G New Generation Network allowing download speeds up to 150 Mbps, covering 90% of the Portuguese population in outdoor situations.

2.95 This access network is connected by a transport network which is mainly fibre-based, with an already high degree of capillarity, however not as widespread as MEO's transport network - *vide* definition of the trunk segment market.

Apax

2.96 Cabovisão, now integrated in Apax, holds a cable access network, which covers around **[BCI] [ECI]** households. Oni, which is part of the same group, holds an access network to serve its business customers, but does not have a significant coverage in terms of past households, given that it does not operate on the mass market, connecting business customers upon request.

Figure 6. Access networks held by Cabovisão (map on the left) and Oni (map on the right)



Rural NGN operators

2.97 Rural NGN cover 139 municipalities of the national territory, managed by DSTelecom and Fibroglobal. These are open networks, available to any operator, which taken together cover around **[BCI] [ECI]** households, providing mass services, namely broadband access services.

Figure 7. Access networks held by Fibroglobal (red) and DSTelecom (blue)

2.98 Even though these are open networks, it was found that the only operator that uses Fibroglobal's (passive) network is MEO, DSTelecom's (active) network being used by several operators. However, MEO has opted not to use this operator's network, at least up to the end of 2015.

Operators belonging to concessionaires[112] and local operators

2.99 Operators belonging to concessionaires basically own a transport network, which is supplied to other operators, and are also active in the market for provision of high-quality access, although in a low scale.

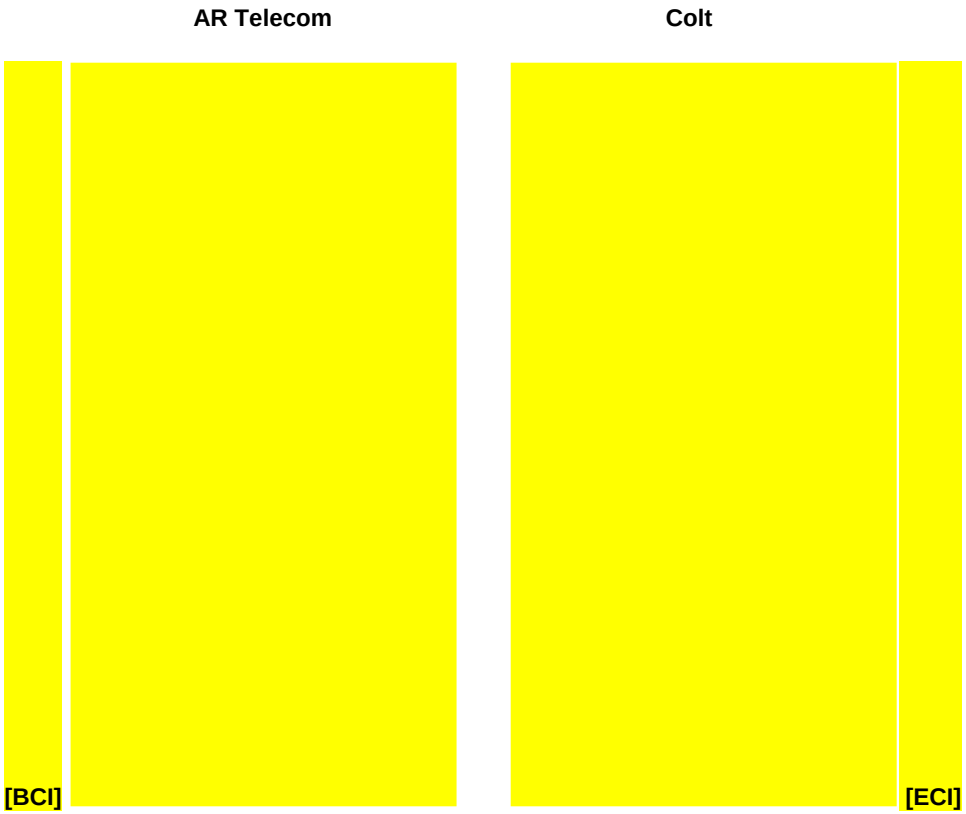
2.100 EMACOM, whose infrastructure is implemented in the Autonomous Region of Madeira only, holds a very developed network in that region, providing services chiefly at wholesale level to several operators.

[112] This concerns operators managing networks owned by:
- REN Rede Elétrica Nacional, S.A. and REN Gasodutos, S.A., in the case of REN Telecom;
- IP – Infraestruturas de Portugal, S.A (which manages road and railway infrastructures), in the case of IP Telecom;
- Empresa de Electricidade da Madeira, in the case of EMACOM.

Figure 8. EMACOM network

2.101 There are also (local) operators that have developed their access network especially in the urban areas of the Greater Lisbon and Greater Oporto, namely AR Telecom and Colt. The figure below presents the access network for each of these operators.

Figure 9. Access networks held by AR Telecom and Colt

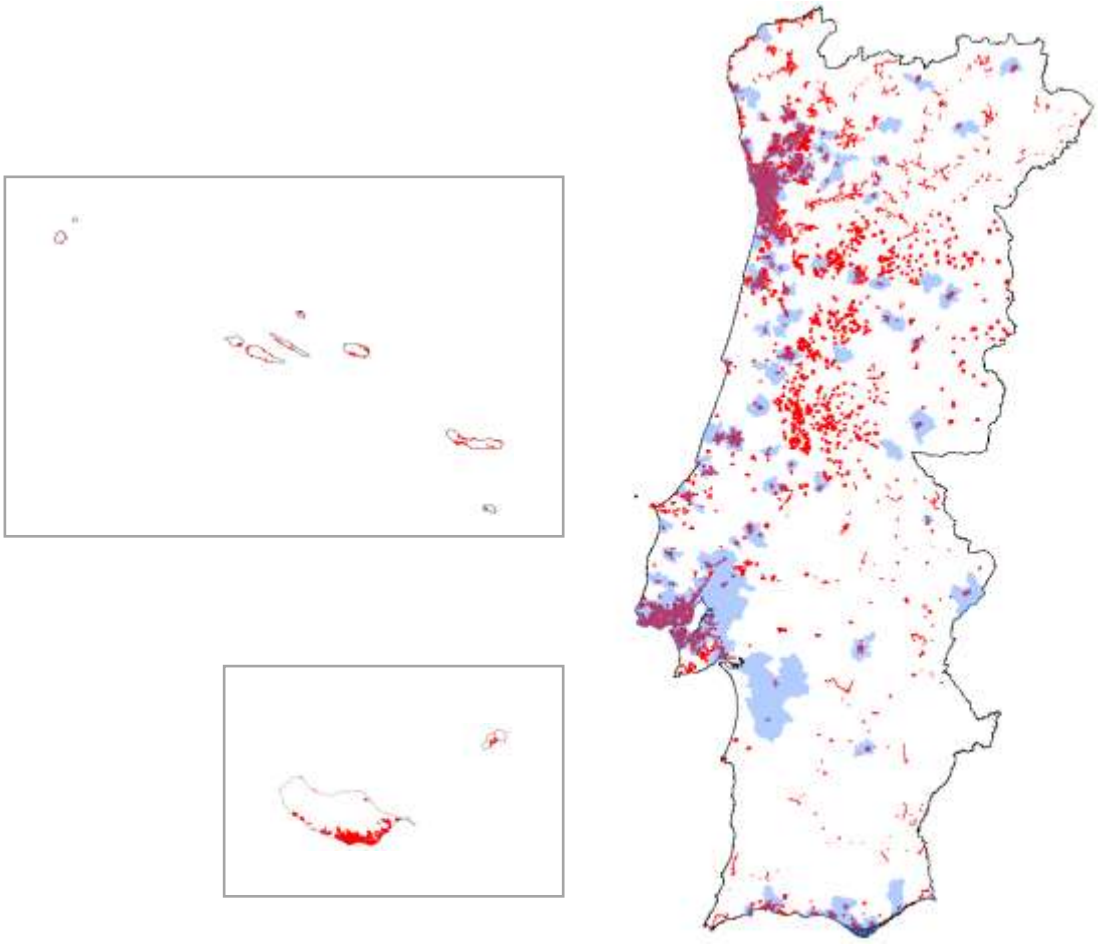


Coverage of the whole of alternative access networks (including areas with collocated operators)

2.102 The figure below represents the coverage of the access network of all operators other

than MEO that operate on the access market and that are taken into account in this geographic market analysis[113]. Exchange areas with operators collocated in MEO exchanges, which are connected with infrastructure owned by operators themselves or by third parties other than MEO, have also been included (in blue)[114].

Figure 10. Access network of all alternative operators (in red), including collocation (in blue, and areas with common coverage, self-owned network and LLU, in purple)



2.103 As can be inferred from maps above, there are several operators that act in wholesale and retail high-quality markets, with relevant coverage of the national territory at the level of the access network, resulting from a continuous investment in networks, especially fibre optic, more recently at the level of the access network.

2.104 It is thus apparent that self-owned networks are already fundamental means on which

[113] Apax, AR Telecom, Colt, DSTelecom, EMACOM (Madeira), Fibroglobal, IP Telecom, NOS and Vodafone.

[114] It should be taken into account that in some exchange areas only one collocated operator may be found, including a rural NGN operator.

the offer of alternative operators relies, and LLU also plays an important role in the scope of low-speed accesses (but not of high-speed, as referred earlier).

2.105 As far as high-speed accesses are concerned, the assessment of network coverage must include fibre-connected PoP, given that in this market segment it is usually profitable to supply point-to-point high-quality accesses on the basis of a network node, without the need to ensure (*a piori*) a high degree of coverage of the access network, as is the case with lower speed accesses (especially standard offers provided to residential customers).

2.106 In this sense, ANACOM cannot but take into account, in analysing this market, the existence of several networks and offers regulated in other markets (namely RUO), which reduce barriers to entry in areas where they are located.

2.107 According to the Commission's guidelines, ANACOM shall take into account, when assessing the competitive conditions at national level, that the presence of alternative operators in a limited amount of dense (business) geographic areas may have a significant effect on market shares observed (in the national market), although it may not necessarily follow that these alternative operators are able to provide competitive offers nationwide (relying on their own networks or in the current wholesale offer, namely leased lines) for example to meet multiple site contracts, which include connectivity to more remote sites.

2.108 This situation could thus be addressed by a geographic segmentation of the market.

Definition of the geographic unit and of the criterion for delimiting areas

2.109 As referred earlier, fibre and cable access networks of alternative operators have significantly developed since the last market analysis (some operators also use the LLU offer). These new networks (FTTH), just as cable networks, do not have the same structure as MEO's traditional copper network, that is, they are not concentrated around MDF located in MEO's around 1,850 exchange areas, as they are not subject to the same limitations in terms of the local loop length.

2.110 As was the case with the analysis of markets 3a and 3b, it was deemed that the geographic unit that constitutes the basis for the definition of the geographic market should be redefined, irrespective of the network infrastructure of the incumbent, as

opposed to previous analyses of leased lines.

2.111 In the light of the referred developments, and from a prospective point of view, it would not be reasonable for MEO's exchange area to remain as the most appropriate geographic unit for the definition of geographic markets for high-quality access, given that there is no direct correspondence between MEO' exchange area and information provided by alternative operators (the network structures of which do not follow it).

2.112 In fact, the 2015 Questionnaire requested information on the location of network termination points (NTP) of retail and wholesale accesses and of network nodes (PoP) at the level of the 7-digit post code (CP7), such information having been mapped at parish level, which is the smallest administrative division.

2.113 This geographic unit per parish thus allows a more disaggregated analysis, given that, in average, an area covered by a parish is smaller than the area covered by an exchange area (there are 3,092 parishes[115] and 1,852 exchange areas).

2.114 In fact, in terms of the (retail) market, a border associated to an administrative area, which is agnostic vis-à-vis the network (access) structure, will be more adjusted to this definition of geographic market. As such, the parish is adopted as relevant geographic unit for high-quality access markets[116].

2.115 As regards the criterion which enables the identification of appropriate geographic areas, ANACOM took into account the reach of (access) networks and of OSP offers, that is, the general presence of multiple infrastructures and alternative offers, given that in Portugal, nowadays, in areas where greater business density and higher economic activity exist, there is increased competition on account of the installation of (a higher amount of) alternative networks.

2.116 However, and taking also into account the position of the Commission, in these markets the existence of alternative infrastructures on its own may not guarantee an effective market competition. In this context, ANACOM decided to define a more

[115] The analysis was based on data of the 2014 Official Administrative Map of Portugal (CAOP 2014) - *vide* http://www.dgterritorio.pt/cartografia_e_geodesia/cartografia/carta_administrativa_oficial_de_portugal__caop_/caop__download_/carta_administrativa_oficial_de_portugal___versao_2014/.

[116] For trunk segments of leased lines, *vide* following chapter.

robust multidimensional criterion, which cumulatively comprises, in addition to the amount of alternative networks, the amount of OSP effectively operating (i.e. with traded accesses) and MEO's market share, to characterize whether a geographic unit is relevant in competitive terms (C area[117] or NC area[118]).

2.117 Taking into account the need to define a robust criterion that guarantees a clear, consistent and stable border between the different geographic areas, ANACOM deems it appropriate to define the referred sub-criteria:

1) Amount of alternative networks - at least two OSP networks must exist;

2) Amount of OSP effectively operating - at least two OSP with installed/supplied accesses must exist; and

3) MEO's market share - must be below 50%.

Such sub-criteria must be met cumulatively so that a geographic unit is deemed to be a C area, i.e. the three sub-criteria must apply simultaneously.

2.118 With respect to the first sub-criterion, the presence of two networks of two alternative operators per geographic unit is deemed to enable the identification of areas where, at the outset and in theory, no barriers to entry exist. However, this is a necessary but not sufficient condition to ensure competition in these areas.

2.119 'Network presence' was defined as a minimum 50% coverage of the relevant geographic unit[119], either by fibre or cable[120] network, or via LLU[121].

2.120 In the case of the high-quality access market for speed not exceeding 24 Mbps, given the relevance of the LLU offer as supporting network for the wholesale and retail access offer, as highlighted in **Table 2** (over 50% of OSP retail accesses rely on the

[117] C area – competitive area.

[118] NC area – non-competitive area.

[119] In amount of households. The degree of network coverage of each operator at parish level was estimated on the basis of information submitted regarding the amount of covered households, broken down by parish, and the amount of traditional housing units per parish of INE.

[120] Network information in SIG format (per cell, in the case of cable networks, and per PDO, in the case of fibre networks) and Excel format (per parish), requested from MEO, NOS (including NOS Madeira and NOS Açores), Apax (Cabovisão) and Vodafone, at the end of the third quarter of 2014.

[121] Where collocated in MEO exchanges in the parish(es) concerned.

RUO offer), it is deemed that the LLU coverage must exist at all times, which in practise entails, at the very least, an OSP network with LLU coverage (over 50%) and another network of another OSP, irrespective of the infrastructure (LLU + 1 network).

2.121 As regards the high-speed access market, given that the LLU offer does not allow the provision of high-quality access for high-speed (over 24 Mbps), fibre-connected point of presence are also taken into account. In this particular case, a minimum 50% coverage is not required for this geographic unit, given that the presence of a PoP addresses the demand for (very) high-speed accesses, as they are more profitable. However, in any case, the existence of at least one (another) network (copper excepted) with 50% coverage in the parish is always required.

2.122 As far as the second sub-criterion is concerned, it is deemed that, in geographic units where at least two OSP are actually present with traded accesses, effective competition may exist (depending in particular on market shares), as the effective entry into the market of at least two operators has already taken place, and consequently, there is more than just a theoretical possibility that operators represent an alternative to MEO (i.e., being present but not actually providing an offer). Without prejudice, in areas where at least two OSP with installed accesses are not present, the dominant presence of MEO network remains *grosso modo*.

2.123 The third sub-criterion is mainly targeted at ensuring that MEO does not hold a dominant position in terms of the amount of accesses per relevant geographic unit under analysis, sustaining the criterion more robustly, as it is not based solely on the existence of alternative networks/offers, as in fact the Commission has supported.

2.124 In conclusion, relevant geographic units that cumulatively meet the listed criteria present competition conditions that are sufficiently homogeneous and robust (not being defined only on the basis of the amount of existing operators), and are as such designated as C Areas; other parishes, which fail to meet one or more of the referred sub-criteria, correspond to NC Areas.

2.125 Taking into account the listed criteria, retail accesses (supplied without using MEO' wholesale offer, in the case of OSP) are thus broken down into the following areas (*vide* table below):

Table 4. Breakdown of retail accesses according to speed and area (first half of 2015)

Speed	Parishes	MEO Accesses	OPS[2] Accesses	Total Accesses (MEO and OPS)	MEO average share
Low-speed	-	26,654	15,895	42,549	-
C Areas	90	5,912	8,029	13,941	42.4%
NC Areas	3,002	20,742	7,866	28,608	72.5%
High-speed	-	19,394	10,200	29,594	-
C Areas	53	2,723	3,733	6,456	42.2%
NC Areas	3,039	16,671	6,467	23,138	72.1%
Total[1]	**3,092**	**46,048**	**26,095**	**72,143**	**-**

Source: ANACOM, on the basis of the 2015 Questionnaire.

[1] Total reported accesses do not exactly correspond to values presented in the table, given that for 8 parishes it was not possible to determine the parish where they are located.

[2] Total OSP accesses do not correspond exactly to values presented in **Table 1** above, as this scope covers only accesses supplied via a self-owned network (or a network owned by a third party other than MEO, except for the RUO offer in the case of low-speed).

2.126 It was thus found that for each retail product market (speed class) there are two geographic areas with different competition conditions:

– C Areas - Low-speed (speed not exceeding 24 Mbps): parishes where the multidimensional criterion is met (MEO's average share is 42.4%)[122]; and

– NC Areas - Low-speed: other parishes, where the criterion fails to be met (MEO's average share is 72.5 %);

– C Areas - High-speed (speed over 24 Mbps): parishes where the multidimensional criterion is met (MEO's average share is 42.2%)[123]; and

– NC Areas - High-speed: other parishes, where the criterion fails to be met (MEO's average share is 72.1 %).

Definition of the geographic market - conclusions

2.127 In summary, and as foreseen by the Explanatory Note that accompanies the Recommendation on relevant markets, ANACOM identified with good reason heterogeneous competition conditions in retail high-quality access markets in the national territory, leading to the conclusion that sub-national markets exist, the

[122] Listed in **Error! Reference source not found.**.

[123] Listed no **Error! Reference source not found.**

delimitation of such geographic markets having taken greater account of the reach of the incumbent's network and that of infrastructure owned by alternative operators.

2.128 The retail market for companies present, in fact, considerably diverging conditions at national level, given that alternative operators have no network in most of the national territory - in a large part of NC Areas -, and as such are not able to provide (at least on a self-supply basis, without using MEO's services), for example, an integrated service to a (large) company operating in multiple locations, where some are located outside the major urban centres, unless a temporary (contingency)[124] solution is used and/or at very high costs.

2.129 In fact, without a regulated wholesale offer of an expanded geographic scope (total, in the case of more remote/rural regions of the territory), ANACOM considers that alternative operators would not have been able to win important tenders (of a national scope, with multiple locations) for the provision of high-quality services to large companies/bodies (e.g. SIBS, CGG or Ministries), given that their networks, which are not as extended (as MEO's), would not have allowed them to compete on the basis of their own infrastructure. These aspects will be addressed below in more detail.

Competitive analysis of retail high-quality access markets

2.130 Having retail high-quality access markets been analysed, they must now be characterized in terms of the prevailing competition dynamics, given that it is basically at retail level that market failures are intended to be avoided and effective competition is to be promoted, so that maximum benefit in terms of choice, price, and quality of electronic communications services derive to end users.

2.131 Nevertheless, it must be stressed that the retail high-quality access market shows some specificities, being defined as a resale (stricter) market. However, as set out below, wholesale markets under analysis in this document include not only resale accesses, but also other types of wholesale products, namely trunk segments of leased lines, as wholesale markets (which are used in part for companies' own

[124] For example, based on mobile or leased lines networks.

networks[125]) are more comprehensive that the retail market.

2.132 In this context, ANACOM considers that while this characterization of retail competition should be accurate, it does not require the steps of an in-depth SMP analysis nor the application of the 'three criteria test'[126], above all because these measures are dealt with in a detailed and precise manner at the level of wholesale markets.

2.133 In any case, the definition of geographic markets, carried out in the preceding section, already focused in detail on competition dynamics at retail level (and in different areas).

2.134 Finally, it will be in the scope of the definition and analysis of wholesale markets that a conclusion will be reached as far as global competition dynamics are concerned, taking into account the impact of this retail market on wholesale markets which are, in fact, the subject-matter of *ex-ante* regulation.

Retail high-quality access markets in C Areas (high- and low-speed)

2.135 When analysing the geographic market, in addition to competition indicators mentioned in detail earlier[127], the competition dynamics of operators present in these markets must also be taken into consideration, namely the winning over of new customers which, in some cases, represent a high amount of accesses, spread across the national territory, leading to a strong demand in terms of network investments, and at a more micro level, of the offer of quality business solutions, with an apparent significant return.

2.136 For example, in the scope of large companies and of the Public Administration, NOS declared to have shown a solid income growth in all segments[128], having won over a significant amount of new customers and provided a fully integrated offer to an

[125] For example, in the case of mobile operators, a large part is used for the purpose of BTS connection.

[126] Cf. Recommendation on relevant markets.

[127] Namely market shares, access networks and the amount of OSP effectively present.

[128] In fact, according to NOS, the large corporate accounts acquired over the last few quarters have started to present a relevant contribution to the annual increase of customer revenues (+7%), which has helped to offset the negative trends of revenues of the SME and SoHo markets (-10%).

increasing rate of customers[129].

2.137 NOS declared also that in the banking field its presence is becoming very relevant, with new customers such as BPI, Montepio and Caixa Geral de Depósitos. NOS has also increased its offer to significant public bodies, such as the Ministry of Health.

2.138 Vodafone has also strengthened and enhanced the offer of business fixed services, both to large companies and to the State, as well as to small and medium-sized companies, providing a set of solutions that are adapted to communications needs. It has developed fixed voice and Internet services over fibre network (FTTH), which has allowed it to provide the market with a range from the most simple fixed voice and Internet solutions to the most complex, such as VPN Data services, based on state-of-the-art IP-MPLS networks or networks with symmetrical and guaranteed bandwidths, taking advantage of the strong investment in this new generation network.

2.139 In 2015, this operator was selected by SIBS to manage the ATM-supporting (communications) network. According to this company, the "*ATM MULTIBANCO network, one of the largest integrated interbank networks in Europe, covers over 12,700 terminals*." This involves the connection to terminals located in remote areas, relying on the use of its own network, with a wide capillarity, and where it is not available, on the lease of MEO lines (as available data show the decrease in the demand for MEO regulated leased lines, this situation already reveals some competition dynamics, at least in areas where operators' own networks have some degree of coverage).

2.140 It should be noted, however, that the fact that operators were able to grow in this market, winning over new large customers with multiple locations, does not mean that they were able to do it with full autonomy, given that they rely on MEO's wholesale offer in many cases. On the other hand, this does not mean also that MEO's market shares at national level are threatened by these developments (*vide* tables above).

2.141 Notwithstanding, in the light of the above, it would not be justifiable to impose wholesale *ex ante* regulation at national level, i.e., also in markets in C areas. But it

[129] *Vide* the above-mentioned 2014 Reports and Accounts.

should be taken into account that the wholesale market includes accesses that are used for resale at retail level and other accesses (for interconnection, self-owned network, etc), which shall be taken into account and analysed as a whole in the following chapter(s).

Retail high-quality access markets in NC Areas (high- and low-speed)

2.142 According to the analysis carried out, the retail high-quality access market in NC Areas is characterized by an absence of effective competition, especially where a single fixed network (MEO network) exists with the ability to provide these accesses throughout the whole country. If such an alternative network in fact exists, it is not wide enough, and/or the respective operators are not able to win over a sufficient amount of customers to allow that area to be considered as an area where effective competition exists (or will exist within the time frame of this market analysis).

2.143 In this context, in principle, there seem to be grounds for *ex ante* wholesale regulation of high-quality access markets in NC Areas, but, as referred above, the development of wholesale markets themselves must be taken into account (not just the retail market, which is defined in a stricter manner). This matter shall be dealt with in the following chapter(s).

3. Definition of wholesale markets

Definition of wholesale product markets for high-quality access and for trunk segments of leased lines

3.1 According to the Commission, the definition of a wholesale product market usually follows that of a related retail market. As such, this definition of wholesale markets will take into consideration the related retail market where this is considered to be relevant and to insofar as the demand for wholesale services results from the demand of retail services provided to final users.

3.2 In the case of the high-quality access market, the wholesale product market includes, according to the Explanatory Note, the necessary inputs for the provision of high-quality accesses to business customers in the retail market, and/or operators, in the wholesale market. This market covers:

- Leased lines (terminating segments) - with traditional or alternative (Ethernet) interfaces, i.e. irrespective of the technology, with capacity to supply dedicated (and usually point-to-point) connections, with symmetrical speed and without contention; and

- Other wholesale access products, typically asymmetric (and possibly with some contention), provided by an operator holding a copper or fibre network or hybrid infrastructures (such as cable network), that meet certain quality characteristics, such as:

  - Guaranteed availability and quality of service in all circumstances, including service level agreements[130], continuous customer support, redundancy and short repair times, typically oriented towards needs of business customers;

  - Management of high-quality network, including the transport component, with low contention;

  - Possibility of accessing the network at specific points according to the geographic density and distribution of companies (unlike residential users);

[130] Known as SLA – Service Level Agreements.

- Possibility of providing Ethernet continuity.

These products may be provided via self-owned infrastructures, internal supply or by leasing services from other providers.

3.3 Wholesale products may not have, in certain cases, a direct correspondence in the retail market - as in the case of MAM lines and of lines for access to international submarine cables, trunk segments of leased lines. There is also a substantial amount of lines contracted at wholesale level which is used in the scope of a company's own network (for the purpose of connections within the core network and between the core network and the access network, namely as far as mobile networks[131] or interconnection with other networks[132] are concerned). In fact, contrary to retail offers aimed for final users, regulated wholesale offers, especially LLRO and RELLO, given the characteristics of this business, have been used mainly to develop self-owned networks, and to a lesser extent, in the context of resale of accesses (leased lines).

3.4 In this context, as the demand for wholesale services results not only from the demand for (high-quality) retail services (that is, services provided to final users), but also from the demand of operators for their own use, the definition of the wholesale product does not follow strictly that of the retail market defined in the preceding chapter, first of all because trunk segments of leased lines, among others, must be taken into account.

3.5 ANACOM thus maintains its view, already expressed in former market analyses, that at wholesale level there are different (high-quality) markets, the access market (former market for terminating segments) and the market for trunk segments (of leased lines).

High-quality access

3.6 Taking exclusively into account data on wholesale access provided in the first half of

[131] In the case of mobile networks (respectively 2G/3G/4G), namely for connection between "antennae"/base stations, BTS/NodeB/eNodeB and aggregation nodes of the mobile access network, BSC/RNC/MME. In the case of 4G/LTE networks, connections are (natively) Ethernet-based and no aggregating point exists in the access network (MME belongs to the core network).

[132] Including lines for traffic interconnection with MEO, namely "interconnection lines" and "internal interconnection extensions", or for connections between operators within MEO exchanges.

2015, the clear dichotomy that exists in the retail market between the set of access with speed not exceeding 24 Mbps and the set of access with speed over 24 Mbps, may be confirmed (as demonstrated by the table below).

Table 5. Wholesale high-quality accesses, first half of 2015

Speed class	MEO	OSP (via supply from)				Total	Supply MEO to OSP[2]	
		RUO	MEO[1]	Self-supply	Third-parties		Total	RUO
Low-speed	10,802	587	792	1,454	8	13,643	49%	21%
High-speed	1,229		69	1,558	15	2,871	4%	0%
Total	**12,031**	**587**	**861**	**3,012**	**23**	**16,514**		

Source: ANACOM, on the basis of the 2015 Questionnaire.

[1] Except RUO. Mainly leased lines (LLRO and RELLO).

[2] Weight of MEO's wholesale supply (total and RUO only) in total wholesale accesses supplied by OSP. Values for OSP do not include other accesses supplied by MEO which were used for other services or their own network.

3.7 As is the case with the retail market, there is a substantial difference in the scope of the use of self-owned infrastructure. In fact, at the level of the wholesale market also, OSP use in practise their own (fibre) infrastructure to supply high-speed accesses, as opposed to the set of low-speed accesses, in the scope of which a high rate (49%) largely rely on MEO's wholesale supply.

3.8 These data confirm the indication given by the retail market analysis, according to which there is clear segmentation between low-speed access markets (mainly copper-based) and high-speed access markets (mainly fibre-based), also according to the retail market definition in the preceding chapter.

3.9 As such, the wholesale product market includes all high-quality accesses, i.e., with guaranteed QoS, irrespective of the symmetry and contention (provided it is low), as well as of technology (traditional and Ethernet), and differs regarding speed (and supporting infrastructure), which justifies the definition of two wholesale product markets:

– Wholesale market for low-speed high-quality access at a fixed location (≤ 24 Mbps), irrespective of the technology, symmetry and contention (up to 1:20) - Wholesale market for low-speed high-quality access;

– Wholesale market for high-speed high-quality access at a fixed location (> 24

Mbps)[133], irrespective of the technology, symmetry and contention (up to 1:20) - Wholesale market for high-speed high-quality access.

Trunk segments of leased lines

3.10 Trunk segments of leased lines (which include also MAM and inter-islands lines as well as lines for access to international submarine cables) do not have a direct correspondence, on their own, to any high-quality retail product.

3.11 These are objectively transparent and dedicated connections (no contention), with symmetrical and constant speed between nodes of the transport network, guaranteeing a very high quality of service, given that these connections are usually redundant/protected.

3.12 They are defined irrespective of their capacity, given that they are usually aggregated in systems with very high fibre capacity (e.g. DWDM), eventually with other lines/connections supporting other services/networks[134].

3.13 In this context, as these products are supported by an all-fibre infrastructure and may be based on any transport technology (SDH, Ethernet, etc.), which promotes without any particular difficulty the provision of segments of any capacity[135], it is deemed that there is a single product market for trunk segments of leased lines which covers all levels of capacity. Moreover, in the case of transport /bidirectional core networks of very high dedicated capacity, it would not be appropriate to extend the scope as was the case for Market 4 (against ex-Market 6), by including accesses with non-symmetrical speed (and/or some contention).

High-quality access vs. Trunk segments

3.14 This sections analyses whether wholesale markets for high-quality access and for trunk segments of leased lines - ex-Market 14[136] - are part of the same product

[133] Copper not included.

[134] For example, a 155 Mbps SDH connection between two exchanges may typically aggregate 63 leased lines at 2 Mbps or 3 lines at 34 Mbps, being aggregated to other similar connections in a connection at 62 Mbps or higher. A 1 Gbps Ethernet connection between two nodes of the transport network may include several trunk segments of 10 and/or 100 Mbps.

[135] This is facilitated by the digital transmission system's own nature.

[136] Referred in the 2003 Recommendation on relevant markets.

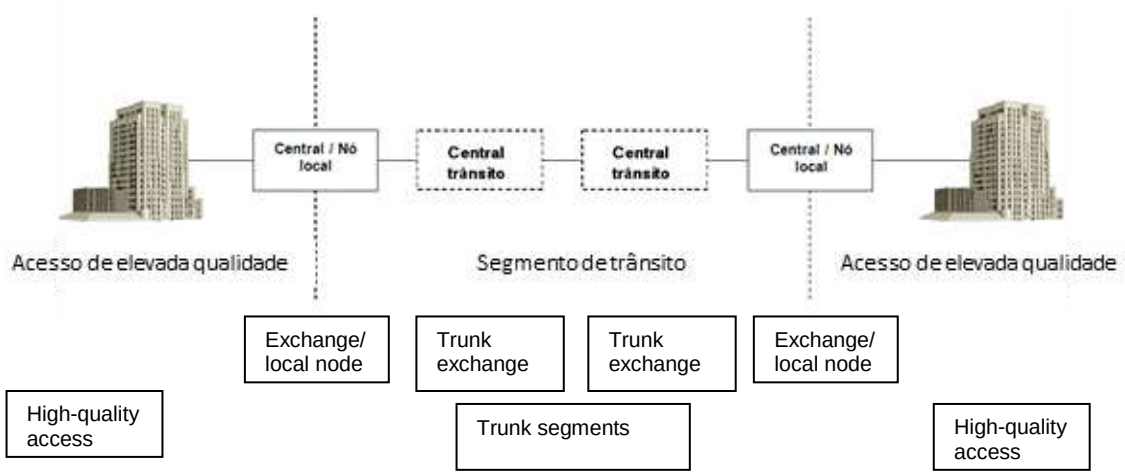
market.

3.15 High-quality accesses are provided at wholesale level by a terminating segment[137]. This corresponds to the physical connection between the customer's installation and the closest network aggregation point, where a PoP (node or exchange) of the transport/transmission network of the wholesale provider[138] is located.

3.16 Where physical connections exist between the above-mentioned nodes/exchanges/PoP of wholesale providing operators, such connections are known as trunk segments[139] or routes.

3.17 That is, (wholesale) high-quality accesses are elements located on the edges of the network, connecting, in the access network, the termination point[140] to the first aggregating node, and routes/trunk segments are part of the transport network core, providing dedicated and symmetrical capacity between nodes that form it - *vide* figure below:

Figure 11. Diagram of an end-to-end connection (between two NTP), including two high-quality accesses and route(s) /trunk segment(s)



3.18 As such, high-quality accesses and routes are complementary and not substitute

[137] Historically, in the scope of leased lines, also known as local extension, in the case of a terminating segment of a leased line held by MEO.

[138] In the case of MEO's regulated offers, its local exchange operates as a delimitation point. As regards regulated leased lines services, MEO's transport/transmission network nodes are located in these local exchanges.

[139] Also known as main section, in the case of a terminating segment of a leased line held by MEO.

[140] NTP – Network Termination Point located in the premises of the wholesale (or retail) customer.

products, meeting different needs, related to different connections and network elements.

3.19 In fact, in the wholesale market, an operator with its own infrastructure may engage only a specific segment, for example, in a situation where it holds its own transport network (i.e. its own trunk segments), contracting only high-quality accesses.

3.20 As demonstrated in the preceding chapter, there are already situations where operators in alternative to MEO not only hold trunk segments but also terminating segments in some areas (where they own an access network), and as such require only high-quality access in other areas, on an complementary basis.

3.21 In general, for an operator with its own (or leased) fibre-optic infrastructure, the investment in trunk segments is relatively lower[141] and faster than an investment in terminating segments (which require, for a relevant coverage, an access network that is almost ubiquitous) and presents greater economies of scale, given that the aggregation of capacity, and sometimes of routes, usually occurs. As such, it would not be easy for a provider of trunk segments to supply also terminating segments without incurring in significant costs, investment risks and high deadlines when implementing the access network. Consequently, it is not likely that such provider of trunk segments is able to limit the behaviour of a hypothetical monopolist operating in the high-quality access market[142]. In a different perspective, in case such an operator holds terminating segments, it is very likely that it holds also trunk segments to which these terminating segments are connected.

3.22 Main alternative providers of trunk segments have developed in the past a large part of their transport networks, which have been expanded, both on the basis of MEO's local exchanges where they are collocated (and where they built a node of their network) and of PoP/aggregating (optic) nodes at their own location, possibly close to MEO's local exchange, which operates, in practise, as such providers' own

[141] Given the lower amount of trunk network connections, although such connections may show a relevant size (length).

[142] For example, an operator with an extensive transport network could opt to acquire only terminating segments, and not to replace them with trunk segments. In this context, an operator that was present with network nodes at national level (collocated in all of MEO's local exchanges), and was able to access them all by means of its own network, would ultimately only need to contract terminating segments in order to supply end-to-end connections throughout the territory.

"local/trunk exchange".

3.23 In any case, and even in a wider perspective, it could be considered that the definition (in former market analyses) of the trunk segment market remain valid even in the current circumstances[143] - i.e. trunk segments of leased lines are part of a core (transport) network, providing capacity between nodes (that form it), and differ from high-quality accesses.

3.24 In conclusion, both wholesale markets for high-quality access (low- and high-speed) and for trunk segments of leased lines shall be analysed[144].

Definition of the geographic high-quality access market

3.25 As referred earlier, the definition of the wholesale geographic market does not fully coincide with that of the related retail high-quality access market, given that the demand for wholesale services results not only from the demand for (high-quality) retail services provided to end-users, but also from operator demand for own use.

3.26 ANACOM thus takes the view that to better characterize and define the wholesale geographic market, wholesale access supplied to operators and (wholesale) self-supply[145] supporting the resale of high-quality access at retail level must be aggregated (according to the table below).

3.27 Account is thus taken of all accesses provided on the basis of operators' own network (not relying on MEO offers), both actual wholesale accesses (provided to other operators), and "accesses" which support accesses provided at retail level.

[143] Where there are not only local (and trunk) exchanges owned by MEO, but also "exchanges"/PoP of other OSP at their own sites.

[144] Although they are no longer included in the list of relevant wholesale markets susceptible of *ex ante* regulation in the Recommendation on relevant markets (as from 2007).

[145] Supply which relies on operators' own network, thus excluding regulated offers provided by third parties.

Table 6. Amount of total wholesale accesses in the first half of 2015

Wholesale supply	MEO Accesses	OSP Accesses	Total Accesses (MEO and OSP)
Low-speed	37,278	17,620	54,898
Self-supply for resale #	26,476	14,779	41,255
To third-parties	10,802	2,841	13,643
High-speed	20,117	11,627	31,744
Self-supply for resale #	18,888	9,985	28,873
To third-parties	1,229	1,642	2,871
Total	**57,395**	**29,247**	**86,642**

Source: ANACOM, on the basis of the 2015 Questionnaire.

Note: # Self-supply for resale at retail level.

As referred above, double counting was removed (multiple connections for the same building and for the same customer), which results in minor differences, compared to data submitted by operators on the volume of accesses provided.

3.28 Taking access supplied to third-parties into account does not alter the definition of the geographic unit and the multidimensional criterion (defined in the preceding chapter), and, as such, all assumptions made for the retail market remain valid (as explained in detail in the section **Definition of the geographic unit and of the criterion for delimiting areas**

– The parish is the geographic unit;

– A multidimensional criterion, which cumulatively comprises, in addition to the amount of alternative networks[146] - at least two being required -, the amount of OSP effectively operating[147] - at least two being required - and MEO's market share[148] - lower than 50%, to identify whether a geographic unit is relevant for competition purposes (C area).

3.29 Bearing in mind the criteria set out, the areas, volume of accesses provided exclusively through self-supply[149] and average shares are as follows (*vide* table below):

[146] Minimum 50% coverage of such parish with cable or fibre network and:
- LLU for the low-speed market; or
- Fibre-based PoP, for the high-speed market.

[147] With high-quality accesses supplied in that parish.

[148] In volume of high-quality accesses.

[149] And RUO offer as regards low-speed.

Table 7. Breakdown of total wholesale accesses according to speed and area (first half of 2015)

Speed	Parishes	MEO Accesses	OSP Accesses	Total Accesses (MEO and OSP)	MEO average share
Low-speed		37,278	17,620	54,898	
C Areas	48	4,569	6,052	10,621	43.0%
NC Areas	3,044	32,709	11,568	44,277	73.9%
High-speed		20,117	11,627	31,744	
C Areas	64	3,467	5,146	8,613	40.3%
NC Areas	3,028	16,650	6,481	23,131	72.0%
Total	**3,092**	**57,395**	**29,247**	**86,642**	

Source: ANACOM, on the basis of the 2015 Questionnaire.

3.30 According to the analysis above, it is found that, for each wholesale product market (speed class), there are two geographic areas with different competition conditions:

– C Areas - Low-speed (speed not exceeding 24 Mbps): 48 parishes where the multidimensional criterion is met (MEO's average share is 43.0%) ; and

– NC Areas - Low-speed: other 3.044 parishes (MEO's average share is 73.9 %);

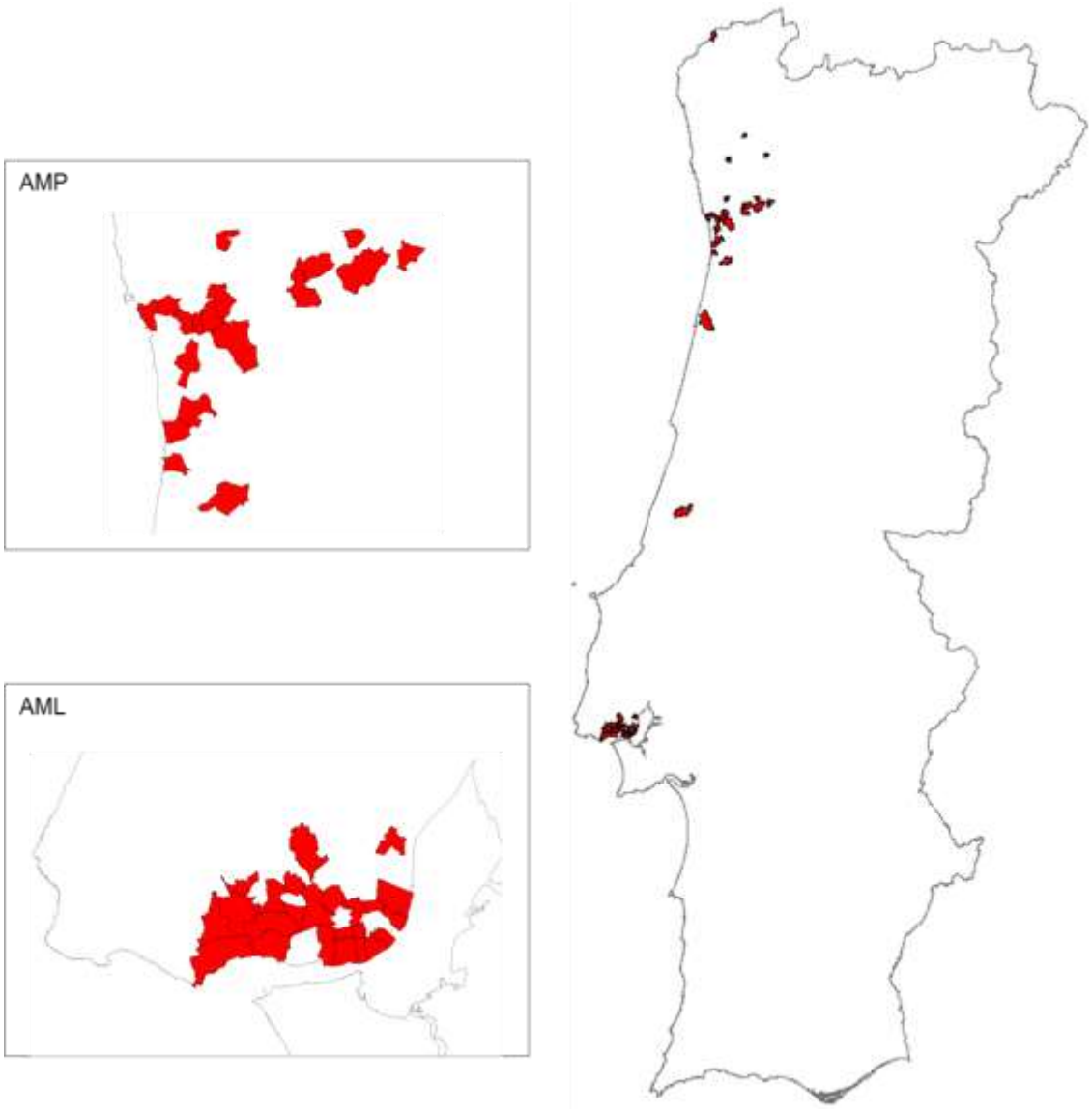
– C Areas - High-speed (speed over 24 Mbps): 64 parishes where the multidimensional criterion is met (MEO's average share is 40.3%) ; and

– NC Areas - High-speed: other 3.028 parishes (MEO's average share is 72.0 %).

Parishes in C Areas are listed in **Error! Reference source not found.** and in **Error! Reference source not found.**.

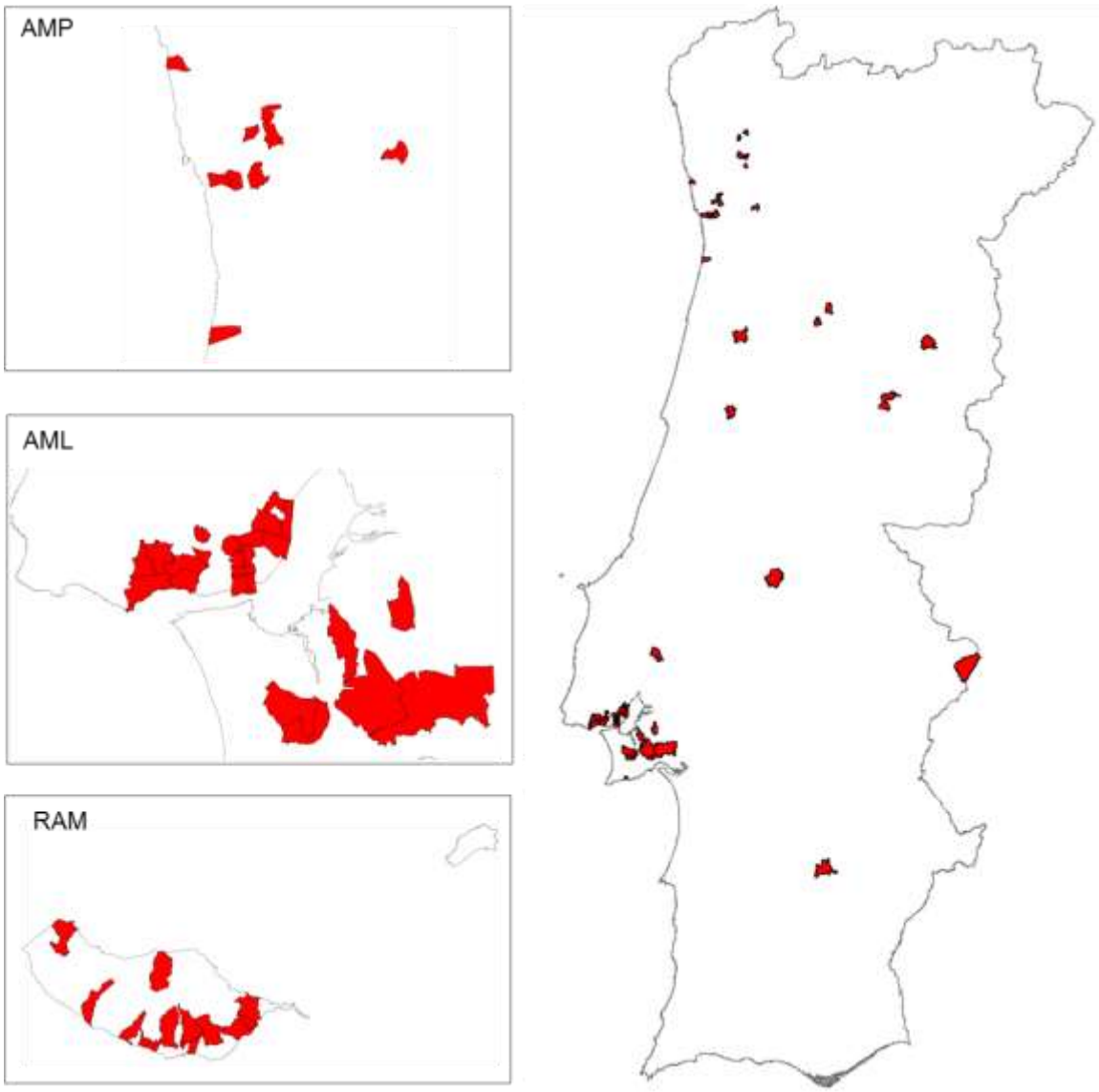
3.31 The figure below shows the distribution of parishes over the different geographic areas, respectively for the low- and high-speed market.

Figure 12. Parishes of C Areas within the low-speed market



Source: ANACOM

Figure 13. Parishes of C Areas within the high-speed market



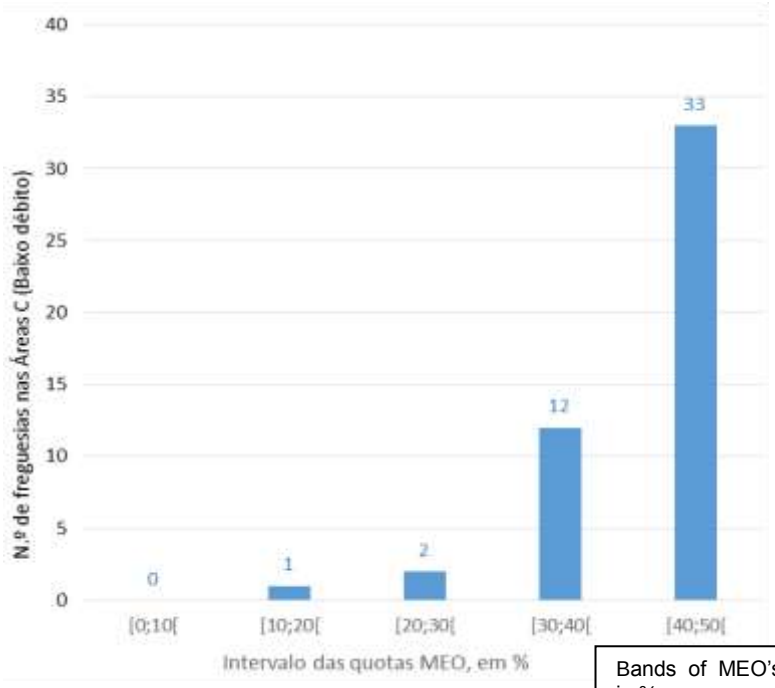
Source: ANACOM

3.32 Given the criterion used to define borders between C Areas and NC Areas, with the restriction of MEO's market share (lower than 50%), it is obvious that there are no parishes in C Areas where MEO's shares are equal to or higher than that threshold. However, there are parishes in NC Areas where MEO's share is lower than 50%, as at least one of the other sub-criteria is not met in those parishes.

3.33 The following charts demonstrate the breakdown of the amount of parishes according to MEO's market share, in C Areas and NC Areas, respectively in the low- and high-speed markets.

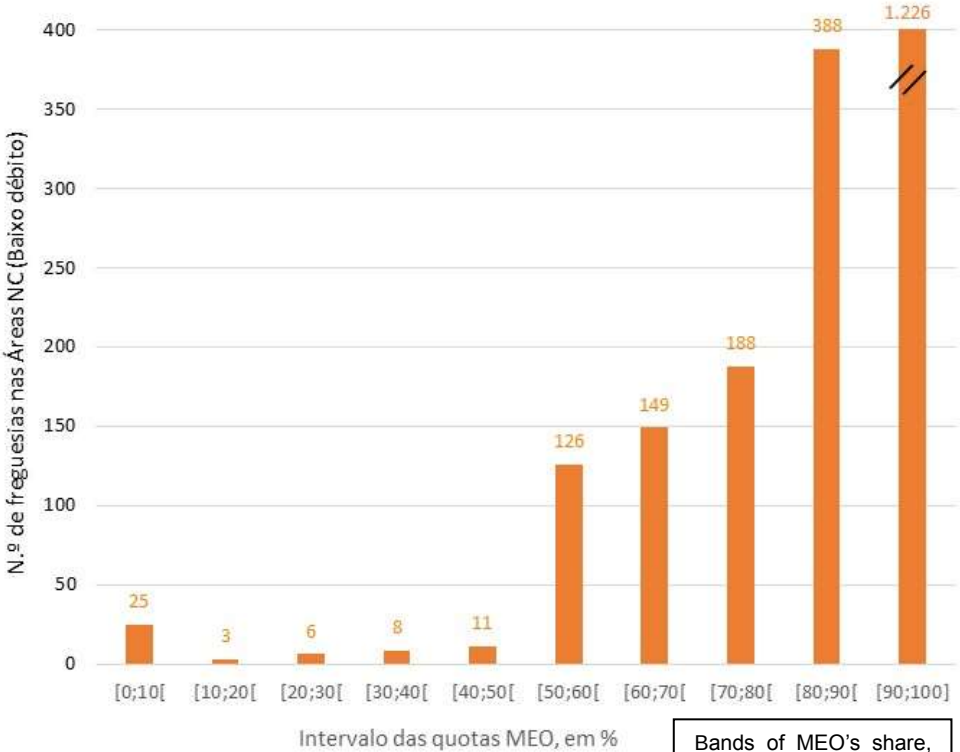
Figure 14. Low-speed market - number of parishes, respectively in C Areas and NC Areas and bands of MEO's market share in those areas (first half of 2015)

Number of parishes in C Areas (Low-Speed)



Bands of MEO's share, in %

Number of parishes in NC Areas (Low-Speed)



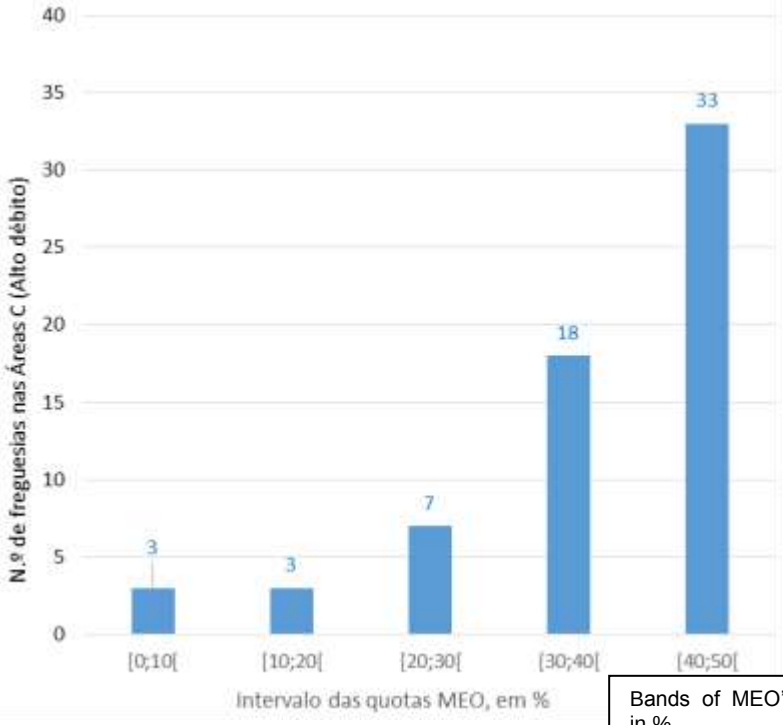
Bands of MEO's share, in %

Source: ANACOM, on the basis of the 2015 Questionnaire.

Note: The total number of parishes does not correspond to 3,092, given that no low-speed access exists in 914 parishes.

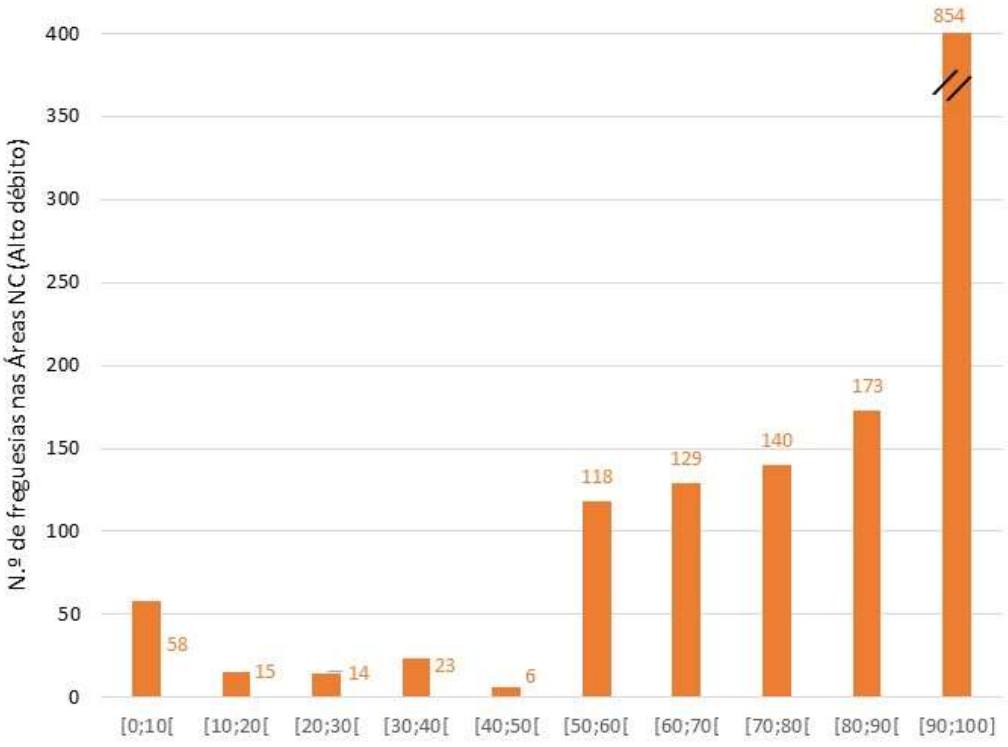
Figure 15. High-speed market - number of parishes, respectively in C Areas and NC Areas and bands of MEO's market share in those areas (first half of 2015)

Amount of parishes in C Areas (High-Speed)



Bands of MEO's share, in %

Amount of parishes in NC Areas (High-Speed)



Bands of MEO's share, in %

Source: ANACOM, on the basis of the 2015 Questionnaire.

Note: The total number of parishes does not correspond to 3,092, given that no low-speed access exists in 914 parishes.

3.34 These charts demonstrate that there is internal homogeneity in C Areas, which in competition terms represent an objectively different geographic area from the geographic area made up by the set of NC Areas.

3.35 However, a more disaggregated analysis of NC Areas, which, on the whole, are currently an homogenous area in terms of (absence of) competition, shows that in some parishes, notwithstanding the fact that MEO's shares exceed 50%, the first two sub-criteria are met[150], which suggests that there may be a tendency for competition in these parishes in the medium-long term.

3.36 Moreover, in a number of parishes (both at high- and low-speed levels), MEO's market share is lower than 50% - although one of the first two sub-criteria fails to be met -, and there are around 80 parishes where MEO's share is lower than 10%. However, in this case, the volume of accesses in most of these parishes is very low (less than 3) and MEO does not provide any access, having a zero market share.

3.37 In this context of an extremely low volume of supply (and demand), the market share cannot be the main (nor sole) indicator of competition assessment, given that the provision by MEO of, for example, two accesses in one of those parishes would imply an increase of its market share by 50% or more, thus not reflecting clear and stable signs of competition.

3.38 Taking into account the above-mentioned contexts, there is no guarantee that there could be competition in these parishes within the time framework of this analysis, and, as such, these sub-groups may not be autonomized, at this stage, in the group of parishes that make up NC Areas, nor can it be accurately supported with some degree of confidence that in those areas high and permanent barriers to entry no longer exist or that there is a tendency towards effective competition in prospective terms.

3.39 These issues shall be addressed again in the scope of SMP analysis and imposition of *ex ante* obligations, where it is weighted whether all parishes in NC Areas should be imposed the same *ex ante* obligations and whether some geographic differentiation should exist as far as obligations are concerned.

[150] Given that there are in such parishes at least two networks and two OSP providing accesses.

3.40 In the light of the above, this results in the following definition of wholesale geographic markets for high-quality access, irrespective of technology:

- Speed not exceeding 24 Mbps, the NTP of which is located in C Areas - low-speed access market in C Areas[151];
- Speed over 24 Mbps, the NTP of which is located in C Areas - high-speed access market in C Areas[152];
- Speed not exceeding 24 Mbps, the NTP of which is located in NC Areas - low-speed access market in NC Areas[153];
- Speed over 24 Mbps, the NTP of which is located in NC Areas - high-speed access market in NC Areas[154].

C Areas and NC Areas were defined in point **3.30**.

Definition of geographic markets for trunk segments of leased lines

3.41 As referred earlier, as there are no legal or regulatory restrictions as regards the development of wholesale trunk segments, this definition shall start by assessing the coverage of transport networks in Portugal.

Transport networks in Portugal

3.42 Given that the dissemination of the offers of operators (of electronic communications services) is mainly related to the geographic coverage of transport networks of various operators (with their own infrastructure) actively providing these markets, a summary of the current situation at the level of coverage and offer of transport network infrastructure at national level is presented below, taking into account the evolution which occurred since the previous market analysis.

3.43 The transmission/transport network includes PoP and fibre connections between them. In this analysis, as referred, PoP are deemed to mean network nodes in an operator's own site/exchange, collocated (namely in MEO exchanges, but using

[151] 'C Areas – Low-speed' for short.
[152] 'C Areas – High-speed' for short.
[153] 'NC Areas – Low-speed' for short.
[154] 'NC Areas – High-speed' for short.

infrastructure other than MEO's), or located in mobile network nodes - BTS[155], the amount according to operator being shown in **Table 3**.

MEO

3.44 MEO's fibre transport network is virtually ubiquitous. This company is bound to provide the wholesale leased line service as holder of SMP in markets (of terminating segments throughout the national territory) and trunk segments in NC Routes, currently in the scope of LLRO and RELLO.

3.45 According to MEO, "*Presenting a strong network traffic growth, Portugal Telecom has also been one of the first companies worldwide to implement interconnections at 100 Gbps between its main network nodes*[156]". In 2013, and in order to reinforce the capacity of mobile data and the improvement of the network quality, MEO had already guaranteed fibre coverage of mobile base stations by 94%, all with IP-based connection[157]. The figure below presents the diagram of the fibre network infrastructure in Portugal:

[155] Only those which are fibre-connected.

[156] MEO "*anticipated customer mobility and bandwidth needs, a data tsunami, having invested in the fibre network*" - 2011 Reports and Accounts.

[157] Portugal Telecom, 2013 annual consolidated report.
Vide http://web3.cmvm.pt/sdi2004/emitentes/docs/CONV49198.pdf.

Figure 16. MEO fibre transport network

Vodafone

3.46 Vodafone developed a fixed network structure, namely a fibre optic network, which covers over 80% of national companies[158], for the provision of mobile network and fixed access services, being fibre-connected in most local exchanges held by MEO where it is collocated.

3.47 Vodafone's transport network increasingly relies on its own resources and already shows a relevant dimension[159], radio links being prioritised in the mobile access network. In its response to the 2015 Questionnaire, Vodafone referred that the company covered already with its own network **[BCI] [ECI]**% of its mobile network (BTS), although being partially radio-based - *vide* **Figure 18**. That is, like NOS, Vodafone has developed its own infrastructure and transport network between this network and its mobile network core, which have resulted in an extended coverage in (and between) main metropolitan areas:

[158] *Vide* http://negocios.vodafone.pt/porquevodafone/asmelhoresrazoes.htm.

[159] Vodafone's transport network relies mainly on fibre optic installed by the company itself, corresponding to **[BCI] [ECI]** km.pair by the end of 2013.

Figure 17. Vodafone fibre transport network

Figure 18. Vodafone radio transport network

NOS

3.48 The transport network held by NOS, which is mainly fibre-based, shows a high degree of capillarity, although it is not as comprehensive as MEO's transport network. It should be recalled that Optimus developed a transport infrastructure and network between its mobile network core and base stations (where antennae have been installed), partly relying on radio links (*vide* **Figure 20**).

Figure 19. NOS fibre transport network

Figure 20. NOS radio transport network

3.49 According to NOS, its "*transport network (...) currently consists of two fibre optic networks made up of several rings (integrating a metropolitan network that serves Lisbon and surrounding areas) which interconnect several data centres, Hubs, Head Ends and Base Stations/e-nodeB where platforms and equipment that support several services which integrate the company's offer are installed*"[160].

Apax

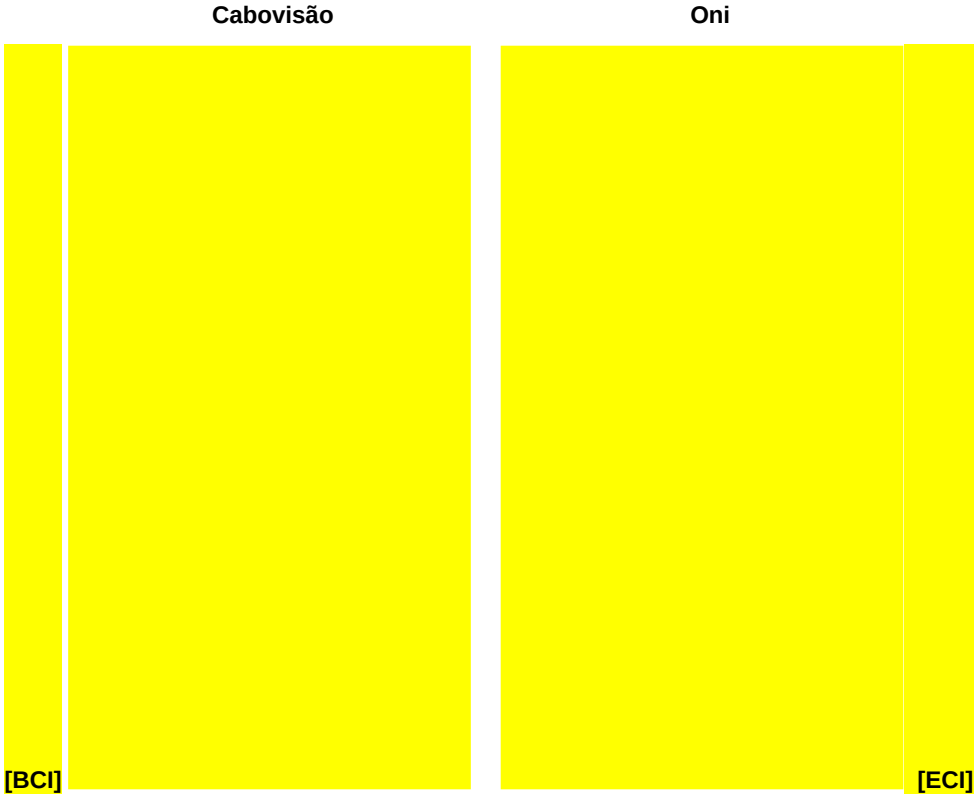
3.50 Apax (in particular through Oni) invested on a regular basis in its own fibre network infrastructure, complemented with fibre infrastructure leased by operators belonging to concessionaires[161], to support the transport network[162], with national coverage, in

[160] The same document, the 2013 consolidated Reports and Accounts of ZON OPTIMUS (now NOS), refers that "*Transport networks owned by NOS underwent a deep transformation process as from 2014, as a result not only of the need to converge Optimus' and Zon's networks, but also of the need for expansion boosted by traffic growth and commercial success. These networks, consisting of fibre optic assets and lines owned by the two companies that originated NOS, are converging into a single national-level network, this merger resulting in a single network with wider coverage, availability and capacity, while at the same time associated operating costs are simplified and optimised*."

[161] Oni's network consists in part of F300's network (subsidiary company) which follows the country's main motorways, completed by a network with a high degree of capillarity, i.e., just like Optimus (and other

"*more than 9.500 km of different sections*"[163]. These transport and access networks (ATM, Metro Ethernet and IP/MPLS) support a large variety of services provided to operators and companies, a diagram thereof being presented below[164]:

Figure 21. Cabovisão and Oni fibre transport network



operators), it relies mainly on its own fibre network, complementing it with fibre leased by third parties. Oni had, by the end of 2013, **[BCI]** **[ECI]** km.pair of dark fibre in its transport network.

[162] Which is structured at several layers, at SDH level (backbone and connection to customers), with multiple multiplexer elements and regional rings, DWDM and a metropolitan ring in Lisbon.

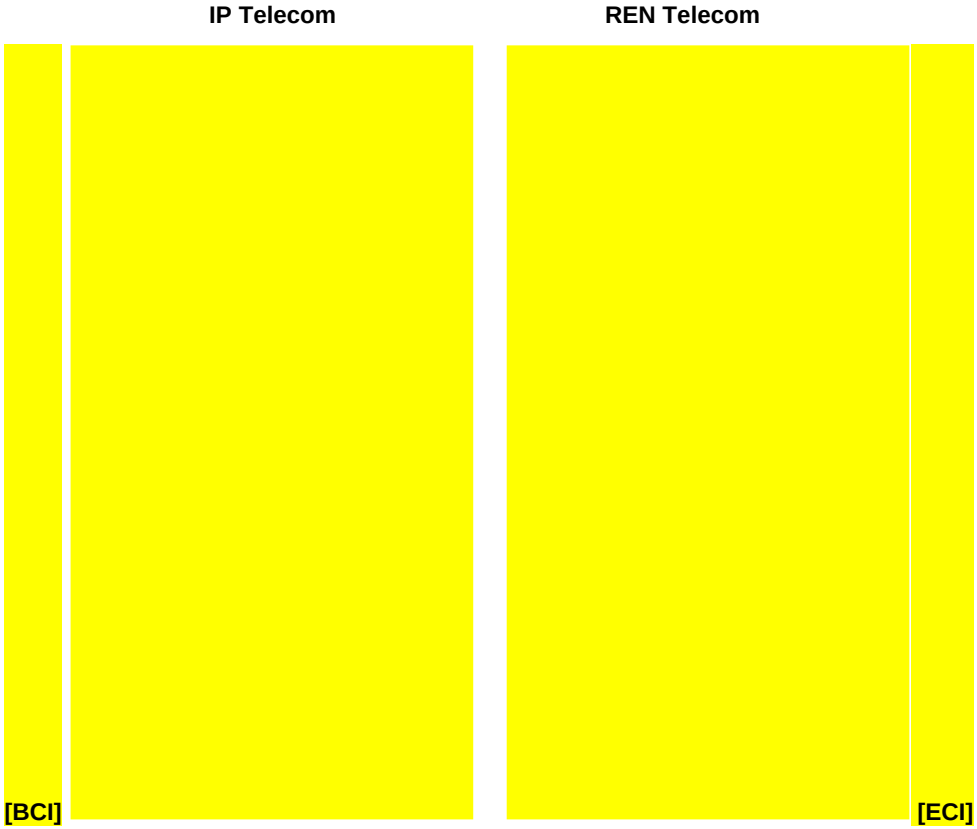
[163] *Vide* "Roadshow APDC NGN" at http://www.redesdenovageracao.com/Eventos/Detalhe/Roadshow-RNG---Apresentac%C3%B5es-e-fotografias.

[164] Although Cabovisão shows no impact at the level of the lines leased by third parties, especially at wholesale level, it has connections in several metropolitan areas. According to information provided at Cabovisão's website, "*Cabovisão has continuously expanded its coverage area, and is present today in more than 60 Municipalities and 200 parishes throughout Portugal. The services provided by Cabovisão reach customers via a broadband telecommunications network (consisting of over 13,000 Km of fibre optic and coaxial cable), exclusively owned by the company, and which is spread through the main cities of the country*."

Operators belonging to concessionaires[165]

3.51 These operators basically hold a fibre infrastructure and a transport network, which is supplied to other operators. The maps referred were obtained through maps supplied by other operators (in the case of IP Telecom) and the high-voltage electricity network (in the case of REN Telecom), and as such are approaches to the real transport network map.

Figure 22. IP Telecom and REN Telecom transport network



3.52 IP Telecom has a large amount of PoP, which are mainly located in railway stations, and as such owns a transport network with a high degree of flexibility.

[165] This concerns operators managing networks owned by:
- REN Rede Elétrica Nacional, S.A. and REN Gasodutos, S.A., in the case of REN Telecom;
- IP – Infraestruturas de Portugal, S.A (which manages road and railway infrastructures), in the case of IP Telecom;
- Empresa de Electricidade da Madeira, in the case of EMACOM.

3.53 In this context, the presence of operators with transport networks and offers in alternative to those presented by MEO (and which replicate the latter's offer in certain routes and geographic areas) has led several operators not to rely on the incumbent operator as their main provider of wholesale segments. Some of them mainly use their own network and rely on/supply to third parties in a wide range of routes.

3.54 Notwithstanding, ANACOM takes the view that substantial differences objectively remain as far as network coverage, and obviously, competition dynamics, are concerned:

- In routes where alternative operators - active on the market - hold their own fibre infrastructure and transport network; and

- In routes where these self-owned infrastructures are relatively scarce, i.e., in most routes (trunk segments) between more remote areas and/or areas of low population and business density.

3.55 Asymmetries between these different "geographic areas" are a result of the development of the market itself and in particular of coverage at the level of alternative fibre and transport network infrastructure[166], as well as of social, economic and demographic differences among the various regions of the territory, and of their impact on business plans made by operators (namely as far as profitability is concerned). These asymmetries, with an evident impact on competition conditions, are not created by market segmentation or primarily by market regulation, but are the basis for the result of that market analysis.

3.56 This situation and the specific definition of geographic markets for trunk segments/routes are further examined in the following sections.

[166] It should be noted that there is a significant coincidence between coverage of routes that connect economically strongest areas and those with greater business density.

Evolution since the last market analysis and review of the criterion for delimiting routes

3.57 Developments occurred at the level of fibre optic infrastructures, as demonstrated above, show that the various operators and bodies continue to extend their transport (and access) networks, in the most dense areas (in population and business terms), especially in metropolitan areas and urban coastline areas, but also between (and in) other important urban areas of the territory.

3.58 In fact, the former market analysis already concluded that heterogeneous competition conditions existed between:

- Routes between local exchanges where at least two alternative operators active in the market are collocated[167], using transmission networks not leased by MEO, known as C Routes (and consisting of connections between MEO's 110 local exchanges); and

- Remaining routes, known as NC Routes, which include all routes where at least one of the local exchanges corresponding to the endpoint is not part of the set of the 110 exchanges defined above[168].

3.59 In that market analysis, ANACOM considered that it would be a reasonable and balanced approach to use the criterion of the existence of two collocated operators (active in the market) at the two endpoints of a given route to consider whether such a route was a C Route. The fact that an operator was interconnected with its own infrastructure at a local exchange held by MEO, would make such exchange, in practise, part of its transport network. The deregulation of C Routes did not bring about any disruption, having the market operated normally, and MEO maintained a commercial offer in those segments.

[167] Mainly NOS (Optimus) and Apax (Oni), both active in wholesale and retail leased line markets. Colt was collocated in a very small number of exchanges. Vodafone was not active in the leased line market although it was collocated in a large number of MEO exchanges.

[168] These routes are characterized by the absence of an effective alternative to MEO's network offer (i.e., this is the only body able to make its own offer on most of these routes, since no alternative operator or offer exists) and, consequently, they are characterized by a lack of competition, even potential competition, or by the existence of limited supply resulting both from the number of collocated operators (less than or equal to one, and in the case of Vodafone, it was not active in the leased line market) or even from a complete lack of alternative utility or third party operator infrastructure.

3.60 Although LLU's relevance has been declining as basis for broadband retail offers[169], the number of exchanges with collocation of active operators in wholesale markets under consideration has slightly increased. It has thus been found that main operators competing with MEO in the wholesale market for leased lines continue to use nodes of the (fibre optic) transmission network, located in MEO's local exchanges, and, in fact, this use has increased.

3.61 At the same time, these operators have expanded their own fibre transport network, with their own nodes/PoP, close to MEO's local exchanges, but not collocated therein[170], which has led ANACOM to reassess the limits of this market.

3.62 In fact, (maintaining) a criterion solely based on collocation would imply that the deregulation of the wholesale market for trunk segment of leased lines would be exclusively dependent on the collocation of at least two operators in all of MEO's local exchanges, irrespective of the existence of multiple alternative transport networks (as well as of PoP close to local exchanges).

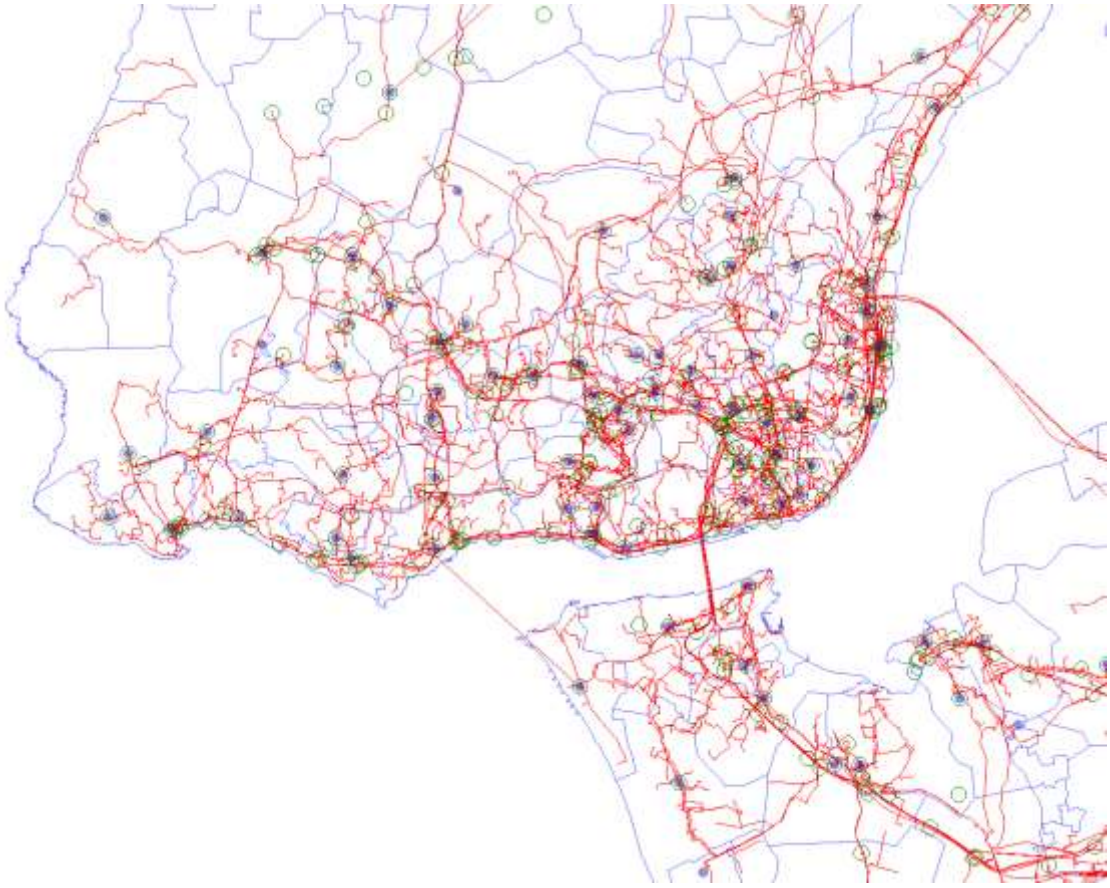
3.63 As there are in fact - as the figure below demonstrates - several PoP of different operators close to MEO's local exchanges and in the area covered by the latter[171], even in those where there is no collocation, this means that a transport network owned by alternative operators exists in the vicinity of local exchanges.

[169] *Vide* market analysis on Markets 3a and 3b.

[170] This situation could mean that the cost of collocation in MEO's exchange exceeded expected revenues, collocation not being thus justified. Where the distance between the point of presence and MEO's exchange is small, the cost of leasing a connection between those two points would be relatively low compared to the price of a trunk segment "replaced" by the operator's network.

[171] It must be recalled that MEO connects an NTP to the local exchange of the area covering it (it could even not be the closest local exchange in a straight line).

Figure 23. MEO exchange areas (blue outline, local exchange - blue circle) and OSP[172] PoP areas (green circle) in the Greater Lisbon area, data for 2015



Source: 2015 Questionnaire.

3.64 As such, the route delimitation criterion must now be reviewed, in line with suggestions put forward in the scope of the 2014 DD, being required, for each endpoint of a route, two PoP of alternative OSP active on the market, either collocated[173] or located in the area covered by each local exchange of MEO.

3.65 ANACOM did not take the transport networks held by DSTelecom and Fibroglobal (Rural NGN) into account, for the purpose of the definition of these markets, given that these operators operate exclusively as wholesale access providers. They are not present in markets under consideration, and are not an option for OSP seeking for trunk segments, and Fibroglobal itself provides passive access only[174].

[172] This figure does not present transport networks of all operators on this market, namely those owned by IP Telecom (which however follow railway lines).

[173] Which are connected to those exchanges with an infrastructure independent from MEO, i.e. with their own fibre network.

[174] According to statistical data reported to date by Fibroglobal.

3.66 Finally, it must be referred that in the scope of the (retail) high-quality access market, the parish was considered to be the relevant geographic unit given that terminating points of such accesses do not follow the network structure (of the incumbent operator). Route endpoints (trunk segments of leased lines), however, follow the structure of transport networks, and for this reason it is justified to maintain the exchange area as relevant geographic unit in this market.

Application of the criterion for delimiting routes[175]

3.67 On the basis of the criterion defined above, 404[176] MEO exchange areas were identified with at least two PoP of different operators, which consist of the so-called 'C Routes' (connections between these local exchanges).

3.68 The table below shows that in most of these exchange areas (207) there are at least 3 operators with their own transport network, thus exceeding the minimum value required by the imposed criterion:

Table 8. Amount of PoP owned by OSP according to MEO exchange area (first half of 2015)

Amount of OSP[1]	Amount of MEO exchange areas
1	348
2	195
3	132
4	58
> 4	17
Total (2 or more OSP)	**402**

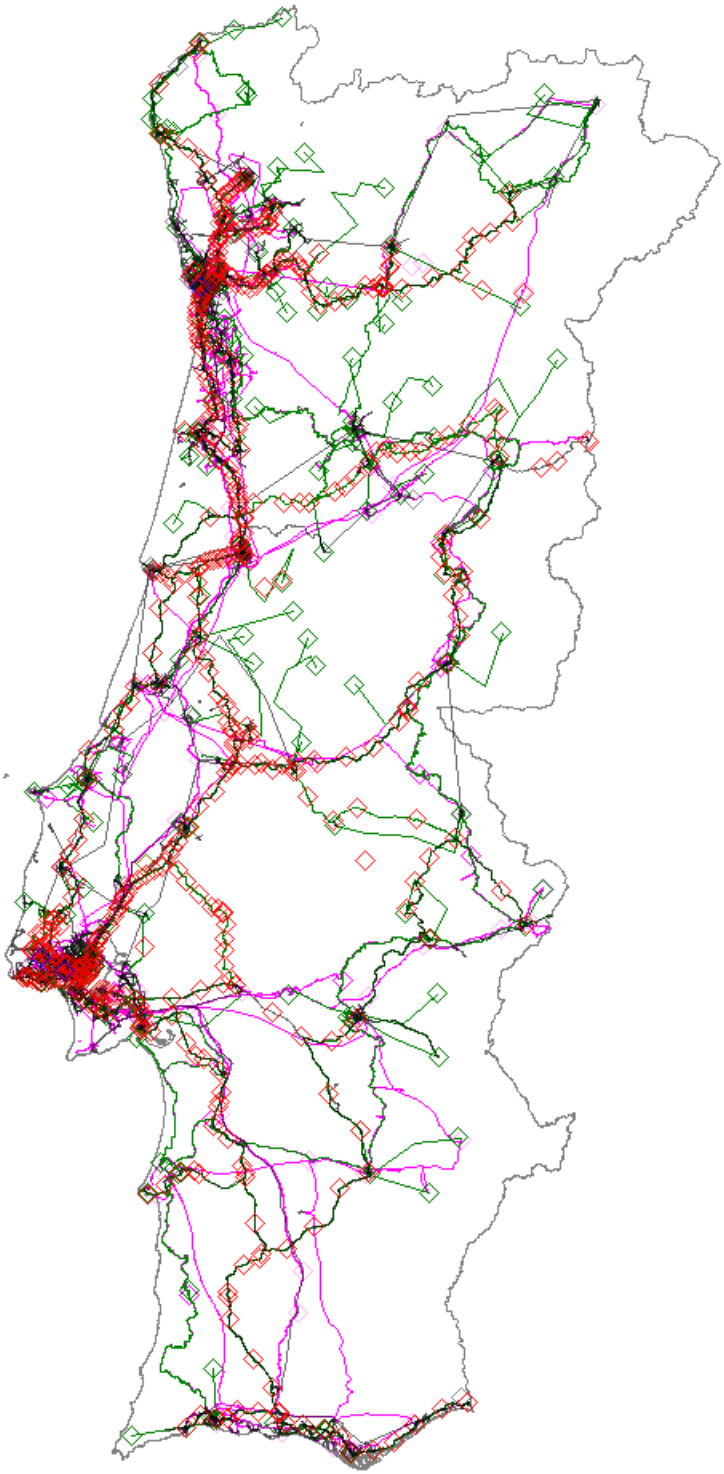
[1] In practise, the number of OSP present in the exchange area is accounted for, as in several cases there are OSP with more than one PoP.

3.69 The figures below show the transport network of several operators, including the respective PoP and MEO endpoint exchanges of C Routes in the Mainland (routes themselves are not identified in the figure, to make the map reading easier.)

[175] Excluding MAM and inter-island lines and lines for access to international submarine cables.

[176] Including the two trunk exchanges owned by MEO in Picoas (Lisbon) and Batalha (Oporto), where collocated operators exist.

Figure 24. Transport networks and PoP of main OSP

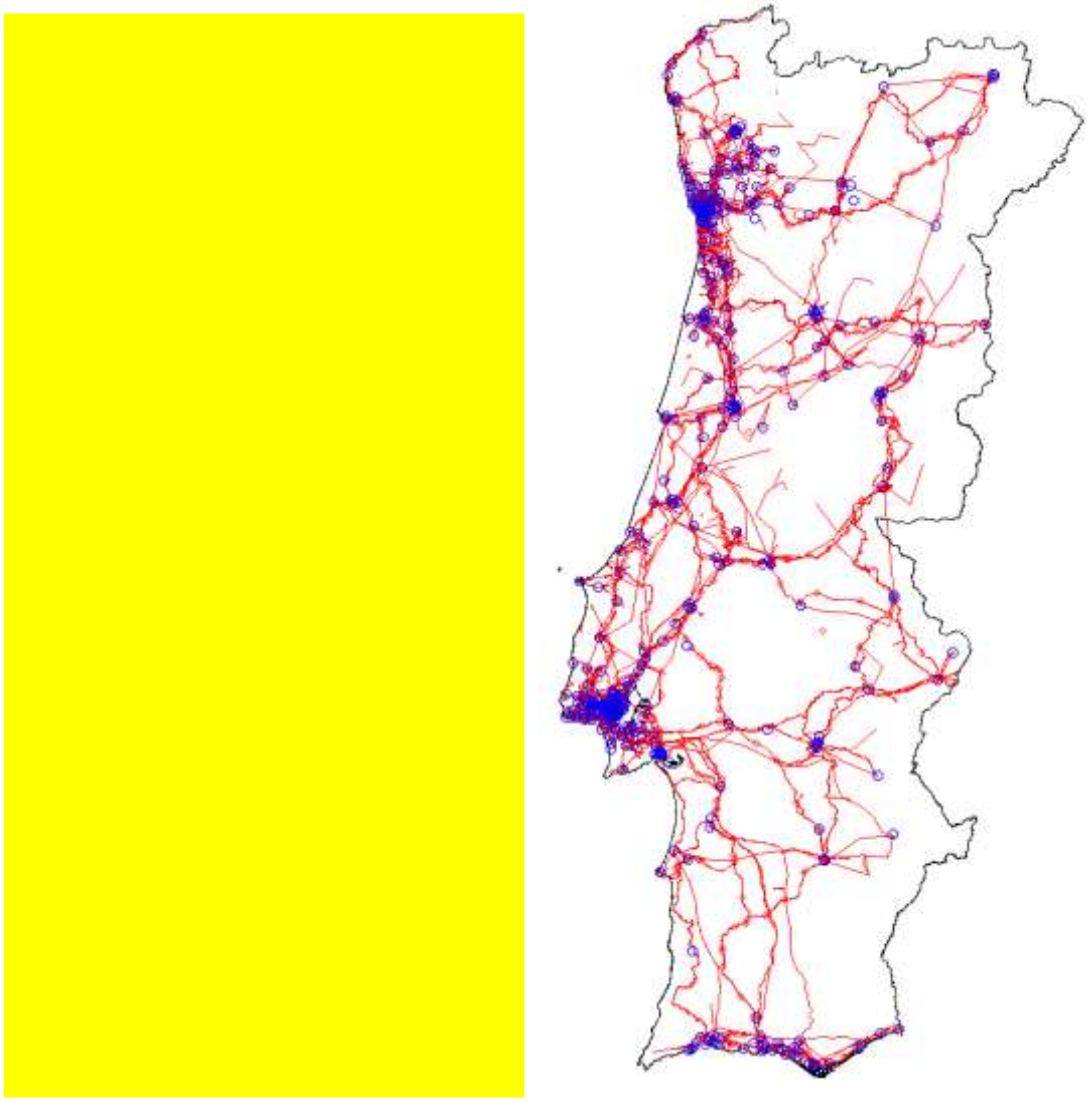


Note: Map does not include fibre-connected BTS, to facilitate map reading.
For confidentiality reasons, operators holding networks are not identified (networks shown in different colours).

Figure 25. Transport network of main OSP and endpoint exchanges of C Routes (circles in blue) and MEO transport network (including all routes, C Routes and NC Routes)

MEO [BCI]

OSP



[ECI]

Figure 26. Enlarged view for the Greater Lisbon area of transport networks of main OSP and MEO endpoint exchanges of C Routes (in blue)

3.70 As can be seen from figures above, the coverage of transport networks and, consequently, the competition situation remain objectively different for the set of C Routes and the set of NC Routes.

3.71 In C Routes, there are operators who basically use their own infrastructure, both for self-supply and third-party supply purposes, thereby competing with MEO[177] - *vide*, for example, the amount of networks in the Greater Lisbon area.

3.72 It is precisely in MEO endpoint exchanges of C Routes that the vast majority of (fibre) PoP owned by OSP may be found, more specifically, around 90% of more than four thousand PoP.

3.73 On the other hand, in NC Routes, MEO remains, in most cases, the sole owner of self-owned infrastructure. In fact, in around 1,100 of MEO's exchange areas (around

[177] As documented, there are several operators and bodies with significant coverage in main routes throughout the national territory, especially between metropolitan areas along the main coast axes, but also between district capitals/main urban areas of the territory.

76% of total endpoint exchange areas of NC Routes[178]), there is not one single PoP owned by any other operator.

3.74 In these cases, the absence of transport networks and of wholesale offers in alternative to those provided by MEO, confirms that competition conditions in trunk segments in NC Routes are sufficiently homogenous and distinct from those of trunk segments in C Routes.

3.75 These asymmetries between geographic areas largely grow out of coverage at the level of infrastructure alternative to fibre and of the transport network, as well as of social, economic and demographic differences among the different regions of the territory, and of the impact on business plans of operators (namely, profitability). OSP require a regulated offer, so they are able to provide their services in competition with MEO in many of the geographic areas covered by NC Routes.

3.76 In the light of the above, the following geographic markets for trunk segments of leased lines are hereby defined:

- Routes between central exchanges of MEO where there are at least two alternative operators with points of presence in the exchange area (either collocated or in the area covered by the exchange), called C Routes (and consisting of connections between MEO's 404 exchanges), identified in **Annex II**)[179];

- Remaining routes, called NC Routes, which include all routes where at least one of the local exchanges which constitutes the endpoint is not part of the set of 404 exchanges defined above[180].

3.77 This analysis did not take into account MAM and inter-island lines as well as lines for access to international submarine cables, which shall be addressed in the following section.

[178] And 60% of all MEO exchange areas (1,853).

[179] Except for routes which coincide with MAM or inter-island sections. These routes include trunk exchanges of Picoas and Batalha.

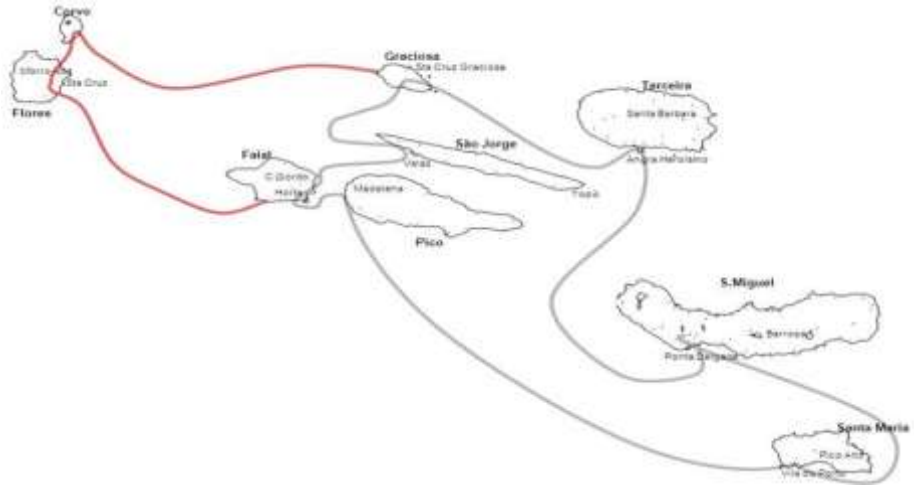
[180] Including routes between exchanges identified above, but which coincide with MAM or inter-island sections.

MAM and inter-island lines

3.78 Connections between the Mainland and the Autonomous Regions (AR) and between the Autonomous Region of the Azores (ARA) and the Autonomous Region of Madeira (ARM) - the so-called MAM lines - are currently ensured by submarine cables held by MEO [181].

3.79 Originally MEO, and more recently Fibroglobal[182], installed submarine cables in the connections between islands of each of those two AR - such connections were called inter-island lines. In the ARA, Fibroglobal owns the following connections: Graciosa – Corvo, Corvo - Flores and Flores – Faial. MEO owns submarine cables in the following inter-island connections: São Miguel - Terceira; Terceira - Graciosa; Graciosa - São Jorge; São Jorge - Faial; Faial - Pico; Pico - Santa Maria; and Santa Maria - São Miguel. In the ARM, the Madeira-Porto Santo connection relies on a submarine cable co-owned by MEO (by **[BCI] [ECI]** %) and NOS Madeira (by **[BCI] [ECI]** %).

Figure 27. Submarine cables held by MEO and Fibroglobal (in red) in the ARA



Source: MEO, reply to the 2014 DD.

[181] The first submarine cables between the Mainland and those AR were installed in the late nineties, and their capacity has been increased since.

[182] Fibroglobal is subject, under the bid proposal submitted in the scope of the public tender for installation, management, operation and maintenance of high-speed electronic communications networks in the ARA, to provide non-discriminatory and transparent wholesale access to any operator who so request. It is not present in retail markets.

3.80 For several of these connections, both those held by MEO and by Fibroglobal, the investment was co-financed with public funds. Cables between the Mainland and the AR were laid when international submarine cables were installed, thus some economies may have resulted from this joint installation.

3.81 As such, although there are no relevant legal restrictions to the installation of submarine cables by operators competing with MEO, and given the installed capacity and the demand, it would not be profitable to install new infrastructure without public funds and/or economies resulting from the installation of another cable (international). The investment in this type of infrastructure as part of an international consortium is not always "open", meaning that operators are not always able to obtain a position in a consortium, even if they wished to, for several reasons, such as the capacity to obtain national or Community public funds, the experience in this type of investments and existing infrastructures which may be optimized in this type of investment (e.g. ECS).

3.82 Consequently, there seems not to be, at least during the period during which this market analysis will be in force, any technical and economical feasibility for a possible autonomous extension of a self-owned transport network, by an alternative operator in these routes, the distance and the ocean representing strong obstacles in the access to networks and to the offer of electronic communications services in the ARA and the ARM. In fact, it became known that in the medium-term a consortium will install an submarine cable that comes close to the ARM[183], but not to the ARA, and no decision exists as to an extension to that region, and if there was, on national operators with ability to provide it (OSP or MEO - and MEO already owns submarine cable landing stations in the ARM). The date of which it is to take effect is also not yet known, more comprehensive information on this subject being possibly available in the next market analysis.

3.83 MEO and Fibroglobal hold a monopoly position as regards connections based on submarine cables they own. In fact, and although operators that purchase capacity in MAM and inter-island lines from monopolist operators may resale such capacity, an assessment of dominance may not take such resale into account, as only lines

[183] Namely the consortium formed by Telebras and Islalink for the construction of the EllaLink submarine cable.

supplied on the basis of an operator's own infrastructure may be accounted for, given that it assumes an analysis in the absence of regulatory obligations[184].

3.84 These submarine cables support the provision of several downstream services, including high-quality accesses. This provision by MEO of MAM (and inter-island) lines is regulated since the first analysis of leased line markets in 2005, in the scope of the LLRO offer. In 2011, after a second analysis of the leased line market, currently in force, the provision by MEO of Ethernet leased lines was also subject to *ex ante* regulation in the scope of the RELLO offer.

3.85 As such, until now MAM and inter-island lines have been included in the trunk segment market, first in the national market (ex-Market 14) and subsequently in the NC Route market. However, even in a strictly technical perspective, a MAM and inter-island line, which relies on submarine cables (and crosses over cable landing stations), that is, on a different infrastructure with thousands of kilometres long, is not like any other trunk segment on national territory.

3.86 But, above all, the unique competition conditions that alternative operators face in the access to these lines, so restrictive, and so different from any other trunk segment in the Mainland, are the reason why these lines are deemed to be part of a different geographic market. In fact, as referred above, at the level of MAM and inter-island lines no alternative offer exists, nor is it expected that such alternatives or any self-owned infrastructure become available in the future, even in the long-term.

3.87 This is a market segment where natural monopolist exist, sole holders of an infrastructure on which all electronic communications services, in the respective connections, are based, and *a priori* no conditions exist for replication by private initiative. For this reason, the connections in the scope of MAM and inter-island line markets must be taken into account in separate. This monopoly in each of these connections allows the monopolist to control the provision of services in the AR.

3.88 ANACOM has acknowledged this special constrain with impact on the provision of electronic communications services by alternative operators in the ARA and the ARM, as it is absolutely necessary for these operators to contract from MEO the

[184] The so-called "Modified Greenfield Approach".

connections to the Mainland (and inter-island connections, as regards connections relying on MEO's submarine cables), having imposed amendments on LLRO and RELLO, namely the reduction of prices of MAM lines[185].

3.89 In the light of the above, a single geographic market is defined for MAM and inter-island lines, which comprises MAM lines, inter-island lines relying on MEO's cable and inter-island lines in the ring held by Fibroglobal (both in the ARA) and Madeira-Porto Santo lines (ARM).

Lines for access to international submarine cables

3.90 'Lines for access to international submarine cables' allow (wholesale) access to capacity in these cables which make landfall at Submarine Landing Stations (SLS) on national territory.

3.91 There are currently three SLS on national territory[186] where international submarine cables make landfall: two belong to MEO (in Carcavelos[187] and Sesimbra[188]) and another to TATA (in Seixal[189]). In 2018, the EllaLink[190] is expected to make landfall at a new SLS at Sines.

[185] In the scope of ANACOM Determinations of 14 June 2012 and 23 July 2015. *Vide* http://www.anacom.pt/render.jsp?contentId=1126190.

[186] SLS in the AR thus being excluded.

[187] Where ACE - Africa Coast to Europe, Atlantis – 2 and Columbus – III make landfall.

[188] Where EIG - Europe India Gateway, SAT-3/WASC, SeaMeWe-3 and TAGIDE 2 make landfall.

[189] Where Main One, TATA TGN-Western Europe and WACS - West African Cable System - make landfall.

[190] Which will connect Brazil to Europe (via Portugal). *Vide* http://www.submarinecablemap.com/#/submarine-cable/ellalink. No public information is yet available on the company that with manage this SLS.

Figure 28. International submarine cables with landing points in Portugal

Carcavelos SLS (owned by MEO)

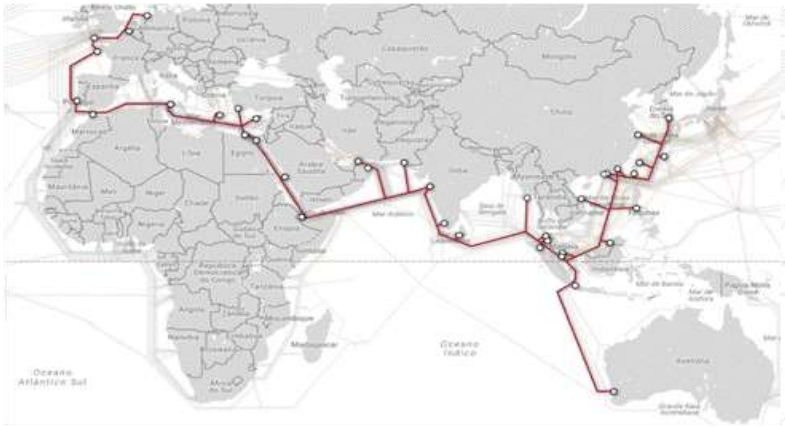
ATLANTIS-2

ACE

COLUMBUS-III

Sesimbra SLS (owned by MEO)

SEAMEWE-3

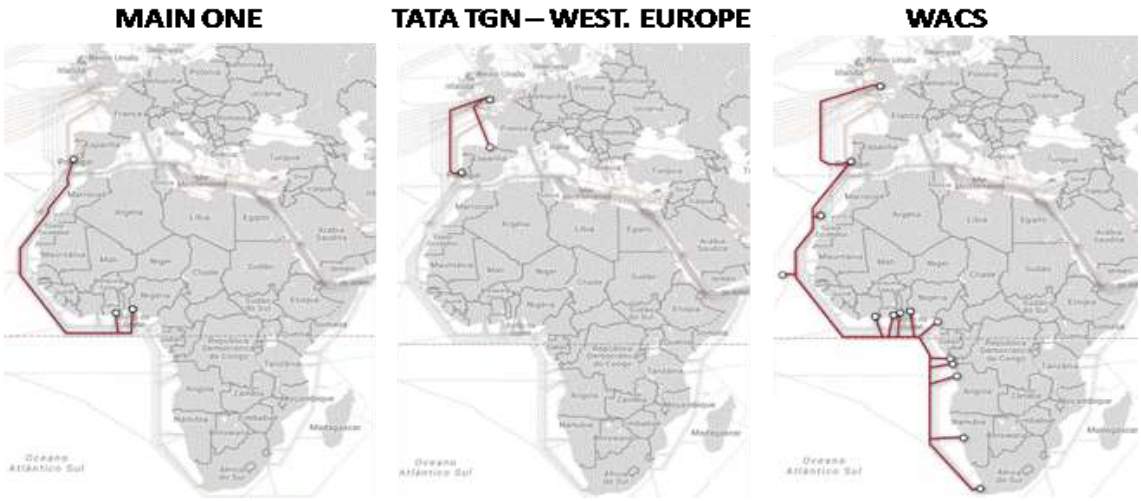


TAGIDE 2

EIG

SAT-3/WASC

Seixal SLS (owned by TATA)



Source: http://submarinecablemap.com/.

3.92 International submarine cables support traffic/capacity from/to several continents and are owned by international consortiums[191] or, in some cases, by a single company[192]. MEO and TATA integrate cable consortiums that make landfall at the respective SLS. Moreover, MEO integrates the consortium of a cable that makes landfall at TATA's SLS (WACS cable) and TTA integrates two of the consortiums that installed cables at MEO's SLS.

3.93 It is stressed that the construction and operation of these international systems, including SLS, are always freely negotiated between operators and agreed among the parties, and laid down in Construction and Maintenance Contracts (hereinafter C&MA) which (self-)regulate the relation between them.

3.94 Conditions for access to each submarine cable are usually determined by the consortium that owns it, and the respective C&MA provide for detailed rules as far as services are concerned (e.g. backhaul or collocation) which owners of SLS are contractually bound to offer to other members of the consortium that intend to use its capacity in countries where the cable makes landfall.

[191] Under article 1 of Decree-Law No. 231/81, of 28 July, a consortium is defined as "*the contract whereby two or more persons, either natural or legal, pursuing an economic activity, undertake in a concerted manner to perform a specific activity or make a contribution in order to pursue any of the objectives referred in the following article*", namely "*the conduction of preparatory actions, either material or legal, related to a specific venture or continuous activity*".

[192] By Main One Cable Company, as regards the cable with the same name, in TATA's SLS and by AT&T in the case of the Tagide 2 cable, in MEO's SLS, in Sesimbra – Source: http://submarinecablemap.com/.

3.95 In general, the capacity access service via international submarine cables consists in the connection of a given capacity - in fact, a leased line - in a specific cable (that makes landfall in a SLS) up to a PoP of the operator that contracted such capacity in that cable, and is made up of two components, an international component and a national component.

3.96 One of the endpoints of the national component is the SLS itself (in a collocation regime), as it the case with TATA, in Seixal, or another location, as in the case of MEO[193]. This national component then corresponds to the connection between the endpoint at the SLS and the PoP of the operator that contracted capacity in a given cable. In practise, this corresponds to a national leased line, thus ANACOM takes the view that it must continue to consider it in the context of the definition and analysis of markets for trunk segments of leased lines.

3.97 The wholesale service of access to (capacity in) international submarine cables provided by MEO in the scope of LLRO (which integrates the so-called backhaul lines with speeds up to 155 Mbps[194]), namely to support international traffic, currently provides for connection up to premises of the wholesale customer operator through specific segments, and the access lines to submarine cables that make landfall at MEO's SLS are exclusively provided by that company, except maybe for the **[BCI] [ECI]** cable.

3.98 As in the case of MAM lines, ANACOM takes the view that these segments (backhaul) differ, on account of their specificity, from trunk segments, and must be integrated in a separate market. In practise, each connection to a SLS could be considered to be a specific market, and several submarine cables (and even SLS) are owned by different bodies.

3.99 As such, three geographic markets are defined for lines for access to international submarine cables, as lines that end at each SLS:

[193] MEO, for example, supplies international line interconnection/switching of a cable that makes landfall in one of the SLS to another cable in the same and/or another SLS through its trunk exchange.

[194] It should be noted that the demand for backhaul for connection of capacity in international submarine cables focuses mainly on very high capacity lines (equal to or over 1 Gbps), and currently only MEO's backhaul up to 155 Mbps (inclusively) is regulated, exclusively in the scope of the LLRO offer. This issue will be analysed in the section on the imposition of obligations.

- Market for lines for access to international submarine cables that make landfall at MEO's SLS in Carcavelos;
- Market for lines for access to international submarine cables that make landfall at MEO's SLS in Sesimbra;
- Market for lines for access to international submarine cables that make landfall at TATA's SLS in Seixal.

Relevant wholesale markets susceptible to *ex ante* regulation

3.100 According to the Recommendation on relevant markets, and for the markets listed in the annex thereof, the NRA may consider it appropriate, on the basis of specific national circumstances, to conduct its own 'three criteria test' for those markets[195]. If the referred is not met for a specific market, the NRA should not impose regulatory obligations on that market.

3.101 NRA should also apply the 'three criteria test' to those markets listed in the Annexes to previous versions of the Recommendation on relevant markets (2003 and 2007) which are no longer listed in the Annex to the current Recommendation if they are currently regulated, in order to assess whether, on the basis of such national circumstances, such markets are still susceptible to *ex ante* regulation.

3.102 On the basis of this reference, and in line with recommendations made by BEREC and the Commission[196], the 'three criteria test' will be applied to the wholesale markets for high-quality access in C Areas (Low- and High- Speed)[197] and to the various wholesale markets for trunk segments of leased lines (except for C Routes).

[195] In fact, markets listed in the annex to Recommendation 2014/710/EC were identified by the Commission, under article 15, paragraph 1, of Directive 2002/21/EC, on the basis of the 'three criteria test', and the NRA should start from a presumption that, in these markets, the '*three criteria*' are met (cf. recital (19) of the Recommendation). Nevertheless, according to recital (20) of the Recommendation, the NRA is not prevented from conducting the 'three criteria test', even in those markets, on the basis of specific national circumstances.

[196] According to ERG/BEREC, NRA may choose to apply the 'three criteria test' to markets included in the Recommendation on relevant markets, which are susceptible to *ex ante* regulation, although such test is not a precondition for the analysis of these markets.

[197] On the other hand, markets listed in the annex to the Recommendation on relevant markets were identified by the Commission, under article 15, paragraph 1, of the Access Directive, on the basis of the 'three criteria test', and the NRA should start from a presumption that, in these markets, the 'three criteria' are met (cf. recital (19) of the Recommendation). In fact, access markets in NC Areas and markets for trunk segments shall be subject to SMP analysis, in a separate section.

3.103 In the previous market analysis[198], ANACOM applied the 'three criteria test' to the C Routes market, having concluded that this market is not susceptible to *ex ante* regulation. As regards the 1st criterion, it was concluded that "[199] *(...) there are no high and non-transitory barriers to entry in the C Routes market. Looking ahead, it is likely that this conclusion will remain unchanged, since the investment required in this type of infrastructure is long term*".

3.104 In fact, in the specific case of these C Routes, it became possible to replicate the network of the incumbent operator, and, consequently, its offer of trunk segments[200]. Several alternative operators have built and have access to fibre infrastructure and to the most recent transport technologies (e.g. DWDM and Ethernet), and sufficient incentives remain for the use of their own (fibre optic) transport network infrastructure in the provision of accesses and leased lines and at retail level, as shown by maps of the section **Transport networks in Portugal** with the transport network infrastructure owned by several bodies and the respective PoP.

3.105 In this regard, it is stressed that the number of local exchanges with two active collocated operators and, in particular, the number of self-owned fibre PoP has increased since the last market analysis, which has led to a proportional increase of the number of endpoint exchanges of C Routes, and, consequently, of the geographic scope of the wholesale market.

3.106 In this context, ANACOM maintains its view that there are no barriers to the entry and expansion in the market for C Routes, which is a competitive market and which is not subject to *ex ante* regulation as from the entry into force of the last market analysis, i.e., since the end of 2010.

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198 On 28 September 2010.

199 "*In the light of: the availability of self-owned fibre infrastructure (or contracted from third parties, such as certain utilities, thereby substantially reducing the impact of sunk costs, economies of scale and difficulties in the replication of infrastructure) in C Routes; high transport capacity available in C Routes; entry of new entrants in this particular segment, thereby strengthening the negotiating power of buyers; expansion of the wholesale offer of alternative operators in C Routes; low level of demand (which has also been decreasing) for trunk segments in C Routes on the part of other operators; and low market share held by MEO (less than 40%) in this market*".

200 In addition, in this market, OSP had (and have) access to dark fibre owned by other operators (including those owned by concessionaires), which assisted them in further extending their transport network.

Wholesale high-quality access markets in C Areas

3.107 In order to determine whether markets under analysis are susceptible to *ex ante* regulation, ANACOM will apply the 'three criteria test' at the same time to wholesale high-quality access markets in C Areas - Low-speed and in C Areas- High-speed, as they present very similar characteristics, conclusions applying to both markets.

1st Criterion - Presence of high and non-transitory barriers to entry

3.108 At the outset, there are no legal, administrative or regulatory barriers to entry in these markets.

3.109 As regards structural barriers, it is important to examine, according to the Recommendation, according to the Recommendation, "*indicators of barriers to entry in the absence of regulation (including the extent of sunk costs), market structure, market performance and market dynamics, including indicators such as market shares and trends, market prices and trends, and the extent and coverage of competing networks or infrastructures*".

3.110 In former market analyses, ANACOM concluded that MEO's high and persistent market share, together with barriers to entry related to the extension of the network and vertical integration of this Group, was an indicator that MEO's dominance in the market for terminating segments of leased lines would be maintained in the future. Main barriers to entry formerly identified by ANACOM were related to the control, by MEO, of the main access network supporting the leased line services (and in particular terminating segments), the demand for high-speed terminating segments still being weak. Stranded (or sunk) costs, which in the case of leased lines were extremely high, represented a relevant structural barrier to entry[201] and expansion.

3.111 All these barriers were considered to be high and non-transitory in the former market analysis, and it was unlikely at the time that they would decrease over a reasonable period of time.

[201] A potential entrant will want to bear such investment costs if these are likely to be recovered, along with the costs of production, as a result of the revenues achieved. The incumbent operator (who has already made its investments) is thus able to explore this asymmetry by showing to the potential entrant that if it decides to start operating in this market, prices will be too low to cover sunk costs. As such, entry is discouraged.

3.112 This conclusion might have been maintained in the future, in case the scope of the product markets had been maintained (the "traditional" leased line markets) and structural changes had not occurred in markets, especially at the level of fibre (access) markets.

3.113 In fact, several alternative operators have expanded in a sustained manner their own infrastructure, which has enabled them to offer (in alternative to the regulated offer) high-quality accesses to third parties. This alternative offer, although restricted to certain areas of the national territory, is based not only on traditional cable and copper networks (LLU) abut also on an increasingly larger self-owned fibre infrastructure. This infrastructure was installed not only to provide services to companies, but also to the residential market, on a massive scale, thus substantially reducing the impact of sunk costs, economies of scale and difficulties in replicating access infrastructure, in the offer of high-quality accesses.

3.114 This development of fibre infrastructure, as noted above, resulted in an increasingly broader coverage of high-speed connections by OSP. For low-speed connections, OSP also use LLU, to a large extent. In a lower degree, they use their own cable network (NOS and Apax), which as referred earlier, has the potential to support in the future a mass offer of high-quality access (even high-speed access).

3.115 In fact, in C Areas, there are at least two (alternative) operators who already use their own network to provide high-quality accesses, in particular with Ethernet technology. OSP dependence on MEO's regulated (leased line) offer is thus low in these areas, also because operators have migrated from traditional technologies to Ethernet (and in the case of high-speed connections to base stations, other technologies, namely radio, have been used in addition to fibre connection, despite the fact that they show limitations for very high speed connections).

3.116 As such, OSP (including mobile operators, now integrated operators) have entered these markets and have increasingly expanded their network and offer and reducing their demand for MEO accesses, that is, they have expanded their self-supply of high-quality access (including leased lines), and their offer to third parties, and decreased in the same proportion their dependence towards the incumbent operator in these geographic areas. However, this dependence is maintained as regards the ducts (and masts) network, and in the scope of low-speed high-quality accesses, also the LLU offer[202].

3.117 In the light of the above, and in conclusion, ANACOM takes the view that, primarily due to the development since the last market analysis of the fibre infrastructure and access network (including the cable network), as well as of the transport network, by OSP themselves - who are no longer largely dependent on the offer of the incumbent operator in these areas -, there are no longer high and non-transitory barriers (to the entry and) to expansion in markets for low-speed and high-speed high-quality access in C Areas. Looking ahead, it is likely that this conclusion is not changed, given that there has been a sustained and long-term investment in this type of infrastructures.

[202] Corresponding to the demand for access, respectively, to the RDAO (and RMAO) and RUO regulated offers.

3.118 Given that these three criteria are cumulative, the fact that the first has not been met automatically implies the failure of the whole test, and as such the access markets must be excluded from the set of relevant markets for the purpose of *ex ante* regulation. Notwithstanding, the two other criteria will be briefly examined, as this has been the consistent practice on the part of ANACOM as well as of other NRA.

2nd Criterion - Tendency of the market towards effective competition

3.119 As referred earlier, the development of self-supply (and the trend towards high-speed accesses[203]) has allowed the end of MEO's dominance in a part of the high-quality access market, that is, in C Areas.

3.120 On its turn, at the level of the volume of high-quality accesses[204] in C Areas, current markets shares are as follows:

Table 9. Estimated market shares in high-quality access markets in C Areas (first half of 2015)

[BCI]

Operator	Low-speed		High-speed	
	Volume	Share	Volume	Share
MEO	4,569	43.0%	3,467	40.3%
OSP	6,052	57.0%	5,146	59.7%
	1,433	13.5%	1,516	17.6%
	390	3.7%	370	4.3%
	3,686	34.7%	1,582	18.4%
	312	2.9%	1,496	17.4%
Others	231	2.2%	182	2.1%

[ECI] Source: 2015 Questionnaire.

3.121 Overall, MEO's market share is 43% and 40.3%, respectively in C Areas - Low-speed and in C Areas - High-speed, thereby less than the reference value of 50%[205] deemed by ANACOM to be one of the main indicators of competitive dynamics in this

[203] The current trend of migration to Ethernet higher capacity accesses (lines) seems to be met in particular through OSP's own accesses, as OSP now have access to the same technologies as the incumbent operator, i.e. using the same technological advantages (e.g. Ethernet).

[204] As referred in the definition of the geographic market, this includes wholesale and retail accesses based on self-supply (and LLU, in the case of low-speed).

[205] The Commission usually shows concerns as regards situations of single dominance in the case of undertakings with market shares over 40%, although situations of dominance may occur even with lower market shares. On the other hand, there could be cases where undertakings have higher market shares but are not regarded as dominant.

geographic market. These dynamics are different than those for other geographic markets, especially those for the high market shares identified in the previous market analysis (even if for the national market for terminating segments of leased lines and irrespective of speed). Taking into account the evolution in a recent past, it is thus likely that MEO's market share remains below 50% in the timeframe of this market analysis.

3.122 Finally, it must be referred that the bargaining power of MEO's main competitors at retail level is relatively significant and shows a growing trend, given the investment in self-owned networks and in alternative offers available in those areas. According to the analysis conducted in the context of the geographic market, a lower demand for MEO's high-quality accesses is likely to occur in C Areas - by comparison to other areas - as main capacity purchasers (in particular mobile operators and main OSP) are increasingly able to meet their own needs via self-supply. In the future, with the deregulation of these C Areas (at the level of terminating segments of leased lines), operators will enjoy an even greater bargaining power when entering into commercial contracts with MEO for high-quality access.

3.123 ANACOM takes the view that high-quality access markets in C areas are already effectively competitive, and that this situation will be maintained in the timeframe of this analysis, and as such, this criterion also fails to be met.

3rd Criterion - Insufficiency of competition law

3.124 Given that there is a limited use of services provided by MEO in these areas, there is no evidence that the application of the Competition Law will not be sufficient (in the future) to address any possible problems.

Wholesale markets for trunk segments of leased lines

NC Routes market

3.125 As regards the NC Routes market, as shown above, its structure and competition conditions are substantially different from those of the C Routes market. Unlike the latter, the NC Routes market presents restrictive competition conditions, which led to the conclusion, in the former market analysis, that it is susceptible to *ex ante* regulation, having been met the 'three criteria test'.

3.126 On that occasion, it was referred that the Commission acknowledged that on a significant number of routes, particularly those with lower capacity, it would not be possible for OSP to compete with the incumbent operator, as most of these routes are served only by this operator (as stressed earlier, in around 76% of endpoint exchange areas of NC Routes, not a single PoP owned by alternative operators exist). In this respect, the Commission considered[206] that the NRA might be able to demonstrate that (a part of) the market for trunk segments would continue to meet the 'three criteria test' and be susceptible to *ex ante* regulation.

3.127 In fact, following the assessment of SMP, the NC Routes market was considered not to be competitive and *ex ante* obligations were imposed on the incumbent.

3.128 According to the Recommendation on relevant markets, ANACOM is required to apply the 'three criteria test' to the trunk segments market (ex-Market 14 of the 2003 Recommendation).

3.129 As far as the first criterion is concerned (barriers to entry), the competitive scenario has not substantially changed, this market still being characterized by an absence of alternative to MEO's networks and offers provided in these connections, especially among areas with lower population and business density and/or more remote areas and areas that are difficult to access.

3.130 In fact, developments since 2010 at the level of OSP fibre infrastructure and transport networks, largely referred to above, have already been taken into account in the update of the scope of geographic markets for trunk segments, with the substantial increase of the geographic scope of the C Routes market - whose endpoint local exchanges are roughly located in areas with higher business density - and the corresponding decrease of the geographic scope of NC Routes market.

3.131 The redefined NC Routes market maintains the same characteristics and barriers already detected earlier:

- Non-existence or low level of alternative (dark) fibre optic infrastructure and transport network available in most routes - in general, only MEO holds fibre

[206] Explanatory Note in annex to the former Recommendation on relevant markets.

infrastructure and transport network in these routes, which results in the inability of alternative operators to provide, at any moment, the segment lease service in these routes and, in particular, to compete at retail level on equal terms in areas served by these routes;

- Maintenance of the low amount of exchanges with collocated operators (the evolution of the number of PoP close to MEO exchanges has already been integrated in the review of the geographic scope of the market - it must be recalled that around 90% of PoP owned by alternative operators are located in endpoint exchange areas of C Routes);

- Non-existence of comprehensive wholesale offers in alternative to those provided by MEO.

3.132 As such, looking ahead, it is reasonable to assume that there will be no changes in a near future, taking also the current economic and financial environment into account, combined with the fact that investments (sunk costs) required to build fibre infrastructure in these routes are very high, to enable operators to achieve a relevant presence in the same market that includes connections among the around 1,450 local exchanges held by MEO[207].

3.133 Obviously, as in most of these routes there is no access to alternative fibre infrastructure, either self-owned or belonging to another bodies, alternative operators are not able to extend, in an economically viable way, their transport network in these routes, thus in practise it remain very difficult to replicate the physical infrastructure of the incumbent in NC Routes. Consequently, insurmountable barriers to new entrants remain in this market, and for this reason the NC Routes market should remain susceptible to *ex ante* regulation.

3.134 As such, former conclusions on the result of the application of the 'three criteria test' to the geographic market for NC Routes remain:

[207] Which are generally located in rural and/or remote areas, with low demand, and as such, lines supplied between these exchanges would likely not ensure the necessary return of investment in collocation and/or expansion of an operator's own network to such locations.

- High barriers to entry and expansion remain - in general, only MEO holds fibre infrastructure and transport network in these routes and alternative operators are not able to replicate this network;

- No tendency exists towards effective competition (even subsequently to the period covered by the market analysis) - MEO holds a dominant position, and no perspective of competitive or comprehensive offers exists;

- The application of Competition Law is not expected to be sufficient to address competitive problems that may arise from this dominance, as demonstrated by ANACOM interventions since the last market analysis, in particular in terms of prices, procedures and quality of service in LLRO and RELLO.

MAM and inter-island market

3.135 All conclusions reached in the scope of the NC Routes market are even more evident as regards the MAM and inter-island market:

- Barriers to entry are insurmountable - only the owner of the submarine cable(s) holds fibre infrastructure and transport network in those specific routes[208]. There is no economic viability for any other operators to autonomously replicate the submarine cable infrastructure, unless public funding exists;

- There is no tendency towards effective competition (even in the long-term) - the operator owner of the submarine cable[209] holds a position of total dominance, and there is no perspective of change of competition dynamics during the period this market analysis is in force, due to the absolute absence of any perspective of competing offers in these routes; and

- The application of Competition Law is not sufficient to remedy competitive problems arising from this absolute dominance, which has been addressed by means of *ex ante* regulation since the first market analysis.

3.136 This is a market segment where a natural monopoly exists: the infrastructure on

[208] Which may, in any case, be leased to third parties. However, the dominant operator has no incentive to supply access under reasonable conditions (as evidenced by the need for urgent measures).

[209] As referred earlier, MEO, Fibroglobal and NOS, in the respective routes/cables.

which all electronic communications services between the Mainland and islands (and between islands) rely has no conditions, at the outset, to be replicated on the basis of private initiative, at least until the next market analysis, and as such, these connections (wholesale trunk segments) are susceptible to *ex ante* regulation.

3.137 The following chapter focuses on an assessment of SMP on this geographic market, and specificities that exist in AR connections, namely those related to cable ownership, shall be weighted in the analysis of *ex ante* obligations to be imposed, the additional segmentation of the geographic market not appearing to be justified here.

Market for lines for access to international submarine cables

3.138 Three geographic markets were defined[210], the first two roughly corresponding to the so-called backhaul service provided by MEO, regulated under the LLRO offer[211] (although currently for capacities up to 155 Mbps).

3.139 In this context, the market has been, so far, subject to *ex ante* regulation, although in a relatively limited way. Because of this, and given that access to international submarine cables has never been explicitly and autonomously part of the list of markets susceptible to *ex ante* regulation of the Recommendation on relevant markets, ANACOM considers that the 'three criteria test' should be applied, in line with the Commission's recommendations on how to address relevant markets which are not included in this list.

3.140 As far as barriers to entry are concerned, it should be referred that since the last market analysis, TATA developed its own SLS (in Seixal), having expanded its offer, and at present the capacity in submarine cables that make landfall at its SLS exceeds the capacity in submarine cables that make landfall at MEO's SLS. Moreover, there are two (remotely) collocated operators at TATA's SLS.

[210] Market for lines for access to international submarine cables that make landfall at MEO's SLS in Carcavelos; Market for lines for access to international submarine cables that make landfall at MEO's SLS in Sesimbra; and Market for lines for access to international submarine cables that make landfall at TATA's SLS in Seixal.

[211] Vide Annex 1, paragraph 3, at http://ptwholesale.telecom.pt/GSW/PT/Canais/ProdutosServicos/OfertasReferencia/ORCA/orca.htm.

3.141 In addition, ANACOM is not aware, to date, of any complaints on the part of operators that contract capacity in submarine cables that make landfall at this SLS. In fact, there are dozens of operators that contracted, on the whole, many hundreds of Gbps of TATA's backhaul, without any problem having been reported on the part of these operators (although MEO reported in its comments to the DD that TATA allegedly had not accepted the provision by MEO of the backhaul service to a third party operator owner of cables with landing point at the Seixal SLS). This means that TATA places no obstacles to backhaul access at its SLS (as opposed to markets for lines for access to capacity in submarine cables that make landfall at MEO's SLS, as demonstrated in this analysis, in the appropriate subsection).

3.142 In this context, it is concluded that there are no permanent barriers to entry and expansion, either of a structural or legal nature, in the market for lines for access to international submarine cables that make landfall at TATA's SMS (Seixal), thus the first criterion is not met and, consequently, this market is not susceptible to *ex ante* regulation, bearing in mind that the three criteria must be cumulatively fulfilled. Nevertheless, it is briefly checked next whether the remaining two criteria are met.

3.143 In its reply to the public consultation and prior hearing on the DD of 19 December 2014, MEO referred that in the case of the WACS submarine cable, with landing point at TATA's SLS, there are three operators who are able to provide access to capacity therein, namely MEO, **[BCI] [ECI]** and TATA.

3.144 In fact, as there are currently three operators who are able to access capacity in submarine cables that make landfall at TATA's SLS, in particular in WACS, and given that TATA provides backhaul services at commercial level which have not been the subject of any complaint, it could be concluded that this market evolves to a situation of effective competition within the relevant timeframe, which is expected to be 3 years (cfr. article 59-A, paragraph 2 a) of ECL).

3.145 It should be noted also that the two other cables with landing point at this SLS - Main One[212] and TATA TGN-Western Europe - are respectively owed by Main One Cable Company and TATA. In the second case, TATA, as owner of the cable and of the SLS, is able to use these assets as the company deems fit, without any obligation to

[212] *Vide* http://www.mainonecable.com/.

grant access/lease capacity to other bodies, as in this case there is no consortium with several operators with shared cable responsibilities, but a single operator (in this case, TATA itself). In the case of Main One, ANACOM is not aware of the agreement established between this operator and TATA, but so far no problem has been reported.

3.146 That is, of the three submarine cables that make landfall at TATA's SLS, one is exclusively owned by a single body (other than TATA), another is exclusively owned by TATA (i.e., there is no consortium), and in the third cable there is a possibility of access in (remote) collocation regime, in a context of "open access" (according to TATA[213]), provided by TATA in the scope of its freedom of economic initiative and not on a basis of regulatory imposition, collocation which is being effectively used. TATA also provides backhaul services (involving a total capacity of hundreds of GBPS) to dozens of operators.

3.147 It may thus be concluded that the second criterion is not met as well.

3.148 Lastly, given that there are no formal complaints on the access to TATA's SLS, ANACOM takes the view that the last criterion fails also to be fulfilled, the Competition Law being sufficient to address any restriction in the access to this market.

3.149 On the other hand, as regards the first two markets defined, MEO has acted as a monopolist, restricting and even preventing access (namely in a collocation regime) to its SLS, according to complaints and requests for intervention submitted on several occasions to ANACOM by several operators (NOS, Oni, Vodafone and BICS).

3.150 Moreover, it must be referred that, according to MEO, one of the C&MA of submarine cables with landing points at MEO's SLS provides for collocation **[BCI] [ECI]**, insofar as **[BCI] [ECI].**This means, **[BCI] [ECI]** owners, managers or employed operators of submarine cables with landing points at a given SLS would not benefit from this possibility.

[213] And confirmed by **[BCI] [ECI]** in the referred pubic consultation.

3.151 For the reasons detailed above, it is found that in a context of absence of *ex ante* regulation, permanent and insurmountable barriers to the entry and expansion in (two) markets for lines for access to international submarine cables that make landfall at MEO's SLS remain, thus the first criterion provided for in the 'three criteria test' is observed.

3.152 Although further to ANACOM's intervention, MEO has enabled collocation of **[BCI] [ECI]**, in a building adjacent to the Sesimbra SLS, a single cable (the **[BCI] [ECI]**) is allowed access, thus competitive constrains remain in this (these) market(s) as regards access to other submarine cables with landing point at MEO's SLS. As such, the second criterion is also deemed to be fulfilled.

3.153 MEO has claimed lack of reciprocity in the provision of collocation at SLS in countries where submarine cables make landfall, on the part of operators that integrate the respective consortiums. However, in this regard, it must be referred that the Council of Ministers of Telecommunications of countries of West Africa adopted at a meeting held in October 2014 a set of Guidelines for Access to ITU Submarine Cables in West Africa (where several cables that also have landing point in MEO's SLS make landfall), to be approved by the Council of Ministers of ECOWAS. In this document, signatory countries undertake to make available collocation at their SLS and to provide backhaul services[214].

3.154 In the light of the above, and taking into account that the application of Competition Law is not sufficient to address the identified competition problems, in particular obstacles to entry in markets for access to international submarine cables that make landfall at MEO's SLS in the absence of regulation, the complaints presented by operators and the need for intervention on the part of ANACOM in order to remedy above-mentioned market failures, it is concluded that these markets are susceptible to *ex ante* regulation.

3.155 The next chapter will focus on a SMP assessment of these geographic markets, and its specificities, namely those related to cable ownership, shall be weighted in the analysis of *ex ante* obligations to be imposed.

[214] Vide:https://www.itu.int/en/ITU-D/Projects/ITU-EC-ACP/HIPSSA/Documents/FINAL%20DOCUMENTS/FINAL%20DOCS%20ENGLISH/submarine_cables_ecowas_regulation.pdf.

Definition of wholesale markets – Conclusion

3.156 ANACOM reached the conclusion that high-quality accesses (termination segments) and trunk segments of leased lines are two different markets.

3.157 In the case of high-quality accesses, and contrary to trunk segments, it was concluded that two product markets exist depending on capacity (low-speed and high-speed).

3.158 As regards the definition of the geographic high-quality access market, both low- and high-speed, substantial differences were found in competition dynamics between different areas of the national territory, which justified the definition of two different geographic markets, including high-quality accesses in NC Areas and high-quality accesses in C Areas. This latter geographic market is not susceptible to *ex ante* regulation.

3.159 As far as trunk segments are concerned, substantial differences remain in competition dynamics between C Routes and NC Routes, the geographic scope of the latter having decreased compared to the previous analysis. In the scope of trunk segments (in NC Routes), the markets for MAM and inter-island lines and for lines for access to international submarine cables were also autonomized.

3.160 Therefore, further to the analysis carried out, it is deemed that the following wholesale markets susceptible to *ex ante* regulation exist in Portugal:

- Market for high-quality access in NC Areas - Low-speed;
- Market for high-quality access in NC Areas - High-speed;
- Market for trunk segments of leased lines:
  - NC Routes market;
  - MAM and inter-island lines market; and
  - Markets for lines for access to international submarine cables that make landfall at MEO's SLS in Carcavelos and Sesimbra.

3.161 ANACOM further concludes that the following markets fail to meet the 'three criteria test', and as such are not considered to be relevant markets susceptible to *ex ante* regulation[215]:

- Market for high-quality access in C Areas - Low-speed;
- Market for high-quality access in C Areas - High-speed;
- Markets for lines for access to international submarine cables that make landfall at TATA's SLS in Seixal.

[215] As referred earlier, the C Routes market was considered, in the former market analysis, not to be susceptible to *ex ante* regulation, thus it was not subject to the application of the 'three criteria test', according to an *a contrario* interpretation of Recital (22) of Recommendation 2014/710/EU.

4. Assessment of SMP in relevant wholesale markets

4.1 Having been identified relevant wholesale markets susceptible to *ex ante* regulation, an analysis thereof is conducted in order to determine whether or not they are competitive, whereby, in the latter case, the operator(s) with SMP is (are) then defined[216].

4.2 According to article 60, paragraph 1, of ECL (article 14 of the Framework Directive) "*an undertaking shall be deemed to have significant market power if, either individually* [individual dominance] *or jointly with others* [joint dominance], *it enjoys a position equivalent to dominance, that is to say, a position of economic strength affording it the power to behave to an appreciable extent independently of competitors, customers and consumers*".

4.3 In the assessment of SMP in wholesale markets, as in the previous market analyses, ANACOM takes utmost account of the Guidelines (§19), assessing "*whether competition is effective. A finding that effective competition exists on a relevant market is equivalent to a finding that no operator enjoys a single or joint dominant position on that market*"[217].

4.4 As such, on the basis of existing market conditions, this chapter focuses on conducting a forward-looking, structural evaluation of relevant wholesale markets, with the purpose of determining whether the market is prospectively competitive, and thus whether any lack of effective competition is durable, by taking into account foreseeable market developments over the course of a (reasonable) period of time[218]. This SMP assessment must assume that no actual or potential *ex ante* regulation exists, in relevant markets under analysis, given that from the results of the analysis it will be concluded whether or not such regulatory intervention is required.

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[216] It is noted that there is no need for an assessment of SMP of wholesale markets for high-quality access in C Areas (high- and low-speed), for trunk segments in C Routes, and for lines for access to international submarine cables that make landfall at TATA's SLS, which were considered to be, further to the application of the 'three criteria test', as markets not susceptible to *ex ante* regulation.

[217] In the same document (§20), the Commission 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*".

[218] According to the Guidelines (§20), 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*".

Criteria for the assessment of SMP

4.5 According to the Guidelines (§75), the Commission presents market shares as a proxy for market power, considering that it would be unlikely for undertakings with market shares of no more than 25% to enjoy a dominant position on the market concerned. On the other hand, according to established case-law, very large market shares — in excess of 50% — are in themselves, save in exceptional circumstances, evidence of the existence of a dominant position.

4.6 Nevertheless, the Commission refers also in the same Guidelines (§78) that the existence(or absence) of a dominant position cannot be established on the sole basis of large (or small) market shares, and as such, NRA are required to use other criteria as well.

4.7 ANACOM considers the following criteria to be relevant in the scope of the assessment of SMP in wholesale markets for high-quality access and for trunk segments of leased lines[219]:

- market shares and size of companies;
- barriers to entry and expansion (which includes control of infrastructure not easily duplicated, economies of scale and scope and vertical integration);
- rivalry;
- potential competition; and
- countervailing power.

4.8 ANACOM will thus undertake a thorough and overall analysis of the economic characteristics of the relevant wholesale markets before reaching a conclusion on the existence of SMP, successively analysing market shares and the degree of competition between established companies, the degree of potential competition and countervailing buying power[220].

[219] Other less relevant criteria include: technological advantage or superiority; easy or privileged access to capital markets/financial resources; diversification of products/services and highly developed sales and distribution network.

[220] The existence of a dominant position cannot be established on the exclusive basis of market shares.

4.9 As far as other criteria are concerned, ANACOM considers that arguments (presented in Chapter 5 of the former market analysis) as to why they are deemed to be irrelevant or less relevant for this SMP assessment remain valid[221].

Individual dominance

Market shares

4.10 The analysis generally begins with the calculation of market shares, being identified potential SMP operators at a first stage, bearing in mind that, save for exceptional situations, undertakings with market shares in excess of 50% are deemed to be dominant.

4.11 On the issue of the methodology to be used in this calculation, the Commission refers in the Guidelines that "*as regards the methods used for measuring market size and market shares, both volume sales and value sales provide useful information for market measurement. In the case of bulk products preference is given to volume*" (§76) and that "*leased capacity or numbers of leased line termination points are possible criteria for measuring an undertaking's relative strength on leased lines markets*" (§77). ANACOM takes the view that these guidelines also apply to high-quality accesses, primarily because the latter include (terminating segments of) leased lines.

4.12 In fact, information was collected (by means of the 2015 Questionnaire) on the volume of accesses broken down by location, contention rate and speed. On the other hand, data on revenues was not requested given that it is usually not available in a detailed and disaggregated fashion. Revenues according to the type of segment - terminating or trunk - are probably not easily available, in particular in the case of alternative operators, as the tariff structure of their (wholesale) offer may not provide for this disaggregation.

4.13 For these reasons, and given that the questionnaire submitted to operators focused mainly on information on the volume of accesses, ANACOM maintains the use of this indicator in the calculation of market shares.

[221] Taking also into account, for this purpose, the views presented in the BEREC paper "ERG SMP Position", on the Guidelines.

4.14 It must also be referred that self-supply (i.e. each operator's own network) was taken into account in the definition of the geographic market and in the analysis of the 'three criteria test'[222], when considering the self-owned access network and transport network infrastructure.

4.15 In markets deemed to be relevant for the purpose of *ex ante* regulation, which are analysed in this chapter, the self-supply issue could in practise not even arise, as the infrastructure of the self-owned access network and transport network has but a low degree of coverage in most of these areas[223]. Their requirements in this scope have been and will continue to be met in part through access to MEO's wholesale reference offers.

4.16 However, the supply of access takes place in part according to a model of vertical integration and self-supply was taken into account in the scope of the definition of geographic markets, having been concluded that segmentation existed therein, and that the weight of self-supply should be acknowledged. In this context, ANACOM believes that self-supply must continue to be included in the calculation of market shares, now for the purpose of the analysis of SMP.

4.17 Finally, it is stressed that market shares are obtained in each market through the volume of wholesale (supplied to other operators) and retail accesses/segments, on the basis of operators' own networks, i.e. the resale to third parties not being considered (as this would result in double counting).

Market for high-quality access in NC Areas (high- and low-speed)

4.18 In order to provide competitive retail services, OSP remain largely dependent on MEO' offer in most parishes of the national territory (in NC Areas), as their access network infrastructures only cover to a limited extent a relatively low amount of

[222] In any case, in former analyses, any changes in data of alternative operators and whether or not self-supply was considered would never change the conclusions reached in the scope of the assessment of SMP, given the very high values of MEO's market share.

[223] In this respect, *vide* the Recommendation on relevant markets (Explanatory Note, paragraph.18): "*In cases where there is likely demand substitution, i.e. where wholesale customers are interested in procuring from alternative operators, it may be justified to take the self-supply concerned into consideration (…). However, this is not justified if alternative operators face capacity constraints, or their networks lack the ubiquity within the relevant geographic market expected by access seekers, and/or if alternative providers have difficulty in entering the merchant market readily*".

parishes (mainly in C Areas). In this context, in 2015 (by the end of the first half), market shares in wholesale markets for high-quality access in NC Areas were as follows:

Table 10. Estimated market shares in wholesale markets for high-quality access in NC Areas (first half of 2015)

[BCI]

Operator	Low-speed		High-speed	
	Volume	Share	Volume	Share
MEO	32,709	73.9%	16,650	72.0%
OPS	11,568	26.1%	6,481	28.0%
	1,834	4.1%	1,222	5.3%
	93	0.2%	64	0.3%
	7,964	18.0%	3,052	13.2%
	774	1.7%	1,967	8.5%
Others	903	2.0%	176	0.8%

[ECI] Source: 2015 Questionnaire.

4.19 On that occasion, MEO's market share reached 73.9% and 72.0%, respectively in the low-speed and high-speed market.

4.20 In these areas, MEO has around 4 times more accesses than its main low-speed competitor and around 5 times more its main high-speed competitor.

4.21 In several occasions it was claimed, namely by MEO, that market competition conditions would be very different (from conditions in the whole of the national territory) in specific areas of the territory. Data obtained by ANACOM have shown that situation is (only) now evident, as at the level of high-quality accesses MEO's market share in C Areas is around 43,0% and 40.3% % (respectively for low-speed and high-speed), and, on the contrary, its share in NC areas is substantially higher, in excess of 72%.

4.22 In conclusion, taking into account market shares, the extension of MEO's dominance in markets for high-quality access in NC Areas (high- and low-speed) is obvious, well above the 50% threshold[224].

[224] According to §75 of the Guidelines, market shares in excess of 50%, save for exceptional situations, are evidence of the existence of a dominant position.

Markets for NC Routes, MAM and inter-island lines and lines for access to international submarine cables that make landfall at MEO's SLS

4.23 MEO remains, in most cases, the sole wholesale provider of trunk segments in NC Routes and in MAM and inter-island lines, via its leased lines regulated offers - LLRO and RELLO.

4.24 In MAM lines, MEO is the sole provider, owner of the (ring) submarine cable between the mainland and the ARA and the ARM, thus its share is 100%. In markets for lines for access to submarine cables that make landfall at its SLS, MEO also holds a 100% share.

4.25 As mentioned earlier, in the scope of inter-island lines, MEO does not own submarine cable infrastructure in several sections in the AR:

- In the so-called western ring, recently installed, Fibroglobal is the sole owner of the submarine cable, with whom MEO contracted rights for use of capacity, and
- The Madeira-Porto Santo section is co-owned by MEO and NOS (the latter being the owner of **[BCI] [ECI]** %).

In other sections in the ARA, MEO is the sole provider, as with MAM lines, owner of the (ring) submarine cable infrastructure, and thus holder of a 100% share. This situation clearly differs from that in above-mentioned sections.

4.26 In the case of trunk segments in NC Routes, MEO's market share has remained on figures very close to 100%, irrespective of the transmission capacity, technology or geographic location (of endpoint exchanges), primarily due to the definition of the criterion for delimiting geographic markets, that is, either there is an alternative (and competition), and a given route is considered to be a C Route, or such alternative does not exist and the route is deemed to be non-competitive (NC Route) [225]. It is recalled that when geographic markets were analysed, ANACOM undertook the review of their scope, and decreased the geographic comprehensiveness of the NC Routes market, with impact on market shares.

[225] As noted earlier, there is an OSP only in 348 exchange areas and in more than one thousand exchange areas no OSP exists, thus the majority of potential routes between the 1,853 exchange areas belong to the NC Routes market, where only MEO holds a transport network.

4.27 It is also not possible to accurately determine MEO's market share (which is close to 100%, given than in most of these routes MEO is the sole wholesale provider), as MEO's local exchange (where alternative operators are collocated) no longer is the border, thus operator data are not easily comparable to MEO data.

4.28 And notwithstanding the fact that, in some cases, there are PoP of IP Telecom or mobile operators close of NC Routes endpoint exchanges (in some cases, several of these PoP are close to the same exchange), as these OSP have but a relatively low weight in the wholesale market for trunk segments of leased lines (or in the case of mobile operators, this could concern mostly radio-connected BTS PoP)[226], in these NC Routes MEO's market share is not affected in a relevant way by the (mere) presence of these operators.

4.29 In fact, alternative operators do not hold their own fibre optic infrastructure and/or transport network in areas covered by these markets, that is, save for some specific exceptions, in most of NC Routes.

4.30 It is noted that MEO's market shares in both wholesale markets do not change whether or not self-supply (either MEO's or that of alternative operators) is taken into consideration. In this context, in the absence of a supporting infrastructure - which is the case of MAM and inter-island lines (except for the western ring) and lines for access to international submarine cables, is total - alternative operators are not able to supply capacity internally nor, obviously, to supply trunk segments of leased lines to third parties.

4.31 Therefore, in conclusion, irrespective of the size of the market for trunk segments in NC Routes, it is always made up of routes where alternative infrastructure is residual and, as such, the supply of trunk segments by OSP is also residual.

Conclusion

4.32 ANACOM thus concludes that MEO holds a position of evident dominance in wholesale markets for high-quality access in NC Areas, both low- and high speed, and for trunk segments of leased lines, holding a market share well above 50%, close

[226] *Vide* **Table 3** in this respect.

or even equal to 100% (in the case of lines for access to international submarine cables and of MAM and inter-island lines, in this case save for the western ring and the Madeira-Porto Santo connection), and there is no situation deemed to be exceptional that, as far as this criterion is concerned, justifies not identifying MEO as holder of SMP in markets under consideration.

Competition between established companies: barriers to entry and expansion and rivalry

4.33 As regards the persistence of high barriers of a structural nature to entry and development of competition, it is important, according to the Recommendation, to examine the "*market structure, market performance and market dynamics, including indicators such as market shares and trends, market prices and trends, and the extent and coverage of competing networks or infrastructures*"[227].

4.34 ANACOM now examines the degree of competition among established companies in relevant wholesale markets, taking into account the existence of barriers to entry and to expansion and rivalry between companies.

4.35 In the scope of the analysis of barriers to entry and to expansion, it must be determined whether significant economies of scale and/or scope exist.

Economies of scale and scope

4.36 MEO continues to enjoy strong economies of scale and scope at wholesale level, due to the development (with high levels of fixed construction costs) of its omnipresent infrastructure of local and transport network (as well as of ducts and masts), largely built over years of monopoly, and also on account of the diversity of services provided, which rely almost exclusively on its own network[228]. As such, given the (larger) scale and configuration of its network and all else being constant, the incumbent operator benefits from unit costs which are below those of its competitors, allowing for an expansion of the network coverage and range of products, at comparatively lower costs, given that, after costs have been incurred, the marginal

[227] Recital (11).

[228] Additional economies of scale are also achieved by the incumbent operator through equipment installed in its own exchanges, whereby its cost does not increase substantially with capacity. That is, as the number of customers/lines supported by the equipment increases, unit cost per customer/access/line tends to decrease.

cost of providing additional accesses or lines over the same structure is relatively small. This fact enabled MEO, for example, to connect most of its BTS with fibre optic, which has not been (yet) achieved by remaining mobile operators.

4.37 Moreover, according to BEREC[229], the development of fibre (NGN) will bring about increased economies of scale and scope in the respective markets. And MEO is the holder of the most comprehensive fibre network in Portugal. It has recently announced that it intends to cover the whole territory with fibre optic by 2020 (on the basis also of NG-GPON2 equipment the company developed itself).

4.38 On the other hand, given the characteristics of downstream markets, there may be some attractiveness for the expansion of operators that invest in fibre infrastructure and self-owned networks in certain (local) areas and routes, although on an *ad-hoc* basis (in particular for connection to base stations).

4.39 However, these developments have already been taken into account in the definition of geographic markets and in the application of the 'three criteria test' to markets for high-quality access (in C Areas) and for trunk segments (in C Routes), and as such, the various barriers in non-competitive wholesale markets remain (that is, in markets for high-quality at a fixed location in NC Areas and for trunk segments[230]):

- Little or no (dark) fibre infrastructure and scarce alternative transport network available in most local areas and routes - in general, only MEO holds infrastructure in such locations, and it has not been, nor it expected to be, replicated in a significant way in the time frame of this analysis;

- Absence of entry or low level of expansion (limited to some local exchanges, and areas in the case of high-quality access) of alternative operators in these specific segments, with capacity to provide, at any moment, the wholesale service to third parties (and at retail level, on the basis of self-supply);

- Absence of wholesale offers with relevant coverage.

[229] "Report on Next Generation Access - Economic Analysis and Regulatory Principles", available at http://erg.eu.int/doc/publications/erg_09_17_nga_economic_analysis_regulatory_principles_report_090603_v1.pdf and "Next Generation Access – Implementation Issues and Wholesale Products, BEREC Report" at http://www.erg.eu.int/doc/berec/bor_08.pdf.

[230] NC Routes, MAM and inter-islands lines as well as lines for access to international submarine cables that make landfall at MEO's SLS in Carcavelos and Sesimbra.

4.40 As such, ANACOM maintains its view that only MEO, given the scale and capacity of its ubiquitous network, is in a position, compared to other operators, to exploit economies of scale and scope, benefiting from significant competitive advantage in terms of costs associated with the markets for high-quality accesses in NC Areas and for trunk segments (given that, in the light of the scale and configuration of the incumbent's network and all else being constant, it benefits from unit costs which are lower than those of its competitors).

Control of infrastructure not easily duplicated

4.41 MEO's access and transport networks have universal coverage of the territory, and ANACOM continues to believe that it is not economically feasible for any operator to replicate the whole of the incumbent's network, namely the network supporting trunk segments in routes located in/between "more remote areas" (such as MAM) and/or small size (NC Routes) or high-quality access, both low- and high-speed, in remote areas or areas of low (business) density. These characteristics are considered to be barriers to entry and to expansion in these markets, given that, as referred above, this ubiquity allows MEO to supply high-quality accesses and trunk segments throughout the national territory at a usually low marginal cost, which is not replicable by any alternative operator, unless significant costs are incurred.

4.42 For the majority of high-quality accesses of speeds not exceeding 24 Mbps, the network supporting the wholesale offer is MEO's copper access network, which is the most efficient for this provision, and which has not been replicated in any area[231].

4.43 As regards trunk segments in NC Routes, ANACOM has already acknowledged that the current coverage provided by fibre optic networks prevents, in practise, any alternative operator from replicating all routes (between MEO's local exchanges) comprised by this market, and, in the case of MAM and inter-island lines (excluding the western ring in the ARA) and of lines for access to international submarine cables at MEO's SMS, such replication is not feasible.

[231] Although OSP have access to the local loop, but basically in C Areas, whereby there is a low level of resort to LLU by OSP in NC Areas.

4.44 On the other hand, main operators (and customers) other than MEO active in markets (of electronic communications services) have already invested in fibre infrastructure to support these services in specific geographic areas, bearing sunk costs for this purpose. As such, these operators may be able to expand their wholesale (and retail) activities in certain routes/geographic areas close to those which they already cover, without incurring significant sunk costs. It is likely, however, that in the short term this expansion has no relevant expression, in particular given the level of expansion occurred since the last market analysis (and already taken into account at the level of geographic markets with the expansion of the scope of the C Routes market, to the detriment of the reduction of the scope of the market under consideration).

4.45 ANACOM thus maintains its view that it is not economically feasible for any operator to replicate the incumbent's network, both at the level of high-quality accesses in NC Areas (low- and high-speed) and at the level of trunk segments in NC Routes, and even more so for MAM and inter-island lines and lines for access to international submarine cables, which constitutes an insurmountable barrier to entry and to expansion in these markets. Any evolution that may take place shall be limited and gradual. This means that MEO's market power is not likely to decrease significantly on account of a new alternative network infrastructure (that replicates the existing offer) in the course of the period of time up to the next market analysis.

Vertical integration

4.46 The existence of vertically integrated companies could place non-integrated competitors at a competitive disadvantage, as market power may be leveraged from one market to the other, in particular when an integrated competitor supplies a non-integrated competitor an essential intermediate production or consumption factor. In these circumstances, it would be harder for a non-integrated company to meet an increase of demand resulting from a price increase of a competitor.

4.47 In the scope of these (geographic) markets, MEO stands out, being a vertically integrated company, and including companies both at the level of the wholesale market - providing wholesale offers to third parties - and of the retail market. MEO uses its own infrastructure and network offer to provide high-quality access services (as well as other electronic communications services) at retail level. This high level of

internal demand, which is planned and shows high volume[232], allows this operator to benefit from large economies of scale and to invest in the development of its networks with a lower risk degree than its competitors. The referred strong investment in fibre network up to 2020 on the part of MEO is recalled in this context.

4.48 As such, this criterion does not contradict the presumption of dominance that results from the calculation of market shares, although it is acknowledged that main competitors are also vertically integrated companies (which however do not hold their own infrastructure and network in most of these markets).

Rivalry

4.49 The price policy and its evolution over time may be a good indicator of the degree of market competition.

4.50 As far as wholesale prices are concerned, it is stressed that prices of regulated lines, in RELLO (namely MAM and inter-island lines) and LLRO were decreased as a result of regulatory intervention and never on MEO's own initiative.

4.51 In fact, an analysis of the evolution of prices of leased lines (the terminating segments of which are now included in the wider market for high-quality accesses), leads to the conclusion that there is no evidence that MEO will readjust its prices in NC Areas and trunk segments in response to changes in prices on the part of its wholesale competitors, both further to the entry of the latter on the market, or as a response to the introduction by new entrants of innovating or diversified offers, although it still holds reasonable margins.

4.52 These facts do not indicate the existence of a competitive market.

4.53 On the other hand, ANACOM continues not to identify any special advantages of a technological nature enjoyed by MEO, given the high level of technological maturity used in support of its network and (wholesale) offer, or in terms of the relationship with main providers of equipment and/or infrastructure. Main operators have also developed their own fibre networks, as well as other recent access and transport

[232] Which in the case of wholesale leased lines reached almost 80% of MEO supply (PT Prime - Soluções Empresariais de Telecomunicações e Sistemas, S.A. and TMN - Telecomunicações Móveis Nacionais, S.A., incorporated into MEO in the meantime).

technologies (such as Ethernet and DWDM). However, as referred, MEO's new fibre access networks will incorporate equipment (NG-GPON2) the company developed itself.

Potential competition

4.54 As already noted, sunk costs related to network installation throughout the entire national territory, especially in areas and routes covered by the wholesale market under consideration, are extremely high and constitute a structural barrier to entry and to expansion in a significant part of the national territory. In fact, given the high costs and time required to expand alternative networks able to guarantee greater coverage of the territory under conditions close to those currently provided by MEO throughout the national territory (in an important part of the territory, taking into account the population and business density of covered areas and routes, in the case of fibre coverage), the development of effective competition in these wholesale markets over the period of time to be prospectively reflected in this market analysis is unlikely.

4.55 In fact, in (semi)urban areas with higher population and business density some potential competition may exist, given that potentially alternative operators may continue to make use of their fibre investments (namely in NGA networks).

4.56 However, in strictly competitive terms, perspectives of a strong development of competition dynamics in these wholesale markets have not been currently identified (nor even prospectively, i.e. within the time frame covered by this market analysis). As such, as regards an assessment of SMP, any (potential) specific differences in competition dynamics in certain geographic areas/routes (of a small size) do not contradict the evidence of MEO's dominance in these geographic markets.

4.57 In must be noted, however, as referred in the preceding chapter, that there are parishes in these NC Areas that simultaneously meet two of the three[233] sub-criteria defined for the purpose of the delimitation of competitive and non-competitive areas, but fail to meet however the remaining criterion, which indicates that in these

[233] Number of alternative networks (at least two), of OSP effectively present (where at least two provide accesses) and MEO's market share below 50%.

parishes, although currently not competitive (as the three sub-criteria are not simultaneously met), there could be a tendency towards an increase of competition in the medium-long term.

4.58 As such, it is deemed that parishes where:

(i) MEO's market share is already lower than 50% (3rd sub-criterion) and which also meet the 2nd sub-criterion on the number of OSP effectively present, but which fail to meet the 1st sub-criterion on the coverage of alternative networks; or

(ii) The 1st and 3rd sub-criteria are met, but not the 2nd[234]; or

(iii) The 1st and 2nd sub-criteria are met, but not the 3rd (MEO's market share), show signs of potential competition, but only in the medium/long-term[235].

4.59 This assessment resulted in the identification of the following parishes, which constitute the now designated CNC (Currently Not-Competitive) Areas:

Table 11. Parishes in CNC Areas (first half of 2015)

Speed	Parishes	MEO Accesses	OSP Accesses	MEO average share
Low-speed	201	15,085	9,080	62.4%
High-speed	294	11,003	5,298	67.5%

Source: ANACOM, on the basis of the 2015 Questionnaire.

4.60 The table below breaks down parishes in CNC Areas and NC Areas (without CNC Areas), per market, as well as MEO's average share in those areas[236].

Table 12. Parishes according to Area and MEO's respective average market share (first half of 2015)

Speed	Parishes		MEO average share	
	CNC Areas	NC Areas (excluding CNC)	CNC Areas	NC Areas (excluding CNC)
Low-speed	201	2,843	62.4%	87.6%
High-speed	294	2,734	67.5%	82.7%

Source: ANACOM, on the basis of the 2015 Questionnaire.

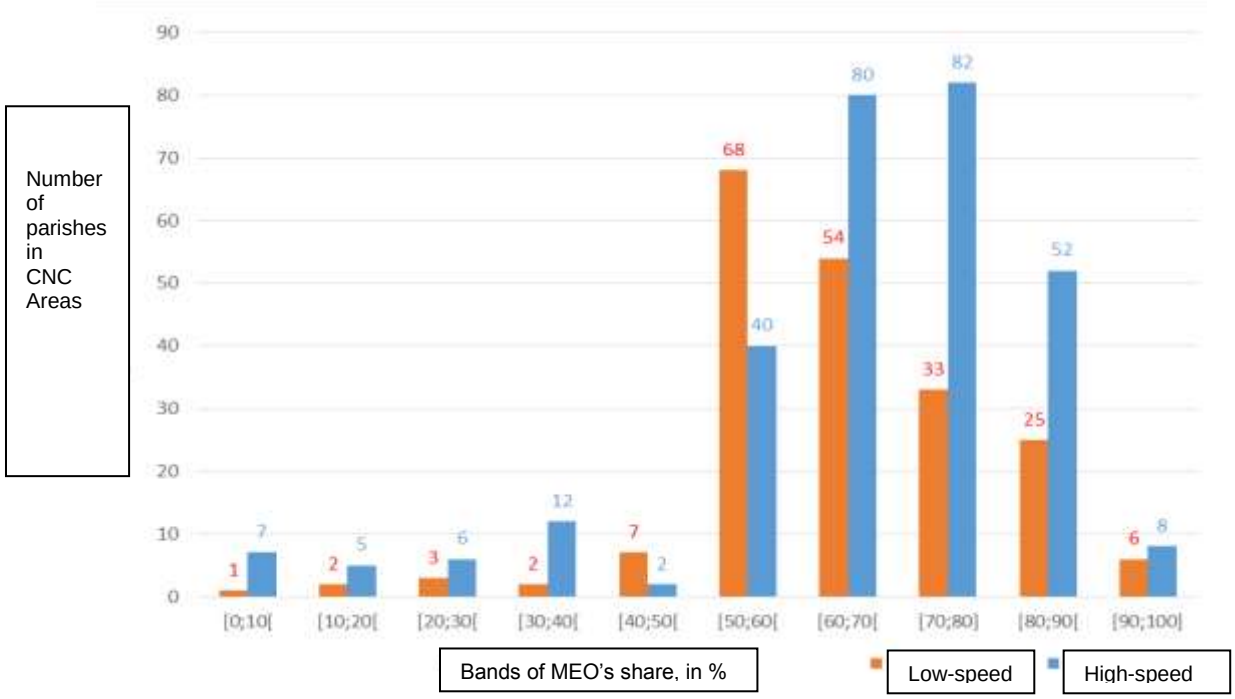
[234] Only one OSP exists, but more than one access is provided in these parishes.

[235] Although the criterion is not fully met, as defined in chapter 3.

[236] Listed in **Annexes V** and **Annexes VI**.

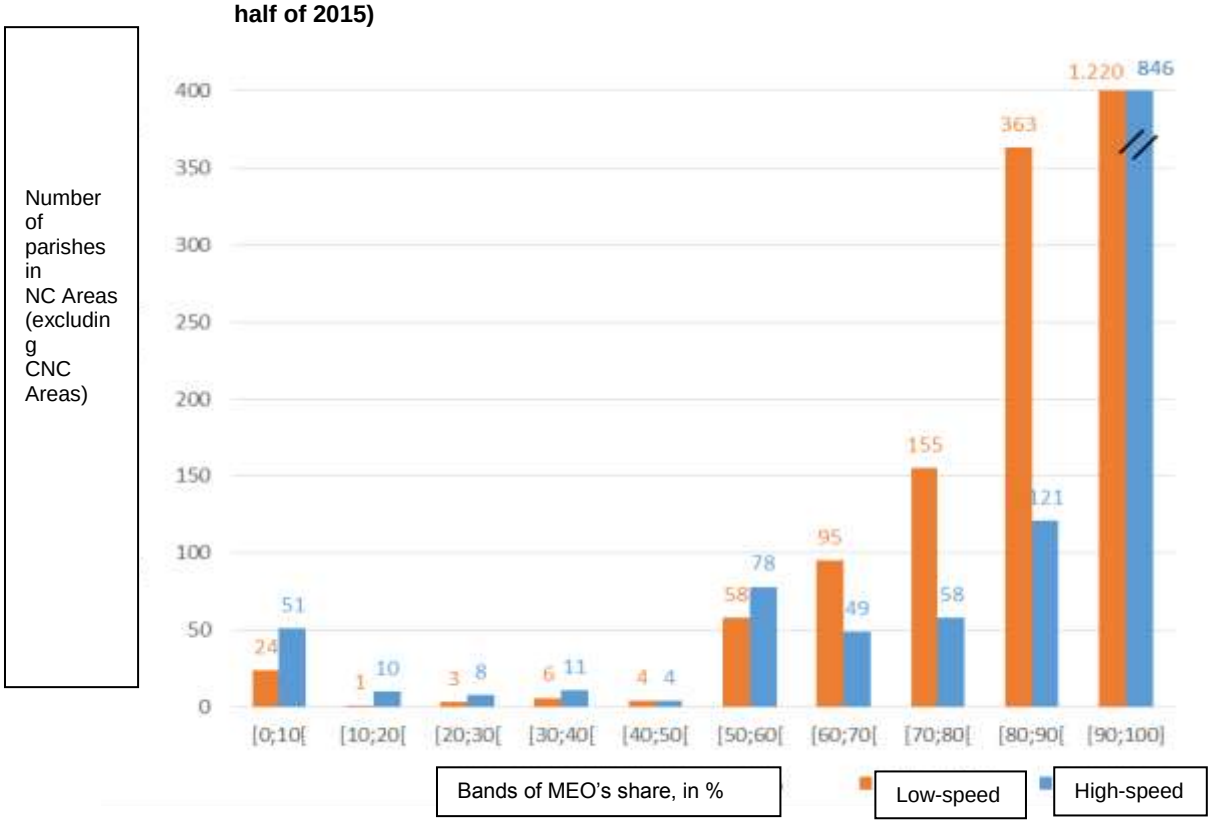
4.61 As reflected in the charts below, only a very small amount of parishes presents MEO market shares below 50%, in NC Areas. In the majority of these parishes, MEO is not present and only one OSP has an effective offer and/or the total number of accesses supplied in the parish is lower than three.

Figure 29. Number of parishes and MEO market share in CNC Areas (first half of 2015)



Source: ANACOM, on the basis of the 2015 Questionnaire.

Figure 30. Number of parishes and MEO market share in NC Areas, excluding CNC Areas (first half of 2015)



Source: ANACOM, on the basis of the 2015 Questionnaire.

Note: The total number of parishes does not correspond to 3,092, given that no low-speed access exists in 914 parishes and no high-speed access exists in 1,498 parishes.

4.62 These competitive differences are addressed in the context of the imposition of *ex ante* obligations.

Countervailing power

4.63 In these wholesale markets, interventions to improve conditions of wholesale offers (of leased lines) have been held almost entirely at the initiative of ANACOM, which shows that customers of these offers enjoy but a low countervailing power.

4.64 Even RELLO, an offer which presents a significant evolution from LLRO (the line volume of which has significantly decreased), was introduced by initiative of ANACOM[237], and not MEO.

[237] In the context of the former market analysis.

4.65 On the other hand, main operators on this market seem to have the same access to financial resources/capital market, thus there seem not to exist situations of advantage enjoyed by some operator over the others.

4.66 The countervailing buying power for high-quality accesses (low- and high-speed) in NC Areas and trunk segments in NC Routes is relatively low, and it is non-existent in the case of MAM and inter-island lines and lines for access to international submarine cables that make landfall at MEO's SLS.

4.67 In the various wholesale markets identified, the behaviour of the main (and in most areas[238], the sole) wholesale provider will not be constrained by the combination of a low number of customers with a large weight as far as business volume is concerned, given that such countervailing power would depend on the existence of alternative operators, who are not present in markets or, where they are, it is not in an active and relevant way.

4.68 As shown in **Table 10**, there is a difference by 55.9% and by 58.8 between MEO's market share and that of its main competitor in NC Areas, respectively in the low- and high-speed.

4.69 The obligation to publish prices, the size of the market leader, the number of major clients and their contribution to total revenue does not indicate the existence of a countervailing buying power restricting the behaviour of the dominant operator in relevant wholesale markets.

Individual dominance: conclusion

4.70 The size of the market leader, MEO, the existence of high (and permanent) barriers to entry and to expansion and the absence of effective or potential competition between companies (prices and other variables) in relevant wholesale markets do not contradict the presumption of dominance resulting from the calculation of its market shares.

[238] In particular in the case of MAM lines and in most NC Routes.

4.71 Factors which put OSP at a disadvantage against MEO lead to the conclusion that MEO holds SMP (individual dominance) in markets for high-quality access (low- and high-speed) in NC Areas and trunk segments in NC Routes, in MAM and inter-island lines[239], and in lines for access to international submarine cables that make landfall at MEO's SLS.

4.72 As regards inter-island lines in the western ring in the ARA and in the Madeira-Porto Santo connection, having been analysed the information provided by Fibrogobal and NOS as well as evolutions occurred in this scope, ANACOM concluded that there seem not to be any signs of restriction of access or discrimination or abusive behaviour on the part of providers of these lines toward any operator.

Joint dominance

4.73 Having been determined the existence of individual dominance in these markets, there can be no joint dominance therein.

Prospective analysis

4.74 ANACOM considers that all factors that justify the designation of MEO as holder of SMP will remain in place over the short to medium term, until the next SMP assessment.

[239] Except for sections in the western ring in the ARA, which is owned by Fibroglobal, and in the Madeira-Porto Santo connection, co-owned by MEO and NOS.

5. Imposition of obligations

5.1 ANACOM is entitled[240], in markets where SMP exists[241], to impose one or more regulatory obligations or to maintain or amend such obligations, where these already exist, and on its turn it must withdraw obligations which have been imposed in any markets which ceased to be considered relevant for the purposes of *ex ante* regulation[242].

5.2 In the imposition, maintenance, amendment and/or withdrawal of obligations, ANACOM takes into account several principles that stem from documents issued by the Commission and BEREC, from ECL and, obviously, from regulatory principles and objectives established by this Authority. It is deemed appropriate that these principles are known to the market and taken into consideration prior to the imposition or withdrawal of any obligation in the markets, which is why they are set out below.

Principles taken into account in the imposition, maintenance, amendment and withdrawal of obligations

5.3 In the scope of the pursue of the fundamental target of promoting competition, in order to reduce or eliminate the competition problems that exist in a specific market, ANACOM must select the obligations which, directly or indirectly, affect the strategic variables of companies with SMP, ensuring that these obligations meet certain requirements, already identified in **Chapter 1** of this document.

5.4 As such, ANACOM must adopt a proportional and duly justified intervention in its fulfilment of the national and European regulatory framework, imposing the minimum obligations that enable the competition problems identified to be overcome, without unduly discriminating any company, and that effectively contribute to an evolution towards a competitive situation of the electronic communications market.

[240] Cf. Guidelines §21 and §114 and articles 56, e) and 59, paragraph 4 of ECL.

[241] In wholesale markets for high-quality access in NC Areas (low- and high-speed) and trunk segments in NC Routes, MAM and inter-island lines and lines for access to international submarine cables that make landfall at MEO's SLS.

[242] In markets for high-quality access in C Areas (low- and high-speed).

5.5 Some of ANACOM's regulatory targets include the promotion of competition in the provision of electronic communications networks and services, to contribute to the development of the internal market of the European Union and to uphold the interests of citizens (ECL, article 5). It particularly falls on ANACOM to ensure that users derive maximum benefit in terms of choice, price and quality, ensuring that there is no distortion or restriction of competition in the electronic communications sector, and further to encourage efficient infrastructure investment and to promote innovation.

5.6 For this purpose, according to articles 67 to 72 and 74 to 76 of ECL, obligations which may be imposed on bodies with SMP on identified relevant markets include:

- To meet reasonable requests for access to, and use of, specific network resources and associated facilities.
- Transparency in the publication of information, including reference offers.
- Non-discrimination in the offer of access and interconnection and in the respective provision of services and information.
- Accounting separation in relation to specific activities related to access or interconnection;
- Price control and cost accounting.

5.7 In the analysis and definition of obligations to be imposed (or withdrawn), account is also taken of the principles established in the context of BEREC Common Positions on the matter, presented in the paper "Revised BEREC common position on best practice in remedies on the market for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location imposed as a consequence of a position of significant market power in the relevant market", dated December 2012[243] and, in particular, BEREC Common Position on best practise in the imposition of obligations on the wholesale leased line market (hereinafter 'Common Position on Leased Lines') [244]. This Common Position refers that wholesale leased lines are key inputs for providing a wide range of electronic communications

[243] Available at http://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/1127-revised-berec-common-position-on-best-pr_0.pdf.

[244] Available at http://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/1096-revised-berec-common-position-on-best-pr_0.pdf.

services (especially to end-business-customers) and that it is therefore vital that, where they are not supplied under conditions of effective competition, they are regulated effectively. Also according to BEREC, the regulation of wholesale leased line will promote competition and the possibility of choice on the part of businesses and thereby make a significant contribution to achievement of the Single Market.

5.8 As regards markets for high-quality access in C Areas (low- and high-speed), which have been concluded not to be susceptible to *ex ante* regulation, it is necessary to take into account article 59, paragraph 3, of ECL. According also to the Commission, "*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 undertaking(s) 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 parties affected a reasonable period of notice*"[245, 246].

5.9 BEREC supports also in this context that, where a NRA withdraws an obligation or replaces it for a different one, it must give notice and provide for a reasonable period of time before this amendment takes effect, in order to avoid an undue market disruption for operators.

5.10 ANACOM also believes that, where there is a situation entailing the withdrawal of existing obligations, it is important to ensure that such obligations are withdrawn in an appropriate way and within a reasonable period of time without adversely affecting end-users and the parties involved.

5.11 This is exactly the concern ANACOM feels with regard to the deregulation of markets for high-quality access in C Areas (low- and high-speed), just like, in the former market analysis, the retail leased lines markets throughout the entire national territory and wholesale trunk segments in "C Routes". In the former market analysis, the "C Routes" market was also not considered to be susceptible to *ex ante* regulation, and

[245] Guidelines (§113).

[246] In the former market analysis, the market for lines for access to international submarine cables that make landfall at TATA SLS did not exist, thus it was not covered by that regulatory framework.

now its scope is extended. In this context, the deregulation of routes which were not part of the scope of the former market, and are now included in this market, must also pay due regard to the above-mentioned principle.

5.12 On the other hand, according to the Commission,

– Recommendation on NGA[247]: "*In situations where it cannot be concluded that the different competition conditions would justify the definition of sub-national geographic markets, it could nevertheless be appropriate for NRAs to respond to diverging competitive conditions between different areas within a geographically defined market, for instance due to the presence of several alternative infrastructures or infrastructure-based operators, by imposing differentiated remedies and access products*";

– Recommendation on consistent non-discrimination obligations[248]: "*In geographic markets where the conditions listed (...) are fulfilled only in some areas within such markets, NRAs should differentiate remedies and maintain or impose price control obligations in accordance with Article 13 of Directive 2002/19/EC only in those areas where such conditions are not fulfilled*";

– Explanatory Note: "*In a situation where NRAs could not clearly identify substantially and objectively different conditions stable over time in order to define wholesale sub-national markets, the existence of geographically differentiated constraints on a SMP operator who operates nationally, such as different levels of infrastructure competition in different parts of the territory, are more appropriately taken into account at the remedies stage by imposing a geographically differentiated set of obligations*",

Therefore, in specific circumstances, NRA are entitled to impose geographically differentiated obligations.

[247] Commission Recommendation 2010/572/EU, of 20 September 2010, available at: http://eur-lex.europa.eu/legal-content/PT/TXT/?uri=celex:32010H0572.

[248] Commission Recommendation 2013/466/ EU, of 11 September 2013, available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:251:0013:0032:PT:PDF.

5.13 As such, taking into account that:

- In terms of product market, the market for high-quality access (current Market 4) is wider than ex-Market 6[249] (and ex-Market 13[250]), identified in the scope of former analyses;
- obligations currently in force have been applied in a uniform way, but cover a part of the different product markets now identified;
- the analysis conducted indicates that SMP continues to exist in markets for high-quality access in NC Areas (low- and high-speed), which must thus remain regulated;
- new geographic markets exist,

a differentiated regulatory framework will therefore be applied in respect of the imposition of *ex ante* obligations in these markets.

Obligations currently in force

5.14 In the former market analysis, this Authority concluded that MEO held SMP in wholesale markets for terminating segments and trunk segments in NC Routes (including MAM, inter-island and backhaul lines), whereby it was adequate, proportional and justified to impose obligations set out in **Table 19** in **Annex I** hereto (all obligations being based on article 66 of ECL, given that no effective competition existed in these markets).

5.15 In the following sections of this paper, and on the basis of current obligations, this Authority examines whether obligations currently in force should be maintained or amended, taking into account principles to be followed in the scope of the imposition of obligations in relevant markets and the reasons that underlie the existence of SMP in these markets, assessing obligations in light of principles and requirements set out in ECL - namely paragraph 5 of article 5 - in the light of current market conditions.

[249] Included in the 2007 Recommendation on relevant markets.

[250] Included in the 2003 Recommendation on relevant markets.

5.16 It is noted that account is taken of current competition problems and those which could potentially arise in the context of the market under analysis and in the period until the next market analysis. As such, the imposition of generic obligations in this analysis (e.g., obligation of access to, and use of, specific network resources or price control) shall be without prejudice to the specification and implementation of the same obligations in separate documents.

5.17 On the other hand, any specific determination so far issued by ANACOM as regards these non-competitive markets shall remain in force, save where it is explicitly withdrawn or amended in the terms defined herein.

5.18 Lastly, as regards markets which ceased to be susceptible to *ex ante* regulation, it is analysed how it would be most appropriate to withdraw (current) obligations, imposed under former market analyses.

Withdrawal of obligations in the wholesale market for trunk segments in C Routes

5.19 In the former market analysis, ANACOM deemed it sufficient and appropriate to establish a six-month transitional period for the withdrawal of obligations on C Routes, during which time the services would continue to be provided on terms which were no more burdensome. This six-month period would start to run as from the date of the final decision on the market analysis.

5.20 As regards new routes included in C Routes, ANACOM maintains its view that the six-month transitional period is sufficient and appropriate, given that, on the one hand, MEO already provides a commercial offer which may be extended to these routes and that, on the other hand, no collocated operators exist in some of the exchange areas now included. There are rather PoP of operators located in the vicinity, which could in some way add some complexity to alternative operators (thus the period should not be a very short one).

Withdrawal of obligations in wholesale markets for high-quality access in C Areas (low- and high-speed)

5.21 As emphasised earlier, where a specific market fails to meet the 'three criteria test', *ex ante* obligations may not be imposed on companies operating in that market, and where they exist, they must be withdrawn. Consequently, in this context, regulatory obligations of access, transparency, non-discrimination, accounting separation, price control and financial reporting, formerly imposed on MEO companies operating in markets for high-quality access in C Areas (low- and high-speed) must be withdrawn, as these wholesale markets do not require the imposition of any measures. Notwithstanding, a gradual transition should be ensured for this deregulation, taking into account the need to reconcile the activity of the Regulatory Authority with principles of predictability. This withdrawal must thus be defined and communicated to interested operators a reasonable time in advance.

5.22 It was concluded in **Chapter 3** that barriers to entry and to expansion in these markets are not (no longer) insurmountable, whereby *ex ante* regulatory intervention is not required. Without prejudice, the analysis carried out below seeks to show that the withdrawal of obligations (imposed in the scope of ex-Market 6) is appropriate and does not inflict great harm on the market, as well as to assess the duration of the transitional period during which obligations concerned should remain in place - as this period is required to protect operators who have invested in transport infrastructure and networks and/or contracted lines in the scope of LLRO and RELLO, and may require a period of time to adjust their strategies and business plans to the new reality.

5.23 Without prejudice to the withdrawal of obligations, ANACOM shall monitor, in close connection with AdC, the evolution of MEO's commercial wholesale offers in this market segment.

5.24 Given MEO' network size and its relevance as a vertically integrated body, with very relevant mobile network and service provision operation, in direct competition with beneficiaries of the regulated offer (e.g. in connections to base stations), any rejection of requests for wholesale provision of leased lines, or its provision under unreasonable conditions, such as (excessively high) prices or lower quality, would be

restrictive of competition in downstream markets, given that wholesale leased lines are a fundamental element of operators' networks supporting several types of retail services, in this specific case of this wholesale segment, of services for high-quality access provided to (medium-size and) large companies.

5.25 In this case, although it was already concluded that MEO no longer holds SMP, there are still some lines contracted in these areas between MEO and OSP, thus their deregulation must take place in a non-disruptive manner, although it may not necessarily result in the worsening of conditions under which they were provided.

5.26 Any discriminatory measures that are found to be committed may justify an intervention, in particular on the part of AdC (at the level of compliance with the Competition Law).

Access to and use of specific network resources

5.27 Taking into account the analysis conducted and arguments presented, this Authority takes the view that no relevant harm will come to wholesale markets in C Areas as a result of the withdrawal of the obligation of access to and use of specific network resources, in particular in the light of the size and extent of fibre infrastructures and transport networks owned by alternative operators, which already meet a relevant part of their own needs in terms of connection of their core networks to their customers' terminating points (including base stations), in particular in C Areas, which on a business perspective are more dense.

5.28 On the other hand, given that alternative operators (still) are important wholesale customers for MEO[251], it is reasonable to assume that MEO maintains incentives to maintain the supply of leased lines in C Areas under reasonable and competitive conditions, as in fact was the case with the C Routes market, which was deregulated in the former market analysis. This incentive basically results from the possibility for these operators to accelerate the development of their own or third party network infrastructure (e.g. utilities), leading to a rapid decline of MEO's wholesale revenues, as it still maintains wholesale revenues in this market via its commercial offer. As

[251] Even at MEO internal level, mobile operation has a significant weight at the level of (self-) supply of lines in this market.

such, this could also help mitigating any losses for operators (which would not be great).

5.29 With the withdrawal of the access obligation, in order to ensure that investments already made by OSP (in the scope of LLRO and RELLO) are leveraged, it must be ensured that these beneficiary operators are given a reasonable period of notice in respect of any amendment or termination of that (those) wholesale offer(s) provided by MEO.

5.30 In the former market analysis, it was deemed sufficient and appropriate to establish a six-month transitional period (for the withdrawal of obligations in the market for trunk segments in C Routes), during which time the services should continue to be provided on terms which were no more burdensome.

5.31 As far as markets for high-quality access in C Areas (low- and high-speed) are concerned, the volume of lines contracted between operators and MEO is still relatively relevant, in particular taking into account the total of self-owned accesses and lines and the total of high-quality accesses at national level. On the other hand, if in the case of the market for trunk segments in C Routes there are always at least two operators, either collocated or with PoP in the vicinity of the local exchange, in the case of high-quality accesses, NTP may be located at different points in the geographic area (parish), thus the replacement of segments provided by MEO for self-owned segments or segments leased from third parties other than MEO could be more time-consuming, and minimum contract durations could also possibly be in place. In this perspective, it is acknowledged that, for OSP, a possible process of change could be more complex and lengthy, as it will always involve the development of their own fibre access networks, in case OSP wish to use only their own resources, and not MEO's commercial offer.

5.32 For the above-mentioned reasons, it is deemed that the deregulation of C Areas requires the imposition of a longer transitional period that the one defined in the former analysis for the deregulation of C Routes, being set at 18 months. In fact, and as mentioned earlier, there are investments made by alternative operators which must be preserved ad safeguarded as far as possible. These investments are also related to the existence of perspectives of provision of new accesses.

5.33 Defined time-limits allow alternative operators to develop their own projects of access and transport infrastructure and networks, to expand self-supply (as has already been the case so far, notwithstanding the existence of a regulated offer), to meet demand at retail level or that of other operators, or to negotiate with other operators or with MEO the maintenance of the services on terms which are advantageous to both parties, given the level of countervailing power held by OSP as important wholesale customers of MEO (namely in other markets). It is deemed, consequently, that the 18-month period is sufficient, taking into account the specificities of this situation, for operators to incorporate the new regulatory and market framework in their commercial policy and business development strategy in the future.

5.34 ANACOM could contemplate an even longer time-limit, given that, for example, there are contracts with large customers valid for several years, however this could ultimately constitute a non-deregulation of the market.

5.35 As such, this period applies to (terminating segments of) leased lines already contracted, and new accesses provided in these areas after the date of publication of the final decision on this analysis shall be subject to commercial conditions. Only after the elapse of the 18-month period is MEO allowed to amend (or withdraw) access to LLRO and RELLO for high-quality accesses in C Areas, or to worsen the respective conditions for access.

5.36 After this period, conditions for access and service provision may begin to be established through mechanisms of commercial negotiation between interested operators and MEO. In this case, MEO must notify beneficiary operators of LLRO and RELLO offers at least two months in advance. In case MEO decides to alter its offer right at the end of the 18-month period, it must notify operators by the end of the sixteenth month from the date of approval of the final decision on this market analysis.

Non-discrimination

5.37 By withdrawing the access obligation, the non-discrimination obligation loses relevance, since an alternative (self-owned) infrastructure is expected to exist, that is, as it is possible for operators to invest directly in their own network, being able to provide high-speed high-quality accesses in C Areas to other operators who do not

wish to invest in their own network, the discrimination in the provision of services would not be profitable for MEO.

5.38 In fact, given that alternative operators hold their own transport networks (or access to alternative networks) to meet their own needs (and/or the needs of third parties), if MEO engaged in discriminatory practises, a decline in its revenues would follow.

5.39 In any case, even if damage to the market is not expected to occur, and in close liaison with the (transitional) maintenance of the access obligation, the same 18-month transitional period should be in place, during which the obligation of non-discrimination must continue to apply. Accordingly, during this period, MEO is required to continue to ensure the same conditions of access to services it provides for itself (or associated companies) for similar services. More specifically, the terms, prices and performance levels as regards quality of service, such as supply times and fault repair times, must be identical for competing companies using LLRO and RELLO and for MEO.

5.40 Likewise, after the elapse of this transitional period, MEO must continue to notify beneficiary operators, at least one month in advance, of any changes in the offer introduced on its initiative, as well as to provide detailed and timely information on evolutions in the service supporting network.

5.41 After the 18-month period, conditions governing access and provision of services will be established through commercial negotiation mechanisms between interested operators. Nevertheless, it is noted that, after this period, any non-appropriate discriminatory action may justify intervention on the part of AdC on an *ex post* basis.

Transparency

5.42 Transparency is a natural complement of the non-discrimination obligation, enabling the detection of any discriminatory behaviour, thus the withdrawal of the non-discrimination obligation naturally leads to the withdrawal of the transparency obligation.

5.43 Accordingly, with this withdrawal MEO ceases to be required to make available and publish the reference offers (LLRO and RELLO) in these areas, although it remains desirable that, on its initiative, it maintains the respective wholesale offer or similar

conditions. Likewise, the information that is currently provided, imposed under the former market analysis and subsequent determinations, concerning the number of terminating segments of leased lines in C Areas and on the respective indicators on the quality of services provided, ceases also to be required at regular intervals (except as regards statistical information for the purpose of the monitoring and supervision of the market)[252].

5.44 Given the transitional period during which the access and non-discrimination obligations are maintained, it makes perfect sense that this period should also apply in the case of the obligation of transparency. Accordingly, in the course of the 18-month period following the publication of the final decision on this market analysis, MEO is required to continue to provide and to publish, under the same conditions that currently apply in the framework of a regulated offer, the reference offers and information currently provided to ANACOM and to the market.

Price control and cost accounting

5.45 In a competition environment, it is unlikely that the incumbent operator has an incentive to set prices for its wholesale offer at a level which is considerably higher than the level of costs incurred in the provision of such services, since, were it to do so, its wholesale clients would most likely seek alternative ways to satisfy their requirements, by expanding their own networks or contracting accesses with an alternative operator, whereby the decision of the incumbent would become unprofitable.

5.46 The withdrawal of the obligation of price control and cost accounting (namely the cost orientation of prices, which so far has only been applied to traditional leased lines) is thus not inappropriate and shall not cause any harm to the market.

5.47 The 18-month transitional period referred to above applies also in this scope. At the end of this period, MEO ceases to be required to comply with specifications related to the obligation of price control and cost accounting.

[252] Information imposed under ANACOM determination of 11 March 2009.

Accounting separation

5.48 The accounting separation obligation is also related to the need to check compliance with the obligations of non-discrimination, price control and cost accounting, as it allows the monitoring of whether situations of cross-subsidization are taking place. Having the withdrawal of mentioned obligations already been deemed to be appropriate, the withdrawal of the accounting separation obligation, considering the conditions prevailing in markets concerned, is also considered to be appropriate.

5.49 Given the existence of an 18-month transitional period, during which obligations currently existing in the market will remain in force, including the non-discrimination and transparency obligations, the obligation of accounting separation should continue to apply also during this transitional period.

5.50 It should be noted that this obligation is only being withdrawn in the scope of the market under analysis. Other obligations, imposed by ANACOM in other frameworks, namely in the scope of audits to costs, are clearly not comprised by this decision.

Financial reporting

5.51 Taking into account the withdrawal of the transparency, non-discrimination, accounting separation and cost accounting obligations, it is also clear that the withdrawal of the financial reporting obligation is appropriate.

5.52 It must be referred, in this context also, that the financial reporting obligation is withdrawn only in the scope of obligations associated to the market under analysis. Other similar obligations, imposed by ANACOM in other scopes, are obviously not covered by this decision.

5.53 It is concluded that it is appropriate to withdraw the financial reporting obligation; notwithstanding, the 18-month transitional period must also apply in respect of this obligation.

Conclusion

5.54 In conclusion, all *ex ante* obligations formerly imposed on MEO in markets for terminating segments (of leased lines) in C Areas (low- and high-speed) are to be withdrawn following an 18-month transitional period.

Analysis of specific obligations to be imposed or amended

5.55 On the basis of obligations currently imposed on MEO (in the scope of ex-Markets 6 and 14), and taking into account the relevant principles referred to above and grounds for the existence of SMP in relevant wholesale markets, sections below focus on the analysis of whether such obligations should be maintained or amended, obligations being assessed in the light of current market conditions and the new scope of Market 4.

5.56 It is noted that consideration will be taken of current competition problems and those which could potentially arise in the context of the markets under analysis, in the period until the next market analysis[253].

5.57 Seeking to maintain a "level playing field" in the regulated access to relevant wholesale markets, ANACOM is required to take utmost account of above-mentioned BEREC Common Positions on this matter, guaranteeing with reasonable certainty that OSP are able to compete at the same level as the operator identified with SMP. This implies that certain regulatory measures must be effectively applied in order to:

- ensure that the SMP operator does not have an unequal and unfair advantage (compared to other operators) due to economies of scale and scope (in terms of its network), especially where such advantage results from its position of dominance;
- prevent the SMP operator from discriminating in favour of its own companies and services, whether in terms of price or other conditions;
- effectively prevent obstructive and delaying behaviour; and
- ensure that measures taken by the SMP operator to develop new infrastructure, required to supply new retail services, provide all other operators with the same opportunities to compete in that scope.

[253] Section **6.4.1.** of the former market analysis described competition problems that could potentially arise in markets for terminating and trunk segments. It is a non-exhaustive but indicative list of the competition problems that ANACOM has identified in its analysis of these markets, which in the absence of regulation may have an impact on key competition aspects, related to prices, diversity and quality of offers, and may give rise to situations of SMP leverage into downstream markets - refusal to negotiate and grant access, quality discrimination, delaying tactics, strategic product design, excessive pricing, predatory pricing and cross subsidization.

Access

5.58 In considering whether the access obligation should be maintained, ANACOM bears in mind article 72 of ECL, i.e., that the proportionality of this obligation requires, in particular, an analysis of the "*technical and economic viability of using or installing competing facilities, in the light of the rate of market development,* (...) *including the viability of other products of access to infrastructure, namely to ducts; the feasibility of providing the proposed access, in relation to the available capacity; the initial investment by the facility owner, taking account of risks involved in making the investment; the need to safeguard competition in the long term, with particular attention to economically efficient infrastructure-based competition*".

5.59 The same article 72 provides that several types of access obligations may be imposed. ANACOM believes in particular that access obligations provided for in the former market analysis should be maintained, namely:

- to meet reasonable requests for access, under transparent, fair and non-discriminatory conditions[254];
- to maintain access already granted;
- to provide beneficiaries with resources equivalent to those provided to its own services and to associated companies;
- to provide for the possibility of collocation in its premises, without prejudice to the existence of technical impediments duly justified on a case-by-case basis.

5.60 In fact, taking into account that the access obligation has been already imposed and implemented in the past - imposed in 2005 and maintained (even strengthened) in 2010 -, the technical and economic viability of this imposition has been extensively demonstrated in the case of leased lines.

5.61 On this occasion, it must be analysed whether it is necessary and appropriate to extend the scope of the access obligation and, consequently, of the current Ethernet

[254] Ensuring, in addition, that order, fault repair and line switching processes (e.g., between two different operators or between two different technologies, in particular from traditional to Ethernet technologies) are efficient. This position is also supported by BEREC in the above-mentioned 'Common Position on Leased Lines'.

reference offer provided by MEO, to include high-quality accesses other that terminating segments of leased lines (i.e. asymmetric access and/or with low contention).

5.62 As demonstrated, MEO is the dominant operator in NC Areas and operators are not able to compete at retail level, on a level playing field, without a wholesale access offer, although investments in self-owned networks have been made in some areas, in order to become independent of MEO's wholesale service regulated offer. This trend may be observed especially in C Areas and partly in CNC Areas (see below).

5.63 In a context of gradual deregulation and investment on the part of several operators, regulation is still justified in areas or services where alternative operators will clearly not invest, such as ducts or MAM lines, as well as in high-quality access services in NC Areas (including accesses other than leased lines which are now part of the scope of Market 4).

5.64 Given that the market under consideration includes high-quality accesses (in addition to leased lines), ANACOM believes that, in the light of the extension of the scope of the product market, it is adequate and appropriate that MEO's current regulated offer is extended to provide also Ethernet connectivity (i.e. at level 2 of the OSI model) with limited contention and with symmetric or asymmetric speed (namely including accesses at 10 Mbps, 100 Mbps e 1 Gbps, at downstream, in the case of asymmetric accesses) [255].

5.65 As the high-quality market is aimed at the business segment, which is very demanding (namely large companies and the State), and given the existence of a market failure, which results from the inability of OSP to provide a comprehensive and competitive offer at national level for multi-location contracts able to meet this demand, MEO's new Ethernet offer must be based on fibre optic and allow local and central access - an aggregation point located at a higher network level, e.g., at regional level, being provided for this purpose.

[255] In line with point 4.2.2.3. of the Explanatory Note, that refers that the NRA is entitled to decide "*on the most appropriate and proportionate remedy (or remedies) to be imposed on the SMP operator in order to address the identified competition problems on the market*".

5.66 This (new) offer to be provided by MEO may be amended by ANACOM so it may be brought it into line with requirements of beneficiary operators. In any case, MEO should take such requirements into account from the outset, namely as regards speed, QoS or SLA profiles, in the light of the characteristics of the regulated product and the fact that a new product is concerned.

5.67 For this purpose, operators must express their effective interest in this offer, submitting for discussion their technical proposals in good time to MEO which, where technically viable, are to be included in the reference offer.

5.68 On the basis of this negotiation, and within 90 days from the final decision on this market analysis, MEO shall make available to operators a new reference offer.

5.69 Without prejudice, in alternative to a new offer, MEO is entitled to review and update RELLO, to include (in addition to leased lines) high-quality accesses with asymmetric speed (without contention or with low contention).

5.70 This will attenuate any risks involved in the investment made by MEO to provide the regulated access offer under consideration.

5.71 On the contrary, consideration must also be given to the protection of competition in the medium-long term and to all investments made both by the SMP operators and by operators who invested in transport (and access) networks in other areas, their maintenance being thereby safeguarded (insofar as the position of SMP is maintained[256]).

5.72 As regards this safeguard of competition in the long term, it is concluded that, since MEO holds a significant part of accesses to the end-customer, wholesale access is essential to enable OSP to compete with that company, in particular, but not exclusively, in offers of retail high-quality access services.

5.73 Although the volume of leased lines based in LLRO has decreased, and it is not

[256] The maintenance of the obligation for access to, and use of, specific network resources prevents the operator with SMP from refusing (or from providing under unreasonable conditions) access to resources that still are fundamental for the provision of retail offers (of leased lines or other services). This refusal would enable it to obtain significant gains, with a reduction of competition in the retail market, i.e., allowing it to leverage its market power to associated markets. This would also correspond to significant damage to end-users, who would no longer have several offer options available, namely in terms of prices.

compensated by RELLO dynamics, operators continue in several areas of the national territory to depend to a large extent on MEO's wholesale offer, namely to complement their self-supply at the level of high-quality access and trunk segments under consideration.

5.74 In fact, the wholesale offer, especially the new Ethernet offer, is important for the establishment of OSP offers, both to complement their own networks, which they continue expand, or for the purpose of retail resale of high-quality accesses, including in the scope of (public) tenders for the provision of electronic communications services (integrating capacity/leased line services). It is highlighted once more that regulated wholesale products are a fundamental tool for the development of markets for electronic communications services, inducing also to a large extent the development of transport and access networks throughout the national territory.

5.75 ANACOM thus continues to consider that the maintenance of the obligation of access to, and use of, specific network resources is appropriate and that its withdrawal could bring about adverse consequences to the market[257]. In that event, the investment made by OSP in network infrastructure (namely transmission and collocation equipment installed in local exchanges) and/or solutions based on this offer could be jeopardised, thereby being contradicted the principles of promotion of efficient investment in infrastructures and of downstream competition, legal certainty and regulatory predictability.

5.76 Moreover, it followed from conclusions on the application of the 'three criteria test' to the retail market for leased lines in the former market analysis that one of the main factors that led to the reduction of barriers to entry and of dominance on the part of MEO at retail level was precisely the existence of a regulated wholesale access to MEO's leased lines, with all associated obligations, and several interventions on that offer by ANACOM.

[257] In this context, and in theory, an operator with SMP would not have the incentive to ensure this access or, at least, not to grant it under appropriate conditions. This company, holder of SMP in the wholesale market for high-quality access, in order to leverage its market power into downstream markets, has the incentive to refuse access to its network or to negotiate under reasonable terms with companies that operate (or wish to provide services) in (wholesale or retail) adjacent markets and who compete with it in these markets.

5.77 It is convenient to restate that, as follows from the analysis performed with respect to market definition and SMP assessment, it is unlikely that in high-quality accesses and trunk segments under consideration (NC Areas and Routes), and especially in MAM lines or lines for access to international submarine cables that make landfall at MEO's SLS, it becomes technically and economically viable, in the short- and medium-term, to widely implement and disseminate resources in competition with MEO's transport and access, the development of competition in the market, on the basis of the development of alternative transport infrastructure with relevant coverage, being thereby prevented.

5.78 As such, it is likely that a vertically integrated company holding SMP in the wholesale market, such as MEO, has an incentive to restrict access to its wholesale products and services given that new entrants into the market(s) decrease its market power at retail level. Given the size of its network, the refusal to supply leased lines at a wholesale level, or their supply under unreasonable terms, would severely restrict competition in downstream markets[258], as the SMP operator would be able to charge excessive prices in this (these) retail market(s) - given that wholesale products are a key component of networks supporting various types of retail services.

5.79 ANACOM thus takes the view that any withdrawal of the obligation to provide access to and use of specific network resources would be inappropriate and could bring adverse consequences to the market. In this case, MEO would have an incentive not to grant such access, or at least, not to supply such access under suitable conditions.

5.80 In fact, according to the BEREC Common Position on Leased Lines[259], SMP operators may "*deny access to their network*", "*restrict use of services*" and "*refuse to develop new products and services on request from an alternative operator*"[260].

5.81 The existence of competition in the wholesale market could mitigate these problems. However, even while it is possible for competing operators to invest in their own networks - and they have already done so, in particular in C Routes and in high-

[258] In particular in the retail market for high-quality access, but also as a complement to operators' own networks, on which a multiplicity of wholesale and retail services rely.

[259] Available at http://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/1096-revised berec-common-position-on-best-pr_0.pdf.

[260] And they may have an incentive to deny access by charging excessive prices and/or delaying development and implementation of products and services.

quality accesses in C Areas - it is unlikely that they are able to fully replicate fibre access networks in remaining areas[261]. The available information and analysis performed by ANACOM lead to the conclusion that this economic rationale remains, although in some specific situations this replication could take place, namely at the level of high-speed high-quality accesses in certain areas of higher business density (outside C Areas).

5.82 In this context, BEREC presents, in the same Common Position on leased lines, the following principles, to be followed by NRA when the access obligation is imposed, in the presence of above-mentioned competition problems[262]:

> ***BP1***[263] *NRAs should impose the appropriate and proportionate combination of access products that properly reflect their national circumstances.*
>
> ***BP4*** *To avoid competitive distortions access should be mandated regardless of the technical solution insofar as it is proportionate, possible and efficient. Different treatment of copper and fibre based wholesale leased lines should be justified and non-discriminatory, and should be based on the differences in identified competition problems between copper and fibre.*
>
> ***BP5*** *NRAs should require SMP operators to provide network access to an alternative operator where that alternative operator reasonably requests it. It is advisable that such requests are formally documented. NRAs should require SMP operators to grant access promptly following receipt of the request from an alternative operator.*

5.83 Specifically as regards collocation, BEREC alerts that operators with SMP may deny access to associated facilities which are key to the provision of leased lines[264] and may also artificially restrict the usage of collocation and other associated facilities[265], determining that:

> ***BP7*** *NRAs should impose obligations with regard to the provision of collocation and other associated facilities*[266]*.*

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[261] This is without prejudice to investments in self-owned infrastructure, particularly NGA, made by main beneficiaries of MEO wholesale offers. These investment plans are, however, limited to certain geographical areas, and do not cover the entire national territory.

[262] It is recalled that this document was prepared in the light of the former Recommendation on relevant markets, and applies only to the leased line market.

[263] BP: Best Practice.

[264] An OSP providing retail services to end-users on the basis of wholesale high-quality access offers may need collocation, interconnection (such as SMP operator sited, customer sited or mid-span), and/or other associated facilities in order to make the offer of access effective.

[265] With this practice, SMP operators may raise their competitors' costs, as competitors would be forced to purchase additional ancillary services across different regulated markets (irrespective of the levels of utilisation).

[266] ***BP7a*** *NRAs should ensure that these remedies allow collocation and other associated facilities to be used efficiently. In particular, NRAs should ensure that usage is not artificially segregated by product or market.*

5.84 In line with these principles, ANACOM also considers that the maintenance of the obligation of wholesale supply - and of access to associated resources, namely the collocation service or the interconnection between operators collocated in MEO local exchanges[267] - is based on the nature of the identified problem, it is proportionate and justified. Such services must be provided with sufficient disaggregation in order to ensure that it is not necessary to purchase products or services that are not strictly required for the service desired.

5.85 These obligations generally correspond to conditions made available by MEO via LLRO and RELLO, which according to ANACOM must be maintained, and which must now cover the new Ethernet reference offer (or adapted RELLO offer) taking into account the expansion of the scope of Market 4 (ex-Market 6).

5.86 However, given the clear lack of demand for traditional lines with speed over 2 Mbps on the part of OSP, it is deemed that such lines do not require regulation in the scope of LLRO, i.e., as regards high-speed terminating segments or trunk segments in NC Routes with speed over 2 Mbps.

5.87 In fact, this segment pool has remained at extremely low values in the last few years - in the 3rd quarter of 2015, there were only 6 leased lines with capacity over 2 Mbps (of 34 Mbps) engaged by two OSP (one of which engaged a single 34 Mbps line) - and new installations have not taken place. The net demand for lines with speed over 2 Mbps in the scope of LLRO has thus been zero for several quarters throughout the territory (including obviously C Areas, which are still regulated).

5.88 Given the trend of demand for Ethernet accesses and lines, as well as the migration of traditional technologies to new access and transport technologies, it is not rational to expect a future demand for traditional leased lines, thus the scope of LLRO must be restricted to traditional leased lines with speeds not exceeding 2 Mbps.

5.89 Even more so, analogue lines were excluded from the scope of the product market for high-quality accesses, being thus immediately withdrawn any obligation which falls on MEO in the wholesale market as regards the provision of analogue lines.

[267] In fact, the imposition of collocation in MEO exchanges is a measure that promotes the development of infrastructures on the part of operators competing with MEO and, thus, that best ensures conditions for the development of a sustained competition.

5.90 In this context, in the scope of LLRO, as regards digital lines provided with speeds over 2 Mbps in NC Routes and in NC Areas:

(a) Current conditions of this regulated offer must remain for current lines (i.e. lines already provided); and

(b) MEO is under no obligation to meet new applications, although it may do so, if it so wishes.

5.91 Any obligations falling on MEO as far as analogue lines are concerned, both in C Areas and in NC Areas, are immediately withdrawn.

5.92 In conclusion, ANACOM takes the view that the scope of the regulated wholesale offer of digital terminating segments and trunk segments of leased lines (LLRO and RELLO), must be maintained, subject to the above-mentioned safeguard, and that the scope of the regulated Ethernet access offer provided by MEO (holder of SMP) is to be extended to high-quality accesses, with and without contention and with symmetric and asymmetric speed.

5.93 On the other hand, it may be necessary to impose additional measures in other aspects of MEO's reference offer, as detailed in sections below.

MAM and inter-island lines

5.94 As referred earlier, access to MAM and inter-island lines deserves special attention, so they may be best adjusted to the interests of the market, imposing therein more precise and appropriate conditions in these specific segments where competition conditions are particularly restrictive. The obligation to meet reasonable requests for access lines in submarine cables is particularly relevant, since this is a scarce resource and no alternative to these lines exists. In fact, the lack of any alternative to MEO MAM lines for alternative operators to be able to establish connections between their networks in the mainland and in the Autonomous Regions, constitutes a strong restriction on their ability to compete at retail level.

5.95 ANACOM's determination of 14 June 2012 acknowledged some specificities at competition level, having already been imposed on MEO stricter access requirements in this wholesale market, which should be maintained[268].

[268] In addition to the determination of 14 June 2012 referred to above, it was necessary to provide for more appropriate conditions at the level of indicators of quality of service (supply and fault repair times), as well as indicators of infrastructure occupation, in this particular market, where competition conditions are particularly restrictive.

5.96 However, as Ethernet lines currently play a fundamental role in the context of MAM and inter-island lines based on submarine cables owned by MEO, representing around 100% of capacity leased by operators[269], and given that the demand focuses on very high speed lines, over 1 Gbps, in particular 10 Gbps lines[270] (especially in the MAM ring), conditions for access to these lines must be reassessed. Moreover, future demand mainly relates to Ethernet lines, and in fact they have been lately the subject-matter of particular concern on the part of NOS and Vodafone in their comments on this matter.

5.97 The lack of regulation of 10 Gbps lines would raise the issue of a possible privileged access on the part of MEO to these lines (compared to those of a lower speed) for the provision of services in more favourable economic conditions, as no alternative exists to MAM and inter-island lines.

5.98 Consequently, in order to appropriately safeguard competition, a regulated offer (RELLO) of 10 Gbps MAM and inter-island Ethernet lines is required, this extension applying to any land trunk segments (where appropriate) and to internal extensions and/or terminating segments that are necessary in the context of MAM lines, which in fact MEO has already implemented, following Decision of 23 July 2015.

5.99 Finally, and as stressed in the definition of the geographic market, there are routes (and lines) that do not rely on MEO's submarine cables, which are not subject to these obligations:

- In the ARA, this concerns the submarine cable owned by Fibroglobal (the so-called western ring), for which MEO contracted rights for use of capacity in the following connections: Graciosa - Corvo; Corvo - Flores; and Flores - Faial.

  Fibroglobal is subject, under the proposal presented in the scope of the public tender for the installation, management, operation and maintenance high-speed electronic communications networks in the ARA, to provide non-discriminatory and transparent access to all operators that request it, thus access to inter-island lines in the referred routes is regulated in the scope of the referred proposal and tender.

[269] The leased capacity of traditional MAM and inter-island lines is residual, not exceeding a total of 5 Mbps by the end of 2014.

[270] It is noted that the quality of service demanded at retail level, namely in terms of Internet access speed, is now much higher than some years ago. As total demand has also increased, access to 1 Gbps lines has become insufficient to meet demand.

- In the ARM, this concerns the Madeira-Porto Santo connection, co-owned by MEO and NOS.

  As referred, according to information received, restrictions in the access to this connection seem not to exist.

Lines for access to international submarine cables

5.100 Determination of 14 June 2012 dealt with lines for access to international submarine cables, namely to access under a collocation regime in submarine cable landing exchanges (SLS) owned by MEO[271].

5.101 As such, the specific more restrictive conditions, on a competition perspective, that exist in the market for lines for access to international submarine cables have already been acknowledged, whereby MEO has already been imposed stricter access requirements in this wholesale market.

5.102 In the referred determination, MEO was required to provide the collocation service and associated services in SLS under the conditions laid down at the time for other exchanges of its network, namely in the scope of LLRO and RELLO, save for any technical constrain or otherwise, duly substantiated by MEO and accepted by this Authority.

5.103 Grounds for the imposition of collocation in SLS where international submarine cables make landfall are identified in the determination itself, and are mainly related to the removal of restrictions in the access to capacity therein, as MEO holds a monopolistic position in the provision of backhaul lines in SLS it manages. These restrictions led several operators to file formal complains on the conditions for access to these cables.

[271] "*D 10. MEO must provide the collocation service and associated services in SLS as currently determined for other exchanges of its network, namely in the scope of LLRO and RELLO, unless there is a technical constrain or otherwise, duly substantiated by MEO and accepted by this Authority, that prevents the provision in these terms of any of the services concerned in any of the SLS. OSP that use the collocation service have access to submarine cables of any operator making landfall in SLS and have room for installing the necessary optical interfaces for installing the capacity lines they require, provided that the technical and safety conditions are duly safeguarded.*

D 11. MEO must break down prices of the underwater and not underwater (backhaul) segments of MAM lines, and OSP may opt or not for using MEO's backhaul, for access to this type of lines.

D 12. In the absence of constrains referred in the preceding point, MEO shall make available services associated to collocation, such as transport of the signal and connection between OSP equipment in the collocation space and MEO and/or consortium's equipment, and the possibility of extending fibre-optic of OSP from the manhole to the collocation space shall also be provided for".

5.104 The obligation falling on MEO to provide access (i.e. to supply at wholesale level) to backhaul lines for connection of capacity in international submarine cables is essential so that alternative operators are able to access this capacity in the national territory to support retail services they provide themselves, either to resale leased lines or other high-quality accesses or for international connectivity purposes.

5.105 In this context, collocation in (or close to) SLS prevents operators, who require it to compete in the market, from incurring in the total cost of lines for access to international submarine cables (backhaul lines), being able themselves to supply that connection internally or to use offers made available by third parties other than MEO. As such, ANACOM maintains its view that MEO must allow collocation in SLS for the purpose of connection to capacity in international submarine cables, under the terms detailed below.

5.106 For the purpose of connection to capacity in international submarine cables, the beneficiaries of collocation in MEO SLS only include operators that are members of a consortium or operators with a contract with members of a consortium, for example via an agency agreement.

5.107 In the light of principles of proportionality and minimum intervention required, the collocation obligation applies only to submarine cables that make landfall at MEO SLS the C&MA of which do not exclude this possibility.

5.108 In such conditions, where requested, the obligation falling on MEO to provide collocation in SLS remains[272]. Such collocation may take place at the SLS itself, at an adjacent location (as is already the case in Sesimbra) or at a remote location.

5.109 Given that SLS are extremely important assets, as these infrastructures aggregate traffic between several countries, it is deemed that access via collocation must be subject to strict safety and protection requirements, and that the use of space (by operators) must be optimized.

[272] Save for a technical constrain or otherwise, duly substantiated by MEO. In this case, MEO is required to submit to ANACOM both the grounds for this refusal and relevant documents evidencing, on its opinion, this impediment.

5.110 As such, it is deemed that SLS collocation modalities (namely at the SLS itself, an adjacent location or a remote location) must be negotiated between MEO and operators benefiting from collocation, and it is admitted, for safety reasons, that collocation at an adjacent location could be more appropriate than collocation at the SLS itself.

5.111 There is collocation space available at the moment in a building adjacent to MEO's SLS at Sesimbra, which MEO considers to be the most appropriate space for the purpose, and where an operator with access to the **[BCI] [ECI]** cable is already collocated.

5.112 Where after every effort is made to negotiate access conditions, MEO and operators who intend to benefit from collocation fail to reach an agreement on such conditions under the preceding point, any of the parties is entitled to resort to ANACOM, which will rule on the matter through a binding decision.

5.113 In limiting the beneficiaries of collocation only to operators contractually associated to international consortiums, ANACOM took into utmost account that, with this solution, interference in MEO's business autonomy is reduced to an almost marginal level, on the one hand, and, on the other, in the perspective of the right of ownership of SLS, impediments at technical and safety levels and as regards the guarantee of space in SLS themselves are safeguarded.

5.114 In case MEO authorizes[273] the use of cross-connects by operators collocated (i) between different submarine cables, insofar as the collocated operator is a member of the respective consortiums or has a contract with a member of consortiums or (ii) between different operators connected to the same submarine cable, it must do so in a transparent and non-discriminatory way, to the extent that the operator is authorized for the purpose in the scope of the respective consortium C&MA.

5.115 Finally, it is stressed that the current backhaul service - up to 155 Mbps in the scope of LLRO - is no longer compatible with market requirements, submarine cables now having capacities by thousands of Gbps, the high demand for very high-speed (e.g.

[273] ANACOM does not impose this possibility, otherwise the Authority would be regulating international lines and not promoting competition in the scope of the backhaul service (national lines used for connection of capacity in international cables).

10 Gbps) Ethernet lines (or DWDM) in international submarine cables being acknowledged.

5.116 As such, the obligation on MEO to supply backhaul services to operators with capacity in submarine cables or to third parties who intend to supply backhaul to operators with capacity in the submarine cable under regulated conditions is to be maintained, at higher capacities than those currently made available. Under RELLO, lines with capacities by at least 10 Gbps must be provided, for connection of capacity in international submarine cables[274]. As far as LLRO is concerned, reasonable requests for access to backhaul lines with capacities over 155 Mbps must be met.

5.117 Finally, it must be referred that in other countries, in particular the United Kingdom, the Regulatory Authority failed only to regulate the backhaul service and collocation in SLS, given that collocation was a common business practice and as such there was competition in the provision of backhaul services, which resulted in significant price reductions.

5.118 In conclusion, the imposition of access obligations in these markets meets the principle of proportionality[275], in its three dimensions, the requirements for appropriateness, necessity and proportionality in a strict sense, taking into consideration the regulatory objectives set out in article 5 of ECL that are achieved with the imposition of such obligations. That is, within the option to regulate, this is the minimum intervention required to meet the fundamental target of promoting competition in the offer of electronic communications networks and services, and of associated resources and services.

5.119 Without prejudice to the above analysis and conclusions, it is clarified that ANACOM is entitled, at any time, and in the light of the evolution of the competitive environment in the market for lines for access to international submarine cables, to develop a new analysis and to review both the compliance with the 'three criteria' test and the framework of obligations imposed on the operator with SMP.

5.120 These arrangements replace points D.10 and D.12 of Determination of 14 June 2012.

[274] In line with obligations provided for in the DD of 19 November 2014.

[275] Cfr. article 55, paragraph 3 a) and article 72, paragraph 4 of ECL.

Conclusion

5.121 In conclusion, ANACOM takes the view that all generic obligations for wholesale access to and use of specific network resources imposed in the former market analysis should be maintained, with the specifications and amendments now deemed to be appropriate (namely at the level of the new regulated offer[276] and the introduction of access at 10 Gbps in MAM lines and in lines for access to international submarine cables), as they remain reasonable, appropriate, proportionate and justified.

5.122 It is noted, notwithstanding, that the access obligation is not sufficient in itself. ANACOM believes that it is necessary to maintain additional obligations, provided for in the ECL, to address potential competition problems such as excessive pricing or discriminatory practices, thereby ensuring the existence of access in reasonable conditions, that meet the conditions in relevant markets. These issues are addressed in sections below.

Non-discrimination

5.123 Even where an access obligation is imposed on an operator with SMP, the latter will still have the incentive to discriminate in the supply of wholesale services, i.e., in conditions under which access is granted to other operators, especially where that operator is vertically integrated or has retail operations, which is the case here. This competition problem, as mentioned earlier, includes the discriminatory use or withholding of information, quality discrimination, delaying tactics and undue demands, as well as the possibility of discrimination in terms of pricing.

5.124 Following these actions, the retail activity of competitor operators is generally undermined, resulting in a decline in the quality of services which they provide or an increase in the costs of these operators compared to the costs of the retail activity of the SMP operator. Consequently, the competitiveness of alternative operators at retail level is reduced substantially, whereby the operator with SMP is able to leverage market power at wholesale level into retail market(s). This kind of discriminating behaviour allows the operator with SMP and its affiliates to hold an

[276] Or adapted RELLO.

advantage in other markets the offers of which they are able to influence, such as (but not restricted to) the market for high-quality access[277].

5.125 In fact, BEREC acknowledges that, as regards this possibility of absence of balanced competition conditions, i.e., the existence of a scenario of discrimination on the part of the company with SMP, operators may not be able to compete on a level playing field which may result in SMP players: (i) having an unfair advantage; (ii) having unmatchable advantage, by virtue of their economies of scale and scope, especially if derived from a position of incumbency; (iii) discriminating in favour of their own group business (or between its own wholesale customers), either on price or non-price issues; and (iv) exhibiting obstructive and foot-dragging behaviour. BEREC takes also the view that, as regards the advantage of a first entrant, SMP operators may have an incentive to discriminate in favour of their own retail operations[278]. Alternative operators thus need assurance that, as downstream markets develop, suitable wholesale products will be available in time to permit them to offer downstream products at the same time as the SMP player.

5.126 To that extent, the obligation of non-discrimination is mainly designed to prevent MEO - a vertically integrated body - from discriminating in favour of its own retail activities and to ensure that competing companies who use MEO's wholesale offer are in a position equivalent to MEO's at retail level. It aims also to prevent undue discrimination among the various operators (beneficiaries of offers) competing with MEO.

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[277] As an illustration, one may consider the situation where an operator with SMP in the market of wholesale supply of high-quality access discriminates against alternative operators and in favour of its own division with operations in the high-quality access retail market. A lower quality of service than that provided to retail divisions of the SMP operator would mean that alternative operators would not be able to provide a new access in a comparable period of time or to guarantee a fault repair time equivalent to that provided by the retail division of the SMP operator. This would correspond to a reduction in effective competition in the retail market, with a clearly prejudicial impact on alternative operators and end-users.

[278] In this respect, BEREC also supports the application of a large set of principles, which include several aspects related to the transparency obligation - in addition to best practise No.12 (BP12), according to which NRAs should put in place a regime which ensures the (technical and economic) replicability of the new downstream services introduced by SMP players. In particular:

BP13 *In cases where SMP operators need to provide a new wholesale product, NRAs should impose an obligation on SMP operators regarding the timely availability of relevant information according to lead times (i.e. notice periods) defined on a case-by-case basis.*

BP14 *NRAs should ensure that alternative operators have the ability to influence the decisions regarding characteristics of new wholesale products and new interfaces.*

BP15 *Where relevant, NRAs should impose a requirement on SMP operators in relation to lead times (i.e. notice periods) regarding the removal of existing wholesale inputs.*

5.127 As such, in accordance with articles 66 and 70[279] of ECL, ANACOM supports that it is justified, appropriate and proportionate to maintain the obligation of non-discrimination to which MEO is subject in the offer to wholesale customers, in order to prevent it, in equivalent circumstances, from discriminating in favour of its own services or subsidiary or associated companies - paragraph 5 b) of article 5.

5.128 Moreover, the non-discrimination obligation, as well as specifications that have already been determined as far as compliance therewith is concerned, implies relatively low costs and it is proportional and appropriate to ensure conditions of equal treatment and competition, whereby it must be maintained.

5.129 BEREC takes the view[280] that there are various possible means of placing competitors at a disadvantage through discrimination in the quality of wholesale services provided by an operator with SMP. To prevent this, BEREC supports the imposition of an obligation of non-discrimination which guarantees that, in equivalent conditions, the services and information provided by the SMP operator to competing operators has the same quality as that guaranteed to its own services and subsidiary companies. To this extent, the following principles must be taken into account:

BP8 *NRAs should impose a general obligation of non-discrimination.*

BP10 *NRAs should impose an obligation on SMP operators requiring equivalence, and justify the exact form of it, in light of the competition problems they have identified*[281]*.*

5.130 BEREC thus supports a (possible and appropriate) implementation of the principle of equivalence also at the level of the supply of wholesale leased lines (now also wholesale high-quality accesses), and, in particular, that operators are able to replicate any service provided on the retail market.

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[279] Article 66 provides for the NRA's powers in the scope of the imposition, maintenance, amendment or withdrawal of obligations. Article 70 describes, in particular, the obligation of non-discrimination.

[280] According to its Common Position.

[281] ***BP10a*** *NRAs are best placed to determine the exact application of the form of equivalence on a product-by-product basis. For example, a strict application of EOI (Equivalence of Input) is most likely to be justified in those cases where the incremental design and implementation costs of imposing it are very low (because equivalence can be built into the design of new processes) and for certain key legacy services (where the benefits are very high compared to the material costs of retro-fitting EOI into existing business processes). In other cases, EOO (Equivalence of Output) would still be a sufficient and proportionate approach to ensure non-discrimination (e.g. when the wholesale product already shares most of the infrastructure and services with the product used by the downstream arm of the SMP operator).*

5.131 Without prejudice to the view on equivalence (which in this case results in the proportionality of the equivalence of output, given that MEO's wholesale offer already shares most infrastructure and services of the product used at downstream by MEO), ANACOM agrees with BEREC's position, supporting that the specifications of the non-discrimination obligation remain appropriate, reasonable and proportional.

5.132 In this context, ANACOM considers that the inclusion of SLA in reference offers remains necessary, whereas adequate and proportionate compensation must be continue to be defined where MEO fails to meet these levels, in all aspects where they apply.

5.133 In the past, alternative operators showed some concerns, namely as regards differences in terms of supply times of leased line services and of similar or related services in retail markets, as well as other aspects concerning the quality of service of the wholesale service provided by the operator with SMP.

5.134 Accordingly, ANACOM analysed, in the determination of 14 June 2012, several aspects related to the "quality of service", including even issues such as the level of compensation provided for in MEO's regulated offer and restrictions applicable to the payment of compensation for non-compliance with the established objectives. In the same scope, ANACOM reinforced the fundamental need to ensure that contractual supply times and repair times that apply to the wholesale supply of leased lines did not prevent operators competing in the retail market from providing their customers with supply and fault repair times which are in line with those provided by MEO companies (operating at retail level) [282].

5.135 Additionally, as regards switching between regulated wholesale products, according to BEREC, SMP operators may have an incentive to discriminate in favour of their own downstream operations. Wholesale switching processes - switching between wholesale products - are thus fundamental for the development and maintenance of an effectively competitive environment, namely in the context of switching to wholesale high-speed high-quality accesses[283].

[282] The following amendments to LLRO and RELLO were imposed, among others: D 1, D2 and D14 - reduction of the deadline for supply; D3 and D4 - review of compensation for failure to comply with supply and fault repair deadlines; D5 - fault repair deadlines for 100% of cases; D15 - Fault repair times and degree of availability must be assessed on a disaggregated basis for MAM lines.

[283] As such, it is relevant that wholesale customers are able to switch wholesale products and/or wholesale providers with the minimum of delay and/or disruption.

5.136 To minimize this potential discrimination, BEREC recommends compliance with the following principles:

BP25 *NRAs should impose obligations on SMP operators in order to ensure wholesale switching processes are speedy and efficient*[284]*.*

BP26 *NRAs should require that switching procedures equally apply between legacy and NGN/NGA wholesale products.*

5.137 The practical implementation of these principles is also fundamental, in the current stage of technological migration (to Ethernet), that is, in the definition of specific procedures for the migration of accesses based on LLRO to RELLO or to the new Ethernet offer. These procedures must also take into account the interests of the beneficiary operator, whereby they must be non-discriminatory and efficient, imposing minimum transition periods and disruption.

5.138 It is also important to ensure that the information obtained by the SMP operator, as a result of the provision of wholesale services to other operators, is not, under any circumstances, transmitted to or used by MEO's retail division or any other internal department that is not essential for the provision of the wholesale high-quality access service. The publication of quality of service indicators/parameters enables verification as to whether the wholesale service is provided to all operators in a non-discriminatory manner and, in particular, whether the service provided by MEO to its own companies (internal departments, such as mobile or corporate) is comparable to that provided to alternative operators. In this case, internal and/or retail indicators that provide a benchmark to weight the performance at internal supply level must be presented[285].

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[284] ***BP25a*** *NRAs should require that the maximum allowed downtime during wholesale switching is the lowest possible for the different needs of specific wholesale customer segments.*

BP25b *NRAs should require that the price of the switch does not act as a barrier to the wholesale switching processes happening.*

BP25c *Where necessary, NRAs should put in place specific measures to facilitate bulk wholesale switching processes and ensure these are non-discriminatory.*

BP25d *NRAs should require that the transaction time required to process wholesale switching requests is as low as possible based on the nature and size of the request.*

BP25e *NRAs should require SMP players to introduce SLAs/SLGs and KPIs in order to ensure the efficiency of the switching process, unless there is evidence that these are unnecessary or not cost-effective.*

[285] According to the determination of 11 March 2009:

"*3. For each company/internal department of PTC* [now MEO] *that does not resort to the wholesale offers under consideration, but which provides services that fall within the same scope, or to whom services are provided in the scope of those offers, information should be released on the corresponding service levels,*

5.139 This requirement is proportionate and a tool to check compliance with the non-discrimination obligation, whereby it is maintained on the terms already defined, adjusting to the breakdown defined for SLAs, whereby traditional lines must be differentiated from Ethernet-based lines.

5.140 Finally, taking into account the principle of non-discrimination and MEO's weight in retail and wholesale markets, this company must continue to refrain from a practice of loyalty and quantity and/or capacity discounts except where justified by the principle of cost orientation of prices (namely where substantial economies of scale are reflected), being admitted that such discounts may be accepted in exceptional and specific circumstances. Any amendment proposed in this context has to be previously submitted to ANACOM, together with a detailed statement of reasons, based on compliance with the principles of non discrimination and cost orientation of prices.

5.141 Finally, ANACOM also takes the view that, in order to ensure compliance with the non-discrimination obligation, it must be accompanied by the imposition of obligations of transparency and accounting separation[286].

Transparency

5.142 ANACOM considers that there are few situations related to the wholesale provision of access (leased lines included) where the transparency obligation would *per se* be sufficient to counteract any possible anti-competitive practices (with impact on the downstream). In any case, it could act as a constraint to anticompetitive behaviour, given that pricing and supply conditions are monitored both by this Authority and by competitors of the SMP company, whereby any anti-competitive measures become more evident.

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adopting the reference offers indicators. Alternatively, when it is not justifiably possible, alternative indicators should be released making it possible to monitor the fulfilment of the obligation of non-discrimination in light of the procedures for internal supply;

4. Should MEO companies and/or internal departments mentioned in 3. provide retail services related to wholesale offers, MEO must also publish information on the quality of service ensured at retail level. Where ANACOM does not specifically define what retail information should be provided, the disaggregation thereof should correspond as much as possible to the level of disaggregation defined at wholesale level".

[286] BEREC also considers that the *per se* imposition of this obligation may not be sufficient, and that Regulatory Authorities should consider additional measures for the effective compliance with the principle of non-discrimination. However, intervention on an *ad-hoc* basis (arbitrage) with respect to each new problem has remained unsatisfactory.

5.143 Moreover, transparency is a natural extension of the non-discrimination obligation, since the ability to prevent discriminatory behaviour depends on the ability to detect such behaviour, hence the need for that obligation. Otherwise, the effectiveness of the non-discrimination obligation would be compromised and, as a result, factors that are at the root of a dominant position would re-emerge or increase. Subsequently, dominance-related problems would arise, with a negative impact on (retail) markets.

5.144 Promoting the application of this obligation ensures:

- the timely provision of relevant information to stakeholders, enhancing predictability, security and certainty associated with to an environment where operators seeking access are able to pursue their activities, and facilitating efficient and informed entry into the market, to the ultimate benefit of competition and the end-user;
- mitigation of information asymmetry between the regulated company and the Regulatory Authority and better monitoring of compliance with the non-discrimination obligation.

5.145 ECL lays down, in its article 66, that the NRA is charged with imposing or maintaining the obligation of transparency in relation to the publication of information, including reference offers, pursuant to articles 67 to 69. Under article 67 of ECL, the NRA may require the publication of appropriate information in respect of the provision of access and interconnection by an operator with SMP, including accounting information, technical specifications, network characteristics and terms and conditions for supply and use, including prices. Also according to article 68 of the same law, the NRA may impose, in particular to operators subject to the non-discrimination obligation, that reference offers for access be published, including the means of disclosure[287].

5.146 Having regard to the referred articles of ECL, ANACOM imposed in its Determination of 8 July 2005, the obligation to publish a reference offer, with two key objectives: (i) to support transparency in the monitoring of potential anti-competitive behaviour and (ii) to disclose the terms and conditions under which other operators may purchase

[287] Under the same article of ECL, operators with SMP may be required to make available offers that are sufficiently unbundled to ensure that operators are not required to purchase products/services which are not necessary for the service requested.

wholesale access services. As such, this offer takes on an important role in the prevention of potential conflict and increases the confidence of purchasers of wholesale services, as it helps them to be fully aware of all the main conditions associated with the provision of services, contributing towards a supply under non-discriminatory conditions.

5.147 In this context, it should be noted that BEREC believes that, as it is particularly difficult for an NRA to control the quality of services provided where a non-discrimination obligation is imposed, it would make perfect sense to support this obligation on a transparency obligation[288]. BEREC indicates, in particular, that the transparency obligation could include the obligation to provide minimum levels of quality of wholesale services, and to regularly report to the NRA, and where appropriate, to other operators[289], performance levels of quality of service of wholesale offers. This body further states that it appears best to publish achieved performance levels, since this increases confidence among market players with respect to the effectiveness of the non-discrimination obligation.

5.148 BEREC gave concrete form to these views in a set of best practise principles in the scope of the guarantee of transparency which NRAs are required to follow:

> ***BP16*** *NRAs should require SMP operators to provide clarity of terms and conditions of access (including those relating to relevant ancillary services) by publishing a Reference Offer, the key elements of which should be specified or approved by the NRA. All material contractual terms and conditions which are known or knowable at the time of publication should be covered clearly*[290]*.*

[288] "Revised ERG Common Position on the approach to appropriate remedies in the ECNS regulatory framework" ("*Remedies document*").

[289] ERG believes also that performance levels could be reported for services provided to OSP as well as for self-provided services, to monitor compliance with the non-discrimination obligation.

[290] ***BP16a*** *NRAs should require SMP operators to take into account any reasonable views of wholesale customers in their reference offer, in particular regarding the evolution of the services offered.*

BP16b *NRAs should require SMP operators to publish the reference offer (i.e. make it operational) within a reasonable time after NRAs have imposed the obligation to grant access. NRAs should give guidance on the reasonable timeframe on a case by case basis.*

BP16c *NRAs should require SMP operators to update the reference offer as necessary, and in a timely manner (see BP13), to reflect relevant changes such as developments in line with market and technology evolution and/or changes to prices, terms and conditions for existing services or technical and operational characteristics*.

5.149 In addition, to guarantee that there are no access restrictions to technical parameters of the access offer, the following principle must be followed:

> ***BP18*** *NRAs should require that SMP operators provide a reference offer which includes relevant information on technical issues*[291]*.*

5.150 ANACOM takes also the view that technical aspects of the regulated offer, such as the quality of service, are essential in any wholesale reference offer, and that it is fundamental to take into account how the various aspects concerning this characteristic of the offer are related to ensure the existence of appropriate competitive conditions and also the provision of wholesale and retail services that meet the needs of end-users. For this purpose, the reference offer must be clear with respect to the set of quality of service indicators, establishing the minimum level for each of these indicators and compensation due in case of non-compliance[292].

5.151 In this respect, it is deemed that the way how performance levels of quality of service of wholesale offers are submitted to NRAs, operators and end-users is very important for ensuring the effectiveness of the transparency obligation - *vide* in this respect ANACOM Determination of 11 March 2009.

5.152 ANACOM therefore believes that the principle of transparency can also be ensured through the requirement to publish, and keep updated, the regulated wholesale offer (so far, LLRO and RELLO[293], and after a final decision on this analysis, the new Ethernet high-quality access offer), in order to enhance the predictability of conditions specified therein, which shall contain a description of the relevant offers broken down into several components according to market needs, as well as the associated terms and conditions, including prices, key technical information, including levels of quality of service (which must include SLAs and adequate compensation in case of non-compliance with established levels).

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[291] Such as (vide Annex 1 of BEREC Common Position):

- a description of the network access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of network access); and
- any relevant technical standards for network access (including any usage restrictions and other security issues).

Additionally, BEREC determines, [BP19] in line with Article 17 of the Framework Directive, that NRAs should encourage SMP operators to adhere to European or global technical standards, wherever feasible.

[292] This compensation should be high enough to create an effective and appropriate incentive for the SMP operator to meet the established levels of service.

[293] At the respective website.

5.153 This is in fact called for by BEREC through the following principles:

> ***BP22*** *NRAs should require SMP operators to provide a reasonable defined level of service*[294]*.*
>
> ***BP23*** *NRAs should impose a generic requirement on SMP operators to provide Service Level Guarantees (SLGs, i.e., compensation for non-compliance with defined targets)*[295]**.**
>
> ***BP24*** *NRAs should impose a generic requirement on SMP operators to provide Key Performance Indicators (KPIs) as a means to monitor compliance with a non-discrimination obligation and ensure that SMP operators fulfil their SLAs (unless there is evidence that this is unnecessary or would not be cost effective)*[296]*.*

5.154 The reference offer must continue to establish the conditions and indicators mentioned above for terminating segments and trunk segments up to 1 Gbps, and henceforth also for Ethernet high-quality accesses[297], as well as the specific conditions related to the service of leased line part circuits and interconnection supporting components (LLRO, up to 2 Mbps), to MAM and inter-island lines and to lines for access to international submarine cables - whereby access up to 10 Gbps must be made available for the latter and for MAM lines (in the scope of RELLO) [298].

5.155 MEO is also required to publish, within 90 days from notification of the final decision, the new Ethernet high-quality access reference offer or an adapted RELLO, under the terms defined in the section on the imposition of the access obligation, which must include all aspects already included in RELLO, namely SLAs, compensation for

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[294] ***BP22a*** *Service Level Agreements (SLAs) should cover specific service areas. Service areas where SLAs are most likely to be necessary are ordering, delivery, service (availability) and maintenance (repair).*

BP22b *SLAs should be made available to wholesale operators. To ensure maximum transparency and comparability of the terms provided by SMP operators to alternative operators and their own downstream arm, all SLAs could be made available to all relevant wholesale customers (including those outside from a specific Member State). For example, SMP operators could make them available on demand or automatically publish these on their websites (as part of their reference offer).*

[295] ***BP23a*** *SLGs should cover all necessary specific service areas. Service areas where SLGs are most likely to be necessary are ordering, delivery, service (availability) and maintenance (repair).*

BP23b *SLG payments should be made without undue delay and should be proactive in nature. That is, with a pre-established process for the payment and billing of the SLGs among operators and without the need for alternative operators to request the intervention of any third party i.e. NRAs or courts.*

[296] ***BP24a*** *KPIs should cover all necessary specific service areas. Service areas where KPIs are most likely to be necessary are ordering, delivery, service (availability) and maintenance (repair).*

BP24b *The results of monitoring KPIs should be made available to all operators in the market. To determine whether they could have been discriminated against, alternative operators would need to be able to compare the levels of service they have received to those provided by the SMP operators a) to their downstream businesses and b) the industry average.*

[297] That is, including at least the same speed as RELLO.

[298] In the scope of LLRO, reasonable requests for access to international submarine cables must be considered.

non-compliance with SLAs, as well as procedures to be followed, namely concerning fault repair and other issues, already followed in the scope of RELLO (and LLRO).

5.156 As regards the requirement for appropriate periods of notice, NRAs must abide, according to BEREC, by the following principles:

> ***BP13*** *In cases where SMP operators need to provide a new wholesale product, NRAs should impose an obligation on SMP operators regarding the timely availability of relevant information according to lead times (i.e. notice periods) defined on a case-by-case basis. The relevant information should include information on prices, terms and conditions and technical characteristics of the new wholesale product. The information provided should allow alternative operators to effectively assess the impact on their own processes.*
>
> ***BP17*** *NRAs should require SMP operators to make certain information available to all operators (publicly or on request) within a reasonable period of time. Such information should include the results of Key Performance Indicators (KPIs) measurements and planned future changes to the SMP operators' network architectures as far as they are relevant to network access (e. g. future points of access) and which might affect the provision of services.*

5.157 As such, it is deemed that MEO must make available to beneficiary operators of regulated wholesale offers all detailed and timely information on the evolution in its access and transport network infrastructure, before introducing changes that may affect the conditions that existed when these operators made the investment decision.

5.158 In the case of changes to MEO's network architecture, insofar as they are relevant to the network access (such as changes to points of access or to technology) and are able to substantially affect the provision of services by beneficiary operators, they must be notified at least two months in advance.

5.159 Moreover, to ensure predictability and ease of reference with regard to this offer, it is considered that it remains necessary to properly identify the changes made thereto[299]. To guarantee these objectives, it is considered that notice of changes made on the initiative of MEO to the reference offer must be given one month prior to the time they are due to take effect. This is the only way of ensuring that operators have time to make decisions and carry out operational activities or activities related to strategic changes resulting from any amendments made to the offer, where these amendments are introduced on MEO's initiative.

[299] In particular in the Annex to LLRO and RELLO.

5.160 ANACOM further takes the view that the publication of disaggregated performance levels, in compliance with Determination of 11 March 2009, is proportionate and must be maintained in the framework of general obligations of transparency and non-discrimination, encouraging compliance with targets established in terms of quality of service and deterring any discriminatory practices.

5.161 In conclusion, following the imposition of the access and non-discrimination obligations, and given the clear relevance of maintaining, in association with the transparency obligation, an appropriate and easily accessible reference offer which includes all the information required so that alternative operators that use or plan to use wholesale services under consideration are able to do so in a predictable and efficient manner, ANACOM takes the view that maintaining the transparency obligation is a proportional, justified and necessary measure to check the non-discrimination principle, which entails low implementing costs, as it requires only the information that is necessary to ensure the absence of adverse competition conditions.

Price control and cost accounting

5.162 Article 74 of ECL entitles the NRA to impose obligations relating to cost accounting and price control, where a potential lack of effective competition means that prices may be sustained at an excessively high level, or a price squeeze may be applied, to the detriment of end-users[300].

5.163 In this context, in the light of the same law, it is incumbent on ANACOM ensure that cost accounting mechanisms and pricing methodologies promote efficiency and sustainable competition and maximise benefits for consumers, whereby prices available in comparable competitive markets must also be taken into account.

5.164 In fact, access and transport networks used for the provision of low- and high-speed high-quality accesses in NC Areas, trunk segments in NC Routes, MAM and inter-island lines and lines for access to international submarine cables that make landfall at MEO's SLS are characterized by a lack of effective competition, due to high and

[300] Including the obligation for cost-orientation of prices and the obligation to adopt cost accounting systems, for the provision of specific types of access or interconnection.

permanent entry barriers and little chance of future competition. In the absence of effective competition, the operator with SMP in these wholesale markets has little incentive to reduce costs and to operate efficiently, given that these high prices are transferred to wholesale customers and, ultimately, corporate end-customers and consumers, who have no alternative choice.

5.165 After all, as these are wholesale markets where: (i) there is no effective competition, (ii) there are relevant barriers to entry, (iii) the development of competition is unlikely and (iv) the SMP operator is able to act independently of other market players, it is likely that this operator has every incentive to set wholesale offer prices at a level significantly higher than costs incurred in providing the services.

5.166 Therefore, a key aspect in the offer under consideration is the possibility for operators to be able to provide retail (or wholesale) services without facing margin squeeze situations.

5.167 On its turn, BEREC believes that OSP may face uncertainty as to the price of wholesale leased lines, however they must be reasonably sure that these prices are set in line with the prices of other related services, in order to encourage efficient investment both by the operator with SMP and OSP alternative operators and to avoid arbitrage opportunities.

5.168 Sill according to BEREC, SMP operators may engage in predatory pricing and/or margin squeezes[301]. In this scope, this body supports that NRAs should adopt measures to prevent them. However, it acknowledges that in cases where an obligation of cost-orientation of prices is imposed, margin squeeze concerns will be mitigated. In any case, to address potential competition restrictions, BEREC supports the imposition of the following principles:

BP35 *The effective price granted by the SMP operator should not be discriminatory and should be offered to all operators that meet the established conditions.*

[301] Whether or not there is an explicit price control obligation, SMP operators may still have an incentive to engage in margin squeeze in relation to downstream products. Furthermore, alternative operators may face uncertainty regarding the principles and methodology for the assessment of margin squeeze which in turn could result in complaints not being resolved quickly.

BP36 *NRAs should put in place obligations preventing SMP operators from engaging in margin squeeze*[302]***.***

5.169 ANACOM also takes the view that the price of the wholesale service should provide appropriate incentives so that both the operator providing access and operators to whom access is granted are able to invest efficiently in their own infrastructures, thereby ensuring sustainable competition, in particular at retail level[303].

5.170 In fact, ANACOM believes that the establishment of an appropriate price for wholesale high-quality accesses in NC Areas and for NC Routes allows competitors to gradually invest in their own infrastructure, while enabling the offer of competitive services at retail level, with clear benefits for the end-user. This has been evidenced by developments occurred in wholesale markets under consideration, particularly with recent evolutions of fibre optic networks, with impact on markets for access in C Areas and for trunk segments in C Routes.

5.171 In this context, the price control and cost accounting obligation promotes and ensures sustainable and efficient competition, since it establishes the prices of wholesale services at a level which allows operators to compete in downstream retail markets. Without this obligation, it would be very hard for ANACOM to check whether established wholesale prices were based on costs incurred by the operator with SMP. This difficulty would take place not only with regard to the appropriateness of the level of pricing established, but also with regard to the structure and composition of the wholesale tariff based on the costing model[304].

5.172 As such, if the cost accounting obligation was withdrawn, an important tool for establishing prices associated to reference offers under consideration would be lost. If this important tool was not available, the market would be led to a situation of

[302] ***BP36a*** *In considering the minimum acceptable margin, NRAs need to strike a balance between short term efficiency, derived from the economies of scale and scope realisable by an SMP player, and the longer term benefits (assessed on a realistic basis) of a more competitive downstream market, brought about by new entrants which should, in due course and to a reasonable extent, be able to match those economies*.

BP36e *Where cost-based access is imposed, this should help address concerns about downstream margin squeeze.*

[303] Where these issues are effectively controlled, is likely that the SMP operator also has a real incentive to achieve efficiency gains and cost savings.

[304] Without prejudice to the need for a review of the costing model predicted in advance by ANACOM, to assess whether it is in accordance with the technological, regulatory and market evolution which took place in the meantime.

greater uncertainty as far as wholesale (and downstream retail) prices are concerned. This greater uncertainty would not be in accordance with the principle of achieving predictability and efficiency in the conditions of the wholesale offer.

5.173 In fact, the importance of regulated wholesale offers, as means that enable OSP to build their own networks and to provide retail offers of electronic communications services (including resale of high-quality access) with broad geographical coverage, justifies the guarantee of minimum conditions, in particular in terms of prices, that allow these operators to compete in the market and to develop truly competitive services, to the ultimate benefit of end-users[305].

5.174 Given the absence of current and forward-looking competition in the period under analysis, the price regulation objective must be to make available to competing operators wholesale access to prices that would be charged in case the market was competitive, while at the same time allowing the operator with SMP a reasonable rate of return on investments already made.

5.175 ANACOM's view is also in line with the perspective of BEREC, which defined the following principles:

> ***BP30*** *NRAs should ensure that with reasonable certainty the price of access will permit an efficient entrant to compete with the SMP player. The access price should also be set in a way which is coherent with the prices for other related (wholesale leased lines) services.*
>
> ***BP31*** *When determining their pricing regulation NRAs need to consider that it should incentivise both efficient investment and sustainable competition.*
>
> ***BP32*** *Where appropriate and proportionate, NRAs should require SMP operators to provide regulated products based on an explicit pricing obligation. Price control obligations can be implemented in different degrees, ranging from a requirement for prices to be cost-oriented and subject to a rate approval, through to specific charge controls such as a price cap, retail minus, etc.*

5.176 So far, prices of (traditional) wholesale leased lines and related resources (e.g. collocation) have been regulated according to the principle of cost-orientation of

[305] Any withdrawal of the price control and cost accounting obligation could result in significant damage to relevant wholesale markets - for high-quality access (except for high-quality access in C Areas) and for trunk segments (except for C Routes) - and in associated retail markets, in particular, the high-quality access retail market. Such damage would have a significant and comprehensive influence, affecting alternative wholesale operators and companies (end-users) and encouraging inappropriate investment and efficiency. It is noted that for the majority of OSP, the costs of leasing lines from PTC (particularly in the case of high-quality access) represents a relatively significant cost in terms of overall costs.

prices. The use of this principle in the definition of prices has also been substantiated in former market analyses. It is noted also that, in applying this principle, ANACOM has based its cost estimates on:

- MEO's cost accounting system, which is subject to an annual audit;
- budgeted costs and current costs of resources consumed and activities required for the provision of services[306],

using also current practices in the European Union as additional reference. The assessment of prices also takes into consideration criteria of economic efficiency.

5.177 It was concluded in the 2010 market analysis that, unlike traditional lines, for which the obligation of cost-orientation of prices was justified in the context of the price control and cost accounting obligation, as far as Ethernet lines were concerned, this obligation of cost-orientation of prices was not deemed to be at the time the most appropriate form of price control[307]. This was especially the case since, at the time, the total number of Ethernet lines was undergoing significant growth (but still relatively low compared to the total number of leased lines) and, in particular, because costs were not fully stabilized for the purpose of regulatory action.

5.178 As such, a "retail minus" rule was imposed on prices of Ethernet leased lines, including MAM and inter-island lines, although there are situations where the "retail minus" rule does not apply in practise, as certain routes have no retail lines in (e.g. MAM lines) or because accesses and lines at retail level are not made up of the same (cost) components of wholesale products, where for example, trunk segments in C Routes (non regulated) are included.

5.179 Up to the Decision of 23 July 2015, and although the "retail minus" rule had not been specified, there was no evidence that the dominant company had defined

[306] According to leased line costing data, the existence of a margin for price reduction was identified in 2012, especially in lines with capacity of 2 Mbps or higher and MAM lines, which was subject to a determination. Notwithstanding, the reduction that was imposed does not correspond to a full withdrawal of the margin, as it was considered prudent to leave a margin to accommodate any evolution with impact at the level of costs, such as, for example, evolution in demand in more remote areas, where unit costs of line supply are higher or any impact resulting from more demanding levels of service.

[307] Notwithstanding the fact that, with a "retail minus" rule, the operator with SMP is able to earn excessive margins, while the NRA is not able to interfere, imposing their reduction.

(excessively) low retail prices - predatory pricing - and/or definition of excessive wholesale prices[308], thus no evidence existed until that time of any margin squeeze (i.e. a disparity between wholesale and retail prices charged by MEO, forcing competitors to suffer loss in their retail offers).

5.180 In addition, it was not possible for a long time to clearly identify, in MEO's CAS, the costs of Ethernet lines (including MAM and inter-island lines), the evolution of which, such as demand, has now stabilized.

5.181 Given that the price control obligation via a "retail minus" rule was not effective, in particular in the context of Ethernet MAM and inter-island lines[309] (due to the fact, for example, that leased capacity in MAM and inter-island lines was used for several purposes and not to serve exclusively a single retail customer, and that there was no retail line/price for submarine connection), it was necessary to change this price control (and determination) rule, replacing it for the principle of cost-orientation of prices, to allow for ANACOM's *ex ante* intervention whenever excessive margins are identified, such as the case of Decision of 23 July 2015, on prices of Ethernet MAM and inter-island lines, and the present case, as the following sub-sections will show.

5.182 The obligation of cost orientation of prices has objective justification and it is appropriate also for Ethernet high-quality accesses (and lines), insofar as it provides for the establishment of cost-based prices, preventing situations of excessive pricing and enabling the development of competition, while promoting, *ceteris paribus*, the application of reasonable prices in comparable competitive markets, thereby contributing to the protection of consumer interests. This view is in line with BEREC's position (**BP33**) according to which NRAs should determine the costing methodology taking account of the following key factors:

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

[308] On the contrary, according to a study carried out by the Spanish NRA, included in its recent decision of amendment of LLRO prices - regulated leased line offer -, the comparison between regulated Ethernet line offers made available by several European operators demonstrated that RELLO prices are the lowest, in the majority of cases (in analysed countries), namely for lines with lengths up to around 15-20 km.

[309] And also in the case of lines for access to international submarine cables.

5.183 It is thus deemed appropriate to impose the cost-orientation obligation both on traditional lines (for which the maintenance of the obligation had already been considered, except for traditional high-speed lines) and on Ethernet high-quality accesses and lines, that is, both for RELLO and for the new Ether net offer.

5.184 In the majority of cases, the imposition of *ex ante* obligations (namely price control) in markets under consideration is necessary, in the light of identified problems, as it cannot be evidenced nor is it likely that normal market operation will remedy the situation, which is the case at present, for example, as regards MAM lines, given that MEO was charging very high prices for the lease of these lines, up to the entry into force of provisional and urgent measures imposed by ANACOM on Ethernet MAM and inter-island lines. In the absence of this obligation, prices of MAM lines would hardly be defined by MEO at reasonable levels by reference to costs. The same situation may take place for other high-quality accesses and lines.

5.185 It is also appropriate, as it addresses identified problems, namely unjustifiably high pricing, and regulating such prices is the least onerous solution.

5.186 This imposition is proportional, taking into account benefits arising for the public interest compared with the damage that would result from non-application[310].

5.187 It is also stressed that the absence of alternatives for customers and the natural incentive to charge high prices makes it unlikely for the operator with SMP to implement, under a regime of free market operation, a timely price decrease to levels reasonably close to the respective costs. However, as referred in earlier chapters, there are parishes in NC Areas which indicate that in the medium-long term alternatives to the operator with SMP will be developed, namely because in these areas there are other networks with some degree of coverage and OSP effectively present - which however fail to meet the criterion of MEO's market share below 50%[311].

[310] This would be serious damage, as it entails the maintenance of high wholesale and retail prices, high barriers to entry of alternative operators (for example, in the Autonomous Regions), as well as a possible reduction of the quality of services provided and even a potential exclusion of end-users and smaller size operators from the market. The impact of these factors extends beyond the mere level of consumption of electronic communications services, to generally affect the development of all economic activities that are directly or indirectly affected by prices and quality of available services.

[311] This also includes parishes where the market share is already below 50%, but which fail to meet the sub-criterion concerning the number of alternative networks.

5.188 As such, and although in terms of definition of geographic market and SMP assessment, these (potential) differences in competition dynamics in certain geographic areas do not allow the so-called CNC Areas to be differentiated (compared to the total of NC Areas), ANACOM deems it appropriate and proportional not to impose the cost-orientation of prices in those areas, given that these areas show a trend for increased competition in the medium-term. That is, high-quality accesses in CNC Areas (LLRO, RELLO and/or new Ethernet offer) are imposed the same obligations, namely of access, non-discrimination and transparency, however a regulated price is not imposed, MEO being entitled to define prices upon request, and *ex ante* definition not being required.

5.189 Notwithstanding the fact that this geographical differentiation of obligations provides the operator with SMP the freedom to establish prices in (low- and high-speed) CNC Areas, such freedom is limited given that this operator may not define wholesale prices that lead to a margin squeeze on the downstream, inevitably restricting the capacity of alternative operators to compete in the retail high-quality access market (in those areas).

5.190 Whenever requested (through a duly substantiated complaint), or where required to ensure effective competition, ANACOM is entitled to undertake a price analysis, which could result in an *ex post* intervention on the part of the Regulatory Authority, where excessive pricing (representing a refusal of access) or evident margin squeeze situations are identified. As such, in (low- and high-speed) CNC Areas the price control obligation is maintained, although less strictly (adapted to market conditions in these areas), given that the cost-orientation of prices is not imposed.

5.191 In any case, this margin squeeze analysis would take into account not only projects subject to complaint, but also other projects (including tender bids) submitted by MEO, thus being carried out an analysis of margins practised by MEO in the market for (low- and high-speed) high-quality access in all CNC Areas.

5.192 This approach provides MEO with greater flexibility to address more aggressive price proposals on the part of competitors, namely bids to (public) tenders, while preventing MEO from engaging in margin squeeze.

5.193 In this scope, the Commission's recommendation and positions must be recalled,

some of which concern other markets, but which remain a reference, namely:

– In the Recommendation on NGA: "*In situations where it cannot be concluded that the different competition conditions would justify the definition of sub-national geographic markets, it could nevertheless be appropriate for NRAs to respond to diverging competitive conditions between different areas within a geographically defined market, for instance due to the presence of several alternative infrastructures or infrastructure-based operators, by imposing differentiated remedies and access products*".

– In Commission Recommendation of 11 September 2013 on consistent non-discrimination obligations, according to which "*(52) In view of the benefits of pricing flexibility in these circumstances, under the recommended approach, wholesale access prices for passive NGA wholesale inputs or non-physical or virtual NGA wholesale inputs offering equivalent functionalities are deemed to be sufficiently constrained (i.e. price-related competition problems are considered to be effectively addressed) when: (i) there is a demonstrable retail price constraint resulting from the infrastructure competition or a price anchor stemming from cost oriented wholesale copper access prices; and (ii) the ex ante economic replicability test is in place in those cases where wholesale price regulation should not be imposed; and (iii) there is an obligation of providing wholesale access services on the basis of EoI. In other words, where EoI is applied and NRAs consider that the above competitive safeguards are in place, they should not impose a regulated access price for those NGA wholesale inputs*", and

– In decisions, namely in Finland[312]: "*invites FICORA to assess whether a more granular analysis* (…) *would allow for an explicit differentiation between replicable and non-replicable* (…) *sites. If so, FICORA should consider differentiating the regulatory remedies accordingly. In this regard, FICORA could limit the imposition of the more intrusive price control obligation only to those primary (…) sites that are truly non-replicable. This would ensure that any investments already made by alternative operators are not undermined by the*

[312] Commission Decision concerning Case FI/2015/1723, April 2015.

price caps set for accessing the incumbent's antennas and facilities. (…) *This would ensure a more proportionate approach, whereby regulation is focused only in those areas that truly represent a bottleneck in the wholesale market*".

5.194 In its Explanatory Note, the Commission expresses a more general position, which is however very similar to the one taken here for the wholesale high-quality access market (in NC Areas): "*In a situation where NRAs could not clearly identify substantially and objectively different conditions stable over time in order to define wholesale sub-national markets, the existence of geographically differentiated constraints on a SMP operator who operates nationally, such as different levels of infrastructure competition in different parts of the territory, are more appropriately taken into account at the remedies stage by imposing a geographically differentiated set of obligations*".

5.195 In fact, ANACOM takes the view that, in the particular case of the market for (low- and high-speed) high-quality access in NC Areas, the effectively different levels of "infrastructure competition" are better addressed through a segmentation of *ex ante* obligations to be imposed.

5.196 In the case of high-quality access in CNC Areas, ANACOM takes the view that cost-oriented prices should not be imposed, on the grounds set out above.

5.197 As such, in accordance with principles above, MEO is required to define cost-oriented prices for high-quality accesses in NC Areas (except CNC Areas), in the scope of the new Ethernet offer (or amended RELLO), i.e., within the same 90-day deadline following the final decision on this analysis, submitting to ANACOM, on the same occasion, the reasoning for such prices.

5.198 In conclusion, given the absence of current and prospective competition, in the period under consideration, the purpose of price regulation is to make available to competing operators access to wholesale high-quality services at prices which would be charged if the market was competitive, allowing at the same time the SMP operator to obtain reasonable return on investment.

5.199 Therefore, wholesale prices of high-quality access in NC Areas (except for accesses in CNC Areas) and trunk segments of leased lines in NC Routes and MAM and inter-island lines must be cost-oriented.

5.200 The price of lines for access to international submarine cables that make landfall at MEO's SLS must also abide by the principle of cost orientation.

Prices of MAM and inter-island lines

5.201 Given the relevance of MAM lines in the context of the territorial continuity between the Mainland and the Autonomous Regions (ARs) and its importance for the guarantee of competition in those regions, costs of MAM and inter-island lines are analysed in the scope of this market analysis to check whether costs are price-oriented.

5.202 Bearing in mind that MEO holds a monopolist position in these connections, the level of market competition is necessarily dependant on prices charged at wholesale level. As the monopolist is able to charge prices which highly exceed costs - as concluded earlier -, due to the lack of alternatives on the market, it maximizes profits. This situation usually leads to the increase of retail prices and/or a reduction in the quality of service to which end-users, in particular in the AR, have access for a given price, which could generate the decrease of the quantity demanded in the market and even to the exclusion of less active users.

5.203 On the other hand, there are operators who make available fixed broadband and pay TV offers in the Mainland and have practically no such offers in the AR, the price of Ethernet MAM and inter-island lines being one of the barriers to (entry and) expansion of the activity of these operators in AR, which constitutes a ground for its review.

5.204 According to MEO CAS data, the margin of traditional MAM lines is significant for all capacity levels and represented in average **[BCI] [ECI]** % in 2014 compared to total revenues (*vide* **Figure 31**).

Figure 31. Revenues, costs and margins of LLRO MAM lines, 2014

[BCI]

[ECI] Source: ANACOM, on the basis of MEO CAS data for 2014.

5.205 The application of the principle of cost-orientation of prices results in a reduction of the price of traditional MAM lines by 66%, to take effect within 30 days from approval of the final decision on this market analysis.

5.206 Unlike traditional lines, the demand for which is decreasing, the demand for Ethernet lines and capacity has been increasing; the maximum capacity contracted for traditional MAM lines is (currently) 2 Mbps, while the total contracted of Ethernet MAM lines by alternative operators is a few dozen Gbps.

5.207 In this context, the Decision of 23 July 2015, which adopted provisional and urgent measures on the price of Ethernet MAM and inter-island lines, imposed a reduction of the referred prices and determined that they would remain in force until the new market analysis procedure was finalised.

5.208 In the scope of this analysis, taking into account the market evolution in 2014 and 2015, ANACOM requested MEO to provide new information on Ethernet MAM and inter-island lines, based on its CAS and used capacity, which allowed the Authority to estimate costs of these lines for 2015, on the basis of the costs of the L1CAP activity- "Submarine cables with landing points in Portugal".

5.209 According to estimates provided by MEO itself for 2015, the costs of the L1CAP activity - "MAM connections" for 2015 amounted to **[BCI]** **[ECI]** [313] Euro, the

[313] Made available by letter sent by MEO on 29 December 2015 (hereinafter 'MEO letter'). This estimate includes costs with the IL1CAP activity - "National - MAM connections and General IL1CAP".

(estimated) used capacity by 2015 being **[BCI] [ECI]** Gbps[314].

5.210 It is stressed in this scope that MEO does not consider inter-island lines (in the ARA and ARM) to be part of the MAM system, being dealt with autonomously.

5.211 Being the total cost of the L1CAP activity mainly a fixed one, the evolution of its absolute value basically depends on the depreciation of investments in submarine cables as well as of operating and maintenance costs, and as the total capacity used in submarine cables increases, their unit cost (per Mbps) decreases.

5.212 In this regard, it must be stressed that a sustained increase of the transmission capacity in the MAM (and inter-island) system has taken place over the last few years, which has resulted in a reduction of the respective unit cost (of the transport capacity, in Euro per Mbps), which justified ANACOM's intervention by means of the referred decision of 23 July 2015.

5.213 Bearing in mind the cost of the L1CAP activity associated to MAM connections and the capacity used (estimated for the end of 2015[315]), it is estimated that the annual cost per Gbps of an Ethernet MAM line, in 2015, amounts to **[BCI] [ECI]** Euro.

5.214 To this value is added the cost of demultiplexing equipment located in exchanges for access to the underwater part of MAM lines, which amounted in 2015 to **[BCI] [ECI]** Euro per Gbps and per (non-secured) section, on the basis of MEO's estimate[316], thus being estimated for 2015 an annual cost per Gbps and per (non-secured) MAM line of **[BCI] [ECI]** Euro.

5.215 Cost estimated in the preceding paragraph must be added also a percentage to meet other costs, namely common costs and commercial costs (including invoicing and collection), which according to MEO[317], represents (in 2014 and 2015) **[BCI] [ECI]** % of network costs of Ethernet MAM lines, corresponding to **[BCI] [ECI]** Euros per Gbps.

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[314] Estimated by ANACOM on the basis of data submitted in MEO letter, corresponding to:
(a) **[BCI] [ECI]** connected/reserved for the MPLS network; and
(b) (i) **[BCI] [ECI]**;(ii)**[BCI] [ECI]**; and (iii) **[BCI] [ECI]**.

[315] By ANACOM, on the basis of data submitted by MEO in the referred MEO letter.

[316] It is noted that ANACOM considered that the value would be identical for 2014 and 2015.

[317] Data in the MEO letter.

5.216 Finally, and taking into account also the cost of capital resulting from the transfer of ex-Marconi, allocated to L1CAP activities, which amount to **[BCI] [ECI]** Euros per Gbps[318], it is estimated that the total cost of a non-secured Ethernet MAM line (that is, a connection/section between the Mainland and the ARA or between the Mainland and the ARM, or between the ARA and the ARM), in 2015, amounted to **[BCI] [ECI]** Euros per Gbps per year.

5.217 Bearing in mind that the price of a 1 Gbps MAM line in RELLO amounts to 111,672 Euro per year, it is verified that the current price of the Ethernet MAM leased line service[319] is three time higher than respective costs, thus being concluded that the scope for decreasing this price is still substantial, a conclusion which was already expected, in the light of the 2014 DD and the referred Decision.

5.218 In fact, decision of 23 July 2015 had already identified scope for an additional price reduction, at the time having been opted, given the magnitude of the reduction, for a phased adjustment of prices to the respective costs, a first phase corresponding to a reduction of revenues by 50% and a second phase to an additional reduction according to the principle of cost-orientation of prices.

5.219 Taking into account that the urgent decision already allowed for a gradual adjustment of prices to costs, within 30 days from approval of the final decision on the present market analysis a (new) price reduction will take place, thereby effectively cost-orienting prices.

5.220 In brief, monthly price ceilings per Ethernet MAM non-secured section/line between any of the exchanges for access to the underwater part[320] shall be replaced by the following, 30 days after the final decision on the present analysis:

[318] Idem.

[319] Further to the urgent Decision.

[320] Which include the exchanges of Carcavelos (01CV01), Picoas (01LX00) and Boa-Hora (01LX22), in the Mainland, the exchange of Fajã de Baixo (96PD02), in S. Miguel, in the Azores and the exchange of Nazaré (91FX03), in the Madeira Island, as well as the exchange of Ponta Delgada (96PD01) in the Azores.

Table 13. Monthly price ceilings per Ethernet MAM non-secured section/line[321]

Speed	Monthly price (Euro)
10 Mbps	349
100 Mbps	768
1 Gbps	2,534
10 Gbps	25,337

5.221 To prices of Ethernet MAM section/line must be added prices of the respective land trunk segments (where appropriate) and internal extensions/or terminating segments.

5.222 Where operators request one or two MAM sections/lines with a given capacity to be secured, MEO must propose an appropriate solution; however, the price must not exceed, in any case, three times the price due for non-secured sections/lines.

5.223 Where an operator contracts three sections making up a ring, MEO must allow this operator to ensure securing services by itself, no securing costs being charged, except for any land component securing costs incurred by MEO. These possible costs - and prices oriented thereto - shall be detailed and submitted also to ANACOM.

5.224 As regards inter-island lines exclusively based on MEO submarine cables, it is possible to adopt a similar methodology to the one used for MAM lines, given that, further to the request for information submitted to MEO, detailed data was received on:

(a) Costs of inter-island lines;

(b) Occupation of sections that make up the inter-island ring in the ARA, namely to total pool of self-owned lines leased to third parties that use resources in this submarine cable, per section;

(c) The length of the inter-island ring, per section.

5.225 In this context, ANACOM began by calculating the capacity used throughout the ring, which was estimated[322] to be, by the end of 2015, **[BCI] [ECI]** Gbps, with the following breakdown according to section:

[321] Valid 30 days after the approval of a final decision on this market analysis.

[322] By ANACOM, on the basis of data submitted in the MEO letter.

Table 14. Capacity per section of inter-island routes
[BCI]

Inter-island routes	Capacity in 2015 (Gbps)
Sta. Maria – S. Miguel S. Miguel – Terceira Terceira – Graciosa Graciosa – S. Jorge S. Jorge – Faial Faial – Pico Pico – Sta. Maria	

[ECI]

5.226 Subsequently, the cost of the IL1CAP activity associated to inter-island connections per section was calculated, having been considered that the allocation of the total cost of IL1CAP activities to each section should be based on the length of the various sections, as proposed by MEO. Operational costs per section, estimated by MEO for 2015 were then added (costs having been allocated also to the various sections), which resulted in the following cost per section:

Table 15. Cost of the IL1CAP activity (including operational costs) per non-secured section of inter-island routes for 2015
[BCI]

Inter-island routes	Totals per section (Euro)
Sta. Maria – S. Miguel S. Miguel – Terceira Terceira – Graciosa Graciosa – S. Jorge S. Jorge – Faial Faial – Pico Pico – Sta. Maria	
Ring total	

[ECI]

5.227 To this value is added the cost of demultiplexing equipment located in exchanges for access to the underwater part of MAM lines, which amounted in 2015 to **[BCI]** **[ECI]** Euro per Gbps and per (non-secured) section, on the basis of MEO's estimate[323].

[323] It is noted that ANACOM considered that the value would be identical for 2014 and 2015.

5.228 To estimated costs must also be added common costs and commercial costs (including invoicing and collection), which according to MEO[324], represent (in 2014 and 2015) **[BCI] [ECI]** % of network costs allocated to inter-island connections, that is, costs of the IL1CAP activity, operational costs and demultiplexing costs, which were also allocated to each section on the basis of the respective length.

5.229 Taking additionally into account the cost of capital resulting from the transfer of ex-Marconi, allocated to L1CAP activities, in 2015, which amounted to **[BCI] [ECI]**[325], and which according to MEO must be allocated to each section on the basis of the length of respective sections, a total cost for 2015 of **[BCI] [ECI]** Euro per Gbps is estimated, with the following breakdown per section:

Table 16. Total annual cost per non-secured section of inter-island routes, per Gbps

[BCI]

Inter-island routes	**Total annual cost per section per Gbps (Euro)**
Sta. Maria – S. Miguel S. Miguel – Terceira Terceira – Graciosa Graciosa – S. Jorge S. Jorge – Faial Faial – Pico Pico – Sta. Maria	

[ECI]

5.230 As such, the following monthly price ceilings of a non-secured Ethernet line for submarine routes of the inter-island ring are hereby defined:

[324] Data in the MEO letter.

[325] Idem.

Table 17. Monthly price ceiling of a non-secured Ethernet line, per route, for inter-island lines

Inter-island routes	Speed			
	10 Gbps	1 Gbps	100 Mbps	10 Mbps
Sta. Maria – S. Miguel	8,453 €	845 €	256 €	116 €
S. Miguel – Terceira	13,037 €	1,304 €	395 €	180 €
Terceira – Graciosa	6,857 €	686 €	208 €	94 €
Graciosa – S. Jorge	7,821 €	782 €	237 €	108 €
S. Jorge – Faial	6,293 €	629 €	191 €	87 €
Faial – Pico	5,989 €	599 €	181 €	82 €
Pico – Sta. Maria	17,429 €	1,743 €	528 €	240 €

5.231 It should be noted that:

(a) The price of a fully secured line in the inter-island ring corresponds to the sum of prices of the seven routes that make up the ring.

(b) The price of a line that uses inter-island routes in the ARA corresponds to the sum of prices of inter-island routes in the path that occupies fewer routes between the origin and destination, on the basis of the structure of MEO's inter-island ring.

5.232 To prices of inter-island routes must be added prices of the respective land trunk segments (where appropriate) in terminal islands and internal extensions/or terminating segments.

5.233 MAM and inter-island prices must be reviewed on an annual basis. For this purpose, MEO shall make available every year data on costs (including operating and maintenance costs, as well as investment costs incurred in year n-1 and forecasted for year n and n+1) and on capacity contracted by OSP and reserved by MEO itself.

5.234 The methodology and obligations imposed on MAM and inter-island lines are in line with the provisional and urgent measures imposed under determination of 23 July 2015.

5.235 Finally, also within 30 days from the approval of the final decision on this market analysis, MEO must include in RELLO cost-oriented prices of lines for access to international submarine cables up to 10 Gbps, both secured and non-secured, submitting grounds for prices to ANACOM within the same deadline. As far as LLRO

is concerned, and upon reasonable request for access to international submarine cables, MEO must present cost-oriented and non-discriminatory prices.

Accounting separation

5.236 Along with the transparency obligation, the accounting separation obligation is essential to ensure effective compliance of the obligations of non-discrimination, price control and cost accounting, especially where the cost-orientation of prices is imposed, allowing ANACOM to properly monitor compliance with the latter obligations, associated with prices and costs of the SMP company.

5.237 Therefore, this obligation continues to be justified, to guarantee non-discrimination (allowing the analysis of wholesale prices and internal transfer pricing) and to prevent cross subsidization. It is a proportionate measure, since it only involves the provision of information with a level of detail which makes it possible to meet the above-mentioned target of checking other obligations. In particular, the absence of an accounting separation obligation would make it difficult for this Authority to properly monitor compliance with obligations associated with the SMP company's costs and pricing and thereby significantly hamper the identification of situations of cross-subsidisation and/or margin squeeze[326].

5.238 The format and accounting methodology must meet the requirements that have been conveyed to MEO by ANACOM in a separate process, whereas this Authority shall conduct periodic reviews of these requirements with a view to improving the costing system and provided information, without prejudice to rules that may be defined in the future.

5.239 Without prejudice, it is stressed that, at the outset, each tariff element must correspond to a profit and loss account in the CAS.

Financial reporting

5.240 In order to enable ANACOM to verify compliance with above-mentioned obligations, and under paragraph 3 of article 71 of ECL, the SMP operator must make available

[326] Any withdrawal of the accounting separation obligation could imply that damages identified above (when considering the non-discrimination, price control and cost accounting obligations) would have serious consequences on relevant markets.

its accounting records, including data on revenues from third parties. Otherwise, the effectiveness of these obligations would be compromised, leading to significant damage to wholesale markets for high-quality access and trunk segments of leased lines and related markets.

5.241 In line with the former market analysis, it is deemed that these accounting records constitute the cost accounting system, which must be submitted under the terms set out in the appropriate forum.

5.242 ANACOM adheres to its view that it is necessary, proportionate and appropriate to maintain the obligation of financial reporting.

6. Conclusion

6.1 In accordance with the principles of competition law, the following wholesale markets were identified as being relevant for the purposes of *ex ante* regulation:

- High-quality access with speed not exceeding 24 Mbps, covering NC Areas;
- High-quality access with speed over 24 Mbps, covering NC Areas;
- Trunk segments, irrespective of speed, consisting of NC Routes, except for MAM and inter-island lines;
- Trunk segments, irrespective of speed, consisting of MAM and inter-island lines; and
- Trunk segments, irrespective of speed, consisting of lines for access to international submarine cables that make landfall at MEO's SLS (in Carcavelos and Sesimbra).

6.2 Having analysed markets above, and taking the utmost account of the Guidelines, ANACOM concluded that MEO holds SMP in the identified relevant markets, and, consequently, that this company must be imposed the obligations of access to, and use of, specific network resources[327], non-discrimination, transparency, accounting separation and price control[328] and financial reporting, *ex ante* obligations specified in **Table 18**.

6.3 As was the case with the conclusion reached in the former analysis for the C Routes market, ANACOM now concludes that wholesale markets for high-quality access in C Areas (low- and high-speed) are not susceptible to *ex ante* regulation. Accordingly, obligations imposed in the former market analysis on terminating segments of leased lines (access to, and use of, specific network resources, non-discrimination, transparency, accounting separation, price control, cost accounting and financial reporting) are withdrawn, following a transitional period of 18 (eighteen) months from the date of approval of the final decision on this market analysis.

[327] Including the imposition in markets for high-quality access in NC Areas, of a new (level 2) Ethernet offer for accesses with low contention (and symmetric or asymmetric speed) and for accesses without contention and asymmetric speed.

[328] In accordance with the principle of cost-orientation of prices, except in CNC Areas.

6.4 During this transitional period, MEO may not worsen LLRO and RELLO conditions, thus current conditions remain in force.

6.5 In new C Routes, obligations formerly imposed are withdrawn after a transitional period of 6 (six) months from the date of approval of the final decision on this market analysis.

6.6 As far as LLRO is concerned, conditions for lines up to 2 Mbps (inclusively) remain the same, and obligations imposed on analogue lines and for new requests for digital lines with higher speed (34 Mbps and 155 Mbps)[329] are immediately withdrawn, except for lines for access to international submarine cables.

[329] Conditions for this type of lines in use by the date of the final decision remaining the same.

Table 18. Obligations to be imposed on companies found to have SMP in relevant wholesale markets (non-exhaustive summary)

Obligations	Relevant wholesale markets [330]
Access to, and use of, specific network resources	▪ To meet reasonable requests for access, under transparent, fair and non-discriminatory conditions, irrespective of the technology used, high-quality accesses[331, 332] now being included, in a new Ethernet offer provided at a local and core aggregation point[333]. ▪ For this purpose, MEO is required to include in the new reference offer (or adapted RELLO) any technically viable proposals submitted by interested operators, that are timely sent to MEO and negotiated. ▪ To guarantee the expansion of capacity in MAM and inter-island lines, capacity up to 10 Gbps now being included (Ethernet MAM and inter-island lines and lines for access to international submarine cables[334]), whereby the respective conditions must be set out in RELLO. ▪ To ensure collocation in MEO local exchanges and SLS (under the terms provided for herein). ▪ To guarantee interconnection between operators collocated in MEO local exchanges (except in SLS). ▪ To negotiate in good faith with companies requesting access. ▪ Not to withdraw access to resources already granted.

[330] Markets for low- and high-speed high-quality access in NC Areas and for trunk segments in NC Routes, in MAM and inter-island lines (except for lines in the western ring in the ARA and in the Madeira-Porto Santo connection) and in lines for access to international submarine cables.

NC Areas (low- and high-speed) correspond to the set of parishes throughout the territory, except for parishes in C Areas (respectively low- and high-speed, listed in **Annex III** and **Annex IV**).

[331] Digital leased lines and other high-quality accesses (with contention and symmetrical or asymmetrical speed), irrespective of the technology, namely SDH, Ethernet, SHDSL, etc. (the latter where provided at retail level by MEO or supplied to its own services or companies of the Group).

[332] For speed up to and including 2 Mbps for traditional lines in the scope of LLRO and up to 1 Gbps for high-quality access in the (new) Ethernet offer and Ethernet leased lines in the scope of RELLO (except for MAM lines and lines for access to international submarine cables, up to 10 Gbps).

[333] For this purpose, the offer must provide for a connection, in addition to MEO's local exchange (local aggregation), to an aggregation point located at a higher network level, e.g., at regional level.

[334] Any reasonable requests for access to traditional lines with capacity greater than 155 Mbps must be considered.

Obligations	Relevant wholesale markets
Non-discrimination in the offer of access and interconnection and in the respective provision of information	▪ To provide alternative operators with information, resources and services within deadlines, on a basis and with levels of quality which must not be lower to those offered to MEO retail departments and companies. ▪ To implement at wholesale level contractual delivery and fault repair times below those observed on retail markets. ▪ Not to apply any loyalty and/or quantity and/or capacity discounts, unless duly justified. ▪ To guarantee specific quality of service targets for MAM and inter-island lines, in particular where secured lines are concerned. ▪ Not to convey to the retail department or companies of the Group information on the leased line service provided to other operators. ▪ To publish performance levels, with the level of detail defined in the determination of 11 March 2009 and developments that may occur in this context by determination of ANACOM, in particular as regards the new Ethernet offer[335].
Transparency in the publication of information, including reference offers	▪ To publish and maintain on its website a (new) Ethernet and digital leased lines reference offer - LLRO and RELLO - including: (a) technical and performance characteristics of the various types of high-quality accesses and leased line segments; (b) prices, duly broken down by component; (c) binding SLA, including conditions for supply and migration, notification and fault repair, and respective compensation in case of non-fulfilment; (d) specific conditions concerning MAM and inter-island lines, lines for access to international submarine cables, the service of leased lines part circuits and interconnection support components (LLRO), and the Ethernet offer (lines and other high-quality accesses). ▪ To clearly identify any changes made to the offer on every single amendment. ▪ To give a 30-day notice in respect of amendments to the offer. ▪ To give a 60-day notice in respect of structural amendments to the supporting network or relevant technologies/services in the offer[336]. ▪ To amend LLRO and RELLO within 30 days and to publish the new Ethernet offer (or adapted RELLO) within 90 days from notification of the final decision on this market analysis, according to obligations now imposed and negotiation of technical conditions with operators who

[335] Or adapted RELLO.

[336] Applies also to the notification of any amendments to LLRO or RELLO at the end of the transitional period imposed in the scope of the withdrawal of obligations in the leased line market in C Areas and in (new) C Routes.

	have expressed visible interest.
Obligations	**Relevant wholesale markets**
Accounting separation in relation to specific activities related to access and/or interconnection	▪ To develop a costing and accounting separation system.
Price control and cost accounting	▪ To set cost-oriented prices, except for high-quality accesses in CNC Areas[337] (where this obligation is not imposed[338]). ▪ To amend RELLO, defining prices of non-secured Ethernet MAM and inter-island lines and of lines for access to international submarine cables as specified in this analysis. This amendment is to take effect within 30 days from the approval of the final decision on this market analysis[339]. ▪ To publish within 90 days from approval of the final decision on this market analysis (cost-oriented) prices of high-quality accesses in NC Areas in the scope of the new Ethernet offer (or adapted RELLO), submitting to ANACOM, within the same deadline, grounds for prices applied. ▪ To decrease by at least 66% the price of traditional MAM lines up to 2 Mbps, inclusively (LLRO), to take effect within 30 days from the approval of the final decision on this market analysis. ▪ To make available every year data on capacity contracted by operators and capacity used and reserved by MEO itself (for year n) and on total costs (including operating and maintenance costs, as well as investment costs incurred in year n-1 and forecasted for year n and n+1), for the purpose of an annual review of prices of MAM and inter-island lines.
Financial reporting	▪ To make accounting records (CAS) available, including data on revenues from third parties.

6.7 ANACOM believes that established obligations may require a greater level of detail, specification or clarification regarding their implementation, which will determined in separate decisions.

[337] Parishes in CNC Areas listed in **Error! Reference source not found.** and **Error! Reference source not found.**

[338] The price control obligation is maintained also in these CNC Areas, MEO not being allowed to define wholesale prices that generate margin squeeze on the downstream. Cost-oriented prices thus apply to high-quality access in NC Areas (except for CNC Areas) and to all trunk segments in NC Routes, MAM and inter-island lines and lines for access to international submarine cables that make landfall at MEO's SLS.

[339] MEO is required to submit to ANACOM, within the same deadline, grounds for prices of lines for access to international submarine cables.

Annex I. Obligations imposed in the former market analysis

Table 19. Obligations imposed in the former analysis on companies found to have SMP in relevant wholesale markets

Obligations	Wholesale markets for high-quality access and trunk segments in NC Routes
Access to, and use of, specific network resources	▪ To meet reasonable requests for access, under transparent, fair and non-discriminatory conditions, irrespective of the technology used[340]. ▪ To provide for collocation on the undertaking's premises[341, 342]. ▪ To ensure interconnection between operators collocated in MEO local exchanges. ▪ To negotiate in good faith with companies requesting access. ▪ Not to withdraw access to resources already granted. ▪ To guarantee expansion of capacity in MAM lines.
Non-discrimination in the offer of access and interconnection and in the respective provision of information	▪ To provide alternative operators with information, resources and services within deadlines, on a basis and with levels of quality which must not be lower to those offered to MEO retail departments and companies. ▪ To implement at wholesale level contractual delivery and fault repair times below those observed on retail markets. ▪ Not to apply any loyalty and/or quantity and/or capacity discounts, unless duly justified. ▪ To guarantee specific quality of service targets for MAM lines. ▪ Not to convey to the retail department or companies of the Group information on the leased line service provided to other operators. ▪ To publish performance levels, with the level of detail defined in the determination of 11 March 2009 and developments that may occur in this context by determination of ANACOM.

[340] Including Ethernet and SHDSL technologies (the latter where provided at retail level by MEO or supplied to its own services or companies of the Group).

[341] At least, in the same terms as in the current RUO and RIO wholesale offers.

[342] Possibility of imposing collocation in submarine cable stations, by means of a separate decision.

Transparency in the publication of information, including reference offers	▪ To publish (and maintain on the website) a reference offer for analogue and digital leased lines - including Ethernet lines[343]- to wholesale customers, including: a) technical and performance characteristics of the various types of leased line segments; b) prices, duly broken down by component; c) binding SLA, including conditions for supply and migration, notification and fault repair, and respective compensation in case of non-fulfilment; d) specific conditions associated with MAM lines, the service of leased lines part circuits (and interconnection support components), the submarine cable access service and the offer of Ethernet as well as symmetric xDSL technologies (if and when made available at retail level or to MEO companies). ▪ To clearly identify any changes made to the offer on every single amendment. ▪ To notify ANACOM with regard to pricing and any quantity discounts, "custom" offers and/or temporary promotions/offers which are used to attract specific customer segments and/or customers in specific geographical areas. ▪ To give a 30-day notice in respect of amendments to the offer. ▪ To provide alternative operators with detailed and timely information on developments in the network supporting the service, giving two months prior notice with regard to expansion of Ethernet coverage.
Accounting separation in relation to specific activities related to access and/or interconnection	▪ Costing and accounting separation system.
Price control and cost accounting	▪ To establish cost-oriented prices in the case of traditional leased lines ▪ To comply with the "retail-minus" rule in the case of leased lines supported on alternative technologies - Ethernet[344].
Financial reporting	▪ To make accounting records (CAS) available, including data on revenues from third parties.

[343] Ethernet lines may be considered in a reference offer other than LLRO, whereas MEO, no later than two months following the final decision, must publish an updated version of the LLRO that includes Ethernet lines or publish a specific offer of Ethernet-supported leased lines. Furthermore, MEO must previously submit to ANACOM - not later than 1 month prior to this publication - the reasoned basis for its various components.

[344] For this purpose, MEO must send ANACOM the tariffs in force for retail Ethernet lines.