

ICP-ANACOM DECISION

Amendments to the Reference Unbundling Offer

(RUO)

ICP-ANACOM

INDEX

1. Framework	4
2. Latest comments from operators.....	5
3. PRELIMINARY GENERAL POSITION ALREADY SET OUT BY ICP-ANACOM.....	7
3.1. Prior hearing and consultation of interested parties on the draft determination	9
4. ANALYSIS	9
4.1. Quality of service and compensation	10
4.1.1. Time taken to repair loops and implementation of premium levels	11
4.1.1.1. Retail services based on the LLU and needs of end-users.....	12
4.1.1.2. Objectives of quality reported by the companies of Grupo PT at retail level.....	12
4.1.1.2.1 Fixed telephone service	13
4.1.1.2.2 Broadband Internet access and IP-TV service.....	14
4.1.1.2.3 Leased circuits service	14
4.1.1.3. Quality of service targets defined in the relevant wholesale offers	14
4.1.1.3.1 RUO	14
4.1.1.3.2 Rede ADSL PT	15
4.1.1.3.3 LLRO	17
4.1.1.3.4 Conclusion on the quality of service targets with respect to the repair of faults defined in the wholesale offers	17
4.1.1.4. Conclusion on the time taken to repair loops and implementation of premium levels.....	18
4.1.2. Availability of the local loop.....	21
4.1.2.1. Conclusion on the availability of the local loop.....	23
4.1.3. Joint interventions	23
4.1.4. Compensation for non-compliance	23
4.1.4.1. Compensation for failure to comply with loop repair times.....	24
4.1.4.1.1 Comparison between formulas 1 and 2 and the formula defined in the "Rede ADSL PT" offer	26
4.1.4.2. Compensation for failures to comply with the level of availability of loop	28
4.1.4.3. Conclusion on compensation for non-compliance	29
4.1.5. Compensation allocation method	30
4.1.6. Submission of demand forecasts by OSPs and the allocation of compensation.....	31
4.1.7. Conditions of access to exchanges by the beneficiaries of the offer	33
4.1.7.1. Conclusion on the conditions of access to exchanges by the beneficiaries of the offer	36
4.2. Transparency of provided information	37
4.2.1. Network elements concepts.....	38
4.2.2. Information on the characteristics of the local loops and their correct identification.....	41
4.2.3. Installation of new APs, AP closure and relocation of loops	46
4.3. Synchronization between loop unbundling and number portability	54
4.4. Other issues	58
4.4.1. Absence of PTC technicians in the local loop unbundling process	58
4.4.2. Rejection of addresses, by PTC, in unbundling requests.....	59
4.4.3. Information on constraints in the RUO	60
4.4.4. Signal transport	60
4.4.5. Connection of internal and external cable	63
4.4.6. Incorrect unbundling	64
4.4.7. Levels of service regarding eligibility with RUO IS - active loops.....	65
4.4.8. Environmental conditions in the open space co-location	66
4.4.9. Installation of equipment with different xDSL technologies	68
4.4.10. Unbundling of non-active loops and rescheduling	70
4.4.11. Tests of transmission characteristics	72
4.4.12. Pricing	73
5. DETERMINATION	75
APPENDIX.....	87
APPENDIX 2.....	88

APPENDIX 3	90
APPENDIX 4	92

1. FRAMEWORK

Measures taken by this Authority in respect of the Reference Unbundling Offer (RUO) have the aim of enabling alternative operators to Grupo PT¹ to invest efficiently in their own infrastructure and in the development of offers which are increasingly innovative and appealing to end-users, contributing to the accomplishment of the regulatory objectives of ICP-ANACOM. Consequently, retail offers based on local loop unbundling (LLU) will not only obtain greater geographical coverage, but also greater competitive capacity and relevance in the market for electronic communications services.

Following approval of the final decision on the definition of the product and geographic markets, assessment of SMP and the imposition, maintenance, amendment or withdrawal of regulatory obligations in the markets for wholesale (physical) network infrastructure access at a fixed location (market 4) and wholesale broadband access (market 5)², it became necessary to determine in what ways the RUO needs to be improved in order to adapt it to the needs and evolution of the market.

In this decision, and with respect to the obligations imposed on market 4, ICP-ANACOM stated that *"there will be certain aspects of the LLU which merit review or updating, with special attention to: (a) improvements in information to be made available with respect to the access network and changes in the network; (b) forecast plans; (c) entry of cable to exchanges through the ducts of PTC; (d) re-scheduling of local loop unbundling; (e) of exchange access times; (f) levels of quality of service, including for Premium services; (g) compensation for non-compliance with levels of quality of service; (h) undue closure of faults; and (i) possibility of OSPs installing faster xDSL technologies"*.

It was further stated in this decision that *"the established obligations may require further detail, specification or clarification with regard to their implementation, which will be provided in separate documents, subject to the consultation process"*.

Furthermore, in the public consultation launched in 2008 on the regulatory approach to next generation access networks, ICP-ANACOM questioned interested parties on improvements that could be made to the RUO.

The beneficiaries of the RUO, in the light of their years of experience in the use of this offer, suggested important issues in the RUO in need of review. Given their relevance for the purposes of this analysis, the comments made by operators in this respect are repeated in the following section.

In the report on the public consultation on the regulatory approach to next generation access networks, ICP-ANACOM stated that *"in light of the market's evolution and accumulated experience, and given the issues raised here, as well as communications received from*

¹ Hereinafter referred to as OSPs - Operators and Service Providers.

² See determination of 14.01.2009 at <http://www.anacom.pt/render.jsp?contentId=611898>, hereinafter referred to as analysis of markets 4 and 5.

operators, which highlight certain difficulties in putting some RUO processes into operation", "it has analyzed possible improvements to this offer in respect of a wide range of issues, the results of which will be included in an upcoming Determination, soon to be placed in consultation".

As such, the issues referred to above merit more detailed analysis by this Authority, with a view to gauging the need for justified, proportional and appropriate intervention in matters which ultimately determine the quality of services based on the RUO and provided to the end-user.

It is also important to mention that, in order to ensure greater transparency for the market, on 11.03.2009, ICP-ANACOM decided on the publication of quality of service performance levels with respect to the wholesale offers of Grupo PT.

Furthermore, a (recently completed) audit was carried out during 2008 on the quality of service indicators with respect to access to the local loop of PT Comunicações, S.A. (PTC) for the period covering the first half of 2007. Having reviewed the reports and conclusions of this audit, ICP-ANACOM plans to submit a draft decision on this matter to consultation in the near future. Accordingly, issues such as joint interventions, the calculation of deadlines for the supply and restoration of services, standardisation of procedures for dealing with faults and the general improvement of the efficiency of the processes of supply and restoration of services will be dealt with in this respect.

2. LATEST COMMENTS FROM OPERATORS

In response to the consultation on the regulatory approach to Next Generation Access Networks, and with respect to the RUO, the following comments were received by interested parties:³

- (a) It is essential to have reliable information on the access network, including on the number of loops in a given exchange and respective coverage area, as well as the type of services which may be offered in the same exchange⁴ so that operators can make an assessment of the investment risk;
- (b) It is imperative that the unbundling of non-active loops is conducted in such a way as to minimize disruption to customers, whereby (1) the technicians of two operators can be called out at the same time and (ii) the unbundling of the loop at the exchange be carried out prior to customer intervention, to that the PT technicians can carry out a full test of the loop when they are with the customers;
- (c) The unbundling of active loops must not exceed the time offered by PTC at retail level, whereby the time for unbundling needs to be reduced to 3 days;
- (d) Mechanisms need to be created to correct situations where loops are unbundled without portability, or vice versa;

³ Presented in summary form. The full responses can be found at <http://www.anacom.pt/render.jsp?contentId=598666&showComments=1>.

⁴ Penetration of services *single, double and triple-play*.

- (e) With the launch of IP-TV offers⁵ and the spread of Ethernet solutions to the enterprise market, the RUO needs to be made more robust with regard to available levels of service, whereas there is clear discrimination in the RUO with respect to the internal offer provided to the retail services of Grupo PT⁶;
- (f) Compensation for non-compliance with levels of quality of service should act as a deterrent;
- (g) Artificial barriers to the use of own resources should be removed and the passage of beneficiary optical fibre should be allowed in order to connect co-located equipment to the beneficiary's network, as should the installation of the co-located operators' own internal cables;
- (h) PTC should install, at its own expense, where "remote attendance points" do not have space for co-location, a cabinet within a radius of 30 meters, for which co-located operators shall pay rent but shall not incur costs of installation;
- (i) It is essential to ensure that the rules governing access to the exchange by technical staff enable malfunctions in co-located equipment to be repaired within a maximum of 2.5 hours, in order to ensure repair deadlines which are consistent with the practices of PTC, especially in the leased circuits market;
- (j) The price charged for the test loop (necessary to assess the feasibility of supporting additional services such as IP-TV) should be significantly reduced;
- (k) More information should be provided for all remote units, and there should be greater transparency with respect to the concepts and definitions of information provided (e.g. attendance point, main distribution frame, street cabinet, remote unit, exchange area) allowing the information to be processed properly - in particular the points of the PTC network should be classified only as access points or points without access, and there should be specific information about each of these points (location, number of associated loops, related geographical numbering, characteristics of the copper pair and co-location conditions);
- (l) Prior notice of a minimum of 5 years should be required in the event that PTC intends to close an MDF, given the impact that this action has on the business of an operator;
- (m) The condition whereby compensation for failure to comply with the objectives should be subject to the provision of demand forecasts by beneficiaries should be removed;
- (n) Where new attendance points are established, PTC should:

⁵ One of the OSPs states be inconceivable, for example, that a television service only guarantees the repair of a malfunction within 10 working hours (meaning that the repair of a malfunction occurring on a Friday night is only guaranteed on the following Tuesday).

⁶ As an example, after contacting the technical support service of Meo, one OSP reports that, according to PTC, the target is to repair within 48 hours, although this may increase when there is a backlog of requests (referring to 48 consecutive hours, there is discrimination in the RUO, since operators whose services are supported by the RUO are only able to guarantee repairs according to a deadline based on working hours, while PTC guarantees repairs according to a deadline based on consecutive hours).

- a. Size them so that they are able to support the space required for the installation of equipment of operators co-located in the exchange of origin;
- b. Ensure there is space in the duct (or, alternatively, dark fibre) connecting the attendance point to the exchange of origin.

3. PRELIMINARY GENERAL POSITION ALREADY SET OUT BY ICP-ANACOM

ICP-ANACOM has already set out its position, albeit on a preliminarily basis, on various of the issues raised by the beneficiaries of the RUO and identified above.

Accordingly:

- (a) In the analysis of markets 4 and 5⁷, with respect to the obligation of transparency, it was argued that *"with the roll out of attendance points and the relocation of accesses from primary attendance points to secondary attendance points, the provision of detailed and timely information on changes in the access network becomes crucially important and is essential so that OSPs are able to assess their impact and evaluate different investment options. Therefore, it is considered that PTC should provide OSPs with detailed and timely information on changes to the access network prior to the implementation of alterations which may affect existing conditions with respect to the investment decisions of the OSPs. In this case, it is important, also taking into account the obligation of non-discrimination, that Grupo PT inform the beneficiaries of the LLU with reasonable advance notice as to (i) the date on which it plans to install a new attendance point so that the co-location requirements (firm requests) of LLU beneficiaries may be taken into account, as far as possible, in the design of the attendance point, (ii) whether or not there is space in the duct between the primary and secondary attendance points, and (iii) the loops to be relocated"*.
- (b) In the report of the public consultation on the regulatory approach to Next Generation Access Networks, it was argued that:
 - a. ICP-ANACOM shares the *"concerns of the various entities in regard to what they consider to be an evident lack of symmetry, transparency, currency and accuracy in the information made available by PTC on (the records of) the access network, as well as the process of "remote enabling of exchanges" and relocation of loops and on the plans for the development of the network"*;
 - b. *"PT should send to the RUO beneficiary operators, with reasonable notice, information which is relevant to the assessment of economic viability, such as the location of the AP or street cabinet, the number of loops to be relocated and their numbering and area of coverage. Where these operators express a firm intention to move towards a similar solution, PT must take the interest expressed into account"*;

⁷ markets for wholesale network infrastructure access at a fixed location and broadband access, available at <http://www.anacom.pt/render.jsp?contentId=814541>.

- c. In the case of relocation of loops, the following could be *"set out as a simple rule, to be considered in any future determination of ICP-ANACOM on the RUO:*

"Advance notice given by PTC with a minimum period of:

- *12 months where the number of active loops to be relocated is less than 1/3 (33%) of the total active loops in the MDF;*
 - *36 months where the number of active loops to be relocated is more than 1/3 (33%) or where the MDF itself is to be deactivated".*
- d. *"In the event that PT, in pursuit of its network development plans, considers it necessary to make effective changes which impact the architecture of the access network (in copper), [...] PT shall, in addition to 'due prior notice', with a notice period which is proportional to the impact and which can be up to three years, be required to reach agreement - essential in the case of MDF decommissioning - with beneficiary operators on the planning and technical conditions in the event that it is necessary to relocate equipment (already) co-located in the exchanges and on any migration of accesses/customers", whereby "it is desirable that the conditions for MDF decommissioning and the migration of co-located beneficiary equipment be agreed upon by the industry, without prejudice to the intervention of this Authority, in the event that the parties fail to reach such an agreement."*
- e. *"ICP-ANACOM [...] will review the model governing the provision of information in respect of the wholesale reference offers, including demand forecast plans. However, it should be pointed out from the outset that demand forecast plans make sense at an early stage of the offer as they enable the regulated operator to scale its resources, allowing it to adapt its offer to meet demand and satisfy, within the established deadlines, the requests that occur. However, in a phase where conditions have stabilised or where there are no significant fluctuations in demand, the requirement to submit these plans could be reassessed."*
- f. Provision should be made to *"advance with alterations to the RUO, especially in terms of:*
- *provision of additional information at the level of coverage, number and locations of the (access) points of the PT network, especially in the context of FTTCab type solutions;*
 - *definition of procedures to be followed in case of profound changes at the level of the network structure (which should have a reasonable period of notice);*
 - *possible differentiation and specification of technical conditions depending on geography, i.e., according to the geographic*

segmentation arising from market analyses (e.g., different conditions at the level of co-location and backhaul⁸);

- *putting the unbundling of the sub-local loop into operation (processes, co- location, connection to the street cabinets - backhaul, among others), implementation of procedures and quality of service requirements, through SLAs, in the event that PT develops FTTCab type solutions on a wide scale and provided that there are operators which are clearly interested in this kind of wholesale product;*
- *definition of procedures for the migration of current wholesale products to any future NGA products, such as the unbundling of the local sub-loop or of the bitstream type;*
- *definition of the process and effective migration of the end-customers of the operators which choose or which have to migrate to a new wholesale product or location (e.g. in case of the decommissioning of an MDF), seeking always trying to minimize the impact of network alterations on active services, i.e., with minimal disruption to service".*

3.1. Prior hearing and consultation of interested parties on the draft determination

The present document embodies the final decision of ICP-ANACOM on the amendments to the Reference Unbundling Offer (RUO).

This document follows the approval by the Management Board of ICP-ANACOM on 05/08/2009 of the draft decision (DD) on the amendments to the RUO. These draft measures were submitted on that date to a prior hearing⁹ for a period of 30 days. It was likewise decided to notify the European Commission and other European regulatory authorities¹⁰. Subsequently, by decision of the Management Board of ICP-ANACOM of 25.08.2009, ratified by decision of 02.09.2009, it was determined to launch a public consultation¹¹, closing on 09.10.2009, on the same DD, whereas it was decided to extend the period provided for the prior hearing of interested parties until the same date.

An analysis of the comments received was conducted in the report of the prior hearing and of the public consultation on the draft decision on amendments to the Reference Unbundling Offer, which report is an integral part of the present determination.

4. ANALYSIS

In the analysis that follows it was decided to group the different topics under consideration as follows:

⁸ For example, with different prices, possibly lower for more remote and/or non-competitive areas

⁹ In accordance with the provisions of articles 100 and 101 of the Code of Administrative Procedure.

¹⁰ Under the terms of paragraph 1 of article 57 of Law No 5/2004 of 10 February.

¹¹ Under the terms of article 8 of Law No 5/2004 and in accordance with paragraph 1 of article 57 of the same law and with paragraph 3 of the "Consultation Procedures of ICP-ANACOM", approved by determination of 12.02.2004.

- (a) Quality of service and compensation;
- (b) Transparency of information provided;
- (c) Demand forecasts;
- (d) Synchronization between the loop unbundling and number portability;
- (e) Other matters.

4.1. Quality of service and compensation

In the context of quality of service, OSPs have highlighted issues related to the repair of faults, emphasising that:

- (a) The quality of service targets established at wholesale level for the repair of faults have a direct impact on the definition of the quality of services targets provided to end-users and should be defined in such a way as to ensure the competitiveness of the retail offers of the alternative operators in comparison to the offer of the operator with SMP, while reflecting the different needs of different market segments;
- (b) The quality of service provided in the repair of faults constitutes an important element in terms of the relationship between the end-user and the operator directly responsible for the provision of retail services;
- (c) The quality of service in the repair of faults takes on greater significance with the retail provision of innovative and more demanding services (e.g. bundled services, including television services);
- (d) The increase seen in the number of unbundled loops results in an increase in the absolute number of faults, making it more relevant in terms of market coverage to ensure that the users of this service enjoy appropriate levels of quality of service in terms of the repair of faults.

Of the variables that influence the quality of service in the repair of faults, there is an urgent requirement to examine the need to amend the RUO in four areas:

- (a) Time taken to repair faults and implementation of premium levels;
- (b) Availability of the local loop;
- (c) Compensation payments to RUO beneficiaries in case of non-compliance; and
- (d) Conditions of access to exchanges by the offer beneficiaries.

It should be noted that, in relation to the issue of quality of service, this Authority has already intervened to increase the transparency of information on the performance of PTC with respect to the provision of a number of regulated services, including those provided under the

RUO, also allowing a comparison with the services provided (internally) by PTC at retail level¹².

Following the implementation of this determination, it will be possible to evaluate, based on more objective data, the possible need to redefine certain targets in order to ensure conditions of non-discrimination in the provision of services at retail level.

4.1.1. Time taken to repair loops and implementation of premium levels

Currently, the target for the time taken to repair faults defined in the RUO is as follows:

Table 1. Current quality of service in the LLU - Repair of faults

Indicator	Objective	Occurrence
Maximum time for repair of loops (1)	10 working hours	90% of best observations
(1) Time, in working hours, elapsing from the moment that the occurrence of a valid fault is reported until full restoration of the service. In the repairs of faults scheduled with the OSP, the scheduled date/time will be used as the basis for calculating the time. For this indicator elapsed time which is attributable to the client will not be counted, referred to as "client-related delay". Faults whose causes are attributed to the client will not be included in this indicator. This indicator is calculated on a quarterly basis.		

ICP-ANACOM, in line with the position advocated by the ERG¹³, examines the suitability of the levels of quality of wholesale service, in particular taking into account:

- (a) Retail services based on LLU and the needs of end-users;

¹² See determination of 11 March 2009 on the publication of the levels of performance in the quality of service (QoS) of wholesale offers, available at <http://www.anacom.pt/render.jsp?contentId=885299>.

¹³ The ERG considers that the quality of service associated with wholesale services is a key issue for the efficient functioning of wholesale and associated retail and argues that:

- (a) The levels of quality of wholesale service, including the time taken to repair faults, should be defined to ensure the competitiveness of the retail offers of alternative offers compared to the offers of operators with (SMP);
- (b) Where appropriate, different levels of quality of service should be defined for the repair of faults, to reflect the different needs of different segments of end-users;
- (c) The premium level of quality should reflect the demand of the business market and should be available, where requested by alternative operators, in return for appropriate remuneration;
- (d) Additional premium levels of quality should be available depending on the capacity and practice of the SMP operator and be at least equivalent to the levels provided by the retail companies/divisions of the SMP operator;
- (e) Mechanisms should be established to provide appropriate compensation in the event that the quality of the wholesale service falls below established levels;
- (f) Compensation should cover all situations of non-compliance, while the value of compensation should be linked to the required level of quality that is established.
- (g) Access should be provided based on technical reasons which make commercial sense and which maximize competition in retail markets. This will imply that the SMP operator will not be allowed to define the forms of access in an arbitrary manner or with unreasonable restrictions that hamper access by third parties, and shall, instead, maximize competition.

See for example "ERG common position on best practice in wholesale unbundled Access (including shared Access) remedies imposed as a consequence of a position of significant market power in the relevant market - ERG (06) 70 Rev1" - or "Report on ERG best practices on regulatory regimes in wholesale unbundled access and bitstream access".

- (b) The objectives of quality of service reported by the companies of Grupo PT at retail level; and
- (c) The objectives of quality of service established in the relevant wholesale offers.

Where relevant, the performance of PTC with respect to the various services mentioned above will also be taken into account.

4.1.1.1. Retail services based on the LLU and needs of end-users

The provision of retail services based on LLU began with voice services and broadband Internet access.

With the introduction of the IP-TV service in LLU-based retail offers, there was a significant increase in demand by end-users regarding the time taken for the repair of faults. This is because, on the one hand, since the television service is typically included in a bundle of services, the number of services provided increases and, on the other because of the social, cultural, educational and informative ends of the television activity itself¹⁴.

Additionally, the provision of services to the business market and to the company itself represents an increase in demand compared to the provision of services to the residential market. This additional demand is especially significant, for example, in the provision of leased lines services over unbundled local loops.

It is concluded that the needs of various market players in relation to quality of service in the repair of faults in retail services based on the LLU have evolved with a significantly increased level of demand, whereby it is appropriate that wholesale conditions accompany this evolution.

4.1.1.2. Objectives of quality reported by the companies of Grupo PT at retail level

So that OSPs are able to compete at retail level with the SMP operator, the times taken to repair guaranteed services at wholesale level should be less than or equal to those guaranteed at retail level. This is because the time required for interaction between the beneficiary operator and the wholesale supplier must be added to the time guaranteed by the wholesale supplier. In certain services, additional activities, usually related to the preparation and final activation of the retail service, may also be necessary.

The companies of Grupo PT provide different types of services that can be used as a reference for the purposes of the present analysis.

In particular:

- (a) The Fixed Telephone Service (FTS);
- (b) The broadband Internet access service; and

¹⁴ See article 9 of the Television Law (Law No 27/2007 of 30 July).

(c) The IP-TV (Meo) service.

Relevant information on the levels of quality of service with respect to the repair of faults established and the practice of the companies of Grupo PT is available in **Appendix 1**.

4.1.1.2.1 Fixed telephone service

The repair times of the FTS (i.e., of the local loop provided by PTC at retail level) impact, from the outset, all supported services, including broadband and television (IP-TV) services. This is with the assumption that internally PTC does not have more demanding repair targets for loops that support broadband and television services compared to other loops.

With this premise, faults affecting the local loop will affect all services supported on it. Faults that affect only broadband services (e.g., malfunction of DSLAM equipment) can not be used as a benchmark for the times taken to repair faults in the local loop, since these services are not comparable¹⁵.

From the information set out in **Appendix 2** it can be seen that, in 2008, the figures calculated by PTC for the time taken to repair faults on the local access network were 74 and 139 hours elapsing respectively for the 80% and 95% percentile of the fastest repairs. The targets established for 2008 were 72 and 165 hours elapsing, respectively, for the 80% and 95% percentiles of the fastest repairs.

A direct comparison of these calculated values or targets and the targets currently established in the RUO is not immediate, since the percentiles¹⁶, the notion of hours¹⁷ and the methods of calculation¹⁸ are different.

Even with all the limitations inherent in the estimation that follows, if it is assumed that the times taken to repair faults follow a lognormal distribution over the two times mentioned above (targets), it is estimated, in a rudimentary manner, that the average of this function for 90% of the cases is about 33 hours elapsing. If we assume that, on average, the number of hours elapsing in a week is about 4.2 times the number of working hours, then 33 hours elapsing is the equivalent to about 8 working hours. This value is similar, but less than, the target set in the RUO of 10 working hours, on average, for 90% of cases.

These levels of service will always be the minimum to be guaranteed, since PTC they are binding upon PTC pursuant to the universal service.

In any case it is natural that for certain some loops, particularly those with a greater number of associated services, there is greater incentive to make repairs more quickly.

¹⁵ While the figures obtained by PTC for the time taken to repair faults on the local access network were 74 and 139 hours elapsing, respectively, for the 80% and 95% percentiles of the fastest repairs, in case of other faults, these values were, respectively, 47 and 108 hours elapsing, significantly lower - see **Appendix 1**.

¹⁶ In the case of the FTS, the percentiles are 80% and 95%. In the case of the RUO, the percentile is 90%.

¹⁷ In the case of the FTS, these are elapsed hours. In the case of the RUO, these are working hours.

¹⁸ In the case of the FTS, it is the maximum value. In the case of RUO, it is the average value.

4.1.1.2.2 Broadband Internet access and IP-TV service

As retail services based on LLU constitute, almost in their entirety, products which combine the voice service and the broadband Internet access service, and also increasingly, the IP-TV service, it is necessary to take account of the quality of service associated with the broadband Internet access services and with the Meo bundle (voice, broadband Internet and IP-TV).

The only values identified for this service are those given by PTC through its customer support line (16200).

For both services, the information given is that faults are repaired within a period of 48 elapsed hours (whereas it is not mentioned whether this is the average period or a period that is guaranteed in all situations - i.e. the maximum period in 100% of cases).

Accordingly, with regard to the retail services of PT that could serve as a reference in terms of quality of service, the following levels are found:

Table 2. Quality of service in the retail services of Grupo PT - Time taken to repair faults

Service	Target level	MEASUREMENT UNIT	Percentage of cases applicable	Measurement
Fixed telephone service	71 hours	Consecutive hours	80% of the fastest repairs	Maximum value
	162 hours		95% of the fastest repairs	Maximum value
Internet access service and MEO	48 hours	Consecutive hours	Not mentioned	Not mentioned

4.1.1.2.3 Leased circuits service

Since the LLU can also support leased circuits offers (including through SHDSL technology), this could also provide a reference, in theory, for the quality of service in the repair of faults in the leased circuits at retail level guaranteed by the companies of Grupo PT.

However, this reference is not the most appropriate since the provision of leased circuits by the companies of Grupo PT is mainly supported using PDH/SDH technologies with their own management and alarm systems, whereby it is not comparable with the provision of leased circuits over unbundled loops.

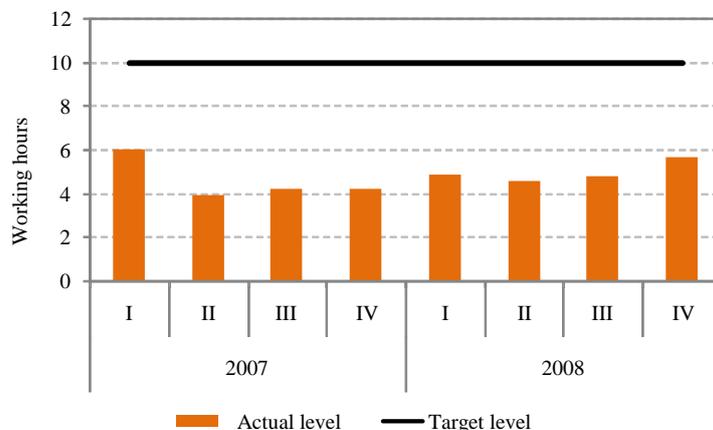
4.1.1.3. Quality of service targets defined in the relevant wholesale offers

The levels of quality of service defined at wholesale level are presented in **Appendix 3**.

4.1.1.3.1 RUO

Analyzing the performance of PTC in the provision of the LLU fault repair service, it is concluded that the practised level of quality of service is currently significantly higher than the quality of service target defined in the RUO.

Graph 1. Time taken in the repair of faults on the local loop - target level and performance (both are average values for 90% of cases)



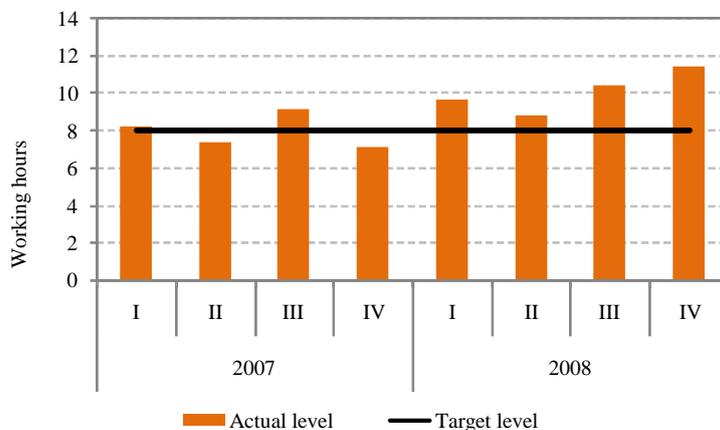
According to the above conclusion, it is possible to improve the base level of quality and introduce premium levels of quality without this entailing a disproportionate burden for PTC. It is noted that any reduction in repair times for faults in this context constitutes no more than a better adaptation of the target to practice.

4.1.1.3.2 Rede ADSL PT

The target for the "standard" level of the "Rede ADSL PT" offer is 8 working hours, on average, for 100% of cases.

Again, this target is not directly comparable with the target of the RUO, since for "Rede ADSL PT" 100% cases are considered, whereas only 90% of cases are considered for the RUO. It is also noted "Rede ADSL PT" comprises a larger number of network elements which are the responsibility of PTC, in addition to the local loop, whereby some faults occurring on these network elements may be resolved more quickly.

Graph 2. Deadline for the repair of faults with respect to the "Rede ADSL PT" offer - target level and performance (both are average values for 100% of cases)



The "Rede ADSL PT" offer also establishes a maximum time for the repair of faults for 95% of cases, which is 28 working hours.

It is considered that the standard target for repairing faults established in the wholesale "Rede ADSL PT" offer constitutes an important reference to be considered by this Authority with respect to the redefinition of the standard target for the repair of faults for the LLU. This is because, in fact, the beneficiaries of the RUO compete at retail, taking into account the times for the repair of faults provided by PTC under this offer (albeit that PTC has not made internal use of the "Rede ADSL PT" offer for the provision of retail broadband services¹⁹).

A particular aspect of the "Rede ADSL PT" offer is that PTC, on its own initiative, introduced²⁰ "premium" levels of service in this offer, setting an additional price for the OSP to be able to enjoy these levels of service.

That is, PTC itself considered that, taking the needs of end-users into account, the definition of "premium" levels of service was merited and would respond to the needs of users who are more demanding in terms of quality.

In this regard, the ERG argues that *"Different levels of service should be available, to reflect differences in customer demand"* and that *"there should be assurance that access products will be of reasonable quality and that service levels (e.g. connection times, repair times) will be reasonable and/or comparable with that provided to SMP player's own business"*²¹.

In addition to a "premium" SLA, it is recognised that the existence of an Urgent SLA, as suggested by a number of OSPs, would ensure greater flexibility for the OSPs in dealing with certain faults²², whereas the daily or weekly limits for urgent repair requests could reduce the demands and unpredictability faced by PTC.

The main distinction between a "premium" SLA and an Urgent SLA is that in the former the loops are identified *a priori* (i.e. there is a set of "premium" loops for which the beneficiary incurs an additional monthly fee to qualify for a higher level of quality) and, in the second, the loops are identified on a case by case basis, and at the time of failure, whereas the operator is charged a fee per intervention for ensuring that this intervention occurs within a shorter period of time.

Different levels of quality of service can be contracted and since it is possible that the quality of service of a loop can vary over time (e.g. the client may become more demanding or could subscribe to more services) a procedure should be available that allows an operator to indicate/change the level of quality to be applied to each loop. This procedure should be efficient and allow the point in time from which a specific level of quality of service is

¹⁹ This is a situation which in future could lead to further review of RUO targets, in particular regarding their calculation in terms of the times taken by PTC as a result of the implementation of determination of 11.03.2009 on the publication of the levels of performance in the quality of service (QoS) of wholesale offers - see <http://www.anacom.pt/render.jsp?contentId=885299>.

²⁰ On 23.08.2005.

²¹ See document "ERG (06) 70 Rev 1 Common position on Wholesale local access" available at http://erg.eu.int/doc/publications/erg_06_70_rev1_wla_cp_6_june_07.pdf.

²² In particular where they intend to ensure a better quality of service to certain more demanding customers (e.g. large corporate customers).

activated or deactivated to be clearly identifiable. It is only in this way that it will be possible to properly record the quality of service actually provided and the respective fee to be charged. In this respect, the "Rede ADSL PT" offer established the process of the MAX8HU and MAX12HL levels of service. The procedure to be adopted regarding the LLU should be as efficient as possible, at a minimum ensuring the efficiency of the procedure already in place under the "Rede ADSL PT" offer.

4.1.1.3.3 LLRO

Furthermore, with respect to the repair of faults, in the leased lines service of Grupo PT, a maximum time for the repair of leased lines (end-to-end and partial) is established for "standard contracts". This time is set at 6 consecutive hours for 80% of the best observations occurring each month. The targets for contracts covering the so-called "Grande Rede de Circuitos" (Large line network) are 4 and 12 consecutive hours respectively for 90% and 98% of occurrences.

However, as noted in relation to the retail offer, the use of the provisions of the LLRO as a reference for defining quality of service targets in the RUO may not be wholly appropriate, since the leased line service of the LLRO is mainly supported using PDH/SDH technologies with its own management and alarm systems, whereby it is not comparable with the provision of leased lines supported on unbundled loops.

4.1.1.3.4 Conclusion on the quality of service targets with respect to the repair of faults defined in the wholesale offers

In conclusion, and with regard to wholesale offers, the current quality of service targets are summarized in the following table:

Table 3. Quality of service in LLU, the "Rede ADSL PT" offer and the LLRO - repair of faults

Service	Indicator	Target level	Comments
LLU	Time taken to repair faults	10 working hours	Average time for 90% of occurrences
"Rede ADSL PT"	Restoration of NORMAL service	8 working hours	Average time for 100% of occurrences
		28 working hours	Maximum time for 95% of occurrences
	Restoration of MAX8HU service	4 working hours	Average time for 100% of occurrences
		8 working hours	Maximum time for 95% of occurrences
	Restoration of MAX12HL service	6 consecutive hours	Average time for 100% of occurrences
		12 consecutive hours	Maximum time for 95% of occurrences
LLRO (Base)	Repair of leased lines	6 consecutive hours	Maximum time for 80% of occurrences
LLRO (Large line network)	Repair of leased lines	4 consecutive hours	Maximum time for 90% of occurrences
		12 consecutive hours	Maximum time for 98% of occurrences

4.1.1.4. Conclusion on the time taken to repair loops and implementation of premium levels

Although the quality of service levels of the different wholesale offers are not wholly and clearly comparable, the position is taken that, as the offer which most equates with the LLU in terms of retail products, the "Rede ADSL PT" offer should be used as a reference.

This offer establishes the following repair targets :

Table 4. Levels for the repair of faults defined in the "Rede ADSL PT" offer

Service	Defined level		
	Normal	MAX8HU	MAX12HL
Average time to repair faults (100% of occurrences)	8 working hours	4 working hours	6 consecutive hours
Maximum time to repair faults (95% of occurrences)	28 working hours	8 working hours	12 consecutive hours

The level currently established in the RUO of, on average, 10 working hours for 90% of occurrences is therefore clearly below the levels of the Rede ADSL PT" offer. Furthermore, as shown above, the performance levels actually presented by PTC for the RUO are significantly below the targets defined for the RUO. That is, the "Rede ADSL PT" offer constitutes a good reference for service levels, also allowing better approximation to the fault repair targets of the leased lines services and to the targets reported by PTC at retail level for broadband and Meo services. The targets of the "Rede ADSL PT" offer also have values which are comparable with the performance recorded in 2008 on the local network of the universal service provider (measured in consecutive hours). The times compare well in European terms, while it is noted that for both the normal service and the premium services, it was not considered necessary at this stage to establish maximum limits for 100% of cases, given the large number of situations involved and the operational reality. It is noted that in the United Kingdom, despite maximum values being stipulated in SLA, right to compensation is provided only in the event that there is failure to comply with the maximum values established (40 working hours for the normal level) in more than 5% of cases and in France compensation is only applied where there is failure to comply with the normal level in the

best 85% of occurrences (maximum time is two working days, representing around 26 working hours). However, as good practice, the ERG recommends repair times of less than two working days²³ (without details given on whether maximum periods are used or if the entirety of occurrences are considered).

While there is certainly little incentive for PTC to extend the maximum period, given that these included in the average indicator, ICP-ANACOM will monitor such situations and PTC shall provide quarterly reports to this Authority on the maximum values recorded, in order to assess the need for specific action in this respect.

Consideration must also be given to the fact that there are clients and services with different needs in terms of availability and service restoration times, whereas less demanding clients should not be unduly burdened, whereby the introduction of premium services in the wholesale offers and, in particular, in the RUO, is deemed an appropriate solution to meet the different market requirements.

On the other hand, it is necessary to determine at this stage, maximum absolute value (for 100% of occurrences) given that the compensation scheme set forth and described below provides an incentive to avoid occurrences of very lengthy restoration time, since these are also reported in the average values, whereas in such situations operators may make use of the Urgent service (by intervention), as proposed below.

Accordingly, the repair targets set out in the "Rede ADSL PT" offer, including the premium levels of quality of service, should be included in the RUO, taking into account the needs of the market resulting from the introduction of broadband and IP-TV services in "triple-play" offers, with the requirements for service availability and resolution of faults which are far more demanding than those of conventional services. This certainly will be intensified with the development of NGA and cable distribution networks, with which LLU-based services will still have to compete within the limits permitted by the various applicable technologies. Moreover, at an enterprise level, account must be taken of the possibility of technological solutions based on LLU and the provision of leased lines and VPN services, likewise with other levels of demand.

It is recognised that a deadline is required for the implementation in the RUO of the quality levels established in "Rede ADSL PT" offer, including premium levels of service, whereby it is considered that a period of 3 months will be appropriate for the development and implementation associated with the modification of the IS supporting these offers.

With respect to prices, the position is taken that any differences between the additional prices applicable to the premium level in the RUO and those applicable under the "Rede ADSL PT" offer, should be duly justified in detail, including through a comparison between the costs of both offers and any additional activities or resources required of PTC in order to provide a similar level of quality.

²³ See "Report on ERG best practices on regulatory regimes in wholesale unbundled access and bitstream access", available at http://erg.eu.int/doc/publications/erg_07_53_wla_wba_bp_final_080604.pdf.

It is noted that as good practice the ERG presents²⁴ consideration for the premium service of a maximum fault repair time of 8 working hours, although Spain and France makes services available with maximum time limits of 6 and 4 working hours, albeit with significantly higher costs than those provided for under the "Rede ADSL PT" offer, of 13 and 8 Euros per month respectively.

The reference for pricing should also be taken from the "Rede ADSL PT" offer, whose prices are shown in the following table:

Table 5. Additional prices for premium levels of quality established in the "Rede ADSL PT" offer

Service	Defined level	
	MAX8HU	MAX12HL
Additional monthly fee	€ 2.50	€ 5.00
Additional activation	€ 12.47	€ 12.47

It is also recognized that the existence of an Urgent SLA (deployable on a case by case basis) would ensure greater flexibility on the part of OSPs in the handling of faults²⁵, whereas maximum daily or weekly limits on requests for urgent repair services could reduce the demands and unpredictability which PTC would face in terms of the provision of resources.

In this case, the view is taken that PTC must submit the conditions and any limitations applicable to putting the urgent level of service into operation, as well as a pricing proposal with detailed reasoning, to ICP-ANACOM, in addition to the pricing and conditions to be applied for the implementation of this services and any alternatives which could help reduce the costs of implementing this solution.

On the other hand, different levels of quality of service may be associated with a single loop and it is possible that the quality of service of a given loop might vary over time, whereby a procedure must be provided enabling operators to indicate/change the level of quality that should be applied to each loop. This procedure should be efficient and should allow the point in time from which a specific level of quality of service is activated or deactivated to be clearly identifiable. It is only in this way that it will be possible to properly record the quality of service actually provided. In this regard, ICP-ANACOM notes that in the "Rede ADSL PT" offer service processes are defined for the MAX8HU and MAX12HL levels of service. The procedure to be adopted regarding the RUO should be as efficient as possible, at a minimum, ensuring the efficiency of the procedure already in place under the "Rede ADSL PT" offer. It is acceptable that a minimum period of implementation be stipulated, along with a minimum period of application to prevent OSPs from making successive amendments. 4 working days is deemed reasonable for the minimum period of implementation. A minimum duration of application of 3 months is also deemed reasonable given the nature of the service.

It is further clarified that the premium level of service should not be enacted for a loop that is faulty (i.e., in a process of fault resolution).

Considering the analysis undertaken and taking into account:

²⁴ Idem.

²⁵ In particular where they intend to ensure a better quality of service to certain more demanding customers (e.g. large corporate customers).

- (a) The principle of proportionality;
- (b) The conditions applied under the "Rede ADSL PT" offer and the universal service and the need to ensure consistency between the various available offers;
- (c) The need to ensure that OSPs have greater flexibility for the different handling of faults;
- (d) The proposals advanced, in the past, by the alternative operators and by APRITEL;
- (e) Statistical RUO data relating to the performance in repairing faults; and
- (f) The positions taken by the ERG on the subject,

and with respect to the loop repair times and the implementation of premium deadlines, the position is taken that:

- D1.** PTC shall reproduce the normal and premium levels of quality of service provided for in the "Rede ADSL PT" offer in the RUO, which levels shall be operational and available to beneficiaries of the offer within 2 months from the date of notification of this determination. This 2 month period is extendable by up to a further 2 months with detailed justification and where accepted by ICP-ANACOM. Any differences between the additional charges applicable to the premium level in the RUO and those applicable under the "Rede ADSL PT" offer shall be duly justified in detail, including through a comparison between the costs of both offers and any additional activities or resources required of PTC in order to provide a similar level of quality.
- D2.** PTC shall submit to ICP-ANACOM, within 30 working days, the conditions applicable to an urgent service, with targets at least equal to those of the premium service, but where the maximum time is applicable to 100% of the cases, payable per intervention, whereas detailed justification shall be provided to ICP-ANACOM with respect to the prices to be applied and to any limitations which PTC deems should be established with respect to the implementation of this service and possible ways of reducing the cost of implementing this solution.
- D3.** PTC shall set out a procedure in the RUO which enables operators to indicate/change the level of quality to be applied to each loop, which procedure should be efficient and allow the point of time from which a determined level of quality service is activated or deactivated to be clearly identifiable. This procedure shall be at least as efficient as that provided for in the corresponding levels in the "Rede ADSL PT" wholesale offer, whereby a minimum execution period of 3 working days is established, along with a minimum period of application of 3 months.
- The premium level may not be enacted for a loop that is faulty (i.e., in a process of fault resolution).

4.1.2. Availability of the local loop

Currently, the target for the availability of the local loop defined in the RUO is as follows:

Table 6. Quality of service in the current LLU - availability of the local loop

Indicator	Objective	Occurrence
Availability of the loop (1)	99.50%	-
(1) Percentage of available hours (in working order) relative to the potential number of service hours of the average total of leased local loops. The term available hours shall mean the difference between the potential number of hours of the average total of loops and the sum of the time taken for the resolution of faults, in the reference period. The average total shall mean the simple average of the local loops leased in the reference period. This indicator is calculated on a quarterly basis.		

In line with the repair of faults, in terms of availability of service, a level of performance is found in practice which is considerably above the quality of service target established in the RUO (see **Appendix 2**). This might indicate, especially in the case of the availability of premium services, that it may be proportional to establish a more demanding target.

Another reason why practice is significantly higher than the target established for the availability of service may be due to the target being undemanding. In this regard, it is noted that, if it is assumed that the fault rate per loop is similar to the fault rate per access in the "Rede ADSL PT" wholesale offer - or to the fault rate per access in respect of the provision of universal service - the mean time to repair faults that would have be about eight times higher than the target set for the repair of faults in order for the minimum target defined for availability not to be accomplished.

Table 7. Quality of service in the LLU and the "Rede ADSL PT" offer - availability of service

Service	Indicator	Monthly target level
LLU	Availability of the local loop	99.50%
"Rede ADSL PT"	Availability of service for the entirety of accesses with NORMAL level of service restoration	99.00%
	Availability of service for the entirety of accesses with MAX8HU and MAX12HL level of service restoration	99.50%

Premium levels of quality of service must guarantee a level of availability which is above that defined for the standard level of quality of service, whereas it can be expected that unbundled loops (especially full access) provide higher levels of availability than those of local ADSL accesses.

In this context, the establishment of a target for minimum availability of 99.90% is based on the demand for greater quality of service from PTC, in proportional form, given their current practice (and also so that, for this type of indicator, there is greater competitive capacity compared to leased lines provided through the LLRO). It is noted that, for example in Spain, the guaranteed availability in unbundled loops is greater than or equal to 99.90%.

It is considered, however, that such an objective of minimum availability only makes sense for a minimum total of unbundled loops of the same OSP with a premium SLA, in respect of which minimum total PTC should state grounds.

4.1.2.1. Conclusion on the availability of the local loop

Given the above mentioned, it is considered that:

D4. PTC should introduce a minimum target for service availability in the RUO of 99.90% for the loops connected to premium levels of quality of service. The minimum target is subject to the existence of a minimum total of unbundled loops of the same OSP with a premium SLA, to be defined, whereas PTC shall be required to provide grounds for the value of the minimum total to ICP-ANACOM.

4.1.3. Joint interventions

As mentioned in the introduction, the OSPs and APRITEL have also reported shortcomings in the processes providing for joint intervention in cases where there is no agreement for the closure of faults.

This topic will be covered in the analysis of the results of the audit (recently completed) on the quality of service indicators regarding access to the local loop of PTC, for the period covering the first half of 2007, whereby the submission of a draft decision on this topic to consultation is due shortly.

4.1.4. Compensation for non-compliance

Currently, in the LLU, the value of compensation for failure to meet the quality of service targets with respect to the repair of loops and loop availability is based on the proportion of monthly provision associated with the local loop compared to the duration of outage (in excess of the indicated level).

In view of current market conditions, it is considered that this compensation is not wholly appropriate since it does not provide a sufficient level of compensation considering the damage caused and the importance of the services in question and it does not therefore constitute a real incentive to comply with quality of service targets (e.g., even if all the loops of an operator are faulty at the beginning of a quarter and none are repaired during this quarter, the compensation paid to the alternative operator does not even correspond to the quarterly bill for renting the loops²⁶ - that is, even where an operator has been unable to make use of any service, it will pay more to the supplier of the wholesale service, for a service which it has not actually used, than the amount it would receive in compensation).

Furthermore, compensation should cover all situations of non-compliance, have a value which is linked to the level of demand and be sufficient to deter non-compliance.

²⁶ The proportional value associated with the applicable fault repair period would be discounted from the quarterly bill.

4.1.4.1. Compensation for failure to comply with loop repair times

Whereas:

- (a) The position is taken that the levels of quality of service for the repair of faults provided for in the "Rede ADSL PT" wholesale offer should be adopted in the RUO; and
- (b) There should be coherence between the wholesale offers made available to operators,

when establishing the levels of compensation for non-compliance, at a minimum, account should be taken of the contents of the "Rede ADSL PT" wholesale offer - see the formula for the allocation of compensation for failure to provide the quality of service under the "Rede ADSL PT" offer in **Appendix 3**.

In this wholesale offer, compensation for failure to comply with the deadlines for repairing faults in local accesses are dependent on the proportion of hours of delay compared to the monthly hours associated with the quality of service level²⁷, on the monthly fee payable and on the total number of accesses contracted by the OSPs.

ICP-ANACOM considers that, with respect to the LLU, the level of compensation should depend on the number of faults and not on the total number of loops contracted by an OSP. The adoption of a formula which considers this indicator provides an additional incentive for PTC to take steps which lead not only to a reduction in fault repair times, but also to a reduction in the number of faults. In other words, it makes more sense, for the purpose of setting compensation for non-compliance, to consider the loops that have actually been affected by faults and which have contributed to the failure to comply with the indicator.

Taking into account that only faulty loops will be considered, it is deemed more appropriate to take the total hours of delay into consideration, rather than hours of delay as a proportion of total monthly hours associated with each quality of service level.

The view is also taken that in the specific case of failure to comply with the maximum period for the repair of faults, the compensation should be directly associated with the loops in relation to which the deadline provided for in the offer is not met.

Notwithstanding the position taken with respect to the LLU, given the absence of significant complaints of non-compliance under the "Rede ADSL PT" offer, it is not considered necessary to alter the compensation levels established under this offer. In other words, the provisions of the "Rede ADSL PT" offer are maintained, whereas the same general rationale is adopted in terms of the LLU, but replacing, for the reasons explained above:

- (a) The total set of accesses with the number of registered faults; and

²⁷ Namely, 176 (8×22) hours where a level of quality of service defined in working hours is considered or 720 (24×30) hours where a level of quality of service defined in consecutive hours is considered.

- (b) The number of hours of delay in proportion to the monthly hours associated with the quality of service level with the hours of delay in repair in light of the established level of quality of service.

Therefore, given that:

- (a) Failure to comply with the average time for the repair of faults should result in an enhancement of incentives to speed up the repair of faults in the overall set of loops where these occur;
- (b) In the case of failure to comply with the maximum time allowed for the repair of faults, incentives to repair faults more quickly should individually target the loops in relation to which the stipulated deadline was not met,

the position is taken that the compensation applicable with respect to the repair of faults under the LLU should take the average time (for 100% of cases) and the maximum time (for 95% of cases) into consideration in different ways.

In this regard, ICP-ANACOM deems it proportionate, appropriate in light of existing problems and justified to set out the following rules for compensation for failures to comply with the levels of quality of service for the repair of faults (which, as mentioned, differ from that specified in the "Rede ADSL PT" offer only in terms of the total set of accesses and the proportion of hours of delay considered):

Formula 1. Compensation for failure to comply with the average time-limits for the repair of faults

$$Average_Delay_x \times Loop_Monthly_Fee_x \times Number_Faults_x$$

Where:

- *Average_Delay_x*: Corresponds to the difference in hours between the actual average time taken by PTC to repair faults and the average time to repair faults defined in the RUO for a particular set of loops with quality of service of the type *x*.
- *Loop_Monthly_Fee_x*: Corresponds to the monthly fee, in euros, payable by the OSP for a loop that is included in the set of loops with quality of service type *x*.
- *Number_Faults_x*: Corresponds to the number of loops of type *x* that were faulty in the month considered.

This compensation is applicable when the average repair time for faults accomplished exceeds the average repair time for faults established in the RUO.

Formula 2. Compensation for failure to comply with the maximum fault repair time (per affected loop)

$$Delay_{xi} \times Loop_Monthly_Fee_x$$

Where:

- *Delay_{xi}*: Corresponds to the difference in hours between the time taken to repair faults in loop *i*, belonging to the set of loops with quality of service type *x*, and the maximum repair time for faults established in the RUO for loops with this contracted level of quality of service.

- *Loop_Monthly_Fee_x*: Corresponds to the monthly fee, in euros, payable by the OSP for a loop that is included in the set of loops with quality of service type *x*.

This compensation is applicable to each loop which has not been repaired within the maximum time allowed for the repair of faults established in the RUO. That is, if the maximum period allowed to repair faults for *y*% of cases is not met, all loops whose repair time was between the target and the accomplished level shall be the subject of compensation as set out above.

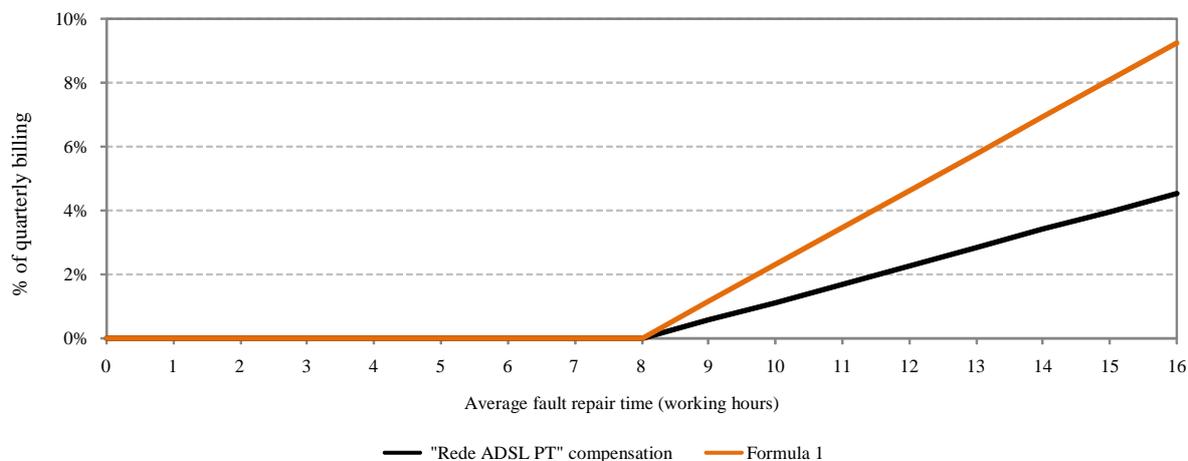
In the case of the Urgent SLA, further to the compensation due, according to Formula 2, no payment is to be made in respect of the value of the intervention performed on the loops in relation to which there was failure to comply with the maximum time allowed for the repair of faults.

Compensation in relation to the average time and maximum time are cumulative.

4.1.4.1.1 Comparison between formulas 1 and 2 and the formula defined in the "Rede ADSL PT" offer

Comparisons were made between the compensation arising from the above formulas and the application of the formula defined in the "Rede ADSL PT" offer.

Graph 3. Comparison of compensation payable according to Formula 1 and the formula defined in the "Rede ADSL PT" offer (the average time to repair faults in a standard loop)²⁸



The application of Formula 1 results in levels of compensation for non-compliance which, in the RUO and for failure to comply with the average deadlines, are higher (about twice) than the levels resulting from the application of the standard formula used in the "Rede ADSL PT" offer. It is noted, however, that, assuming a significantly lower fault rate in the LLU²⁹ than the current rate of the "Rede ADSL PT" offer, it may arise that compensation resulting from Formula 1 is less than the compensation resulting from the application of the standard formula of the "Rede ADSL PT" wholesale offer.

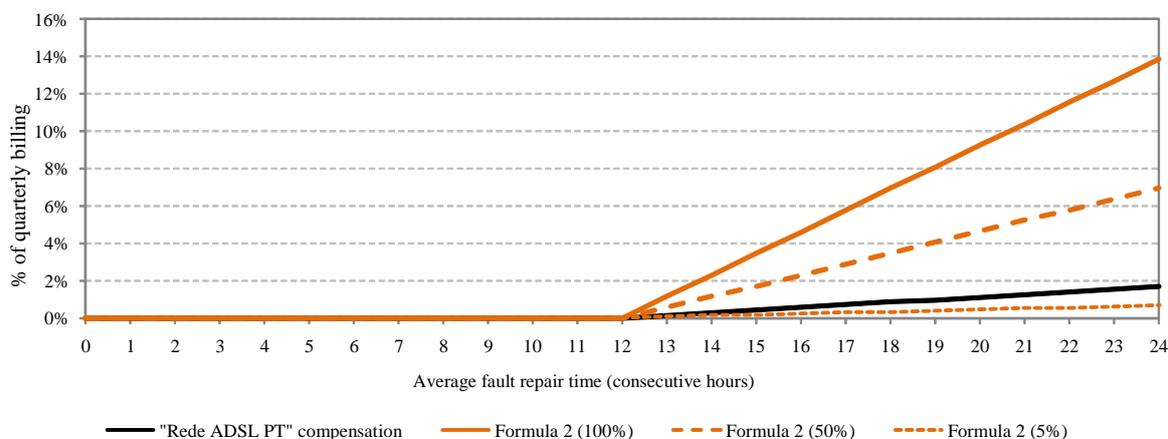
²⁸ The calculations assume that the quarterly percentage of failures in the LLU is three times the monthly percentage of failures recorded in June 2009 in "Rede ADSL PT" accesses (monthly rate of 1.07%). The standard formula of the "Rede ADSL PT" wholesale offer applies to monthly compensation. In this respect, it was assumed that the level of quality of service would be the same over three months.

²⁹ About half.

Taking into account the premises made by this Authority with basis in actual values, the application of the formula equivalent to the one existing in the "Rede ADSL PT" wholesale offer means that for each working hour of average delay³⁰ there will be linear compensation corresponding to 0.57% of the quarterly billing amount associated with the rental of local loops³¹. If Formula 1 is applied, the compensation per working hour of delay will correspond to 1.07% of total quarterly billing. It is considered that this is a value which provides a more appropriate incentive to comply with the quality of service targets, thereby providing greater protection for operators and end-users. It also evident that such compensation is neither excessive or disproportionate for PTC, given the damage caused to the OSPs and their customers.

With regard to compensation applicable as a result of non-compliance with the maximum time limits, the comparison depends on the number of faulty loops where there is non-compliance with the maximum repair time (i.e., a percentage - which should be small - of the monthly percentage of faults referred to in footnote 28), since compensation in the "Rede ADSL PT" offer is unaffected by this variable, unlike in the proposal for compensation put forward by this authority for the RUO (Formula 2). In the following figure, the comparison is shown for the level set in terms of linear hours (MAX12HL).

Graph 4. Comparison between compensation payable according to Formula 2 and the formula defined in the "Rede ADSL PT" offer (maximum time limit to repair faults in a premium loop - MAX12HL)³²



Assuming that:

- (a) The LLU fault rate will be equivalent to that of the access network of the "Rede ADSL PT" wholesale offer³³,

³⁰ further to the established target level.

³¹ References to quarterly billing concern the actual billing corresponding to the total set.

³² In the case of the LLU, it is assumed that all the loops that exceed the established target are repaired in the same period. In the case of formula 2, three scenarios are adopted: (a) all faulty loops are replaced in compliance with the established deadline, (b) 50% of the faulty loops are repaired by the specified time, (c) only 5% of the faulty loops do not comply the established replacement period. It is further assumed that all the loops are at MAX12HL level, which is by no means to be expected.

³³ As mentioned above, 1.07%.

- (b) In all faulty loops there is non-compliance with the maximum repair time associated with the level *premium 2* (MAX12HL) through a practice corresponding to double that established in the offer (24 hours)

the compensation resulting from the application of Formula 2 will therefore still correspond to about 13% of the quarterly billing amount. Keeping the same assumptions, if non-compliance corresponds to 50% of the faulty loops, compensation will amount to around 6% of the quarterly billing amount, whereas with a 5% non-compliance rate for the faulty loops, compensation will be only about 0.6% of the quarterly billing amount. It is noted that it can be expected that the rate of faulty loops that are not repaired within the maximum establish time limit will tend to be small.

Furthermore, with an equivalent rate of non-compliance, in the case of compensation associated with the "Rede ADSL PT" wholesale offer, the compensation will not depend directly on the number of loops where the maximum time limit is exceeded. In this situation, the compensation would be around 1.7% of the quarterly billing amount.

By providing a direct link between compensation paid to the individual operator and the individual loop which is faulty, the application of formulas 1 and 2 promotes greater consistency between the actually accomplished quality of service and the compensation granted to operators.

4.1.4.2. Compensation for failures to comply with the level of availability of loop

The time to repair faults and the respective compensation is determined on a fault by fault basis. For example, a loop may have suffered several consecutive faults - in an extreme case during a month - and may always have been repaired within the established target. However, for all purposes, it is as if the loop were not in operation. In this case, if there was no compensation for non-compliance with the levels of loop availability, because the loop had always been repaired within the established time limits, no compensation would be due.

Accordingly, it is necessary to establish levels of compensation for failure to comply with the level of loop availability. This compensation is applied to the set of loops and should, at a minimum, correspond to the proportion of time for which the loops were unavailable (in case of non-compliance with the target), in addition to a compensation factor.

In this case, the levels currently defined in the "Rede ADSL PT" offer (see **Appendix 3**) are not wholly appropriate, and other levels need to be defined that effectively compensate an occurrence of non-compliance which negatively impacts the service provided to operators and, indirectly, to end-users. In general this compensation should not be less than twice (as in Spain) the value of the monthly charge for the total set of accesses multiplied by the additional downtime resulting from the non-compliance:

Formula 3. Compensation for non-compliance with the local loop availability target

$$F \times Deviation_Target_x \times MonthCharge_Loopset_x$$

Where:

- *F*: Multiplying factor set at 2.
- *Deviation_Target_x*: Corresponds to the difference between the level of availability accomplished and availability target established in the RUO for a particular set of loops with quality of service type *x*.
- *MonthCharge_Loopset_x*: Corresponds to the monthly charge in euros, paid by the OSP for the loops which are included in the set of loops with quality of service type *x*.

4.1.4.3. Conclusion on compensation for non-compliance

Regarding compensation for failure to meet the quality of service targets for the repair of loops and loop availability, the position is taken that, in light of current market conditions, the current provision in the RUO is not the most suitable (given also the alteration arising as a result of the introduction of premium levels) since it does not provide a sufficient level of compensation for the damage caused and the importance of the services affected.

Accordingly, the position is taken that:

D5. PTC shall introduce compensation in the RUO for failure to comply with the average time limits for the repair of faults, on the following terms:

$$Average_Delay_x \times Monthly_Fee_Loop_x \times Number_Faults_x$$

Where:

Average_Delay_x - Corresponds to the difference in hours between the actual average time taken by PTC to repair faults and the average time to repair faults defined in the RUO for a particular set of loops with quality of service of the type *x*.

Loop_monthly_fee_x - Corresponds to the monthly fee, in euros, payable by the OSP for a loop that is included in the set of loops with quality of service type *x*.

Number_faults_x - Corresponds to the number of faults stemming from factors attributable to PTC occurring during the month being considered in the loops of type *x*.

D6. PTC shall introduce compensation in the RUO for failures to comply with the maximum time limit allowed for the repair of faults on the following terms:

$$Delay_{xi} \times Monthly_Fee_Loop_x$$

Where:

Delay_{xi} - Corresponds to the difference in hours between the time taken to repair faults in loop *i*, belonging to the set of loops with quality of service type *x*, and the maximum repair time for faults established in the RUO for loops with this contracted level of quality of service.

Loop_Monthly_fee_x - Corresponds to the monthly fee, in euros, payable by the OSP for a loop that is included in the set of loops with quality of service type *x*.

D7. PTC shall introduce compensation in the RUO for failures to comply with the level of availability on the following terms:

$$F \times Deviation_Target_x \times MonthCharge_Loopset_x$$

Where:

F - Multiplying factor set at 2.

Deviation_Target_x - Corresponds to the difference between the level of availability accomplished and availability target established in the RUO for a particular set of loops with quality of service type *x*.

MonthCharge_Loopset_x - Corresponds to the monthly charge in euros, paid by the OSP for the loops which are included in the set of loops with quality of service type *x*.

4.1.5. Compensation allocation method

According to the RUO, the "assessment of the various indicators will be performed every six months. PT Comunicações will make any adjustments to accounts regarding compensation for non-compliance with time limits no later than one month following notification addressed to the company by the OLO, with respect to the previous six month period"³⁴.

This situation gives the initiative to seek compensation to the OSPs.

This issue was, for example, the subject of a decision by OFCOM³⁵ in which it was decided that the regulated operator - in this case Openreach - should be proactive in the payment of compensation. According to OFCOM, Openreach should monitor its performance in terms of the established targets and where it finds non-compliance, it shall compensate the OSPs concerned without the OSP being required to claim compensation or having to demonstrate entitlement. The same rationale is applied in Spain³⁶.

According to OFCOM, this measure strengthens incentives so that Openreach meets the established quality of service targets and so that OSPs receive the compensation to which they are entitled in the event of non-compliance more quickly and without procedural or administrative difficulties.

ICP-ANACOM shares the opinion of OFCOM, considering that a measure such as the one described above contributes to the improvement of the compensation allocation process, incentivising the accomplishment of the established targets.

Accordingly, it is considered that PTC shall pay compensation no later than the end of the second month following the end of the six month period in question. This shall remain subject

³⁴ See Annex 13 of the RUO.

³⁵ See decision of 20 March 2008 on "Service level guarantees: incentivising performance", available at <http://www.ofcom.org.uk/consult/condocs/slg/statement/>.

³⁶ See Section A.3 - Annex 1.

to a mechanism providing for the re-evaluation of compensation values in the light of the values calculated by the OSPs.

Accordingly, the position is taken that:

D8. PTC shall introduce the obligation into the RUO whereby it shall be bound to act, upon its own initiative, to pay compensation for failures to comply with the quality of service targets established, making payment no later than the end of the second month following the end of the six month period in question, subject to further re-evaluation and adjustment taking into account the values calculated by the OSPs.

4.1.6. Submission of demand forecasts by OSPs and the allocation of compensation

It is set out in the RUO, in line with other reference offers of PTC, that compensation for non-compliance is payable by PTC in the event that the quality of service targets are not accomplished with respect to a determined OSP for reasons which are entirely attributable to PTC (its subsidiaries or subcontractors).

Such compensation is, however, subject to the submission by OSPs of demand forecasts. Specifically, in situations where the services actually contracted by an OSP and the values indicated by this OSP in its submitted forecast plans do not match, or in the event that these forecast plans are not submitted by the OSP within the period and according to the conditions set out in the offers, the RUO sets out that PTC is not liable to pay the compensation in question to the OSP with respect to exchanges and/or services where there have been inaccurate forecasts and is not liable to pay compensation with respect to services regarding which the OSP has failed to present forecast plans, despite making every effort to ensure that there are no delays in the provision of services where such a mismatch existed during the period covered by the forecast plans.

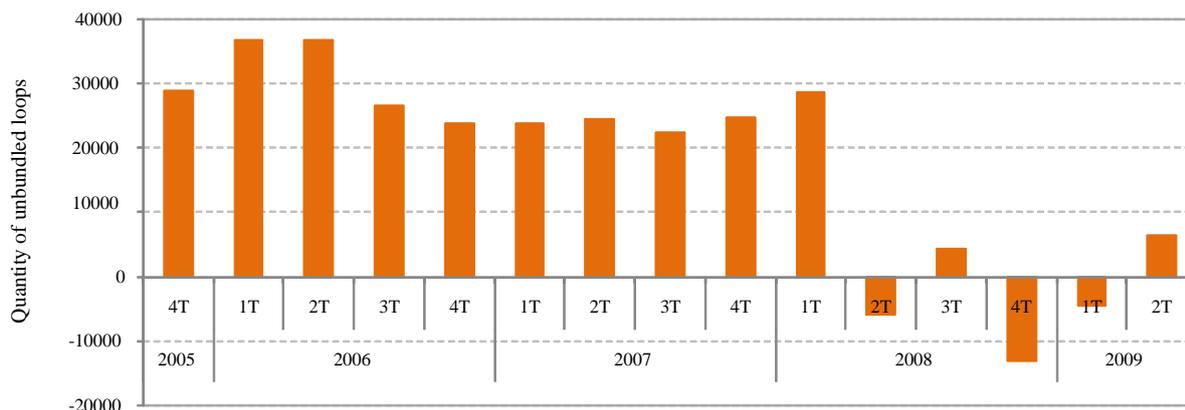
It is considered that the relevance of the presentation of forecast plans to the formulation of the offers of PTC was not questionable when the RUO was introduced, when there was no experience and when there was a need to adapt the offer to demand and streamline processes, since the submission of forecast plans was ultimately meant to enable PTC to match its resources to expected demand in the offer. Accordingly, in this context, the view was taken that this was a reasonable measure.

Since the introduction of the RUO into the market in March 2001, major improvements have been made in the offer, especially in terms of the processes associated with its own functioning, contributing to the increases seen in demand.

Indeed, on previous occasions, ICP-ANACOM has agreed with the view expressed by PTC on the need for the submission of OSP forecast plans and for these to be consistent with the services actually contracted. Otherwise, it was deemed that PTC could not be required to fully comply with the stipulated deadlines with respect to the exchanges and services where the forecast plans were inaccurate,.

However, it is considered that the RUO is now relatively stable, both in terms of processes and in terms of demand levels, whereas only limited instability has been seen recently (particularly stemming from a drop in demand, which has no negative impact in terms of guaranteeing specific levels, which could be the case if there was an unexpected increase in demand) - see Graph 5.

Graph 5. Quarterly evolution in number of unbundled loops



Furthermore, PTC already has the systems, structures and resources at an appropriate level, whereby there is no obvious need for any significant change in these systems, structures or resources as a result of trends in demand over the medium-term.

Meanwhile, in certain activities, PTC uses the same human resources for its own retail and wholesale service, whereby an interface could exist (with the respective human resources at a reduced level, handling the management and processing of requests) connecting the OSPs and PTC.

It is also noted that, at times, this matter has been a source of dispute between the operators - see, for example, the cases of dispute between Sonaecom and PTC for non-compliance with quality of service levels in the RUO³⁷, whereas, and as noted by the ERG, the obligations to send forecasts and the accuracy of such forecasts can give rise to conditions leading to abuse of compensation rules; as such it establishes certain rules in the event that such forecasts are implemented.

It is also noted that, where excessively detailed, the regular submission of forecast plans by OSPs may involve the transmission of privileged information on the competition to PTC, which information, in the current framework and in light of the above, would discourage further use of wholesale offers.

Finally, this issue has also been the subject of a decision of OFCOM which, despite recognizing the importance of clear and reliable forecasts and encouraging OSPs to submit forecast plans to Openreach (a functionally separate division of BT), took the position that the

³⁷ See, for example, determinations at <http://www.anacom.pt/render.jsp?contentId=952406> (repair time for faults) and at <http://www.anacom.pt/render.jsp?contentId=595499> (reply to requests for verification of eligibility).

payment of compensation for non-compliance with the established targets shall no longer be subject to the submission of forecast plans by the beneficiaries³⁸.

Accordingly, in this context, and having considered the advantages and disadvantages associated with no longer linking the submission of forecasts and the payment of compensation, this Authority takes the position that a balanced approach should be taken which takes into account the benefits of forecasts in terms of structuring the resources so that, in current conditions:

- D9.** PTC shall amend, in the RUO, the conditions for the payment of compensation for non-compliance with the established targets on the following terms:
- In the event that an OSP sends PTC demand forecasts for the loops, pursuant to and with a level of reliability stipulated in the RUO, they will receive the compensation established in the RUO in full;
 - Otherwise, they shall receive 75% of the amount of compensation established in the RUO.

It is noted that in the case of co-location, it is currently set out that, to provide for the rapid resolution of any constraints, the OSPs are required to submit forecasts, a situation which it is deemed should be maintained, including for the benefit of OSP.

4.1.7. Conditions of access to exchanges by the beneficiaries of the offer

The quality of service and, in particular, time of access to exchanges in emergency situations is an important issue that affects service provided to end-users.

Currently, the conditions set forth in the RUO for access to exchanges (including to open space modules) are as follows:

³⁸ See decision of 20 March 2008 on "Service level guarantees: incentivising performance", available at <http://www.ofcom.org.uk/consult/condocs/slg/statement/>.

Table 8. Current quality of service in the LLU - access to open space

Indicator	Objective	Occurrence
Deadline for access - normal (1)	2 working days	100% of the observations
Deadline for access - emergency (2)	6 elapsed hours	100% of the observations
<p>(1) The RUO states that access "<i>should preferably be made during the normal operating timetable of PT Comunicações</i>".</p> <p>(2) The RUO states that this type of access is covered by "<i>emergency situations, including faults which are urgent in nature</i>". It is also indicated that "<i>OLOs should make requests for access to the buildings of PT Comunicações through the Operator and Provider Service Centre</i>", with which it shall coordinate the schedule and the necessary actions for the callout to the building in question.</p>		

In exchanges without automatic access control, or with open space or exterior co-location, which are not permanently staffed by PTC personnel³⁹, there must be a time lag between the time that the request for access is made by the OSPs and attendance at the exchange by a PTC representative to supervise access by the OSP technician(s). Since this period corresponds, in practice, to the travel time of the PTC representative, with which, it is noted, there is always a cost associated, a period of 6 hours is excessive for access to any exchange, especially when there are customers without service during this period.

It seems reasonable and technically/operationally possible to differentiate between access times in an emergency situation, for example:

- (a) For exchanges in the urban areas of Lisbon and Porto and/or operation and maintenance (O & M) exchanges of PTC; and
- (b) For the remaining exchanges.

In the past, PTC presented⁴⁰ a proposal to operators for improving levels of quality of service provided under the RUO, under which, maintaining the current conditions for normal access⁴¹ and emergency access⁴², the introduction of premium emergency access was proposed as follows:

- (a) Attendance of the building within 6 hours, with possible guarantees of 2 hour, 3 hour or 4 hour callout, depending on the exchange in question⁴³;
- (b) An additional price of 15 Euros per callout, compared to the price of emergency access.

Account must be taken of the compromise between establishing deadlines which answer the needs of the market and the costs associated with guaranteeing such deadlines. The definition

³⁹ The presence of a PTC representative at these exchanges is always required, if only to open the doors. It does not seem at all reasonable to order PTC to allow OSPs free access (key or entry card access) to their premises.

⁴⁰ According to information submitted by one of the beneficiaries of the offer.

⁴¹ Scheduling with a minimum notice of 2 working days, with:

- price of callout scheduled in normal times: € 20.19 per hour plus €13.06 per callout;
- price of callout scheduled outside normal working hours: €37.16 per hour plus €13.06 per callout.

⁴² The building is attended within a maximum period of 6 hours, with a price of €37.16 per hour plus €13.06 per callout.

⁴³ For exchanges where one of the OSPs is co-located, PTC guarantees 2 hour callout to 52% of the exchanges and 3 hours for the others.

of access times in emergency situations differentiated by exchange (between 2 and 6 hours) provides an acceptable compromise. Moreover, this kind of access will be used occasionally, namely in emergency situations. In this respect, the position is taken that the proposal made previously by PTC provides an appropriate basis, whereas the company shall be required to identify the maximum times for the provision of access in emergency situations for all of the exchanges where OSPs have co-located equipment, providing ICP-ANACOM with the respective reasoning.

In the case of normal access, the position is taken that there are insufficient grounds for determining a change in time of access from two days to one day. In fact, this Authority considers that given the information available, where the activity of an OSP is efficient and well-organised, the reduction of the notice period from two days to one day, in situations where there are no faults or urgency in gaining access, is irrelevant. Consequently, it is not considered that an increased level of performance should be demanded of PTC in relation to this type of access. Extra requirements should be concentrated on wholesale services which have specific bearing on the quality of service provided to end-users and where the efficiency and organization of OSP does not have an important role in the overall efficiency of the service within the scope of LLU.

Again, it is necessary to define compensation for non-compliant access times, which should be proportional to the length of delay and the number of loops unbundled by the OSP in the exchange in question. Therefore, in line with the provisions established for compensation for non-compliance with the maximum time limit for the repair of faults, compensation for non-compliance with access times to exchanges in emergency situation is determined by:

Formula 4. Compensation for non-compliance with exchange access times in emergency situations

$$Delay_{xi} \times Monthly_Fee_Loop_x \times No_Loops_Unbundled_x$$

Where:

- *Delay_x*: Corresponds to the difference, in hours, between the time actually taken to grant access to exchange *x* and the maximum time limit for access in an emergency situation established in the RUO for this exchange *x*.
- *Monthly_Fee_Loop_x*: Corresponds to the average monthly charge, in euros, payable by the OSP for unbundled loops in exchange *x*.
- *No_Loops_Unbundled_x*: Corresponds to the number of unbundled loops of the OSP in question in the exchange *x*.

This compensation is applicable in each situation of non-compliance with the time limits of access to the exchanges in emergency situations.

For the time being, there is no provision for compensation to be paid in the event of non-compliance with the time limits for the provision of access to exchanges in normal situations, since this is not considered a critical factor. However, any occurrences of non-compliance will be monitored in order to determine whether there are grounds for the imposition of such compensation.

Emergency situations must be those in which it is evident that end-users are without service or that there is a degradation in the quality of service offered to the end-user.

Given the sensitivity of the information in question, it should be provided in an Extranet with access limited to OSPs.

4.1.7.1. Conclusion on the conditions of access to exchanges by the beneficiaries of the offer

Given the above, the position is taken that:

D10. PTC shall include in the RUO, on an exchange by exchange basis, the maximum time limits for access to exchanges in emergency situations (between 2 and 6 consecutive hours) applicable to all exchanges where the beneficiaries of the offer have co-located equipment, whereas such information shall be provided in an Extranet with access limited to OSPs.

Emergency situations are considered situations in which it is evident that end-users are without service or that there is a degradation in the quality of service offered to the end-user

D11. PTC shall submit to ICP-ANACOM, upon publication of the RUO and in detail, grounds for the new emergency access times and any additional charge to be made payable.

D 12. PTC shall introduce compensation in the RUO for non-compliance with the time limits for access to exchanges in emergency situations as follows:

$$Delay_x \times Monthly_Fee_Loop_x \times No_Loops_Unbundled_x$$

Where:

Delay_x - Corresponds to the difference, in hours, between the time actually taken to grant access to exchange *x* and the maximum time limit for access in an emergency situation established in the RUO for this exchange *x*.

Monthly_Fee_Loop_x - Corresponds to the average monthly charge, in euros, payable by the OSP for unbundled loops in exchange *x*.

No_Loops_Unbundled_x - Corresponds to the number of unbundled loops of the OSP in question in exchange *x*.

4.2. Transparency of provided information

Currently, PTC provides the following information in the RUO SI⁴⁴:

Table 9. Information provided on the access network

Information provided	File
Information on the general technical characteristics of the local networks of PTC	Inf_topologia.pdf
Information on the capacity for physical OR co-location and viability of open space co-location.	Inf_coinstal.pdf
Information, MDF by MDF, on the number of local loops in use, number of metallic pairs in the distribution frame, number of metallic pairs in operation and number of surplus lines	Inf_lacetes.xls
Information, MDF by MDF, on the general characteristics of the loops, particularly on the minimum, maximum and average lengths of the local loops and the calibres of cable for the most representative configurations of the access network	Inf_calibres.zip
Information, MDF by MDF, on the number of broadband connections, broken down by technology	Inf_tecnologia.xls
Information, MDF by MDF on the numbers associated with the dependent RUs of a determined MDF	Inf_remotas.xls
Information, MDF by MDF on the numbering associated with each loop (including blocks and respective potential)	Inf_MDF.xls

PTC also provides:

- (a) A complete list of all the MDFs on its network, identifying each MDF, its postcode and geographical coordinates;
- (b) Regularly updated information on each AP including in particular, the codes and name of the originating AP, the code and name of the new AP and/or existing AP to which the loops will be transferred, including the number of transferable loops and the expected date for conclusion of the transfer.

For purposes of analysis, the following issues need to be addressed:

- (a) The definition of the concepts associated with the information detailed by network element, namely the concepts of AP and MDF;
- (b) The definition of the information detailed by network element, including information on the characteristics of the local loops;
- (c) The installation of new APs, the closure of APs and the relocation of loops.

There are further obligations with respect to information on co-location. It was, in particular, determined ⁴⁵ that PTC should maintain an updated list making information available to the OSPs with respect to:

⁴⁴ See Annex 5 of the RUO. This information may be requested by an OSP with at least one confirmed request for co-location, subject to the prior signing of a confidentiality agreement.

- (a) Exchanges with constraints identified but not overcome, because there are no budgets approved by at least one of OSP or where resolution is not viable (specifying the relevant situation);
- (b) Exchanges with constraints being resolved by PTC, identifying (i) the number of operators eligible for the allocation of costs, (ii) the budget implemented and (iii) the time for resolution;
- (c) Exchanges without constraints, but where the one year period, during which beneficiaries are eligible to share the costs associated with the resolution of constraints, was not yet elapsed, identifying the number of eligible operators, the budget and the date on which this period ends.

4.2.1. Network elements concepts

The OSPs have pointed to the existence of ambiguity in the various concepts presented, related to the network elements of PTC.

PTC, in response to the public consultation on the regulatory approach to NGA states:

"With regard to the considerations outlined in the consultation on the access network of PT Comunicações, there appears to be some ambiguity in the concepts presented. In fact, MDFs are not exclusively installed at Primary Attendance Points (AP), since there are also MDFs at Secondary Attendance Points. Meanwhile, local exchanges, as they are commonly referred to, are also Attendance Points and at the level of ROU and unbundling of local loops, these are attendance points with MDFs, whether Primary or Secondary."

In addition the OSPs, for example, Sonaecom, state in response to the same consultation that:

"Attendance points (AP): these points are defined in the consultation as "...a technical node/point of the network belonging to a given Exchange Area (EA), which covers a determined geographical area within the EA and which has capacity to support FTS and ADSL services. ...". However, given this definition, it is difficult to make a distinction between an exchange and a remote unit: is a local exchange unable to support the service of FTS or ADSL? Does a remote unit not have this capability? What differentiates them? What makes an AP into an UCR? Sonaecom takes the view any point of the network where local loop unbundling is technically possible constitutes an AP, whereby this is a term which covers main exchanges, as well as remote exchanges and street cabinets. However, the regulator identifies over 2800 attendance points, and at the same time, identifies more than 10 000 street cabinets, which shows the inconsistency of the information"

This is clearly an issue that requires clarification. Whatever the technical definition, the position is taken that, as advocated by Sonaecom, any point of the network where local loop unbundling is possible should be clearly identified and characterized, taking into account the

⁴⁵ And PTC is acting accordingly

detailed information identified above (and which is analyzed in detail in the following sections).

In fact, given the various names used by PTC with respect to the access network (e.g., AP - primary and secondary - MDF, RU, Exchange Area or street cabinet(s), sometimes to designate the same physical element (e.g. There are MDFs in secondary APs) the view is taken that there must be an unambiguous element, as comprehensive as possible, enabling full characterization of the access network.

In fact, as stated in the public consultation on the regulatory approach to the NGA, there is recognition that *"there is some lack of clarity in the information provided by PTC, specifically in terms of the concepts of AP and in terms of the relationship of APs with MDFs, RUs and even the local exchanges themselves. The basic structure of PTC's access network should be clearly defined and presented, while the information made available to beneficiary operators should be consistent throughout. The responses received clearly set out the view, confirmed by the recent experience of ICP-ANACOM in its analysis of these issues, that the concepts and definitions relating to network infrastructure need clarification in order that there is harmonised, clear and unequivocal understanding thereof."*

Additionally, as mentioned in section 2, OSPs have recently raised issues related to the need for PTC to provide reliable information, for all the attendance points of its network, on their location, the number of associated loops, associated geographic numbering, characteristics of the copper pair, conditions of co-location and the type of services that may be offered at that exchange.

Reference is made in this regard, also in the Consultation report on the regulatory approach to NGA, that *"it must be ensured that the operator is provided with the information which is strictly necessary for the development of its network and LLU-based services - for example, the exact location of APs whatever their type (local exchange, MDF or RU), their geographical coverage and details of associated numbering - as well as any developments planned by PT at the level of access networks which may affect this development"*.

According to PTC, an AP *"is a term used to identify a technical node of the network, belonging to an exchange area, which covers a determined geographical area"*.

PTC should further fully clarify, with respect to the RUO, the concept of installation point (IP).

Accordingly, taking the latest developments into account, whereby the AP has taken on fundamental importance in the access network, and recognizing the need for a certain period to be included in the RUO, the position is taken that:

D 13. PTC shall include in the RUO the definition of the concept of AP and installation point (IP) in a detailed and clear manner, identifying the information available to beneficiaries of the RUO, through restricted access, within 2 months of notification of the final determination, for each AP:

- Its name and unique identification code;

- The address, post code and geographical coordinates of the first installation point (IP) associated with the AP, identifying the reference system;
- Whether the AP is primary or secondary and, if secondary, which main AP it depends on;
- The type (own or rented building, container or cabinet) and the feasibility of co-location (for cases already evaluated);
- Their validity (FTS, ADSL or both);
- The exchange area to which it belongs;
- Whether or not it has an MDF and if so, the name of the MDF.

D 14. In any information detailed by AP, PTC shall always identify the AP through a unique code.

D 15. Any AP, regardless of whether or not it is a primary AP, is eligible for local loop unbundling, whereby OSPs can be physically or remotely co-located at any AP, except if there are duly reasoned technical constraints, and may request the unbundling of loops.

D 16. PTC shall include provision in the RUO, with respect to the external cable connection of the remote co-location service, for a cable of adequate capacity to link the Secondary AP and the street cabinets.

D 17. PTC shall define in detail, in the RUO, the concepts of AP, MDF, remote unit and street cabinet, establishing the relationship between each one.

For now, no obligation is imposed to provide specific information on street cabinets, except with regard to the number of street cabinets per AP (information which should already be available to PTC and which OSPs require in order to evaluate potential access to the sub-local loop). This position is in line with the view advocated in the report of the public consultation on the regulatory approach to next generation access networks: "*Any move towards an FTTCab solution, even in a limited way, will always be associated with the development of LLU (as opposed to an FTTH solution, independent of the copper network), especially with the conditions of local sub-loop unbundling and co-location in, or next to, the street cabinets. Accordingly, if PTC moves towards an FTTCab solution and any of the operators benefiting from the LLU shows a firm intention to benefit from the same solution, ICP-ANACOM will examine the situation in detail and may need to intervene with respect to the RUO, especially in terms of processes and procedures (including co-location). To this purpose it is noted that the RUO already provides for the possibility of local sub-loop unbundling, although this solution requires more detail and operation.*". In this framework:

D 18. PTC shall provide information on the number of street cabinets, by AP.

Assessment of the conditions of co-location available at each AP should be made on a case by case basis, since PTC is under no obligation to evaluate and maintain information on co-location conditions in all APs of its network where there are no expressions of specific and concrete interest.

4.2.2. Information on the characteristics of the local loops and their correct identification

As mentioned above, the availability of information about the characteristics of local loops within the scope of the RUO has raised concerns among some beneficiaries of the wholesale offer, including an alleged lack of information provided by PTC.

The OSPs add that the information currently provided by PTC on the characteristics of the loops has severe shortcomings, with a summary of the general data at MDF level on the lengths and calibres of the loops relating to previous years.

The information currently provided at MDF level, identified in **Table 9** does not respond effectively to the needs of the beneficiaries of the RUO and must also be adapted to the evolution that has been seen on the PTC network. In particular:

- (a) Information on the general technical characteristics of the local networks of PTC

General information that should continue to be provided in existing form.

- (b) Information on the capacity for physical OR co-location and viability of open space co-location

Information that should continue to be provided in existing form.

- (c) Information, MDF by MDF, on the number of local loops in use, number of metallic pairs in the distribution frame, number of metallic pairs in operation and number of surplus lines.

Information that should be provided, AP by AP, instead of being provided MDF by MDF. The loops in use must refer to the local loops, number of pairs in the distribution frame, number of pairs in operation and number of surplus lines, based on metallic pairs, which are connected to the AP in question and which are eligible for unbundling.

- (d) Information, MDF by MDF, on the general characteristics of the loops, particularly on the minimum, maximum and average lengths of the local loops and the calibres of cable for the most representative configurations of the access network.

General information to be provided AP by AP, notwithstanding specific information provided about each individual loop, as detailed below.

- (e) Information, MDF by MDF, on the number of broadband connections, broken down by technology.

Increasingly relevant information in the context of xDSL technology, allowing greater sensitivity in terms of the potential for interference, and as such, permitted speeds, must now be given AP by AP.

- (f) Information, MDF by MDF, on the numbers associated with the dependent RUs of a determined MDF.

Information that should be provided, AP by AP, instead of being provided MDF by MDF. Since the concepts which are relevant for the purposes of the RUO are those of the main and secondary AP, references to RUs should be replaced by references to secondary APs.

- (g) Information, MDF by MDF on the numbering associated with each loop (including blocks and respective potential)

Information which should be provided, AP by AP (including remote units), instead of being provided MDF by MDF.

It is considered that the information should be updated, whereas the position is taken that this update should be performed every 3 months.

Following the analysis conducted in the previous section, and due to consistency, the position is taken that:

- D 19.** All the information currently available and separated by MDF shall instead be separated by AP, and shall be updated and made available to beneficiaries of the offer within 3 months from the date of notification of the final determination. Such information shall be updated on a quarterly basis.
- D 20.** Taking into account the current framework of the RUO, information provided on the number of local loops in use, number of pairs in the distribution frame, number of pairs in operation and number of surplus lines must refer exclusively to metallic loops.
- D 21.** The "*Information, MDF by MDF, on the numbers associated with the dependent RUs of a determined MDF*", shall be replaced by "*information, primary AP by AP, with respect to numbering associated with the secondary APs dependent on a determined primary AP*".

On the other hand, there are continuing complaints by RUO beneficiaries about the inadequacy and lack of currency and reliability with respect to the information on the effective coverage of each MDF/AP, which is currently based on the numbering to which "in principle" it is attached and on a list of exceptions and a web application, where the database is queried number by number.

The question of precise knowledge of the coverage of each exchange and unambiguous identification of the exchange that is connected to a particular loop is particularly relevant

both to the decision to invest in co-location in a given exchange⁴⁶ and to the marketing of LLU-based services, whereas there are negative effects on end-users and the general market when this leads to false expectations of service activation, even if based on information which is available but which proves to be incorrect.

Moreover, incorrect information can lead to an incorrect assessment of the addressable market, resulting in the requests of customers being refused or not being considered when these could have been answered by the beneficiary.

Under these conditions, and taking into account, in particular:

- (a) the case of Spain and France, where the reference offer includes a similar obligation;
- (b) the fact that the IRG set out the provision of this information in its 2002 document "*Principles of implementation and best practice regarding LLU*"; and
- (c) the fact that after several years the parties involved have failed to reach agreement on a satisfactory solution to the problem,

it is considered appropriate and proportionate to order PTC to make available, at the request of beneficiaries, geo-referenced information on coverage areas (through appropriate mapping, indicating coordinates of the limit points or seven digit postcodes) opting for the solution that minimizes costs and presenting detailed justification to ICP-ANACOM of any costs incurred in the provision of this information.

The view is also taken that incentives should be created for the maintenance of accurate and updated information in the current systems, whereas it is determined that any incorrect information on an active loop (by omission or inaccuracy), where duly demonstrated, shall give right to compensation to the amount of twice the installation price of a loop, i.e. 76 euros. This compensation shall be applied particularly in cases of inaccurate situations, where no loop exists in a correct AP, which situations are found not to correspond to reality, notwithstanding the fact that such information is dynamic and should therefore be kept updated on a quarterly basis, whereby changes occurring during this period should not be penalized. This figure takes into account the value of daily compensation for failures to comply with the time limit for installation and the known values corresponding to commission from customer requests, which in many cases the beneficiaries are unable to recuperate.

Whereas it is recognised that the information in question is not static, it is considered that PTC may, in future, state grounds for discrepancies in the information supplied with basis in activations, deactivations and changes of location which may occur over a given period of time. That is to say, it is accepted, in terms of a commitment to cost-benefit, that the information is not updated in real time and requires updating, at a minimum, on a quarterly basis.

⁴⁶ since it can impact the assessment of the risk of entry into new exchanges.

- D 22.** PTC shall provide, upon request of beneficiaries, and within 3 months from the date of notification of the final decision, geo-referenced information on the coverage areas of the APs (via appropriate mapping, indicating the coordinates of the limits points or seven digit postcodes), opting for a solution that minimizes costs and presenting to ICP-ANACOM detailed justification for any costs incurred in the provision of this information.
- D 23.** PTC shall include provision in the RUO for the allocation of compensation for each occasion that incorrect information is provided on the numbering associated with a particular AP, where properly demonstrated, to a value of 76 euros. The information must be updated, at a minimum, on a quarterly basis, whereas any incorrect information that can be shown to result from changes occurring during this minimum quarterly period shall not be considered for the purposes of such compensation.

Additionally, it can be seen that:

- (a) PTC has implemented a set of testing and diagnostic tools (e.g., GEREX) that provide a set of measurements and electrical parameters for the loops that constitute the set of accesses⁴⁷;
- (b) PTC makes available, through the "Rede ADSL PT"⁴⁸ IS, an application available online⁴⁹, through which the OSP can immediately obtain, for a given loop, the results of theoretical ADSL/ADSL2+/M (speeds from 256 Kbps up to 24 Mbps) coverage tests, obtaining the indication "viable", "not viable" or "inconclusive"⁵⁰.

The non-availability of the above data to the OSPs, under the RUO, results in an asymmetry between the treatment of beneficiaries of the RUO and PTC's own services, with significant impact in terms of the sale of broadband products, whereas the ERG itself stresses the importance of alternative operators having knowledge of the levels of quality of service that they are able to provide to their customers.

In particular, in the light of the current conditions of the broadband access market and taking into account the future evolution which is envisaged for this market, prior knowledge with respect to the specific features of the loops becomes increasingly important and fundamental. This is because the possibility of supplying end-users with high speeds and services requiring higher speeds (e.g. IP-TV) is heavily dependent on the physical characteristics of the loop, in particular on its length and on latency and attenuation levels. Access to this information results in increased well-being of users and an improvement in the competitive conditions of

⁴⁷ According to publicly available information, this application, which is based on Oracle technology and designed by PT Inovação in order to monitor their fixed network, operates at the level of centralized supervision of the local network and automates the conduct of testing, compiling and processing of information on equipment for measuring the network lines.

⁴⁸ Accessible to current OSP beneficiaries of the RUO who are also beneficiaries of the "Rede ADSL PT" offer.

⁴⁹ Known as "Viabilidade ADSL", accessible through the portal <https://ptwholesale-clientes.telecom.pt>.

⁵⁰ In this case, the result is not conclusive and the conduct of qualification tests may be requested. According to PTC, within the scope of the "Rede ADSL PT" service, the online viability response is determined by combining measurements and the application of theoretical algorithms on the routing of the copper track.

the market, reducing the risks associated with LLU-based investments and providing for its expansion to new exchange areas.

The determination of distance and calibre of the physical support and the calculation of theoretical values of attenuation⁵¹ already constituted activities performed in the verification of eligibility, but were eliminated from this service because the OSPs wanted a reduction in pricing and because PTC demonstrated difficulties in meeting deadlines established for the service. It should be noted, however, that with the increased bandwidth needs, in particular due to "triple-play" offers (which include TV) circumstances have changed.

The information currently available on the calibres and the lengths of the various types of cable of the access network in each MDF⁵², while useful for a macro assessment of the feasibility of providing certain services from a given MDF, since it is grouped by MDF, does not enable specific assessment of such viability each loop.

Naturally, this information about the characteristics of the loops can only be made available for active loops, since in the case of non-active loops there is no established routing of the copper section and the loop is not connected to the PTC telephone switch, whereby there may be sections missing between the AP with which it may be associated and the network termination point of the end-user.

Therefore, in addition to information currently available, and also taking into account the principles adopted by the IRG in 2002 in the document referred to above, which provides for the provision of results of conducted xDSL tests, the position is taken that:

D 24. PTC shall make available to the beneficiaries of the RUO, through access to the wholesale portal, within 3 months from the date of notification of the final determination, the information currently available under the "Rede ADSL PT" offer with respect to the results, for a given loop, of theoretical ADSL/ADSL2+/M (speeds from 256 Kbps up to 24 Mbps) coverage tests, giving an indication of "viable", "not viable" or "inconclusive".

D 25. PTC shall make available to the beneficiaries of the RUO through access to the wholesale portal, within 3 months from the date of notification of the final determination, information, for a given active loop, on its length and attenuation levels.

It is considered that the availability of this information reduces the relevance of the qualification tests of the local loop and respective pricing, issues which have been raised by a certain OSP. Furthermore, given that the prices of these tests were defined in 2001, the position is taken that:

⁵¹ Also the analysis of compliance with the spectrum management plan was conducted in this phase.

⁵² Information is provided on the average lengths, minimums and maximums for 90% and 75% of the sections of each calibre, by type of routing between the MDF and the PD.

D 26. PTC shall revise the prices of the qualification tests and, upon publication of the revised RUO following this decision, shall submit to ICP-ANACOM the respective detailed reasoning describing in detail all relevant costs and shall further inform this Authority, with appropriate detail, about the procedures applicable under the "Rede ADSL PT" offer with regard to local loop tests, including qualification tests.

4.2.3. Installation of new APs, AP closure and relocation of loops

This issue, as mentioned in Section 2, has given rise to specific comments from the entities responding to the public consultation on the regulatory approach to NGA and was the subject of a preliminary position by ICP-ANACOM.

In particular, given the proposal presented in the consultation document by ICP-ANACOM making provision for notice periods which are differentiated according to the percentage of loops in a given MDF affected by network changes:

(a) PTC:

- a. Understood, in general, the need to establish different periods of notice for structural network change, as is the case of any "phase-out" of MDFs.
- b. Noted that the RUO already stipulates that the company give notice, twelve months in advance⁵³, of all planned work which may affect the quality or performance of the service provided to the OSPs (cases which include the structural changes which are the subject of this issue)⁵⁴.
- c. Mentioned that there was no expectation for any "*phase out*" movement of MDFs, whereby it did not consider that the definition of differentiated time limits timely, since there are MDFs with entirely different dimensions and features⁵⁵ and such definition would not lead to a proportional and adjusted treatment, as proposed by ICP-ANACOM.
- d. Took the view that this is a matter that should be the subject of a specific study and not necessarily of an agreement between the various stakeholders, especially in a context of NGA⁵⁶ establishment.
- e. Notes that it regularly sends information to the beneficiaries of the RUO on the update of its APs, including, code and name of the originating AP, the name and code of the new AP and/or existing AP to which the loops will be

⁵³ Following the determination of ICP-ANACOM of 28 June 2001.

⁵⁴ PTC notes that even the period adopted in the RUO has proved, in certain circumstances, to be excessive, given the dynamic evolution of its network.

⁵⁵ According to PTC, the treatment of MDFs with up to 5,000 loops in use (in most cases) cannot be the same as the treatment of MDFs with more than 20,000 or even more than 30,000 loops in use.

⁵⁶ Since many operators are developing their own optical fibre solutions, independent of the RUO, which may impact the plans that were sent to PTC (which does not want to be constrained in the evolution of its network by contingencies and changes in the plans of operators).

transferred, including the number of transferable loops and the expected date for conclusion of the transfer.⁵⁷

- f. Considers that the only requirements that are appropriate and proportionate are those related to the provision of timely information to affected operators, enabling them, to the extent they deem necessary, to reformulate their access solutions.
- (b) ONI agreed with the differentiation in the periods of advance notice according to the percentage of affected loops and advocated the adoption of other measures, including:
- a. The presentation by PTC of their plans for NGA development in transparent form and with sufficient advance notice.
 - b. No price increase in the RUO, whereas any increase in operating costs should be borne by PTC.
 - c. No deactivation⁵⁸ of exchanges where there are co-located operators and where the number of unbundled loops exceeds a certain limit, unless PTC bears the costs of migration to street cabinets.
 - d. The assumption, by PTC, of the costs of migration in exchanges where there are co-located operators but where the number of unbundled loops is below a certain level whereby the costs of maintaining the exchange PTC are excessive.
- (c) ZON agrees with the existence of different periods, taking the view that this is a positive framework solution for the issue. It considers, however, that the definition of a percentage of loops to be deactivated might not be suitable given the needs of the operators which base their offers on this service. Therefore, it comments that an alternative might be to give importance of the capillarity of the offers of the operators (i.e., the areas which are most relevant to the alternative operators will be the last to be decommissioned).
- (d) VODAFONE agreed with the proposed rule for differing periods of advance notice of structural changes in the access network of PTC, considering, however, that it is necessary to ensure that the dates are reported for the commencement of such changes (which always comply with the established notice period) and that the affected loops and areas are identified.
- (e) SONAECOM, noting that the possibility of discontinuing access points has a severe impact on beneficiary operators and may bring into question the very viability of the investments which have already been made, argued that:

⁵⁷ PTC notes that the installation of new APs is, necessarily, always based on rational justification at both an economic and technical level, providing an improvement in the provision of services, the solution of saturation problems, problems of quality and/or coverage, or all of these objectives simultaneously. And that, depending on the motivation, the timing thereof is necessarily variable and not always controllable by the performing operator (e.g. implementation of new urban developments).

⁵⁸ During a suitably long period of time.

- a. It is essential that there is predictability regarding the evolution of the network, considering, in this respect, that the proposal presented in the consultation document⁵⁹ appears balanced. However the operator believes that 36 months notice for the dismantling of an exchange is clearly insufficient, given the impact that this would have on the business of an operator⁶⁰, proposing an extension of the deadline to 5 years⁶¹.
- b. Whenever a new street cabinet space is established, there should be provision of: (i) space for operators who are co-located in the respective "mother exchange", as well as conditions for a second cabinet to be built by other beneficiaries that so wish (ii) space in the ducts connecting the "mother exchange" to the street cabinet and, if this is not possible, dark fibre.
- c. Any new street cabinets (or APs or RUs) should have a minimum number of customers so that the economic viability of its unbundling is ensured, or where this is not possible for duly reasoned technical reasons, the provision, on the date of opening of the access point, of a bitstream offer which enables replication of offers competing with those offered by the SMP operator to its customers.⁶².
- d. In cases where the co-located operators at an exchange have not been notified of the plan for remote enabling and where the co-location of the beneficiaries in the new AP is feasible, a dark fibre connection should be provided, without cost, between the exchange and the AP.

⁵⁹ See section 2.2.5 of the consultation document: "*From the outset, a basic measure which could be taken to minimise the impact of these alterations, which could become structural and affect a large percentage of loops of a given exchange, is to extend the period of advance notice that PT Comunicações gives to the beneficiaries in proportion to this percentage. For example, one could set out a rule of the type:*

Advance notice of PT Comunicações of a minimum of:

- 12 months, where less than 5% of the total loops are affected;;
- 18 months, where less than 10% of the total loops are affected;
- 24 months, where more than 10% of the total loops are affected;
- 36 months, where more than 50% of the total loops are affected or where the exchange/MDF is to be decommissioned;"

⁶⁰ Therefore, according to Sonaecom, the typical amortisation periods of equipment installed by beneficiary operators in the exchanges are clearly greater, whereby it does not accept a period of time which is shorter than that necessary to ensure such amortisation.

⁶¹ Stating that an exchange closure is planned far in advance, as part a plan of structural change to the access network.

⁶² According to SONAECOM, PTC has an incentive to scale new access points so that they are not large enough for RUO beneficiaries to obtain a return on unbundling, arguing in these cases for a solution which is similar to that established in the case of Holland (bitstream offer allowing replication of the offers that the beneficiaries of RUO have with basis on this offer). Sonaecom believes that there should be stronger discouragement of this type of behaviour as far as imposing the obligation on PTC that - whenever, conditions allowing replication are not guaranteed for alternative operators in new APs - the company provides payment of compensation to the operators who were co-located in the deactivated exchange, defined (i) in order to ensure that these operators obtain a reasonable return on investments made and put at risk by decisions made by PTC; and (ii) above all, in order to ensure that, in its decision, PTC incorporates the cost of opportunity associated with attempts to close off the market.

- e. There should be processes providing for the quick migration of customers which minimize service interruptions and whose costs are borne by PTC, with consideration to the fact that the beneficiaries of the RUO are not responsible for these changes in the structure of the wholesale offer which they contracted.

In the report of this public consultation, this Authority submitted its preliminary position, which is restated below:

"In this context, special concern centres (as well as the on addition of new APs and the 'relocation of loops') on the possibility of access points being discontinued (remote units, attendance points or street cabinets), which may occur in a scenario of widespread evolution to NGA. ICP-ANACOM recognises that a high occurrence of these situations may in fact have a large impact on beneficiary operators of the LLU and on the sustainability of executed or planned investments, with negative implications for competition and consequently for consumers.

It is reiterated that ICP-ANACOM, in the definition of an approach which is consistent and coherent with the objectives of regulation, as enshrined in law, and with the objectives of current regulatory practice, will seek to ensure that no disruption will occur to the functioning of markets, particularly in wholesale access markets. In this respect ICP-ANACOM may intervene at the level of wholesale offers (especially the RUO) - in compliance with the obligations of access, transparency and non-discrimination imposed on the operator with SMP -, adapting said offers and improving them in specific aspects.

ICP-ANACOM recognizes, as previously stated, that PT should be free to develop its network and services as efficiently as possible for the benefit of its customers. Since the promotion of efficient investment in networks, particularly in NGA, is one of the objectives of this Authority, any restrictions or limitations on such investment should be minimal.

However, given the existence and maintenance of obligations of access, non-discrimination and transparency imposed on PT as holder of SMP in the wholesale access markets, this objective does not invalidate the requirement that PT continues to comply with certain rules in respect of the provision of information on the development of its network, essential for operators which are beneficiaries of offers supported on this network.

It is not intended that PT provide its competitors with commercial information, which is confidential in nature, but that, with a reasonable period of advance notice, PT provide all the information which enables operators, just as it enables PTC, to determine at any moment which investments should or should not be undertaken with respect to the development of their networks and services in order to derive an adequate rate of return. Moreover, PT itself affirms its 'comprehension of the establishment of different periods of prior notice for structural changes in the network'.

There is consensus that investments in electronic communications networks are investments which are (very) long term, sometimes surpassing economic, regulatory

and political cycles. It is therefore of utmost importance to seek maximum stability, consistency and predictability in the market, which predictability PT likewise advocates for its own investments.

Obviously, changes will occur during the evolution to NGA, with potentially large impact on existing networks and services⁶³, whereby it is essential to provide clear rules from the outset governing the timely provision of information on this evolution with a reasonable time horizon given the long-term nature of most of the investments.

The proposed rules apply mainly to structural changes in the network, such as possible deactivation of MDFs, as well as to cases where ‘relocation of loops’ occurs (e.g., through the establishment of a new AP), which, if this involves an MDF where operators are co-located, directly affects the operations of these operators in said MDF. The ‘affected loops’ are the active loops which are ‘relocated’, whereas the percentage is calculated in proportion to the total number of active loops⁶⁴. ICP-ANACOM, not intending to create (new) complex procedures, considers this to be a reasonable criterion to quantify, in a simple manner, the potential impact of network changes on LLU.

On the other hand, it continues to accept that unplanned (and, by nature, temporary) situations - such as situations of emergency or force majeure or the need to perform control, adjustment or maintenance operations, as referenced by PT - are considered exceptional conditions, even though they should be subject to a minimum prior notice (in the case of operational and maintenance operation), as set out in the RUO.

Therefore, in light of the comments received and the review conducted by this Authority, the following be set out as a simple rule, to be considered in any future determination of ICP-ANACOM on the RUO:

‘Advance notice of PTC with a minimum period of:

- 12 months where the number of active loops to be relocated is less than 1/3 (33%) of the total active loops in the MDF;*
- 36 months where the number of active loops to be relocated is more than 1/3 (33%) or where the MDF itself is to be deactivated’.*

Given the number of operators actively using the LLU (i.e., the MDFs) and the size of the MDFs, the threshold of 1/3 (of active loops) meets the criteria of reasonableness, in view of the possible impact of lower⁶⁵ or greater⁶⁶ thresholds.

⁶³ See, for example, the Dutch case.

⁶⁴ It is noted that, normally, in any MDF, the total number of loops in the distribution frame (in operation or not) is much higher than the number of active loops, but given that the biggest impact will be at the level of active loops, it was decided to use this simplification.

⁶⁵ In this case (e.g., 10%), most of the alterations proposed by PTC would be submitted with a notice period of 36 months, which would limit PTC's freedom of action with respect to the structure of the access network.

In any case, the loops which are already unbundled (or are to be unbundled prior to their 'relocation'⁶⁷) for an operator co-located in a given exchange should not be relocated without checking whether there is a possibility of alternative access, otherwise the end-customer will lose the service of this operator or the operator will have to be co-located in the new AP(s), even if against their will, assuming that this is feasible, which in many cases it may not be, given the type of installation in which these APs are established.

Accordingly, even with prior and timely information, it is necessary to examine to what extent such change(s) put(s) at risk investments which have already been made (or which are due to be made in the meantime) by the beneficiary operators. It is also necessary to guarantee that any costs arising from the change are not passed on indiscriminately and disproportionately to the beneficiary operators, which could constitute a double penalty for the alternative operators, since the impact itself of such developments on the downstream markets will probably be very negative for these operators (e.g. lower number of potential customers, leading to lower revenues)."

ICP-ANACOM considers that in general terms the above position remains valid.

Indeed, the view is taken that greater transparency should be ensured in terms of the information which is made available to the beneficiaries of the RUO and which impacts their investment decisions or affects investments already incurred.

In this respect, the fundamental question is not whether or not there is a "phase out" of MDFs/APs. The fundamental question is that the beneficiaries of the offer may know in good time if there will be relocation of loops between MDFs, since this is the main factor affecting their business, or if the number of copper pair loops is decreasing (being replaced by optical fibre loops). Naturally, relocation occurring for reasons not attributable to PTC can not be forecast on the same terms.

Therefore, besides the need for beneficiaries of the RUO to have access to updated information, even where approximate at first and updated in good time prior to relocation, with regard to the exact number of loops supported on copper pairs in each AP (as discussed in the section above), it is also important that they know, with reasonable notice, if the number of loops connected to a given AP where they have co-located equipment will see a significant reduction over the long term, in light of the impact that this has on their business. Access to such information will simultaneously allow operators to prepare to migrate customers to alternative solutions (including next generation) while preventing the assumptions underlying their investment plans from being immediately changed. Accordingly, it is also necessary for PTC to give reasonable notice of the creation of new APs on its network, including all relevant information, and incorporating the needs of operator in the sizing of these points, and especially the needs of those operator which are co-located and

⁶⁶ In this case (e.g., 50%), the majority of the amendments proposed by PTC would be submitted with a period of 12 months, which would have a large impact on co-located operators and on their capacity for adapting to the alterations.

⁶⁷ It is noted that PT may not prevent an operator from choosing to continue the process of loop unbundling, even after giving prior notice, in exchanges where the operator is already co-located. Otherwise, there is a risk of encouraging changes in the network "only" in order to restrict LLU

have expressed interest, particularly those that have made a firm commitment. This position has also been set out in the analysis of markets 4 and 5⁶⁸.

Indeed, several operators have made significant investments in co-location and loop unbundling, whereby it is necessary to consider appropriate periods and models for transition so that such investments are not put at risk and that the levels of competition which have already been achieved are not jeopardised, while account must also be taken of the risk that this transition may result in a (re)monopolisation of the electronic communications markets. In this sense, there is a need to define mechanisms which provide for non-disruptive migration to NGA.

The proposal advanced in the report of the public consultation on the regulatory approach to NGA for a prior notice period of up to three years needs to be reviewed, particularly with regard to situations of MDF decommissioning, taking into account the need to make investments in co-location, investments in the unbundling of specific loops and in related services viable, recognizing the role that LLU-based services play in the investment ladder and the migration to NGAs, and recognizing the need for a certain level of flexibility and speed in the development and updating of the PTC network. It should be noted in this respect that the OSPs should have access to relevant information at the same level of detail, the same quality and with the same timeliness as is provided to the services of PTC, since the decommissioning of an AP is a strategic decision, planned over the long term. In addition, the EC, in its most recent draft consultation on the regulatory approach to NGA⁶⁹, states that, where there is no agreement between the operator that provides access and the beneficiary of such access with respect to the periods of migration, the NRA must ensure that beneficiaries are informed at least 5 years in advance of such deactivation (which period may be reduced, if an equivalent access can be guaranteed).

ICP-ANACOM does not agree with some of the proposals suggested by the beneficiaries, particularly related to:

- (a) The impact on PTC of any costs of migration, whereas it will be necessary to guarantee that any costs arising from the change are not passed on indiscriminately and disproportionately to the beneficiary operators, which could constitute a double penalty for the alternative operators;

⁶⁸ Specifically it was stated that "*Furthermore, as noted above, with the dissemination of attendance points and the relocation of access point from primary attendance points to secondary attendance points, the provision of detailed and timely information on developments in the access network becomes crucially important and is essential so that OSPs are able to assess its impact and evaluate different investment options. As such, it is understood that PTC must provide OSPs with timely information on developments in the access network before the introduction of changes that impact the conditions existing with respect to the investment decision by the OSP. In this case, it is important, also taking into account non-discrimination, that Grupo PT inform the beneficiaries of the LLU with reasonable advance notice as to (i) the date on which it plans to install a new attendance point so that the co-location needs (firm requests) of LLU beneficiaries may be taken into account, as far as possible in the design of the attendance point, (ii) whether or not there is space in the duct between the primary and secondary attendance points, and (iii) the loops to be relocated. This issue will be detailed in a separate document.*"

⁶⁹ See http://ec.europa.eu/information_society/policy/ecomm/library/public_consult/nga_2/index_en.htm.

- (b) The provision of conditions for the installation of a second cabinet, for reasons beyond the control of PTC, particularly related to local authority licensing for this duplication of infrastructure;
- (c) Ensuring that new APs have a minimum number of customers to ensure the economic viability of co-location and respective unbundling of loops, since it is not for this Authority to replace PTC in the definition or scaling of the network of this company, which is done taking into account not only economic conditions but also premises of a technical nature - the possibility of imposing an offer bitstream at any AP where there are no co-located operators will be addressed again in the revaluation of markets 4 and 5.

In any case, the loops unbundled prior to relocation should not be relocated without checking for the possibility of alternative access, otherwise the end user will lose the service of the operator or the operator will have to co-locate in new locations, thereby incurring additional costs.

It is also important to define, in the short term, the general conditions to be followed in planning and in the technical conditions in case of any need for relocation of equipment (already) co-located in the exchanges and any migration of accesses/customers, subject to specific conditions be agreed a minimum time in advance.

Therefore, in conclusion, the position is taken that:

D 27. In the case of relocation of loops for reasons attributable to PTC, and for the AP where there are operators co-located, PTC shall give minimum prior notice of:

- 12 months where the number of active loops to be relocated is less than 1/3 of the total active loops in the MDF;
- 36 months where the number of active loops to be relocated is more than 1/3 and less than 2/3 of the total number of active loops in this AP;
- 60 months where the number of active loops to be relocated exceeds 2/3 of the total number of active loops in this AP (including in the event that the AP itself is decommissioned, and being reduced to 36 months, if an equivalent access can be guaranteed).

D 28. Simultaneously to the provision of prior notice, as referred to in **D 27**, PTC shall submit an indication to the beneficiary operators of the RUO with respect to the possibility of retaining the services of local loop unbundling from the original exchange and shall further submit information which is relevant for the assessment of the economic viability of co-location for the new APs to which the loops are relocated, including:

- code and description of the originating AP,
- code and description of the new APs (with the location and coverage area properly geo-referenced) and/or of existing APs to which loops will be relocated,

- approximate information - with deviation of $\pm 15\%$ - regarding the number of loops to be relocated from the original AP,
- approximate information - with deviation of $\pm 15\%$ - about the number of loops for each destination AP and
- year in which relocation is due to take place.

Giving 2 months prior notice, PTC shall submit accurate information on the number of loops to relocate to the destination AP and the respective numbering, indicating the date determined for the completion of the relocation.

D 29. Where there are firm intentions on the part of the operators to co-locate in a new AP, PT shall take the interest expressed into full account when scaling the AP, including in the design of any new ducts (guaranteeing at all times, the provision of dark fibre in the event that there is no space in the duct).

D 30. PTC shall agree with the beneficiaries of the RUO – presenting, for such purpose, a proposal within 4 months following the date of notification of the final determination - the general principles to be followed in planning and the technical conditions in case of any need to relocate equipment (already) co-located in exchanges and any migration of accesses/customers, subject to the intervention of this Authority in the event that no agreement between the parties can be reached. The specific conditions to be deployed in a given AP should follow the general principles and technical conditions agreed and established no later than 4 months prior to the date of equipment relocation.

D 31. Loops unbundled prior to relocation should not be relocated without checking for the possibility of alternative access (i.e. the express willingness of the end-user should prevail), unless there are severe impediments of a technical nature or in terms of network optimisation, which inhibit the unbundled loops from being maintained in the original AP and where grounds are provided, on a case by case basis, to the beneficiary operator and to ICP-ANACOM which may determine on such situations.

4.3. Synchronization between loop unbundling and number portability

Following the publication, on 18.02.2009, of Regulation No 87/2009 amending Regulation No 58/2005 of 18 August (Regulation of Portability)⁷⁰ and publication of the amendment of the Portability Specifications, ICP-ANACOM issued a determination on the synchronisation between number portability and local loop unbundling⁷¹.

In this determination it was stipulated that PTC shall immediately amend the RUO to allow the full entry into force of Regulation No 87/2009 on 20 July 2009, with the provision that, in case of concurrency of portability and local loop unbundling process, the transfer of the loop

⁷⁰ See <http://www.anacom.pt/render.jsp?contentId=881180>.

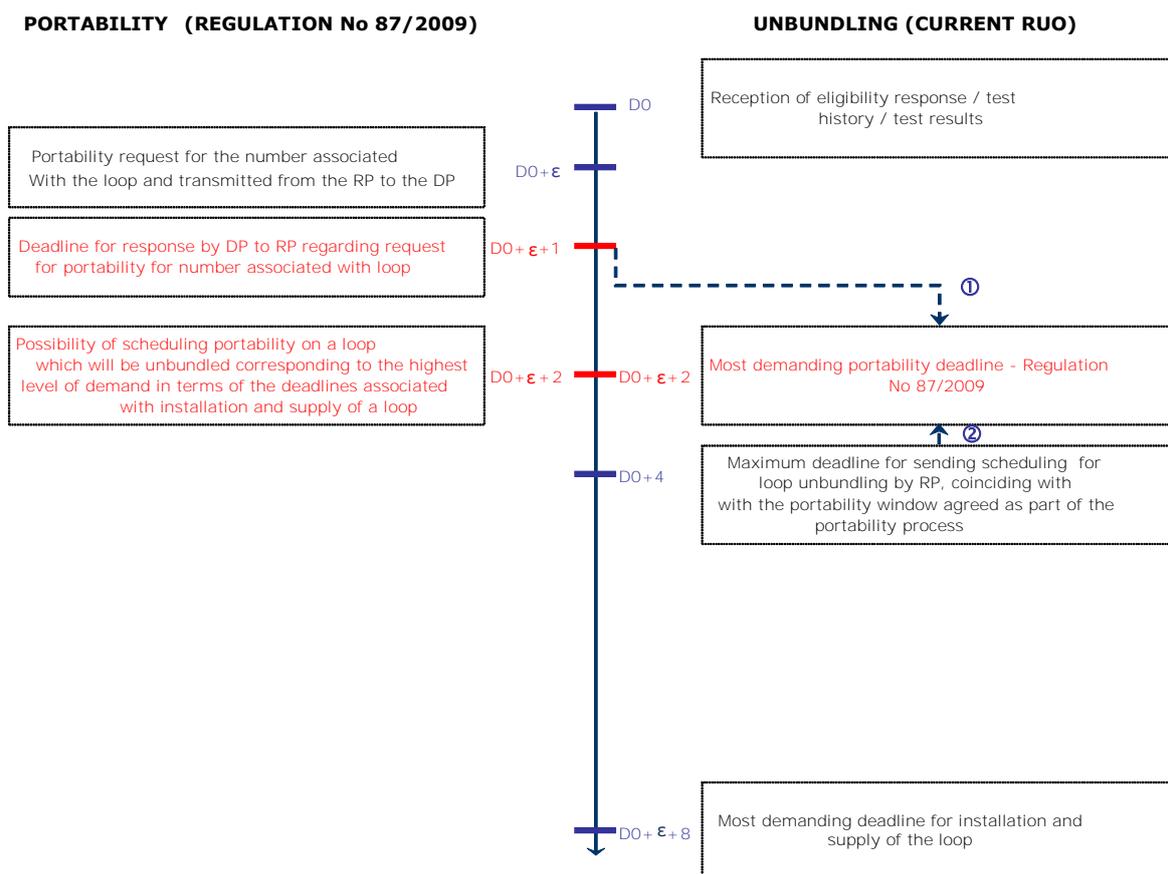
⁷¹ See determination of 15.07.2009, at <http://www.anacom.pt/render.jsp?contentId=966443>.

occurs during the portability window agreed with the OSP, whereby the request for number portability must be made at least 8 days in advance of the first option of the proposed window by applying the other procedures in Annex 7 of the RUO.

ICP-ANACOM also stated in the same determination that it had the RUO under review, although this process could not be completed until Regulation No 87/2009 entered into force on 20 July.

Besides synchronisation, which has already been the object of determination as described above, the main question under consideration relates to the evaluation of the possibility of reducing the periods of operator responsibility, reducing the total time for loop unbundling with associated portability requests. In fact, the adoption of amendments to the Portability Regulation and the specifications has enabled more rapid scheduling of number porting (in 2 working days instead of 8 working days), which is not compatible with current time limits for loop unbundling provided for in the RUO (see Figure 2).

Figure 1. Schematic representation of the processes of loop unbundling with portability (current RUO and Regulation No 87/2009)



From analysis of the diagram it is concluded that:

- (a) It is possible that even where the RP informs PTC of the scheduled date of portability and unbundling when it receives this information, only one working day elapses between the time that PTC is informed of the scheduled date and the date on which it is required to perform the unbundling - a situation identified in the above figure with ①;
- (b) Theoretically it will be possible for the RP to comply with the maximum period of 4 days to confirm and schedule the loop unbundling and, in the meantime, for the date scheduled for the unbundling to have passed – a situation outlined in the above figure with ②.

In this respect it is necessary, for example, to take into account that:

- (a) In Italy, it is set out that the incumbent operator performs unbundling no later than 5 days following notification by the alternative operator (for 95% of the loops) and no later than 8 days (100% of the loops);
- (b) In France, unbundling may take place up to 7th working day following confirmation;
- (c) In the United Kingdom, the operator has to schedule the unbundling date from the 5th working day following the date on which the scheduling was made, whereas BT may, where it does not agree with the proposed date, indicate an alternative date, which may be up to the 10th day following notification by the alternative operator;
- (d) In the Netherlands, unbundling has to take place (for 95% of occurrences) within 12 working days following the order;
- (e) In Spain, unbundling with portability has to take place within 12 working days following the order of the alternative operator.

In addition, in its document "*Report on ERG best practices on regulatory regimes in wholesale unbundled access and bitstream access*"⁷², the ERG established that best practice for the installation of loops is 7 working days.

Again, as mentioned in relation to time limits for repair, information compiled through the functioning of the determination of 11.03.2009 regarding the publication of quality of service performance levels for the different wholesale offers⁷³ will make it possible to have more reliable information on the levels prevailing at retail level, especially in broadband services, which may lead to a revision of the time limits which are established herein.

The currently guaranteed limit of 4 working days following the confirmation of the order is not only appropriate and proportionate in light of the activities that need to be undertaken

⁷² See http://erg.eu.int/doc/publications/erg_07_53_wla_wba_bp_final_080604.pdf.

⁷³ See <http://www.anacom.pt/render.jsp?contentId=885299>.

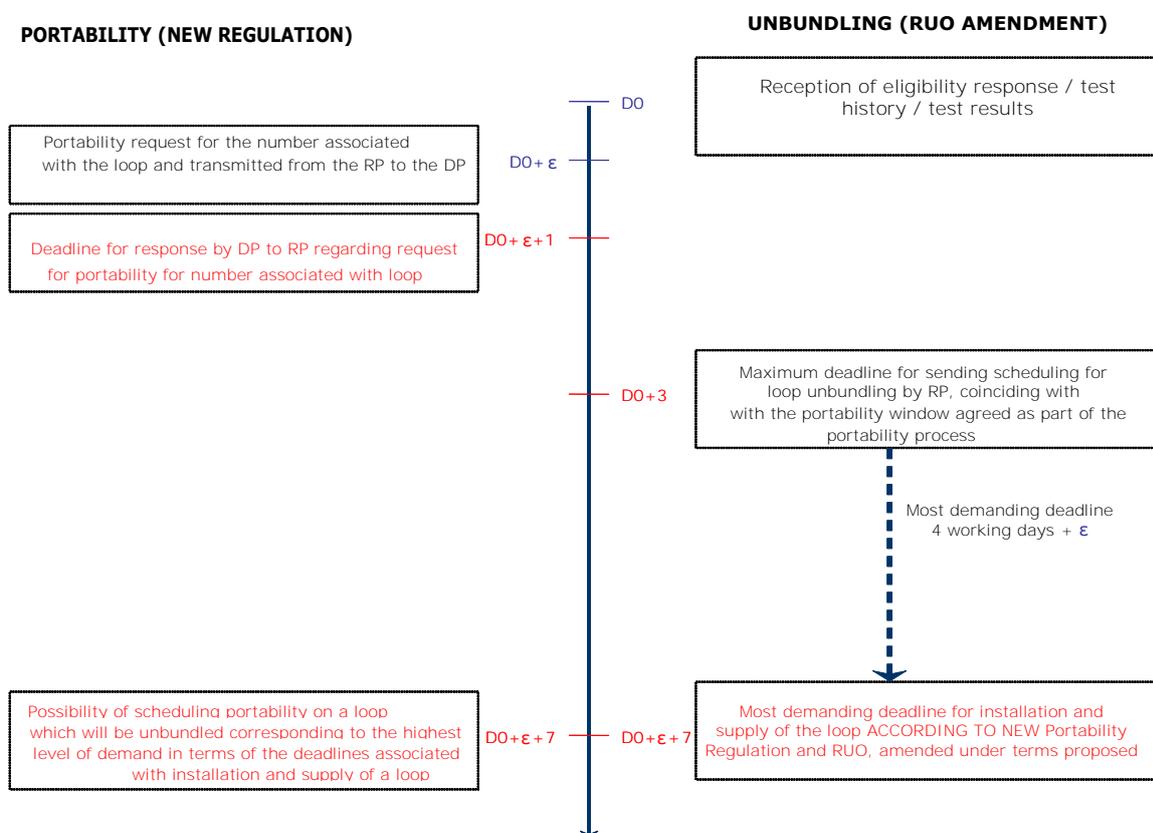
during this period to ensure efficient delivery, but also demanding insofar as it ensures a rapidity that compares positively with existing practice in other European countries. This will therefore be the reference used by ICP-ANACOM in defining the amendments to be adopted in procedures associated with the RUO due to the change that occurred in the Portability Regulation.

Noting that the DP will have one day less to confirm the number's portability window, the reduction by one working day in the time limit for the confirmation and scheduling of the unbundling is equivalent to maintaining the current situation in terms of demands made of the RP, since the one day gained due to the amendment to the Portability Regulation is transferred to the beneficiary.

It is also seen that the guarantee that PTC continues to have a minimum of 4 working days between the time that it is informed of the date scheduled for unbundling and the time at which this unbundling is actually performed is now provided by determining that the alternative operator requesting unbundling with portability makes the number portability request at least 10 working days in advance of the first proposed portability window.

The figure below seeks to explain this situation:

Figure 2. Schematic representation of the processes of unbundling of a loop with portability (relevant LLU - associated activities (proposed amendments) and number portability - new Regulation)



In **Appendix 4** it is shown that the changes outlined above in relation to that defined in the RUO are equivalent to maintaining the current situation in terms of the deadlines required of

PTC to perform unbundling, with the reduction in the time that the DP has to respond to the request made by RP for number portability fully reflected in the minimum time limit for performing the loop unbundling.

Therefore and considering:

- (a) The publication, on 18.02.2009, of the Regulation amending Regulation No 58/2005 of 18 August;
- (b) The relevant procedures and deadlines set out in respect of loop unbundling with portability;
- (c) The need to ensure compatibility between the process of unbundling with portability, as set out in the RUO and the portability process set out in the amended Portability Regulation;
- (d) The need to ensure that the deadlines associated with the unbundling of a loop remain appropriate and proportionate with respect to the activities involved in this activity;
- (e) The deadlines for loop unbundling with portability practiced in other European countries,

The position is taken that:

D 32. PTC shall, in respect of the process of unbundling of local loops with portability:

- Reduce the maximum period for confirming the order and for scheduling the unbundling by the beneficiaries from 4 to 3 working days;
- Set out that the transfer of the loop shall occur during the period of the portability window agreed with the OSP and that the request for number portability shall be made at least 7 days in advance of the first option proposed for the window, whereas the remaining procedures laid down in Annex 7 of the RUO shall apply.

4.4. Other issues

4.4.1. Absence of PTC technicians in the local loop unbundling process

Another issue that has raised concerns among the beneficiaries of the RUO is related to the alleged failure of PTC technicians to attend during the local loop unbundling window, while PTC cites absence of the customer as being a reason for unbundling not being executed in the agreed window.

In several cases, according to copies of the work sheet submitted to ICP-ANACOM, the OSP was present at the site from the beginning until the end of the unbundling period, with the end-user signing the worksheet presented by the OSP, giving proof of this presence, whereas PTC failed to appear at the site.

This information is based on the assumption of good faith with respect to the end-user, who signs the worksheet presented by the OSP, where it is stated that PTC's technician failed to attend during the agreed period for unbundling.

In the cases investigated, the information in PTC's system is that the unbundling did not occur due to "house closed/customer absent", which does not correspond to the information provided by the OSP technician and by the end-user.

Given the nature of the issue, this matter is the subject of separate analysis at ICP-ANACOM.

However, it is noted that similar situations are no longer being reported, whereby it can be assumed that the situation has since been resolved or at least, minimized.

4.4.2. Rejection of addresses, by PTC, in unbundling requests

The rejection of addresses by PTC, with respect to the unbundling of non-active loops, has also been the subject of concerns raised by certain OSPs.

With respect to the unbundling of non-active loops, it falls to the recipient of the offer to effect the pre-order, in which the address is indicated⁷⁴, and it falls to PTC to verify the location of the loop (exchange and address).

Subsequent to the presentation by an OSP of a list of occasions where it considered that addresses have been rejected unduly by PTC, this Authority examined each of the situations reported and concluded, according to available information, that there was insufficiently strong indication to justify inference that the rejection by PTC of the indicated addresses was improper.

In fact, notwithstanding that this is a matter for complex evaluation and resolution, ICP-ANACOM found that, on the one hand, according to a database of CTT, some of the roads listed by the OSP did not exist, while on the other hand, some of the addresses in the letters sent by the OSPs to their potential customers (indicating that PTC had unduly rejected the request for unbundling) were not identical to the addresses sent to PTC⁷⁵ - including errors in typing postcode.

This Authority deems that it is apparent that this issue may comprise certain difficulties of information compatibility, whereby it is necessary to dispel any ambiguity that may exist in the complete and unequivocal identification of the address, so that the loop is properly installed and unbundled at the correct address. Accordingly, common sense and efforts are required from both parties so that this task is undertaken in the best possible way, whereas it does not seem reasonable to place all onus and responsibility on PTC and in particular the task of "guessing" or manually processing (using a separate databases) the addresses of potential customers.

⁷⁴ Since the end-user has no better reference for their identification, including the fixed telephone number.

⁷⁵ Not considering the fact that the letter may have been sent to another address (such as the headquarters of the entity requesting installation from the OSP).

In this regard, PTC has already informed ICP-ANACOM that, in order to speed up the process:

- (a) New codes have been assigned for rejection reasons, making it possible to identify which component of the address submitted by the operator was detected as containing erroneous or insufficient information; and
- (b) It remains available through their service interfaces, to work with operators where there are queries about an address,

whereas ICP-ANACOM has reiterated to PTC that it should make every necessary effort, working with operators, in order to resolve these situations swiftly.

4.4.3. Information on constraints in the RUO

Subsequent to determination of ICP-ANACOM of 12.04.2007⁷⁶ on co-location procedures within the scope of LLU, it was ordered that PTC shall maintain an updated list, for the information of the OSPs, on RUO constraints⁷⁷. PTC has provided information through its Extranet portal, since September 2007.

In point p) of the same determination it was ordered that PTC shall inform ICP-ANACOM, simultaneous to its response to the OSP, whenever it claims that an application for co-location is not feasible or has constraints.

PTC sought clarification from this Authority on whether it remained necessary to inform ICP-ANACOM, pursuant to point p) of the above determination, or whether the publication of information on its Extranet portal would be sufficient.

Since ICP-ANACOM is informed, on a monthly basis, of the list of RUO constraints, which usually contains the information that PTC sends to OSPs in the event of a lack of viability or in the event of constraints, and also receives information from the OSPs on the same issue, the position is taken that this obligation whereby PTC is bound always to inform ICP-ANACOM whenever it claims that a request for co-location is not viable or is subject to constraints may be withdrawn, subject to ICP-ANACOM reserving the right to seek more detailed information about specific cases.

4.4.4. Signal transport

The current process whereby equipment installed by the OSPs inside the exchanges of PTC is connected to their networks through the transport service, is considered by the RUO beneficiaries as inefficient and as giving rise to additional costs⁷⁸.

⁷⁶ See <http://www.anacom.pt/template31.jsp?categoryId=240883>.

⁷⁷ Point n) of the determination.

⁷⁸ Certain beneficiaries take the view that the value payable is unacceptably high, since they are obliged to pay for three optical fibre pairs even where a lower number is required.

In the view of these OSPs, access should be given to the cable paths of the PTC exchanges and respective registers, allowing the use of OSP optical fibre inside these exchanges. Accordingly, the cutting of optical cables and the contract and hiring of a service that, in its view, would have no reason to exist, would be avoided. It is further suggested that PTC should provide the chute(s) supporting the passage of the OSP cable(s).

On considering the possibility of imposing an obligation of access and the proportionality of such a decision, ICP-ANACOM is bound to take account of article 72, paragraph 4, of Law No 5/2004, according to which the proportionality of this obligation shall entail, specifically, analysis of "*the technical and economic viability of using or installing competing facilities, in the light of the rate of market development and taking into account the nature and type of interconnection and access involved; the feasibility of providing the proposed access, in relation to the available capacity; the initial investment by the facility owner, taking into account the risks involved in making such investment; the need to safeguard competition over the long term*".

The solution defined by ICP-ANACOM in the determination of 13.04.2005 for the signal transport service presupposes the use of ducts, particularly up to the permanent manholes (PMH) of PTC, in the vicinity of the exchange. That is, where there is space in the permanent manhole of PTC near the exchange, the operators shall extend their cables to this manhole, where the connection will be performed (these conditions are defined in the RUO⁷⁹).

It is agreed to be more efficient, and all the conditions are in place by which the OSPs, if they so wish, can install their fibre optic cables from their own infrastructure outside the PTC building to their equipment inside the building.

In fact, given the prices established in the RUO⁸⁰, and as an example, for a distance of 5 meters between the manhole and the exchange entrance and 50 meters inside the exchange, and acknowledging the existence of three OSPs in this exchange, the total cost incurred per OSP as a result of the signal transport service would total around 2,760 euros per exchange⁸¹. Accepting that, on average, if there are 500 unbundled loops per OSP in this exchange, the cost of installation will, under these conditions, be about 5.5 euros per OSP and per loop⁸².

Notwithstanding the above, it is recognised that, for installation in new exchanges, where there is not yet any OSP equipment (smaller exchanges), the average number of unbundled loops will tend to be reduced and the cost (per loop) of the installation of the signal transport

⁷⁹ In Annex 4 is stated that "*Signal delivery is conducted through the link, through optical fibre, of the co-location modules of the operators with a co-location operators with a transfer chamber located in the vicinity of the building of PT Comunicações, to which the OLO connects using its own resources.*

Whenever there is a PTC manhole in the vicinity of the exchange with capacity available, this can be used to receive the duct and the optical fibre cable of the OLO(s). If there is no permanent manhole with available capacity, a new multi-operator chamber will be constructed."

⁸⁰ Applicable to requests made after 17.05.2005 where, as on the date of the request, no service has been supplied to any OSP and no construction process has been initiated with respect to a current request in accordance with Model B.

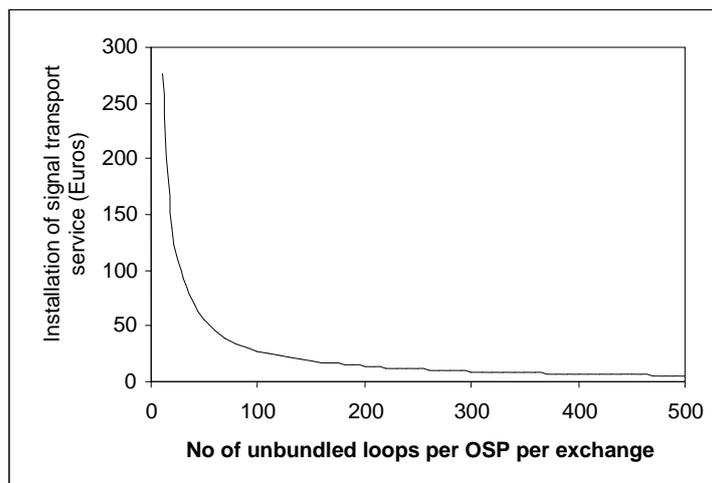
⁸¹ According to the current calculation formula (without installation of multi-operator chamber): installation (€) = CF_MO + CF_O + (D1 × 79,55) + (D2 × 19,62) = 1.194,51/2 + 1.248,14 + (5 × 79,55)/2 + (50 × 19,62).

⁸² Obviously, this hypothetical value of 5.5 euros per loop is only obtained after the three OSPs have managed to unbundle a total of 1500 loops.

service per unbundled loop will tend to increase in proportion (see evolution in the cost of installation according to the number of unbundled loops per exchange in

Graph 6).

Graph 6. Trend in the cost of installation (per loop of the signal transport service according to the number of unbundled loops per OSP and per exchange (where D1=5m and D2=50m and with three OSPs per exchange)



A significant number of these exchanges, which do not yet have OSP equipment, are located in non-urban areas and are much smaller (number of loops), in which the reduction of initial costs is an increasingly important factor in the decision by OSPs to invest, given the smaller scale and greater risk in the recuperation of these costs taking this exchange into account on its own.

Accordingly, the promotion of broadband penetration, through the pursuit of LLU development in areas of lower population density and/or more remote areas, reducing the asymmetry between the services available in urban areas and other areas may call for a simplification and consequential reduction in the cost incurred in the signal transport service, enabling the extension of OSP optical fibre to their area of co-location, thereby reducing the initial cost associated with co-location.

In this regard, it has already been argued in the report of the public consultation on the regulatory approach to NGA that the entry of fibre optic in the cable input tunnels in the exchanges may, as provided for in the RDAO, be performed by alternative operators (i.e., by entities accredited by PTC). That is to say, the position was taken that operators should be able to install their cables in the access cable tunnels to the exchanges of PTC⁸³.

⁸³ For this purpose, as set out in the RDAO, the RUO must include a list of entities with which PTC has been working and in which it recognizes technical competence to access ducts for the installation, maintenance, repair and removal of infrastructure, which entities should be contracted by the OSP for the extension of fibre to the ODF or co-location area. It will also remain possible for works to be monitored and supervised of by a PTC technician.

For this to happen, beneficiaries must also be able to use the technical chutes inside the PTC exchanges, although it is considered excessive to grant beneficiaries the right to install chutes inside exchanges. That is, as a general rule, it remains the position that works to be undertaken inside PTC exchanges to accommodate the optical fibre cabling of the OSPs (including civil construction works), with the exception of works carried out inside the co-location space (joining of optical fibre / connection to ODFs), should remain the responsibility of PTC. Therefore, PTC shall proceed with the installation of technical chutes, at the request of the OSP who may install their cables in these chutes.

Accordingly, it is possible for operators to install their cables in access cable tunnels to the exchanges of PT and extend them to their equipment through the technical chutes installed in the exchange for this purpose.

In conclusion, the position is taken that:

D 33. PTC shall remove any restrictions on the installation of the optical fibre of RUO beneficiaries by the technicians of these beneficiaries in the access cable tunnels to the PTC exchanges and shall remove any restrictions on the use of technical chutes, allowing the optical fibre of the OSPs to be extended up to the co-location area, whereas PTC shall include the respective conditions and procedures in the RUO, submitting these to ICP-ANACOM and giving grounds for any additional pricing, upon the publication of the RUO.

4.4.5. Connection of internal and external cable

The internal and external cable connection is a situation that is distinct from the signal transport service, insofar as it involves connections in the RP/RI which is an interface between the PTC network and the OSP network, involving works on a sensitive network element. There is, moreover, clearly a significant reduction in costs with installation by the OSPs, also making room for new conflicts about the demarcation of responsibilities in this process.

Accordingly, it remains the view that works to make the internal and external cable connection must be carried out by technicians from PTC.

The RUO does not explicitly provide for connections to OSP equipment located in non-adjacent modules. Accordingly, and taking into account the principle of efficiency, PTC shall include such a procedure in the RUO to connect to non-adjacent modules of the same company (or of companies of same group).

In conclusion:

D 34. PTC shall introduce into the RUO a service of connection to non-adjacent modules, irrespective of whether they are modules of the same or of different operators, presenting the respective reasoning for pricing to ICP-ANACOM.

4.4.6. Incorrect unbundling

According to certain OSPs, the current processes of unbundling and portability may result in the following types of error, with subsequent interruption of the service provided to customers:

- (a) Loop unbundled without effecting portability;
- (b) Loop not unbundled and portability effected;
- (c) Bad unbundling where the loop is unbundled but incorrectly (with or without portability).

Purportedly, this type of situation is the result of the need for manual coordination of the various processes involved in portability and unbundling. It is therefore suggested that ICP-ANACOM should impose an obligation on the operators involved to work together to minimize disruption of service to the customer.

In the first two cases mentioned above, this proposed cooperation should give priority to restoration of the service regardless of the support network, culminating in the successful conclusion of the processes of unbundling and portability. It is also suggested that the associated costs should be borne by the entity responsible for the fault.

To this purpose, the OSPs proposed mutual cooperation with PTC in developing a technical solution which, after detecting a fault, ensures that service is restored within a maximum of 2 hours and is maintained until such time as correct loop unbundling and/or number portability can be verified.

With respect to bad unbundling, and according to the suggestion of certain OSPs, the restoration process should follow the process whereby the faults resulting from bad unbundling are corrected, whereas the existing compensation mechanism should be clarified to ensure that, irrespective of the conduct of the beneficiaries, there is always an incentive for PTC to ensure restoration of service. In this sense, the OSPs argued that the RUO must set out that the application of compensation for bad unbundling should be independent from any planning process.

It has also been suggested that a review be conducted on the unbundling and portability process to ensure that portability can only be carried out after successful unbundling.

This Authority agrees with the principle that the interruption of service to the end-user should be avoided at all costs, ensuring the swift restoration of the service in the event that this occurs. Therefore, it is considered important to provide a simple and fast procedure for the restoration (albeit temporarily) of service to the customer, regardless of the entity responsible for the interruption.

Given the seriousness of a situation where service to a customer is interrupted, it seems clear that the operators involved shall cooperate in the prompt resolution of the causes of such an occurrence. ICP-ANACOM intervened back in 2005, reviewing and adapting the compensation due from PTC for failure to comply with the levels of the service of the RUO,

especially and specifically in the case of unbundling failures, which is (still) the main cause of disruption of service.

However, there are other cases where the cause of the interruption is due to flaws in the "joint" procedures of unbundling and portability, the consequences of which can be minimised using some of the solutions proposed by the OSPs, including temporary re-routing of calls.

This Authority has not heard recently that the situations described persist, which may be due to all participants in the process having gained greater experience, and it would therefore be premature to take action in this matter.

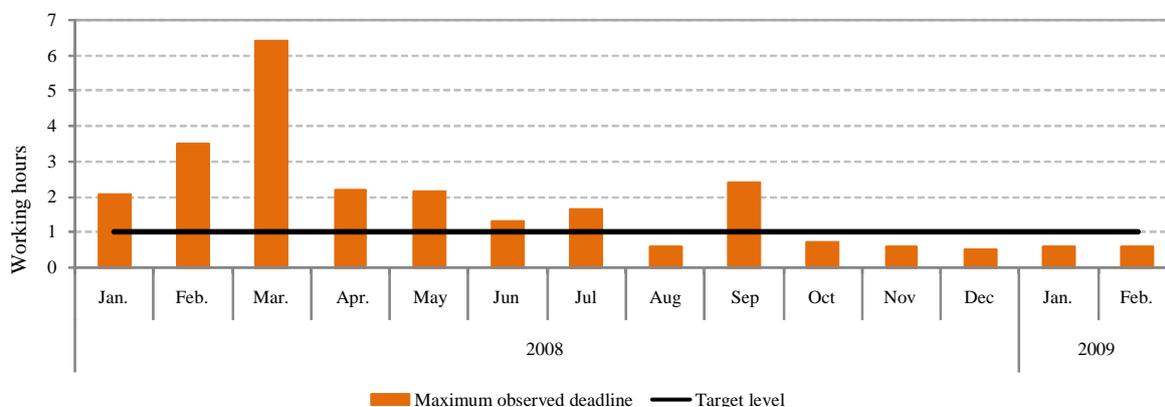
4.4.7. Levels of service regarding eligibility with RUO IS - active loops

PTC has reiterated to ICP-ANACOM that practice has demonstrated that it is not possible *"for the RUO Manager to guarantee maximum response times to requests for verification of eligibility of 1 working hour"* for the current volume and concentration of requests. In this respect and after the analysis conducted as what time limit would be appropriate for this activity, PTC, *"taking into account measures leading to the reduction of response times"*, has proposed that the current maximum be revised to a maximum of 5 working hours (maintaining 95% of occurrences).

This Authority notes that the measures that PTC has been taking to reduce the response time appear to be having a positive impact, noting that contrary to what happened in the past - when the concessionaire failed to meet target levels for this quality of service indicator - PTC has been responding to requests for verification of eligibility of local loops, using the RUO IS, in periods less than the target level.

Indeed, as shown in the chart below, there has been a progressive reduction in the maximum response time since October 2008, down to levels below 1 working hour.

Graph 7. Monthly evolution of the maximum response times to requests to verify the eligibility of local loops using the RUO IS (active loops)



Therefore, considering the trends reported in maximum response times to requests for eligibility for an active local loop using the RUO IS, ICP-ANACOM deems it reasonable that

the existing provisions in the RUO be maintained, i.e., to maintain the maximum target of 1 working hour.

4.4.8. Environmental conditions in the open space co-location

In the past, concerns have been expressed about an alleged deterioration in environmental conditions (e.g. temperature) in some of the locations providing open-space co-location, which would have an impact on the quality of service provided to end-users.

It was in this context that the intervention of ICP-ANACOM was sought in this area, whereas the operator argued that the maintenance of air conditioning units (AC) should be undertaken by PTC and that changes should be made to the initial conditions, so that the costs associated with AC systems are shared among all beneficiaries of these systems, including PTC.

After initial review and the inspections carried out of the "more problematic" exchanges, ICP-ANACOM requested clarification from PTC, whereby the company argued that the conditions for co-location offered to OSPs are those set out in the RUO ("*whereby the conditions available in open space [and] in ORs are different*") and it considers that the current procedures and conditions should be maintained, whereby "*any issues related to environmental conditions which may arise can be solved, ... without creating procedures which are complex [e] which are difficult to implement*".

PTC also argued that:

- (a) The RUO makes no provision for the maintenance of the conditions prevailing on the date of the first co-location⁸⁴ and that such provision would not be viable at a practical level, since these conditions "*are altered as new operators use the space*";
- (b) The ORs have been specifically designed to accommodate suitable AC equipment, whereas in open space, it is not easy to forecast the occupation of space, making it difficult to properly size the AC system;
- (c) It has responded to requests made by each operator to resolve excessive temperatures, while considering that operators should send a "joint proposal";
- (d) It is its current practice to present a quotation to the operator who places an order, leaving it to the operator to decide whether to accept it, "*supporting the costs incurred by PTC (...) [or] contact [ing] other interested parties to share costs*"; and
- (e) It does not control the rented spaces occupied by active equipment and not all spaces require the same conditions.

⁸⁴ According to PTC, if the rooms of the frame do not have AC, this is because this system was not necessary for the equipment already present before the co-location of an OSP.

⁸⁵ Whereby PTC noted that it has, "*at its own expense and without obligation to do so, made several improvements, where feasible*".

It is accepted that PTC does not have to provide, in general, the same (environmental) conditions in different situations, for example, in open space and in ORs. It is also accepted that PTC should not at any time be bound to guarantee initial conditions, since:

- (a) PTC has not made any commitment nor given any indication that it would, on a permanent basis, ensure the environmental conditions that existed at the time of the first co-location (in open space); and/or
- (b) With the co-location of more equipment, the initial conditions are not maintained.

Accordingly the position is taken that PTC should not be required to expand or replace the AC or cooling systems, at its own expense, in order to ensure that the initial environmental conditions are maintained⁸⁶.

In this case, interested OSPs should coordinate among themselves to identify the need for a determined level of environmental requirement over the medium to long-term and propose a climate control system to PTC which is suitable to their own needs, which may be different from the needs of PTC.

In this case, the OSP can agree among themselves with respect to aspects related to the level and distribution of the costs of the climate control system in order to adapt them to their own needs, whereas the involvement of a larger number of parties would lower the cost incurred by each OSP, since the total cost would be shared between them. For this purpose there should be a form signed by all concerned, whereas it is deemed reasonable that there will always be one OSP which will take the initiative.

After the presentation by the OSP(s) to PTC of a proposal for a climate control system which is suitable to their own needs, PTC will respond with a detailed budget (oriented to cost) and wait for confirmation from the OSP(s).

Accordingly, in the absence of other agreement between the parties, and taking into account existing procedures, the position is taken that the following principles should be followed:

- (a) The OSP (or various OSPs, if they have similar requirements) should give PTC indication of the improvement of environmental conditions which they require to be provided on the site occupied by this OSP or number of OSPs;
- (b) Within 20 working days, PTC shall be required to submit a proposal that includes a comprehensive and detailed budget which is cost-orientated and the execution time expected for carrying out the work;
- (c) The OSP requesting the improvements shall decide, within a maximum period of 15 working days of receipt of the budget sent by PTC, whether to accept the proposed budget, which acceptance shall constitute a formal order;

⁸⁶ However, this does not relieve PTC of the obligation to ensure, at its own expense, that the AC or cooling systems which existed originally are maintained.

- (d) The OSP requesting the improvements will be responsible for making full payment to PTC for the works, whereas it may decide to make an agreement with other OSPs in the same location to share the respective cost, which arrangement shall be performed directly between the OSPs without the involvement of PTC.

In conclusion, the position is taken that:

D 35. Notwithstanding any agreement between the parties, PTC shall include conditions in the RUO applicable to open space climate control, in accordance with the following principles:

- The OSP (or various OSPs having similar requirements) shall give PTC indication of the improvement in environmental conditions that are to be provided on the site occupied by this OSP or group of OSPs;
- Within 20 working days, PTC shall submit a proposal including a comprehensive and detailed budget which is cost-orientated and shall submit the execution time forecast for the performance of the works;
- The OSP requesting the improvements shall decide, within a maximum period of 15 working days of receipt of the budget sent by PTC, whether to accept the proposed budget, which acceptance shall constitute a formal order;
- The OSP requesting the improvements will be responsible for making full payment to PTC for the works, whereas this OSP may decide to make an agreement with other OSPs in the same location to share the respective cost, which arrangement shall be performed directly between the OSPs without the involvement of PTC.

4.4.9. Installation of equipment with different xDSL technologies

A request was made to ICP-ANACOM that the ITU-T G.993.2 (VDSL2) standard be included in the RUO in order to allow the extension of the "*range of offers available today in the national market and provide greater competitive dynamics, with direct benefits for citizens in general*", in line with that already occurring, for example, in the reference offers of Spain and Belgium.

It was also requested that, in the context of the recent developments seen with respect to SHDSL technology, that the RUO be amended to include⁸⁷ G.991.2 Amendment 1 (07/2004), G.991.2 Amendment 2 (02/2005) and G.991.2 Amendment 3 (09/2006), allowing the existing standards to be updated "*in order to introduce greater efficiency in the use of available spectrum and to achieve higher speeds*", of 3.1 Mbps and 5.7 Mbps, as has already been implemented in several European countries (notably in France, Spain and Belgium).

In addition to SHDSL, it was also requested that the Ethernet be included in the range of services supported over unbundled loops, which possibility is supported in the ITU-T G.998.2 standard ("*Ethernet-based multi-pair bonding*").

⁸⁷ At present the use of SHDSL technology is limited in the RUO to speeds of up to 2.3 Mbps.

On other occasions, based on existing technological developments, ICP-ANACOM has ordered the amendment of the RUO to provide for the provision (by the beneficiaries of this offer) of solutions based on ADSL2+ and G-SHDSL⁸⁸.

It is noted that PT Inovação, the company of Grupo PT focusing on research and development in electronic communications networks, including in particular DSLAM and transmission systems, announced⁸⁹ that, in the development of mediaDSLAM equipment, use is made of VDSL2 technology. It is also noted that the company has said that by the end of 2006, the solution in question would be stabilized, so that the first commercial units would be released in early 2007, allowing the companies of "Grupo PT to carry speeds of (up to) 100 Mb/s over the copper pair of the telephone line"⁹⁰.

Accordingly, ICP-ANACOM, considering the developments in technology (in xDSL standards, specifically in the standard indicated above) and, especially in the implementation plans presented by the principal operators and by PT, the view is taken that it is natural that the use of VDSL2 technology and the standards SHDSL (G.991.2 Amendment 1 (07/2004) and G.991.2 Amendment 2 (02/2005)) be provided for in the RUO.

Moreover, in this context and given the information available, including from other Member States⁹¹, there are no purely technical grounds for the RUO not making provision from the outset, and in theory, for the use of all access technologies that conform to applicable international standards, as set out within the scope of the ITU-T, ETSI and/or IEEE.

It is necessary, however, to take into account any impact that these technologies may have, particularly in terms of spectrum management in cables, whereby provision should be made for the use of a frequency plan which minimizes potential interference with the simultaneous use of other technologies defined within the scope of the ITU-T, to be followed by all operators, including the companies of Grupo PT.

On the process for selecting a single parameterisation option for the definition of frequency plans, it is considered that, should PTC should work towards an agreement about this plan with those involved. In the absence of any agreement, ICP-ANACOM may intervene.

In any case, PTC is bound always to respond with reasonable timeliness to requests from OSPs for the installation/connection of new equipment / technology, which response, where negative, must be reasoned (including, where applicable, the need to define a frequency plan). These positions are in line with the "principles of implementation and best practices" of the ERG⁹².

⁸⁸ See paragraph 14. of Determination of 13.03.2003 on Amendments to be made to the RUO, available at: <http://www.anacom.pt/template31.jsp?categoryId=214924>.

⁸⁹ See the website of PT Innovation: <http://www.ptinovacao.pt/noticias/2006/096%20100mbits.htm>.

⁹⁰ See the website of PT Inovação at: <http://www.ptinovacao.pt/noticias/2006/116%20mxplay.htm>.

⁹¹ Standards already provided for in the offers of several Member States (e.g. Germany, Belgium, Holland, Denmark, United Kingdom and Finland).

⁹² "Principles of implementation and best practice regarding LLU" of 18.05.2001 and amended in May 2002: "8. The development of the cable spectrum management plan should be a joint responsibility of the beneficiaries (including the provider). The provider shall consult with the beneficiaries when developing a spectrum management plan. The NRA can facilitate discussion and make decisions where the operators and providers are

In conclusion, the position is taken that:

D 36. PTC shall include the possibility in the RUO of using, pursuant thereto, any technologies/platforms that conform to international standards defined within the scope of the ITU-T, ETSI and IEEE, except where there is technical impediment duly reasoned on a case by case basis, which impediment shall be notified to ICP-ANACOM within 20 working days following the request.

PTC shall take steps, within 60 days, to reach an agreement on a frequency plan for those technologies where, in the light of their demand and the level of interference that may be caused, there is justification, which plan shall be made to minimize possible interference with the simultaneous use of the other technologies defined within the scope of the ITU-T and shall be followed by all operators, including the companies of Grupo PT. In the absence of any agreement, ICP-ANACOM may intervene.

4.4.10. Unbundling of non-active loops and rescheduling

As mentioned in Section 2, OSPs have argued that it is imperative that the unbundling of non-active loops is conducted in such a way as to minimize disruption to customers, whereby (i) the technicians of two operators can be called out at the same time and (ii) the unbundling of the loop at the exchange be carried out prior to customer-level intervention, so that the PT technicians can carry out a full test of the loop when they are with the customers (iii) there is a reduction in the time limit for the installation of non-active loops, the process for which takes 14 to 22 working days in total.

With respect to the first question - simultaneous callout of the technicians of the two operators - it should be noted that the RUO already provides that the technical staff of PTC are called out within a specific time window. Accordingly, there is already coordination between the teams of PTC and of the OSPs, so that both are present at the customer premises at the time of intervention.

The possibility of replacing the intervention window with a specific time is not deemed proportionate. In fact, the experience in this or in other sectors, for example, in retail markets, shows that even with the definition of extended time windows (e.g. morning or afternoon), the provider's commitment to the customer is not always met.

Nevertheless, it is recommended practice that the technician of PTC, or subcontracted personnel, notify the OSP, preferably 1 hour before travelling to the customer premises about said callout, and for this purpose use a freephone number of the OSP.

Accordingly:

unable to reach an agreement within a reasonable period of time. 10. The spectral management plan should include clear procedures enabling the use of new systems or (spectral) masks . "

ICP-ANACOM recommends that the technician of PTC, or subcontracted personnel, notify the OSP, preferably 1 hour before travelling to the customer premises about said callout, and for this purpose use a freephone number provided by the OSP.

In addition, the end-user experience and the overall efficiency of the transfer of non-active loops will be further improved if:

- (a) The unbundling is performed in the exchange and loop is concluded on the local network prior to (or concurrently with) intervention at the customer premises, so that the technicians who are on the premises of the end user can, from the outset, carry out the tests required to verify that the loop is functioning properly, correcting any faults at the time of intervention at the customer premises without requiring additional callouts, which are inconvenient for end-users and imply increased costs for the OSPs;
- (b) Faster mechanisms have been defined to reschedule in situations where installation/unbundling did not occur, whether for reasons attributable to PTC or for reasons attributable to the OSP or the end-user, whereas in the present situation, in the event that there is no communication two working days prior to the unbundling date, the process is closed, and restarted from the beginning (i.e., the OSP must make a new transfer request)⁹³. In the event that the loop is not installed on the scheduled date for reasons attributable to PTC, the procedure adopted by that company, as notified to this Authority, determines that the loop unbundling be performed as soon as possible, whereas the total time counted shall be the time elapsing since the eligibility response⁹⁴ or from confirmation of the order⁹⁵ until the unbundling is performed (in these cases the process is not restarted from the beginning since the requests are not made void/cancelled due to failure to keep to the originally scheduled date), whereas it remains important to establish limits for rescheduling.

Regarding the third question - reducing the time limit for the installation of non-active loops - it is noted that, according to data from 1st Quarter 2009, PTC accomplished the established target, providing the loops in 13 working days whereas the respective targets are established as 10 and 18 days respectively for non-active loops without and with the need for material. That is, in practice, the time taken by PTC in the provision of non-active loops are close to the time taken by PTC in the supply of active loops, and as such ICP-ANACOM does not, for the time being, identify the need to take action in this matter. Response time to verification of the eligibility of these loops (which, compared to active loops, includes analysis of the loop and scheduling) is 4 working days with the RUO IS. This period is longer than that applicable to non-active loops, given the additional work involved in the evaluation of this type of loop, which may include budget preparation.

Accordingly, the position is taken that:

⁹³ For example, in the absence of the customer. It is currently set out in the RUO (Annex 7, page 16) that "*Where an attempted installation is unsuccessful for reasons not attributable to PT Comunicações, the request to supply the loop is cancelled and the respective process is closed, whereas the OOL remains bound to make payment to PT Comunicações in respect of the provision of the service*".

⁹⁴ In the case of a request for active loop without portability.

⁹⁵ In the case of active loop requests with portability and non-active loop requests.

D 37. PTC shall unbundle non-active loops in the exchange and on the local network prior to or simultaneously to the intervention at the customer premises.

ICP-ANACOM recommends that the technician of PTC, or subcontracted personnel, notify the OSP, preferably 1 hour before travelling to the customer premises about said callout, and for this purpose use a freephone number provided by the OSP.

D 38. PTC shall include a simple and efficient mechanism in the RUO for rescheduling the unbundling of non-active loops in situations where the installation/unbundling did not take place, whether due to reasons attributable to PTC or due to reasons attributable to the OSP or end-user. Rescheduling due to the non-occurrence of unbundling is permitted where due to reasons attributable to the OSP or end-user, whereas no rescheduling limit is permitted with respect to the non-occurrence of unbundling due to reasons attributable to PTC. The deadline for performing the rescheduling, which should be concluded as soon as possible, is 5 working days.

4.4.11. Tests of transmission characteristics

The RUO sets out that "*where the OLO has chosen not to order tests from PT Comunicações, and has not provided the results of tests which it carries out to PT Comunicações, within 10 working days from the supply of the loop, regardless of whether the tests have been conducted or not, PT Comunicações shall not be responsible for ensuring the technical characteristics of the respective loop*"⁹⁶.

In these cases the OSP must provide PTC, in accordance with Annex 15 of the RUO⁹⁷, the following data (corresponding to the test results), identifying the system/technology used:

- (a) Frequency (kHz)
- (b) Theoretical Attenuation (dB)
- (c) Limit⁹⁸ (dB)

There are some concerns on the part of RUO beneficiaries with respect to:

- (a) The deadline for submitting the test results to PTC;
- (b) The alleged non-acceptance by PTC of the results of tests carried out by OSPs, claiming that PTC limits the measurement methods used by the beneficiaries;
- (c) The fact that PTC should be required to ensure a minimum level of quality of service in restoring the service in case of fault, which the beneficiaries claim should be independent of prior notification by the operator of any loop measurements.

⁹⁶ See RUO, Annex 9.

⁹⁷ Form FORMULA 1.5 - V18.04.

⁹⁸ Limits of total attenuation for the transmission systems allowed.

However, the measurement results depend both on the equipment and methods used, whereby there is a need to establish a reference.

In light of these concerns, the following position is taken:

- (a) The period of 10 working days for the OSPs to submit the test results is too short, and shall therefore be extended to 15 working days⁹⁹;
- (b) Except where there is duly justified objection, PTC shall accept the results of tests carried out by the OSPs and shall not impose any unjustified restrictions on the methods of measurement or otherwise should measure the attenuation of the loop and send these measurements to the OSP, prior to unbundling, identifying the method of measurement.
- (c) PTC shall ensure, at a minimum, upon restoration of the loop subsequent to repair or maintenance operations, the levels notified by the OSPs when sending the test results or notified to the OSP upon unbundling, and shall further give notice of the measurements immediately after the repair of faults.

In conclusion, the position is taken that:

- D 39.** PTC shall amend the time limit by which the OSPs are required to submit the test results to PTC from 10 working days to 15 working days, including also the possibility that OSPs submit test results within 15 working days following alteration from a level of service to another on a given loop.
- D 40.** Unless otherwise agreed, PTC shall accept the results of the tests carried out by the OSPs, provided that the DELT methodology is used, whereas no unjustified restriction may be imposed with respect to measurement methods, except in the case of duly justified objections.
- D 41.** PTC shall ensure, at a minimum, upon restoration of the loop subsequent to repair or maintenance operations, the levels notified by the OSPs when sending the test results or notified to the OSP upon unbundling, and shall further give notice of the measurements immediately after the repair of faults.

4.4.12. Pricing

It is considered that any pricing of additional services resulting from the present determination must be thoroughly justified.

Accordingly, the position is taken that:

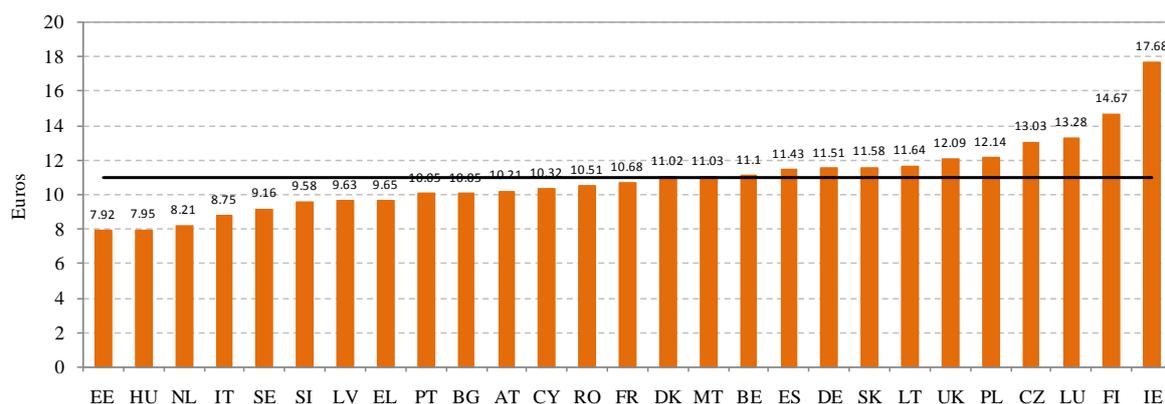
⁹⁹ It is noted that the time limit applicable to PTC is 4 working days, although in this case the period in question has an impact on contracting of the service, which is not the case in the submission of the test results by the OSP.

D 42. PTC shall provide detailed justification of the pricing presented, based on costs, describing in details the activities conducted, the execution times, the category of technicians executing them and respective hourly rate, as well as any associated material or software costs and any premise or estimate included, for consideration of possible cost allocation mechanisms.

The main cost component of the services provided under the RUO is the monthly charge and installation of the local loop.

According to the European Commission's 14th implementation report, the price of LLU in Portugal (in full access modality, which is the mode that OSPs use in Portugal) is among the lowest in the European Union, at about 8% below average, but significantly below average in terms of installation and slightly below average when it comes to the monthly charge. The following graph shows the average prices of total monthly prices (monthly and installation spread over 3 years) for the Member States of the European Union, whereas it is noted that, recently, regulators have proposed price increases in Italy and the United Kingdom.

Graph 8. Average monthly price of full access in the European Union



According to data from a certain OSP, the monthly charge for the local loop represents almost 90% of the monthly costs for access to the RUO, whereas local loop installation represents about 70% of non-recurring costs.

Accordingly, these two components are the most critical in terms of the costs incurred by the OSPs under ROU, while it is important to note that prices were set in 2006 based on retail cost data and not using the wholesale product which was not stable at that time. It should be noted in any case that, in relation to the installation and monthly charge of the local loop, the latest available costing (2008) shows that:

- (a) In the "full loop" wholesale product, the installation margin is positive and the monthly charge negative, so that the combined margin of the two components is slightly positive (less than 1%);
- (b) The unit costs of the monthly charge of the retail "analogue accesses" product increased between 2004 and 2007, whereas the adoption of the methodology used previously and based on cost information from analogue accesses, deducting the costs

not incurred in the unbundling of the local loop, would not, in principle, allow the monthly charge for the local loop to be reduced. However, in 2008, a reversal was seen in this trend, which trend will be monitored and properly analyzed.

In the other components (especially in the case of internal and external connections and signal transport), while there could be learning economies which may be reflected in reduced task execution times, it is unlikely that considerable reductions have been seen in the prices of material or in labour costs which could justify a reduction in prices.

In fact, data from PTC's Analytical Accounting System (AAS) for the year 2008 and taking into consideration the total number of the monthly and installation, the "signal transport" and "internal connection" products had negative margins¹⁰⁰. The "physical co-location" product had a positive margin, which, however, does not offset the negative margins described above.

In light of the above data and considerations, ICP-ANACOM finds no grounds for proposing an alteration to the prices of the RUO, notwithstanding continued and careful monitoring of this issue, especially in the face of new costing data or conclusion of "benchmark" analyses underway, whereby ICP-ANACOM may intervene in the event that this is deemed appropriate.

5. DETERMINATION

In view of the analysis and considering that:

- (a) Grupo PT is subject, in respect of the LLU, and following analysis of the market for wholesale (physical) network infrastructure access at a fixed location, inter alia, to obligations of:
 - Access and use of specific network resources;
 - Transparency in the publication of information, including reference offers;
 - Non-discrimination in the provision of access and interconnection and in the respective disclosure of information;
- (b) In its regulatory approach, ICP-ANACOM is required to take utmost account of the common positions of the ERG, in particular the "ERG common position on best practice in wholesale unbundled Access (including shared Access) remedies imposed as a consequence of a position of significant market power in the relevant market - ERG (06) 70 Rev1", the "Report on ERG best practices on regulatory regimes in wholesale unbundled access and bitstream access" and the "Principles of implementation and best practice regarding LLU";
- (c) ICP-ANACOM will conduct a periodic review of the wholesale offers in general and in particular the RUO;

¹⁰⁰ Only the installation of the internal link has a positive margin.

- (d) The principles of transparency and non-discrimination call for greater reliability and consistency of information provided pursuant to the RUO, which information shall be complete, clear and unambiguous;
- (e) LLU beneficiaries require access to more information on matters which are essential to the development of their offer and which have a direct impact on investment decisions, especially in a phase of investment in NGA, whereby a balanced, transparent, efficient and predictable process can be ensured, eliminating barriers to the development of the broadband market and of competition;
- (f) Access to accurate and appropriate information, especially information which enables the end-user to be clearly informed as to the services which can be provided, is essential to guarantee good experience in the contracting of services by end-users, benefiting the entire electronic communications sector;
- (g) The responsibilities of ICP-ANACOM are to promote 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;
- (h) Following the various interventions undertaken by ICP-ANACOM within the scope of the RUO, alternative operators have invested significantly in their own infrastructure, including at core network level and in co-location in PTC exchanges, thereby contributing to the development of innovative offers which are appealing to customers in a climate of greater competition and consequently contributing to the objectives of regulation as set out in Law;
- (i) It is important to safeguard, within reasonable limits, the investments made by operators and to ensure continuity and profitability over the medium term, while respecting the principles of proportionality and intervening only as required to accomplish the intended objectives;
- (j) Quality of service is an important issue which impacts the service provided to the end-user, whereby interruption to services should be particularly avoided and their rapid restoration should be ensured in the event of any such interruption, taking into account the requirements of the various services offered to end-customers; accordingly, there are grounds for regulatory intervention in this matter when differences in the negotiating power of the different parties prohibit the accomplishment of satisfactory objectives, and in particular where no change is seen in performance targets over the years;
- (k) It is necessary to ensure consistency between the various available offers, i.e., among the conditions applied with respect to LLU, the "Rede ADSL PT" offer and the Universal Service, and also in order to promote sustained and efficient investment by all operators in the development of their networks and services and to promote greater competition in the markets;
- (l) In compliance with the principle of non-discrimination, reasonable time limits should be established within the scope of a "Service Level Agreement" (SLA), which limits

shall be sufficient, at a minimum, to enable LLU beneficiaries to compete with the offers of Grupo PT in the retail market and to satisfy the needs of different types of customers, especially through Premium and urgent services (requested on a case by case basis and payable per intervention);

- (m) Any delay in the supply of services or in the restoration of services has a negative impact on the activities of the beneficiary operators, whereby mechanisms are required which deter failures to comply with the established targets;
- (n) The amount of compensation due as a result of services which fall short of the agreed level shall be appropriate given the quality demand level required and shall be defined so that it acts as an incentive for the provider to meet the target levels of service, and it shall be determined according to the deviation from the established target and be associated with the affected loops.
- (o) The time of access to exchanges in emergency situations is an issue which is particularly relevant to end-users and which must be revised to reduce and differentiate the deadlines associated with such access;
- (p) The promotion of broadband penetration, through continued development of the LLU in areas of lower population density and/or more remote areas, reducing asymmetries between the services available in urban areas and in other areas, could be accomplished through a simplification and consequently, reduction in the costs incurred in the signal transport service;
- (q) The RUO is already relatively stable, both in terms of processes and in terms of level of demand, whereby making the OSPs subject to the payment of compensation in the event of non-compliance with the targets established in forecast plans is disproportionate and may hamper the development of wholesale offers;
- (r) There is a need to ensure the compatibility of the procedures followed in loop unbundling with portability with the procedures laid down in the Regulation amending Regulation No 58/2005;
- (s) Enhanced efficiency of wholesale services, the elimination of unjustified barriers and the respective reduction in costs is important to ensure fair competition, with clear benefits for end-users;
- (t) Agreement is required on procedures ensuring environmental conditions which are suitable for the maintenance of equipment co-located in the exchanges of PTC and of services supported on such equipment;
- (u) Due to developments in technology, it is advisable to update the standards and technologies that can be supported over unbundled loops;
- (v) Mechanisms should be established which minimize disruption to the end-user, especially with regard to the need for the end-user to be at home during the unbundling of non-active loops;

- (w) In accordance with paragraph 1 of article 57 of Law No 5/2004 of 10 February, whenever decisions are to be taken which affect trade between Member States, the NRA shall make, by suitable means, the substantiated draft decision measure accessible to the European Commission and to the national regulatory authorities of other Member States, indicating any confidential information therein;
- (x) Under the terms of Commission Recommendation 2008/850/EC of 15 October on notifications, time limits and consultations provided for in article 7 of Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002, with reference to a common regulatory framework for electronic communications networks and services¹⁰¹, the draft measures which amend the technical details of the obligations previously imposed and which have no appreciable impact on the market (for example, annual updates of costs and estimates in accounting models, deadlines for the presentation of reports, delivery deadlines) should be reported to the European Commission using the short notification form provided in Annex II to the above-mentioned recommendation;
- (y) By determination of 05.08.2009, the Management Board of ICP-ANACOM decided to hold a prior hearing of interested parties on the draft determination that it proposed to adopt, whereas by decision of the Management Board of ICP-ANACOM, of 25.08.2009, ratified by determination of 02.09.2009, it was determined to launch a public consultation, in respect of which, the comments received, their analysis and reasoning of the decision is included in the "Report on the prior hearing and on the public consultation on the draft decision regarding amendments to the Reference Unbundling Offer";

the Management Board of ICP-ANACOM, pursuant to the powers set out in point b), e), f), h) and n) of paragraph 1 of article 6 of its Statutes, as approved by Decree-Law no 309/2001 of 7 December, in the exercise of its remit, as set out in points b) and g) of article 9 of the same Statutes, taking into account the regulatory objectives set out in paragraphs a) and c) of paragraph 1 of article 5 of Law No 5/2004 of 10 February and in execution of measures determined subsequent to the analysis of the market for wholesale (physical) network infrastructure access at a fixed location, determines the following:

1. PTC shall amend the RUO within 20 working days following notification of this determination, in consideration of the following:
 - D 1. PTC shall reproduce the normal and premium levels of quality of service provided for in the "Rede ADSL PT" offer in the RUO, which levels shall be operational and available to beneficiaries of the offer within 2 months from the date of notification of this determination. This 2 month period is extendable by up to a further 2 months with detailed justification and where accepted by ICP-ANACOM. Any differences between the additional charges applicable to the premium level in the RUO and those applicable under the "Rede ADSL PT" offer shall be duly justified in detail, including through a comparison between the costs of both offers and any additional activities or resources required of PTC in order to provide a similar level of quality.

¹⁰¹ See <http://www.anacom.pt/render.jsp?contentId=735098>.

D 2. PTC shall submit to ICP-ANACOM, within 30 working days, the conditions applicable to an urgent service, with targets at least equal to those of the premium service, but where the maximum time is applicable to 100% of the cases, payable per intervention, whereas detailed justification shall be provided to ICP-ANACOM with respect to the prices to be applied and to any limitations which PTC deems should be established with respect to the implementation of this service and possible ways of reducing the cost of implementing this solution.

D 3. PTC shall set out a procedure in the RUO which enables operators to indicate/change the level of quality to be applied to each loop, which procedure should be efficient and allow the point of time from which a determined level of quality service is activated or deactivated to be clearly identifiable. This procedure shall be at least as efficient as that provided for in the corresponding levels in the "Rede ADSL PT" wholesale offer, whereby a minimum execution period of 3 working days is established, along with a minimum period of application of 3 months.

The premium level may not be enacted for a loop that is faulty (i.e., in a process of fault resolution).

D 4. PTC should introduce a minimum target for service availability in the RUO of 99.90% for the loops connected to premium levels of quality of service. The minimum target is subject to the existence of a minimum total of unbundled loops of the same OSP with a premium SLA, to be defined, whereas PTC shall be required to provide grounds for the value of the minimum total to ICP-ANACOM.

D 5. PTC shall introduce compensation in the RUO for failure to comply with the average time limits for the repair of faults, on the following terms:

$$\text{Average_Delay}_x \times \text{Monthly_Fee_Loop}_x \times \text{Number_Faults}_x$$

Where:

Average_Delay_x - Corresponds to the difference in hours between the actual average time taken by PTC to repair faults and the average time to repair faults defined in the RUO for a particular set of loops with quality of service of the type x.

Loop_monthly_fee_x - Corresponds to the monthly fee, in euros, payable by the OSP for a loop that is included in the set of loops with quality of service type x.

Number_faults_x - Corresponds to the number of faults stemming from factors attributable to PTC occurring during the month being considered in the loops of type x.

D 6. PTC shall introduce compensation in the RUO for failures to comply with the maximum time limit allowed for the repair of faults on the following terms:

$$\text{Delay}_{xi} \times \text{Monthly_Fee_Loop}_x$$

Where:

Delay_{xi} - Corresponds to the difference in hours between the time taken to repair faults in loop *i*, belonging to the set of loops with quality of service type *x*, and the maximum repair time for faults established in the RUO for loops with this contracted level of quality of service.

Loop_Monthly_fee_x - Corresponds to the monthly fee, in euros, payable by the OSP for a loop that is included in the set of loops with quality of service type *x*.

- D 7. PTC shall introduce compensation in the RUO for failures to comply with the level of availability on the following terms:

$$F \times Deviation_Target_x \times MonthCharge_Loopset_x$$

Where:

F - Multiplying factor set at 2.

Deviation_Target_x - Corresponds to the difference between the level of availability accomplished and availability target established in the RUO for a particular set of loops with quality of service type *x*.

MonthCharge_Loopset_x - Corresponds to the monthly charge in euros, paid by the OSP for the loops which are included in the set of loops with quality of service type *x*.

- D 8. PTC shall introduce the obligation into the RUO whereby it shall be bound to act, upon its own initiative, to pay compensation for failures to comply with the quality of service targets established, making payment no later than the end of the second month following the end of the six month period in question, subject to further re-evaluation and adjustment taking into account the values calculated by the OSPs.

- D 9. PTC shall amend, in the RUO, the conditions for the payment of compensation for non-compliance with the established targets on the following terms:

- In the event that an OSP sends PTC demand forecasts for the loops, pursuant to and with a level of reliability stipulated in the RUO, they will receive the compensation established in the RUO in full;
- Otherwise, they shall receive 75% of the amount of compensation established in the RUO.

- D 10. PTC shall include in the RUO, on an exchange by exchange basis, the maximum time limits for access to exchanges in emergency situations (between 2 and 6 consecutive hours) applicable to all exchanges where the beneficiaries of the offer

have co-located equipment, whereas such information shall be provided in an Extranet with access limited to OSPs.

Emergency situations are considered situations in which it is evident that end-users are without service or that there is a degradation in the quality of service offered to the end-user

- D 11. PTC shall submit to ICP-ANACOM, upon publication of the RUO and in detail, grounds for the new emergency access times and any additional charge to be made payable.
- D 12. PTC shall introduce compensation in the RUO for non-compliance with the time limits for access to exchanges in emergency situations as follows:

$$Delay_x \times Monthly_Fee_Loop_x \times No_Loops_Unbundled_x$$

Where:

Delay_x - Corresponds to the difference, in hours, between the time actually taken to grant access to exchange *x* and the maximum time limit for access in an emergency situation established in the RUO for this exchange *x*.

Monthly_Fee_Loop_x - Corresponds to the average monthly charge, in euros, payable by the OSP for unbundled loops in exchange *x*.

No_Loops_Unbundled_x - Corresponds to the number of unbundled loops of the OSP in question in exchange *x*.

- D13. PTC shall include in the RUO the definition of the concept of AP and installation point (IP) in a detailed and clear manner, identifying the information available to beneficiaries of the RUO, through restricted access, within 2 months of notification of the final determination, for each AP:
- Its name and unique identification code;
 - The address, post code and geographical coordinates of the first installation point (IP) associated with the AP, identifying the reference system;
 - Whether the AP is primary or secondary and, if secondary, which main AP it depends on;
 - The type (own or rented building, container or cabinet) and the feasibility of co-location (for cases already evaluated);
 - Their validity (FTS, ADSL or both);
 - The exchange area to which it belongs;
 - Whether or not it has an MDF and if so, the name of the MDF.

- D 14. In any information detailed by AP, PTC shall always identify the AP through a unique code.
- D 15. Any AP, regardless of whether or not it is a primary AP, is eligible for local loop unbundling, whereby OSPs can be physically or remotely co-located at any AP, except if there are duly reasoned technical constraints, and may request the unbundling of loops.
- D 16. PTC shall include provision in the RUO, with respect to the external cable connection of the remote co-location service, for a cable of adequate capacity to link the Secondary AP and the street cabinets.
- D 17. PTC shall define in detail, in the RUO, the concepts of AP, MDF, remote unit and street cabinet, establishing the relationship between each one.
- D 18. PTC shall provide information on the number of street cabinets, by AP.
- D 19. All the information currently available and separated by MDF shall instead be separated by AP, and shall be updated and made available to beneficiaries of the offer within 3 months from the date of notification of the final determination. Such information shall be updated on a quarterly basis.
- D 20. Taking into account the current framework of the RUO, information provided on the number of local loops in use, number of pairs in the distribution frame, number of pairs in operation and number of surplus lines must refer exclusively to metallic loops.
- D 21. The "*Information, MDF by MDF, on the numbers associated with the dependent RUs of a determined MDF*", shall be replaced by "*information, primary AP by AP, with respect to numbering associated with the secondary APs dependent on a determined primary AP*".
- D 22. PTC shall provide, upon request of beneficiaries, and within 3 months from the date of notification of the final decision, geo-referenced information on the coverage areas of the APs (via appropriate mapping, indicating the coordinates of the limit points or seven digit postcodes), opting for a solution that minimizes costs and presenting to ICP-ANACOM detailed justification for any costs incurred in the provision of this information.
- D 23. PTC shall include provision in the RUO for the allocation of compensation for each occasion that incorrect information is provided on the numbering associated with a particular AP, where properly demonstrated, to a value of 76 euros. The information must be updated, at a minimum, on a quarterly basis, whereas any incorrect information that can be shown to result from changes occurring during this minimum quarterly period shall not be considered for the purposes of such compensation.
- D 24. PTC shall make available to the beneficiaries of the RUO, through access to the wholesale portal, within 3 months from the date of notification of the final
-

determination, the information currently available under the "Rede ADSL PT" offer with respect to the results, for a given loop, of theoretical ADSL/ADSL2+/M (speeds from 256 Kbps up to 24 Mbps) coverage tests, giving an indication of "viable", "not viable" or "inconclusive".

- D 25. PTC shall make available to the beneficiaries of the RUO through access to the wholesale portal, within 3 months from the date of notification of the final determination, information, for a given active loop, on its length and attenuation levels.
- D 26. PTC shall revise the prices of the qualification tests and, upon publication of the revised RUO following this decision, shall submit to ICP-ANACOM the respective detailed reasoning describing in detail all relevant costs and shall further inform this Authority, with appropriate detail, about the procedures applicable under the "Rede ADSL PT" offer with regard to local loop tests, including qualification tests.
- D 27. In the case of relocation of loops for reasons attributable to PTC, and for the AP where there are operators co-located, PTC shall give minimum prior notice of:
- 12 months where the number of active loops to be relocated is less than 1/3 of the total active loops in the MDF;
 - 36 months where the number of active loops to be relocated is more than 1/3 and less than 2/3 of the total number of active loops in this AP;
 - 60 months where the number of active loops to be relocated exceeds 2/3 of the total number of active loops in this AP (including in the event that the AP itself is decommissioned, and being reduced to 36 months, if an equivalent access can be guaranteed).
- D 28. Simultaneously to the provision of prior notice, as referred to in D 27, PTC shall submit an indication to the beneficiary operators of the RUO with respect to the possibility of retaining the services of local loop unbundling from the original exchange and shall further submit information which is relevant for the assessment of the economic viability of co-location for the new APs to which the loops are relocated, including:
- code and description of the originating AP,
 - code and description of the new APs (with the location and coverage area properly geo-referenced) and/or of existing APs to which loops will be relocated,
 - approximate information - with deviation of $\pm 15\%$ - regarding the number of loops to be relocated from the original AP,
 - approximate information - with deviation of $\pm 15\%$ - about the number of loops for each destination AP and

- year in which relocation is due to take place.

Giving 2 months prior notice, PTC shall submit accurate information on the number of loops to be relocated to the destination AP and the respective numbering, indicating the date determined for the completion of the relocation.

- D 29. Where there are firm intentions on the part of the operators to co-locate in a new AP, PT shall take the interest expressed into full account when scaling the AP, including in the design of any new ducts (guaranteeing at all times, the provision of dark fibre in the event that there is no space in the duct).
- D 30. PTC shall agree with the beneficiaries of the RUO – presenting, for such purpose, a proposal within 4 months following the date of notification of the final determination - the general principles to be followed in planning and the technical conditions in case of any need to relocate equipment (already) co-located in exchanges and any migration of accesses/customers, subject to the intervention of this Authority in the event that no agreement between the parties can be reached. The specific conditions to be deployed in a given AP should follow the general principles and technical conditions agreed and established no later than 4 months prior to the date of equipment relocation.
- D 31. Loops unbundled prior to relocation should not be relocated without checking for the possibility of alternative access (i.e. the express willingness of the end-user should prevail), unless there are severe impediments of a technical nature or in terms of network optimisation, which inhibit the unbundled loops from being maintained in the original AP and where grounds are provided, on a case by case basis, to the beneficiary operator and to ICP-ANACOM which may determine on such situations.
- D 32. PTC shall, in respect of the process of unbundling of local loops with portability:
- Reduce the maximum period for confirming the order and for scheduling the unbundling by the beneficiaries from 4 to 3 working days;
 - Set out that the transfer of the loop shall occur during the period of the portability window agreed with the OSP and that the request for number portability shall be made at least 7 days in advance of the first option proposed for the window, whereas the remaining procedures laid down in Annex 7 of the RUO shall apply.
- D 33. PTC shall remove any restrictions on the installation of the optical fibre of RUO beneficiaries by the technicians of these beneficiaries in the access cable tunnels to PTC exchanges and shall remove any restrictions on the use of technical chutes, allowing the optical fibre of the OSPs to be extended up to the co-location area, whereas PTC shall include the respective conditions and procedures in the RUO, submitting these to ICP-ANACOM and giving grounds for any additional pricing, upon the publication of the RUO.

- D 34. PTC shall introduce into the RUO a service of connection to non-adjacent modules, irrespective of whether they are modules of the same or of different operators, presenting the respective reasoning for pricing to ICP-ANACOM.
- D 35. Notwithstanding any agreement between the parties, PTC shall include conditions in the RUO applicable to open space climate control, in accordance with the following principles:
- The OSP (or various OSPs having similar requirements) shall give PTC indication of the improvement in environmental conditions that are to be provided on the site occupied by this OSP or group of OSPs;
 - Within 20 working days, PTC shall submit a proposal including a comprehensive and detailed budget which is cost-orientated and shall submit the execution time forecast for the performance of the works;
 - The OSP requesting the improvements shall decide, within a maximum period of 15 working days of receipt of the budget sent by PTC, whether to accept the proposed budget, which acceptance shall constitute a formal order;
 - The OSP requesting the improvements will be responsible for making full payment to PTC for the works, whereas this OSP may decide to make an agreement with other OSPs in the same location to share the respective cost, which arrangement shall be performed directly between the OSPs without the involvement of PTC.
- D 36. PTC shall include the possibility in the RUO of using, pursuant thereto, any technologies/platforms that conform to international standards defined within the scope of the ITU-T, ETSI and IEEE, except where there is technical impediment duly reasoned on a case by case basis, which impediment shall be notified to ICP-ANACOM within 20 working days following the request.
- PTC shall take steps, within 60 days, to reach an agreement on a frequency plan for those technologies where, in the light of their demand and the level of interference that may be caused, there is justification, which plan shall be made to minimize possible interference with the simultaneous use of the other technologies defined within the scope of the ITU-T and shall be followed by all operators, including the companies of Grupo PT. In the absence of any agreement, ICP-ANACOM may intervene.
- D 37. PTC shall unbundle non-active loops in the exchange and on the local network prior to or simultaneously to the intervention at the customer premises.
- ICP-ANACOM recommends that the technician of PTC, or subcontracted personnel, notify the OSP, preferably 1 hour before travelling to the customer premises about said callout, and for this purpose use a freephone number provided by the OSP.

- D 38. PTC shall include a simple and efficient mechanism in the RUO for rescheduling the unbundling of non-active loops in situations where the installation/unbundling did not take place, whether due to reasons attributable to PTC or due to reasons attributable to the OSP or end-user. Rescheduling due to the non-occurrence of unbundling is permitted where due to reasons attributable to the OSP or end-user, whereas no rescheduling limit is permitted with respect to the non-occurrence of unbundling due to reasons attributable to PTC. The deadline for performing the rescheduling, which should be concluded as soon as possible, is 5 working days.
- D 39. PTC shall amend the time limit by which the OSPs are required to submit the test results to PTC from 10 working days to 15 working days, including also the possibility that OSPs submit test results within 15 working days following alteration from a level of service to another on a given loop.
- D 40. Unless otherwise agreed, PTC shall accept the results of the tests carried out by the OSPs, provided that the DELT methodology is used, whereas no unjustified restriction may be imposed with respect to measurement methods, except in the case of duly justified objections.
- D 41. PTC shall ensure, at a minimum, upon restoration of the loop subsequent to repair or maintenance operations, the levels notified by the OSPs when sending the test results or notified to the OSP upon unbundling, and shall further give notice of the measurements immediately after the repair of faults.
- D 42. PTC shall provide detailed justification of the pricing presented, based on costs, describing in details the activities conducted, the execution times, the category of technicians executing them and respective hourly rate, as well as any associated material or software costs and any premise or estimate included, for consideration of possible cost allocation mechanisms.
2. To recommend that the technician of PTC, or subcontracted personnel, notify the OSP, preferably 1 hour before travelling to the customer premises about said callout, and for this purpose use a freephone number provided by the OSP.
 3. To notify the European Commission, under the terms of paragraph 3 of article 57 of Law No 5/2004 of 10 February.

APPENDIX 1

QUALITY OF SERVICE AT RETAIL LEVEL

Voice service

Determination of 30.03.2006 established the quality of service parameters applicable to the provider of the universal services and the corresponding performance targets¹⁰². With respect to the levels associated with the repair of faults, on the local network as well as other faults, the following is established (annex 3 of the cited determination):

Table 10. Fault rate per access line (PQS2) – targets and performance

Indicator	Annual Target	2008
Fault rate per access line	0.10	0.13

Table 11. Fault repair time (PQS3) - targets and performance

Indicator	Target	2008
(a1) Time to repair faults of the local access network which corresponds to 80% percentile value of the swifter repairs	72	74
(a2) Time to repair faults of the local access network which corresponds to 95% percentile value of the swifter repairs (hours)	165	139
(b1) Time to repair other type of faults, which corresponds to 80% percentile value of the swifter repairs (hours)	47	44
(b2) Time to repair other type of faults, which corresponds to 95% percentile value of the swifter repairs (hours)	108	93
(c) Rate of repairs carried out within the repair time limit established by the universal service provider, intended to be offered to consumers (%)	80	68

Broadband Internet access service and IP-TV service

The information provided in the following table was obtained from PTC's customer service line (16200) on 15.06.2009:

Table 12. Repair times for broadband Internet access service and IP-TV service obtained from PTC's customer service line (16200)

Service	Guarantee of repair given to end-user
Broadband Internet access (Sapo)	48 consecutive hours
IP-TV (Meo)	48 consecutive hours

¹⁰²Both the definitions and the measurement methods (which follow version 1.1.1 of the document ETSI EG 201 769-1) conform with the quality regulation applicable to the telephone service at a fixed location with the required adaptations resulting from the telephone service at a fixed location, with the scope of the universal service, covering only analogue accesses.

APPENDIX 2

QUALITY OF SERVICE AT WHOLESALE LEVEL

"Rede ADSL PT" Wholesale offer

Table 13. Fault repair levels established in the "Rede ADSL PT" offer

Service	Defined level		
	Normal	MAX8HU	MAX12HL
Average fault repair time (100% of cases)	8 w.hrs	4 w.hrs	6 c.hrs
Maximum fault repair time (95% of cases)	28 w.hrs	8 w.hrs.	12 c.hrs
Additional monthly charge	€ 0	€ 2.50	€ 5.00
Additional activation	€ 0	€ 12.47	€ 12.47
Availability of service	99.00%	99.5%	99.5%

Nota: c.hrs. = consecutive hours and w.hrs. = working hours.

Table 14. PTC practice in terms of quality of service in 4th quarter 2008¹⁰³

Service	Accomplished levels - 2008		
	October	November	December
Quantity of faults (% average set)	1.20%	1.04%	0.91%
Average linear time	43.7	41.6	59.4
Average working time	11.3	10.7	12.3
Availability	99.93%	99.94%	99.93%

Local loop unbundling offer (LLU)

Table 15. Target and accomplished levels of service with respect to the repair and availability of loops

RUO parameter	Target	Occurrence (%)	Accomplished levels
			4th Qtr 2008
IQSL1 – Repair time	10 w.hrs	90%	5.7
IQSL2 – Loop availability	99.50%	100%	99.96%

¹⁰³ Data is not available separated by quality of service level. The data presented refers to all accesses provided through the "Rede ADSL PT" offer, irrespective of the contracted level of quality of service. Despite there being more recent wholesale data, it was decided to present all data up until the end of 2008, in order to provide comparability with the retail data.

Leased Lines reference Offer (LLRO)

Table 16. PQS2 – Fault repair times

Contract type	Circuit type		Target	Occurrence
Base	Leased lines (end-to-end and part circuits)		6 hours	80%
	Lines for traffic interconnection	Interconnection Lines	6 hours	80%
		Internal extensions for interconnection	4 hours	80%
	Lines for access to submarine cables	<155 Mbps	6 hours	80%
		155 Mbps	4 hours	90%
Line network	Leased lines (end-to-end and part circuits)	<155 Mbps	6 hours	80%
		155 Mbps	4 hours	90%
	Lines for traffic interconnection	Interconnection Lines	6 hours	80%
		Internal extensions for interconnection	4 hours	80%
	Lines for access to submarine cables	<155 Mbps	6 hours	80%
		155 Mbps	4 hours	90%
	Large line network	Leased lines (end-to-end and part circuits)	<155 Mbps	4 hours
24 hours				98%
155 Mbps			24 hours	90%
Lines for traffic interconnection (Interconnection Lines and internal extensions for traffic interconnection)		4 hours	90%	
		12 hours	98%	
Lines for access to submarine cables		<155 Mbps	6 hours	80%
		155 Mbps	4 hours	90%

Table 17. PQS3 - Degree of availability of service

Contract type	Circuit type		Target
Base	Leased lines (end-to-end and part circuits)		99.00%
	Lines for traffic interconnection		99.90%
	Lines for access to submarine cables		99.50%
Line network	Leased lines (end-to-end and part circuits)	<155 Mbps	99,50%
		155 Mbps	99,99%
	Lines for traffic interconnection		99.90%
	Lines for access to submarine cables		99.50%
Large line network	Leased lines (end-to-end and part circuits)	<155 Mbps	99,85%
		155 Mbps	99,99%
	Lines for traffic interconnection		99.90%
	Lines for access to submarine cables		99.85%

APPENDIX 3

COMPENSATION FOR FAILURES TO COMPLY WITH THE QUALITY OF SERVICE IN THE "REDE ADSL PT" OFFER

Repair of faults

Formulas in the "Rede ADSL PT" offer:

Normal:

$$\frac{HU}{22 \times 8} \times \sum_{n=1}^k Ac_Loc_Parque_Classe_NORMAL(n) \times Preço_Mens_Classe(n)$$

MAX8HU:

$$\frac{HU}{22 \times 8} \times \sum_{n=1}^k Ac_Loc_Parque_Classe_MAX8HU(n) \times Preço_Mens_Classe(n)$$

MAX12HL:

$$\frac{HU}{30 \times 24} \times \sum_{n=1}^k Ac_Loc_Parque_Classe_MAX12HL(n) \times Preço_Mens_Classe(n)$$

where:

- "HU" is the difference, in working hours, between the maximum time actually accomplished and the level of Quality of Service;
- "HL" is the difference, in consecutive hours, between the maximum time actually accomplished and the level of Quality of Service;
- "Ac_Loc_Parque_Classe_NORMAL(n)" corresponds to Local Accesses of the Class (n) in the set in the month in analysis with the "NORMAL" level of service restoration;
- "Ac_Loc_Parque_Classe_MAX8HU(n)" corresponds to Local Accesses of the Class (n) in the set in the month in analysis with the "MAX8HU" level of service restoration;
- "Ac_Loc_Parque_Classe_MAX12HL (n)" corresponds to Local Accesses of the Class (n) in the set in the month in analysis with the "MAX12HL" level of service restoration;
- "Preço_Mens_Classe(n)" corresponds to the monthly price of a Local Access of the Class (n);
- k represents the total number of available Classes.

Loop availability

Table 18. Compensation for failure to comply with service availability

Level of Quality of Service	Compensation
Availability of NORMAL service	
93% ≤ Availability of service <99%	3% of next monthly billing
Availability of service <93%	5% of next monthly billing
Availability of MAX8HU and MAX12HL service	
93% ≤ Availability of service <99.5%	3% of next monthly billing
Availability of service <93%	5% of next monthly billing

APPENDIX 4

SYNCHRONISATION BETWEEN UNBUNDLING AND PORTABILITY

Figure 3. Schematic representation of the processes of loop unbundling with portability (current situation pursuant to the portability regulation and the RUO) (with $\epsilon = 0$ and $\epsilon = 2$)

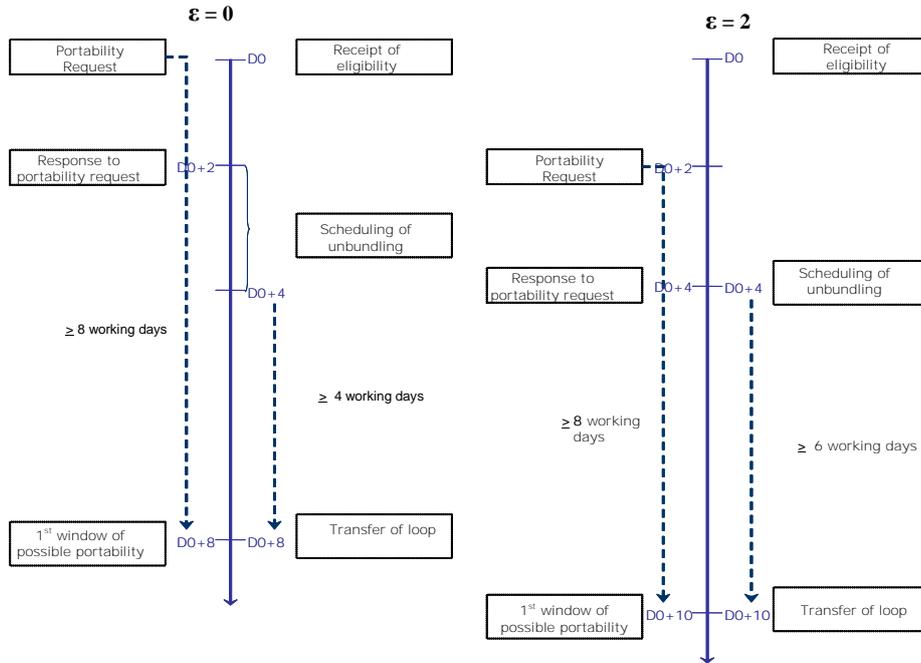


Figure 4. Schematic representation of the processes of loop unbundling with portability (amendments to portability regulation and proposed amendments to the RUO) (with $\epsilon = 0$ and $\epsilon = 2$)

