ANACOM

ICP - Autoridade Nacional de Comunicações
Av. José Malhoa, nº12 - 1099-017 Lisboa
Portugal

Internet - http://www.anacom.pt
e-mail - info@anacom.pt
Telephone - +351 217211000
Fax - +351 217211001

The information is also available in Anacom's Internet website in:

http://www.anacom.pt/template31.jsp?categoryId=196062

Determination of 8.6.2006

DECISION

SPECIFICATION FOR CHANGES TO RIO FOR THE INTRODUCTION OF CAPACITY-BASED INTERCONNECTION

1. FRAMEWORK

Considering the evolution of the electronic communications market and the emergence of competitive and innovative products and services in the retail market that could not be fully replicated by Grupo PT's competitors within the framework of the current time-based interconnection model, it became necessary to introduce an interconnection model that is not time-based, enabling Grupo PT's competitors to replicate in a competitive way certain offers and campaigns launched by Grupo PT. Thus, in connection with ICP-ANACOM's decision regarding the setting of obligations in the call origination and termination wholesale markets[1], Grupo PT was given the obligation to offer a capacity-based interconnection model, as an alternative to the time-based interconnection model (based on the length of switched calls).

This interconnection model is based on the offer to the OSP[2], by a company of Grupo PT, - PT Comunicações, S.A. (PTC) in this case – of a certain interconnection capacity at a given interconnection point and at a fixed price. Its introduction should give operators the ability to more efficiently manage interconnection resources, adjusting them in accordance with their needs and traffic profiles. It will enable them all to offer innovative products and services and to foster the use of the fixed network, and at the end it will benefit users and also contribute to foster competition.

In general, the marginal cost of the traffic that is routed on PTC's network tends to be null. Thus, creating effective competition conditions allowing the OSPs to replicate the circumstances in which PTC operates requires that the marginal costs of the first's traffic are equally null. This objective may be reached with interconnection prices by capacity or interconnection flat rates.

It thus becomes necessary to define the terms of the offer of capacity-based interconnection, namely its geographical scope, eligible traffic, the possibility of option regarding time-based interconnection, the conditions associated to traffic transhipment (including the setting of a price that fosters adequate planning) and the unit price by basic capacity unit.

The setting of the capacity-based interconnection price, with the implementation of price ranges that lead to a non-discriminatory treatment of Grupo PT's several interconnection services, imposes a clear definition of assumptions. On a first moment, traffic estimates will

[1] *See* ICP-ANACOM's decision of 17/12/04 at http://www.anacom.pt/template12.jsp?categoryId=152277.

[2] The definition of OSP in force in RIO is applied: public telecommunications network operator(s) or fixed or mobile telephone service provider(s), or data transmission service providers (when applicable, in accordance with ICP-ANACOM's determinations concerning the change of the interconnection regime for access to switched data transmission services of 23/09/03, and changes to be made to RIO of 16/03/ 04.

have to be used to determine an initial interconnection price, however with the typical constraint of asymmetric information between regulator and regulated.

In this context, based on the information available, ICP-ANACOM will define the price of capacity-base interconnection to be in force at the launch of this offer. In future revaluations of the capacity-based interconnection price, for its correct evaluation and considering the principle of cost orientation of prices, PTC must support its price proposition based on data to be made available. This data are, namely, the rate of channel occupation and the weight of the total traffic of voice and internet services (both wholesale and retail), routed per hour (in order to assess the location of the peak hour) regarding total daily traffic. Considering that the traffic of voice services and the traffic of internet services evolve differently, it is also necessary to assess the individual evolution of each type of traffic, in order to take that evolution into account.

Any price based on previous average routed traffic tends, once established, to foster traffic increases, thus possibly becoming unadjusted. Therefore, it will have to be periodically assessed.

This interconnection model also raises technical issues, namely at the level of: (i) planning of interconnection that is adjusted to quality of service levels; (ii) defining traffic transhipment conditions, including price; (iii) network operation and maintenance including the definition of procedures; (iv) deadlines for the capacity-based interconnection roll-out.

In this sense, determination of 24/06/05[3] approved the launch of a public consultation on the provision of capacity-based interconnection (interconnection flat rate), in the scope of ANACOM's duties stated in article 6 of the Statutes (Decree-Law no. 309/2001 of 7 December), setting a thirty-day period for interested parties to comment.

Determination of 12/10/05[4] approved the report of the consultation on the provision of capacity-based interconnection (interconnection flat rate) launched following the determination of 24/06/05. Simultaneously, the draft decision with the specification for changes to PTC's Reference Interconnection Offer (RIO) was approved, in order to include capacity-based interconnection. Interested parties were notified to comment, in writing, during a 10 working-day period, in accordance with articles 100 and 101 of the Administrative Procedure Code.

[3] *See* http://www.anacom.pt/template12.jsp?categoryId=156025.
[4] *See* http://www.anacom.pt/template12.jsp?categoryId=167685.

Taking into account the arguments presented in the report of the previous consultation, which is part of the process, ANACOM's Board of Directors, in the scope of the duties stated in paragraphs b) and f) of no. 1 of article 6 of the Statutes, approved by Decree-Law no. 309/2001 of 7 December, considering the regulatory objectives mentioned in article 5 of Law no. 5/2004 of 10 February, namely the promotion of competition in the offer of electronic communications services and the protection of citizens' interests, and according to no. 3, paragraph a) of article 68 of Law no. 5/2004, determines the following:

2. PRESENTATION AND FORMAT OF THE CAPACITY-BASED INTERCONNECTION OFFER

The conditions of the capacity-based interconnection offer defined in the following sections of this document should be integrated in the RIO, in an autonomous section on the provision of capacity-based interconnection. Information regarding the implementation, concerning contracts, procedures, prices and quality of service, should also be included in RIO, as is current practice with the remaining interconnection services.

The concessionary should submit to ICP-ANACOM, within thirty days counting from the date of the determination, a new version of RIO that includes the provision of capacity-based interconnection, for the verification of its compliance with the established minimum elements. This new version of RIO should respect the principles of transparency and non-discrimination, in accordance with no. 1, paragraphs a) and b) of article 66 of Law no. 5/2004 of 10 February. It should be released and published sixty days before the entry into force of the capacity-based interconnection. It should be noted that ANACOM may still intervene, according to no. 2 of article 67 and no. 3 of article 68 of the Electronic Communications Law, on the version of the offer to be released.

3. DESCRIPTION OF THE CAPACITY-BASED INTERCONNECTION MODEL

The capacity-based interconnection model is the transparent and non-discriminatory offer by PTC to the OSP of a certain capacity of interconnection services, alternative to the time-based interconnection model, at the geographical interconnection points (GIP) described in RIO, at a fixed price (i.e. interconnection flat rate).

The interconnection flat rate depends on the contracted capacity and is independent of the volume/duration of the traffic effectively routed. The contracted capacity is measured in multiples of the basic capacity unit defined below.

The capacity-based interconnection model implies that PTC makes available the network resources aimed at satisfying the interconnection requests of the operators that contract a certain capacity to route the eligible traffic, according to the quality and availability objectives agreed upon, also implying the payment of a price for the transhipment of traffic, in order to promote an efficient and rational use of capacity-based interconnection.

4. BENEFICIARIES OF THE CAPACITY-BASED INERCONNECTION OFFER

ICP-ANACOM sees no reasons to limit the number of entities benefiting from the capacity-based interconnection offer vis-à-vis what is already defined in RIO. Thus, the beneficiary entities will be the current beneficiaries of RIO (public telecommunications network operators and fixed telephone service, land mobile service and the data transmission service providers.)

5. TRAFFIC ELIGIBLE FOR CAPACITY-BASED INTERCONNECTION

The capacity-based interconnection model is valid for voice traffic and narrow band internet access traffic (dial-up).

Among the basic services of interconnection of switched traffic, the origination and termination services are the interconnection's fundamental base. For this reason, the traffic eligible for capacity-based interconnection is the following:

a) Origination: Local, Simple Transit and Double Transit;

b) Termination: Local, Simple Transit, Double Transit;

The access to the following services is excluded from the eligible traffic for capacity-based interconnection:

a) free interconnection services (e.g.: 112, 117, 1414);

b) international termination and transit traffic.

6. DEFINITION OF THE BASIC CAPACITY UNIT

The basic interconnection capacity unit should be a 2 Mbps circuit, and the capacity to be contracted by an OSP a full multiple of 2 Mbps.

7. RESALE OF CAPAPITY-BASED INTERCONNECTION UNITS

The possibility of resale of capacity-based interconnection units should be foreseen.

8. QUALITY OF SERVICE INDICATORS AND LEVELS

The changes to be introduced with the new interconnection model do not directly imply a change to the current indicators and levels of the interconnection quality of service, stated in Annex 3 of RIO, namely the quality of the OSP's networks and of the lines and the losses in the interconnection beams.

9. TRAFFIC TRANSHIPMENT CONDITIONS

The transhipment of the eligible traffic must be foreseen and should be made:

(i) firstly, through leased lines associated to the time-based interconnection at the same GIP, with the existence of a price for traffic transhipment promoting a correct planning of the capacity-based interconnection beams. In this sense, 2 times the price of time-based interconnection should be adopted.

When there is transhipment at the capacity-based interconnection line(s), the OSP must request the procedures that are needed to increase the number of lines (in accordance with what is already foreseen in RIO)

(ii) secondly, when all capacity-based and time-based lines at a certain GIP are busy, transhipment of the eligible traffic should be made using the scheme currently agreed upon among operators, i.e., should the transhipment be made through the interconnection lines of another GIP, RIO's interconnection prices (time-based model) are applied for the corresponding interconnection level.

(iii) alternatively, through indirect interconnection with another operator, making it possible for the beneficiary of the offer to choose, should its lines with PTC be busy, to send traffic through a third operator, which would deliver PTC's traffic to its lines.

A twenty-day period was defined for the migration between transhipment options (including functionality tests), counting from the OSP's notification to PTC of the PGI and beams that make up the transhipment route (whether these belong to them or to third party operators willing to make the transit).

10. PROCEDURE FOR CONTRATING CAPACITY AND MIGRATION FROM THE CURRENT INTERCONNECTION MODEL TO THE CAPACITY-BASED INTERCONNECTION MODEL

The offer of capacity-based interconnection should be characterized by transparency and efficiency. Therefore, in RIO, in the scope of the flat rate, the ways to communicate the following should be specified: a) request for capacity/migration (responsible: OSP); b) acceptance/denial of request (responsible: PTC); c) service rendered (responsible: PTC).

Also considering the transparency and efficiency criteria, RIO must also define the ways to communicate (responsible: PTC) and solve constraints (responsible: OSP) in the implementation/migration process.

In this context, ICP-ANACOM does not find any reasons why the communication modes between PTC and the OSP should be any different from the ones currently defined in RIO. The capacity/migration requests must be made in writing to the contact nominated by PTC, which should keep records of all requests/denials made during a minimum period of three years.

Possible specific processes for migration from time-based interconnections to capacity-based interconnections must be identified by PTC and defined in the RIO version that includes the offer of capacity-based interconnection that it subjects to ICP-ANACOM.

11. DEFINITION OF DEADLINES

As a principle, the maximum deadlines to create and increase GIPs should not depend on the interconnection model (time or capacity-based). They are currently defined in RIO's sections 13.4 e 13.5, respectively, and are the following:

a) maximum deadlines for the creation a new GIP:

a.1) analysis of the GIP's implementation request: twenty two working days;

a.2) implementation of the GIP after validation of the request: forty five working days;

b) maximum deadlines to increase an already existing GIP;

b.1) when there is the need to change the network structure, to replace or to increase the transmission equipment: one month;

b.2) other cases: fifteen working days.

RIO should define the following deadlines for the migration from time-based interconnection lines to capacity-based interconnection:

a) deadline for validation of the request for migration from the time-based interconnection model to the capacity-based interconnection (and vice-versa): five days;

b) maximum deadlines for migration:

b.1) when it is necessary to change the network infrastructure, replace or increase the transmission equipment: one month;

b.2) other cases: fifteen working days.

Deadlines for possible additional activities currently not performed should be defined in RIO, in order not to hinder the desirable speed in the implementation of capacity-based interconnection.

Should PTC fail to fulfil the deadlines established to install, increase and migrate in connection with capacity-based interconnection, it is established that in case of:

- non fulfilment of the migration deadline to the capacity model – after the deadline for the migration's effective implementation, without it being concluded by PTC, the interconnection traffic will be billed from there on in accordance with the capacity-based interconnection model;
- non fulfilment of the deadlines associated to the construction or increase of GIP's – the corresponding beneficiary will pay the interconnection prices of the alternative routings of traffic originally routed through the contracted capacity, with a 50% discount, during the non fulfilment period.

12. DEFINITION OF A MINIMUM CONTRACTING PERIOD

PTC should promote changes at the level of the network planning and structure, as well as in the associated information systems, aiming to make the new capacity-based interconnection model available. In this sense, in order to promote interconnection stability and an appropriate planning of the interconnection traffic, it is necessary to establish a minimum period for the contracting of interconnection capacity.

During the first year of the offer in force, the minimum contract period will be of one year. After the first year of the offer being in force, the minimum contract period will be of two

years. Thus, at least one month before the ending of the minimum contract period, each operator must request PTC to change the contracted capacity, with the purpose of adapting it to their effective needs. Penalties for the requested changes do not apply.

Should this minimum period not be fulfilled, namely with the advance cancelling of the basic capacity units or the advance migration of part or all of the contracted capacity at a certain GIP, PTC, as established in RIO regarding time-based interconnection, may ask the OSP to reimburse all or part of the corresponding investment (including installation expenses), as long as it is proven that investment made on the network became useless following the gap between what was planned for the minimum contract period and the new request.

13. METHOD FOR RECKONING THE PRICE OF CAPACITY-BASED INTERCONNECTION (INTERCONNECTION FLAT RATE)

The price of capacity-based interconnection should be part of the offer. It should be reckoned by basic capacity unit, based on the following method:

The principles to be taken into account when reckoning interconnection prices are mainly that interconnection prices must be determined according to the real cost of their provision and the economic continuity of the model. I.e., prices defined according to the long term efficient provision cost, including a reasonable remuneration of capital, and the maintenance of the average remuneration of the operator providing the capacity, together with the reduction of the unitary costs for the operator requesting that capacity.

Thus, a relation is established between the monthly capacity price and the price per minute through the criterion used for sizing: the foreseen monthly traffic.

Calculation of minutes in the peak hour

Interconnection between operators is structured around a basic network unit of 2 Mbps. The number of 2Mbps lines to contract is determined by two parameters:

- Number of simultaneous conversations in the busiest hour (in terms of routed calls), i.e., in the peak hour (PH);

- The loss of calls at the interconnection (Degree of service, B) = 1%[5].

According to the Erlang B[6] formula, at peak hour, for a basic capacity of 2 Mbps:

No. Lines	Traffic Intensity (Erl)	Occupation Rate	Routed Minutes (at PH)
31[7]	21.19 (for B=1%)	68.35%	1,271 (31*60*68.35%)

The estimated value for the total number of minutes routed per month at a basic unit is given by the formula: Minutes per month = Minutes at PH / PTr * DU * M, taking into account the traffic's rate at the peak hour versus the total daily traffic of 10.4%[8] and considering a number of twenty one working days per month and one month as the 11/12 holiday period:

PTr	DU	M	Routed minutes in a month (2 Mbps)
10.4%	21	11/12	*235,257* (1,271/10.4%*21*11/12)

Thus, the number of 235,257 minutes of traffic routed per month per each basic capacity unit of 2 Mbps should be considered to reckon the initial price per basic capacity unit.

Notwithstanding the mentioned values regarding the updated parameters, ICP-ANACOM will, whenever possible and appropriate, take into account the most recent values registered by PTC in the scope of the variables associated to traffic.

Estimation of the Tariff for Capacity-Based Interconnection

Maximum prices per basic capacity unit are determined by multiplying the minutes associated to that unit by the average interconnection price per minute at the considered interconnection level, Local, Transit (Simple or Double), which is set in RIO for the time-based interconnection.

Basic Unit Price = Minutes per month * Price per minute

[5] According to RIO: "[the] lines for interconnection must be sized so that the loss of traffic in each interconnection beam does not exceed the value of 1%. The value of the loss is calculated by the ADPH method on Erlang B during an observation week in each month".

[6] The Erlang B traffic model is the most used model for determining how many channels are necessary to handle a certain amount of traffic (measured in Erlang) during the busiest hour (peak hour).

[7] 64 kbps of 31 channels can be used in each 2Mbps line, when there are no signalling links. There is a limited number of signalling links in the interconnection networks between PTC and the OLOs: up to 20 2Mbps lines only 1 signalling link is necessary (almost-associated mode, up to 10 lines of 2 Mbps).

[8] Each operator's traffic volume weighted average reckoned by (weighted according to the traffic volumes of each OSP, faxed by PTC on 14/02/06 corresponding to the period 07/07/05 to 31/08/05).