

COMPETITION IN LOCAL ACCESS

RESULTS OF THE PUBLIC CONSULTATION

ICP UNDERSTANDING

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I. INTRODUCTION

ICP aims to fuel the fast development and innovation in Information Society services, based for example, on the use of e-mail, access to multimedia services and high-speed Internet access. As such, the organisation launched on 10 June, a public consultation on local access competition.

This had the main goal of obtaining contributions in order to assess the most appropriate and efficient solutions for the promotion of local access competition in Portugal. The public consultation also intended to obtain contributions in order to assess the most suitable and efficient solutions for the introduction of Local Loop Unbundling (LLU) in Portugal. In this respect, the Minister of Social Equipment has already publicly announced that LLU will be implemented by 30/06/2001.

ICP would like to thank all the organisations and users that showed interest in the public consultation, namely by sending in contributions and comments which have greatly enriched this process.

In the current context, the ICP understanding was that, among the mechanisms that could promote greater technological and service innovation in local access, LLU would constitute at this moment, an important contribution in the background of global competition.

The Lisbon Extraordinary European Council¹ and the Santa Maria da Feira European Council² arrived at a similar understanding. These meetings concluded that the aims of info-inclusion, namely of the citizens that live in peripheral and less developed regions, together with the reduction of Internet access costs could lead to greater progress through the creation of conditions that provide greater competition in the local access networks, especially through LLU.

This document summarises the responses received³ (in **Annex 1**) and outlines a set of proposals and recommendations concerning the operational options of LLU. Given the summarised and integrated character of the tables presented, their analysis should also encompass a consultation of the full responses.

The proposals for action and recommendations equally took into account the EU regulatory framework in force, namely the Recommendation⁴ and Communication⁵ from the European Commission. Furthermore, it also took into account the latest developments that have meanwhile taken place in the EU, namely concerning the proposal for the Regulation⁶ about the LLU.

¹ See http://europa.eu.int/council/off/conclu/mar2000/mar2000_pt.pdf.

² See http://europa.eu.int/council/off/conclu/june2000/june2000_pt.pdf.

³ Available in full, in their original form, on the ICP Internet page: <http://www.icp.pt/oll/respostas.html>.

⁴ See www.ispo.cec.be/infosoc/telecompolicy/review99/rec2000-1059en.pdf.

⁵ See www.ispo.cec.be/infosoc/telecompolicy/review99/com2000-237en.pdf.

⁶ See www.ispo.cec.be/infosoc/telecompolicy/review99/com2000-394de.pdf.

II. SURVEY RESPONSES AND ICP'S UNDERSTANDING

Responses were received from different market agents⁷. In order to simplify and better interpret the interests of the various players in the market, the responses were split into the following five categories depending on their origin:

- (a) Notified Operator (NO)⁸, the companies in which they have a holding and/or their subsidiaries;
- (b) Other License Operators/Service Providers;
- (c) Equipment manufacturers;
- (d) Consumer rights associations;
- (e) Other organisations.

It is pointed out that other comments were also received from individual users who in general stressed the importance of LLU in terms of competition in telecommunications services.

1. *LLU in the context of local access competition*

Question 1.

Do you agree that LLU may at this moment be an appropriate alternative to encourage competition in local access and to promote innovation? Explain your reasons paying special attention to the alternatives currently available and to the options expected in the short term, as well as to the nature of the services which may be available to the end user.

Most respondents believe that LLU will prove a strong incentive to competition, leading to an improved general accessibility to broadband services. According to several organisations, the LLU alternatives currently existing, in general, (i) are too expensive to be used comprehensively in a profitable way in local access for most residential customers and small and medium-sized companies or (ii) take too long to implement.

According to NO, LLU will not stimulate installation or competition for new local access networks, reducing the incentive to investment in alternative and own infrastructures. Furthermore, continuing to build on existing technology will limit innovation and the search for new technological solutions. The companies in which NOs have a holding and/or their subsidiaries hold a different view. These think that LLU will definitely be one of the alternatives to guarantee, in the short term, both the EU objectives and the market demands. Nevertheless, it is understood by these organisations that LLU will for the most part be an unacceptable solution in the medium and long term. Even so, they point out the existence of alternatives, in particular for the business segment (e.g. fixed wireless access or fibre optics in the local loop).

⁷ Annex 2 contains a list of the respondents.

⁸ Organisation notified as having significant market power in the fixed public telephone network market and/or fixed telephone services market.

Several services that could be made available to end-users were also identified. These included high-speed Internet access, web-TV, videoconferencing, access to video clips and other multimedia content, e-commerce, Virtual Private Networks (VPNs), LAN interconnection, dedicated circuits, access to virtual public services, tele-work and the fixed telephone service itself.

ICP UNDERSTANDING

Considering that:

1. In some markets (e.g. the United States of America) LLU has made a major contribution to overall competition;
2. In the national market the provision of direct access to the fixed telephone service by new operators until the end of the 1st half of 2000 was extremely limited. This is similar to the situation that took place in the other Member States immediately after the full liberalisation of the telecommunications sector;
3. The alternative technologies and infrastructures identified in the consultation document do not have the same functionality and ubiquity that the installed local access network supported on metallic pairs;
4. The *Lisbon Extraordinary European Council*⁹ and the *Santa Maria da Feira European Council*¹⁰ established several priorities and objectives regarding this issue. These included promoting the info-inclusion, namely of the citizens that live in peripheral and less developed regions, promoting the access to a quality communications infrastructure at a low price, offering a wide range of services and reducing the cost of Internet access. These aims might be easier to achieve through LLU;
5. The announced availability by the NO of a commercial offer for services based on ADSL complemented with a bitstream access, to be completed in January, is a positive step towards the development of new services. Even so, it constitutes a relatively delay¹¹ with regard to the offer of services based on ADSL, which does not favour the elimination of impairment to competition.

Going ahead with LLU would avoid conditions that impair competition in the provision of services supported on the aforementioned technologies, given the swiftness with which the NO can disseminate the ADSL offer in the future;

6. The slowness, given the specific market conditions, of the development of alternative access infrastructures would not be compatible with the intended goals in the Information Society area (e.g. high-speed Internet access, tele-work or access to multimedia content). This could lead to a “digital division” between Portugal and the other Member States of the European Union.

⁹ See http://europa.eu.int/council/off/conclu/mar2000/mar2000_pt.pdf.

¹⁰ See http://europa.eu.int/council/off/conclu/june2000/june2000_pt.pdf.

¹¹ Since 1997, the notified operator has been carrying out tests with ADSL equipment in real connections (see www.telecom.pt/empresa/financeiras/relatorios/rel97/pdf/rel97.pdf).

LLU is at this moment an important alternative to boost competition, innovation in technology, services and tariff plans thus promoting the development of the Information Society. LLU will lead to more choice in terms of services, quality and prices, with a significant impact on the development of the market in general, mainly through the increase in competition and promotion of the efficient entrance into the market of operators and service providers.

2. Compatibility between LLU and investment in alternative and own infrastructure

Question 2.

Do you think that the price of LLU may have an impact on investment in alternative infrastructure? What other mechanisms (apart from the regulation of prices) do you deem appropriate to promote investment in an alternative infrastructure in the medium and long term following the implementation of LLU?

It is generally thought that the price of LLU can have an impact on investment in alternative infrastructure. Given this fact, some organisations believe that mechanisms should be created to promote a balance between investment in alternative infrastructure in the medium and long term and access to LLU.

Several organisations identified different mechanisms to promote investment in alternative infrastructure in the medium and long term following the implementation of LLU, such as:

- (i) the imposing of infrastructure development aims for the organisations that will benefit from LLU;
- (ii) setting a time limit for the NO to provide LLU through the application of sunset clauses; or
- (iii) the imposing of a maximum number (or ratio) of clients for each Requesting Operator (RO) in this scheme¹².

Some responses warned that the methodology adopted in Holland (gradual transition from prices based on historical costs to prices based on current costs) may not be best option to adopt because it assumes that the ideal way to develop the market involves the multiplication of access infrastructures, which, necessarily, would involve high costs that would probably not be returned given the natural limitations of the market.

ICP UNDERSTANDING

It is considered that the application of an appropriate and reasonable cost oriented price for LLU will guarantee that access to the offer will be within the reach of ROs in cases where the development of alternative infrastructures is not economically viable (i.e. in cases in which the use of the existing infrastructure is more efficient than investment in an alternative infrastructure).

¹² Other mechanisms not directly related to the implementation of LLU mentioned by different organisations will be analysed in the appropriate headquarters.

It is also believed that the price of LLU should be reassessed on a regular basis in line with the dynamics of the market, especially taking into account the impact on the development of infrastructures and services and the amount of competition in the local access market.

The investment aims in alternative infrastructure will be better achieved if LLU is looked upon as a resource complementing the networks that encompass other infrastructure. Hence in principle, without harming the regulatory legislation, it is considered that LLU may be required by public telecommunication networks operators that have began operating and which comply with the conditions of their license, unless duly justified.

ICP does not consider it desirable to create incentives for inefficient entries into the market. Thus the development of a secondary trading market of subscriber lines, built on artificial arbitration opportunities based on the difference between the service offered at cost oriented prices and the eventual yielding at market prices, should be not promoted. In this background it is considered that:

1. the RO must not under any circumstances, yield the local loop to third parties;
2. the request of any access to the local loop must be based on actual demand. If this demand does not exist or if the contractual relationship between the user and the RO ceases, the use of the local loop must be returned to the NO.

3. LLU Options

Question 3.

Taking into account the advantages and disadvantages of each option identified for the implementation of LLU:

- 1.1. Which variants do you consider most appropriate considering the specific case of Portugal? Which additional options do you think should also be considered?*
- 1.2. If you have suggested more than one variant, what priority would you give to the implementation of each one, and in particular, which local loop unbundling variant would you be more interested in being operational from 30/06/01?*
- 1.3. What types of services and technologies might you (or do you intend to) use under each variant identified (whenever possible identify the relevant standards)? What specific considerations should be taken into account in the minimum offer for bitstream access?*
- 1.4. In a first analysis, which relevant conditions do you believe to be necessary to assure so that the options identified may be successfully implemented?*
- 1.5. Is there an option that in your opinion should not be implemented for technical, economic, regulatory or other reasons?*

Different viewpoints are held by the different categories of organisations concerning this set of questions.

On the one hand, the NO and the companies in which they have a holding and/or their subsidiaries defend bitstream access as the most suitable variant for Portugal. They believe that the full unbundled access to the local loop and shared access to the local loop should be put back

due to the operational, business, confidentiality and security constraints. With regard to the bitstream access, the NO defends the technological neutrality of this option, considering that the choice of technology must be its own responsibility, using quality, performance and economic criteria in the selection process. Therefore the ON believes that the definition of a minimum offer for bitstream access would not be suitable.

On the other hand, the majority of the other organisations suggest that the various options considered are valid for LLU implementation in Portugal. The priority variants for most respondents are bitstream access and full unbundled. The date of implementation of the variants causes a greater divergence of opinions. According to some organisations, the date of implementation must be simultaneous with (or before) the beginning of ADSL services offered by the NO. According to some organisations, the three solutions should be launched at the same time.

The main technologies identified as able to be used in LLU were ADSL and G.Lite (in the full unbundled and shared access variants), SDSL and HDSL2 (for full unbundled), standardised by ITU and ETSI. With regard to bitstream access, certain organisations were concerned about:

- (i) the transmission technology;
- (ii) the traffic delivery points;
- (iii) the quality of service;
- (iv) prices;
- (v) technological development.

One of the respondents, stating that it would be essential to define a minimum offer for bitstream access, in order to enable the ROs to provide various broadband services to the end-user, also proposed the inclusion of a minimum throughput of 512 kbps in the ADSL and G.Lite variants.

Among the conditions required to ensure that the variants identified can be successfully implemented, the following were outlined:

- (i) the determination of a reasonable and balanced price, established in accordance with the application of the cost orientation principle;
- (ii) the definition of a frequency plan;
- (iii) the definition of collocation rules;
- (iv) the scheduling of the process;
- (v) service level agreements encompassing the various phases of the process;
- (vi) access to register of the NO network;
- (vii) the complete functioning of the operational support systems for the ROs and the NO.

ICP UNDERSTANDING

When the public consultation was launched, the European Commission considered three implementation variants of LLU: (i) full unbundling access to the local loop; (ii) shared access to the local loop, and; (iii) bitstream access. The European Commission's proposed Regulation with regard to the "*Unbundled Access to the Local Loop*"¹³, published on 12/07/2000, after the launching of the public consultation did not consider bitstream access as a LLU implementation variant but foresees that this form of access should be available from the moment in which the NO begins to provide DSL services.

Taking into account that:

1. Full unbundling will in principle be less complex in technical-operational terms compared to shared access, enabling an integrated and complete commercial relationship between the alternative provider and the end-user and therefore greater innovation with regard to tariff schemes and services;
2. Shared access may constitute the most complex and articulated variant among the various operators;
3. The LLU proposal was presented for discussion at the European Parliament Council and foresees the objective date of 31/12/2000;
4. The Regulation proposal also encompasses access at intermediate points of the local loop¹⁴, which will need, in principle, better definition in certain aspects and can be technically complex in addition to the implementation of LLU;

and also taking into account the experience of other Member States, which in general do not yet plan shared access, it is considered that:

1. Full unbundling constitutes a priority solution for the implementation of LLU. As such, all market agents and especially the NO must, except possible temporary technical limitations arising from the proximity of the deadline date of the current Regulation proposal, make the greatest possible effort in order that the offer be available from 31/12/2000;
2. Bitstream access, although not constituting an LLU variant, must be offered, in principle, from the moment at which the NO begins providing DSL services, in accordance with the non-discrimination principle under the terms of article 33 of the Regulations for the Operation of the Fixed Telephone Service;
3. The implementation of shared access would benefit with the experience acquired in the implementation of full unbundling. Hence, it can be operated in parallel with the implementation of full unbundling;
4. It is important to weigh up access at intermediate points of the local loop, especially in situations in which there are metallic pair and fibre optic hybrid solutions on the access network. It can be operated in a similar fashion to shared access, being carried out in parallel with the implementation of full unbundling.

¹³ See www.ispo.cec.be/infosoc/telecompolicy/review99/com2000-394de.pdf.

¹⁴ Local sub-loop.

4. Prices and costs

Question 4.

Do you agree with the application of the cost orientation principle for LLU prices? In your view, which costing methodology do you consider to be most suitable for pursuing this principle at LLU? Do you feel that the application of the methodology you stated is compatible with the retail prices which are currently charged by the notified operator for the monthly subscription? If not, which solutions do you propose?

All the respondents that took part in this public consultation agreed with the application of the cost orientation principle in LLU. However, the NO stressed that the application of this principle must be restricted to a time period considered reasonable. Certain ROs pointed out that the application of the cost orientation principle in LLU may lead to higher prices for LLU than the prices offered to the public for the subscription line currently practised by the NO as a result of possible incomplete re-balancing of the tariffs.

The preferred costing methodology for several ROs is based on the Long Run Average Incremental Cost (LRAICs) or alternatively in the establishment of the price based on the European best practices. According to the NO, the recuperation of the costs through the current costs will be more appropriate because it will reproduce more suitably the conditions for a competitive market.

ICP UNDERSTANDING

It is considered that, taking into account the need to preserve the intrinsic coherence of the cost orientation principle, the costing methodologies must be applied in a consistent, integrated and global manner for the several network elements and/or services of the NO. This will minimise possible distortions in the telecommunications market with implications for the price fixing mechanisms and possible repercussions with regard to competition.

If different costing systems are used for the subscription of the subscriber line and for LLU, the resulting price of LLU may be higher than the retail price, leading to lower profit margins. This means that theoretically, it would be possible to argue that the RO may not be able to have, under certain circumstances, a profit margin that enables the commercial operation of the service. However, it is not certain that the services provided by the RO will be a perfect substitute for the subscription line service (even if supported on the same network elements), hence the price comparisons may not be direct. On the other hand, as mentioned in the consultation document, the profit margin in the provision of broadband services will be, in principle, higher than the profit margin for the provision of the fixed telephone service. As such, it is believed that it is economically viable to provide broadband services through LLU.

The data gleaned from the costing system of the NO indicate some progress in re-balancing the monthly subscription fee with regard to analogue access, even if there is currently an operational deficit.

The adoption of current practices in the European Union will also be a possible reference although their respective transfer to the national situation must be carefully analysed taking into account that:

- (i) the average access line length can vary significantly from country to country;
- (ii) the geography of the country can significantly influence the local loop costs;
- (iii) the costing methodology used to establish the LLU price is different among the various Member States;
- (iv) the cost elements included in the monthly line rent (e.g. maintenance and repair) or in the installation can differ from country to country¹⁵.

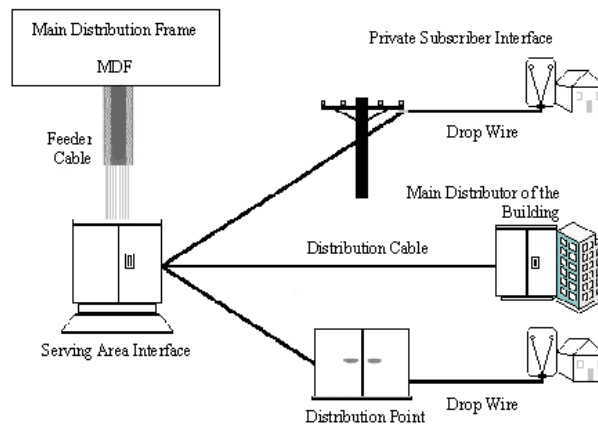


Fig. 1 Diagram showing access network the elements.

In the case of shared access in which the fixed telephone service is provided by the NO and the RO offers the high bit rate services, it can be argued that as the NO is paid for the costs incurred through the monthly fee, shared access could cost nothing. It is doubtful that this approach may result in proper incentives for the balanced development of the market. Taking into account the fact that the costs cannot be recuperated twice, it is considered that in shared access, the costs of the local loop should be shared between the NO and the RO. The difference should be duly reflected in the monthly fixed telephone service charge.

Some markets have seen some opportunistic behaviour. Namely, the request by the end-user to the NO of (i) a new line, (ii) an improvement in the line or (iii) a second line and, subsequently, in a reduced time lapse, request the LLU from the NO, taking advantage of the underlying price differences among the services provided in terms of the Universal Service and services offered at market prices. Without supposing that this behaviour will take place on a national level, these kinds of incentives will not be created.

¹⁵ See, for example, the documents “*Access to Bandwidth: Indicative prices and pricing principles*” and “*Access to Bandwidth: Conclusions on charging principles and further indicative charges*”, both from Of tel, respectively, on www.of tel.gov.uk/competition/llu0500.htm and www.of tel.gov.uk/competition/a2b0800.htm.

With regard to the collocation area, many questions were raised about whether this should be assessed in terms of historical costs or in terms of specific market prices of the geographic zone under consideration.

In this background ICP will analyse the price proposed by the NO based on the following principles:

1. In establishing the LLU price, the application of the cost orientation principle should be taken into account, given that this contributes to the promotion of competition and the development of offers from new operators and simultaneously efficient investments on the local network both on the part of the NO and on the part of the ROs;
2. Currently the cost orientation principle can be checked from the audited costing system based on historical costs of the NO. As such the costs to be considered initially can have as a reference the data coming from the analytical accounting system of this operator, without impairing for the consideration of the current practices in the European Union;
3. A move towards the adoption of models based on Long Run Incremental Costs (LRICs) is not ruled out. This methodology allows a complementary perspective that may be appropriate for efficient and sustainable market entry and with an effective use of the telecommunications infrastructure;
4. The rest of the relevant headings can, in principle and in the first phase, be analysed in terms of incurred costs.

Question 5.

Do you consider that the setting of average prices throughout the country for LLU will be compatible with the aim of promoting competition in the local loop and especially of promoting the general public's access to services, within the context of the Information Society? If not, what considerations do you feel are relevant as regard the geographical area which should be considered for the application of geographically de-averaged prices?

Most responses of the various categories of organisations considered the setting of national average prices for LLU conducive to promoting competition in local loop and especially in increasing access by the general public to services linked to the Information Society.

ICP UNDERSTANDING

The understanding prevailing in the responses is in accordance with ICP's social concerns with regard to the promotion of universal access for citizens to telecommunications services and the promotion of info-inclusion. These principles are outlined in the regulatory background concerning universal service.

The setting of national average prices for access to LLU, in promoting greater use of the NO's network and consequent alternative services in non-urban areas, can contribute towards the promotion of info-inclusion. It is also pointed out that certain alternative emerging technologies

can be more efficient in urban areas with a high population density than in rural areas where the population is more widely dispersed.

Question 6.

Taking into account the different variants for the implementation of LLU and any other price components other than the cost of leasing the line (e.g. line transfer costs), please identify all the relevant elements with regard to the costs associated to the implementation of the LLU.

Several entities identified various cost elements with regard to setting the costs associated to the implementation of LLU.

According to the NO, among the costs referred to the following stand out:

- (i) the access network (e.g. metallic pair, testing and maintenance equipment, gathering of information records);
- (ii) access network equipment (e.g. modem, filter, multiplexing, switches, etc.);
- (iii) civil engineering on the access network;
- (iv) commercial costs;
- (v) installation, operation and maintenance;
- (vi) collocation costs.

For each of these cost categories several cost elements were also identified. Some of these costs were also mentioned by the other organisations.

In relation to the initial set-up cost and costs of adapting the common spaces for collocation, there are several ways for the NO to recover this cost¹⁶. For example, in Germany where collocation results in common costs for the adaptation of spaces, the RO that first requests access (RO₁) incurs, in a first phase, all the costs. The next RO (RO₂) pays RO₁ 50% of the initial costs. This continues successively, with the RO_n paying each of the previous ones $1/[n(n-1)]$. This solution has the disadvantage of obliging the RO₁ to make a considerable financial investment.

Another option would be to set an average price per operator taking into account the expected number of ROs that would request physical collocation. This solution has the disadvantage that the NO could incur non-recoverable costs if the number of ROs is less than the number initially forecast.

¹⁶ With regard to this matter see, for example, the following documents:

1. "Recommended Practices for Collocation and other Sharing Facilities for Telecommunications Infrastructure" published by Eutelis Consult, Horrocks Technology and Tera Consultants, for the European Commission (on www.ispo.cec.be/infosoc/telecompolicy/en/Study-en.htm);
2. "ETP Recommendations on Local Loop Unbundling - Provisioning and O&M issues", from ETP (on [www.etp-online.org/documents/\(00\)061ETPLLUrecsissue1final.doc](http://www.etp-online.org/documents/(00)061ETPLLUrecsissue1final.doc));
3. "Order on Reconsideration and Second Further Notice of Proposed Rulemaking in CC Docket No. 98-147 and Fifth Further Notice of Proposed Rulemaking in CC Docket No. 96-98", from FCC (on www.fcc.gov).

ICP UNDERSTANDING

It is considered that some of the cost elements identified could be relevant in the setting of the price for LLU. The following price categories can be identified at the start:

1. Price for the local loop:
 - a. Price for connection, installation or transfer of the line (to exiting lines and spare lines) and possibly disconnection price;
 - b. Monthly charge.
2. Price for collocation:
 - a. Price for installation or adaptation of spaces;
 - b. Monthly charge;
 - c. Price for internal and external tie cables;
 - d. Price for installation, operation and maintenance of equipment (in the case of virtual collocation);
 - e. Prices for other associated, ancillary or associated facilities (namely, power with or without interruption and acclimatisation).

Therefore, the NO must propose duly justified prices, taking into account the cost orientation principle, clearly identifying the cost-allocation method. In this proposal, prices for the various functionalities and resources associated with the LLU provision must be established.

These prices must be suitably unbundled in order that the ROs do not incur additional costs for services that are not requested.

In principle, the costs incurred must be totally borne by the organisations that give rise to them.

5. Technical-operational questions

5.1. Collocation

Question 7.

In the event of it being alleged that there is insufficient space for co-installations in the notified operator's buildings, how do you think this situation can be overcome? ? Which conditions do you think it may be necessary to assure in order to guarantee the security and to preserve the integrity of the network in the event of physical collocation?

Several solutions were proposed to overcome a possible lack of space for collocation in the NO's buildings. Among the most relevant were:

- (i) analysis case by case in order to identify possible ways of rationalising space;
- (ii) the delivery of aggregated traffic at the same price as full unbundling;
- (iii) remote collocation.

According to the NO, in order to guarantee the safety and preservation of network integrity in the event of physical collocation, it may be necessary to:

- (i) monitor the teams of the ROs that should have restricted and controlled access to the NO's installations;
- (ii) install the equipment of the ROs in enclosed and independent spaces and with external access exclusively limited to the technicians of each RO;
- (iii) guarantee compatibility of the equipment of the ROs with the conditions of the space and the equipment of the NO and other ROs collocated in the same space.

The main conditions outlined by the rest of the categories of organisations were:

- (i) the definition by each RO of a restricted group of individuals authorised to access the NO's installations;
- (ii) control of RO technicians' access through usual safety procedures;
- (iii) the installation of equipment of the ROs in enclosed and independent spaces;
- (iv) the rationalisation of space occupation.

ICP UNDERSTANDING

It is considered that the measures needed to guarantee safety and preservation of the integrity of the network should be adopted provided that they are reasonable. Examples of these measures include controlled access to the NO's installations duly identified RO technicians or the possible demarcation of the equipment installation space for each RO.

Question 8.

Do you consider virtual collocation and remote collocation to be viable alternatives to physical collocation? Under what circumstances? To what extent do you think that the à priori intervention of the ICP with regard to creating a framework of the conditions for collocation, could contribute towards greater transparency and speed in this process?

As defined in the previous consultation document, under virtual collocation the RO selects and supplies the equipment. Its installation and operation will be carried out by the NO's technicians. The RO can (i) continue as the owner of the equipment or (ii) sell or rent the equipment to the

NO for a nominal value. In the case of remote collocation the equipment of the RO is installed in a building located near the NO building, being operated and maintained by the RO.

In general the various organisations believe that remote collocation and virtual collocation are viable alternatives to physical collocation. Some ROs however, state that virtual collocation should not be considered as an alternative to physical collocation, given the specific needs of staff training and the complexity of the processes linked to this option.

According to several respondents, these alternatives can be considered when (i) there is limited physical space in the NO's installations, or (ii) there is a lack of safety. Several organisations also pointed out that remote collocation would only be viable when the MDF of the NO and the RO's installations were close to each other.

Many organisations think that ICP intervention *a priori* regarding the framework of the collocation conditions is important, especially through the definition of measures that increase the space available and swiftness of the business process.

ICP UNDERSTANDING

Without impairing the offer of other types of collocation, it is considered that the physical collocation conditions must be guaranteed. The space destined for physical collocation must not be used for purposes other than those strictly necessary for the use of the local loop. Furthermore, it is considered that both remote collocation and virtual collocation must be offered when viable.

If various ROs show interest, whenever possible, the space among the operators is to be shared.

In some Member States of the European Union, there is already an emerging market for the renting of space for collocation in infrastructures belonging to and operated by third parties. These offers enable the installation of interconnection points of several ROs in a centralised manner, also catering for the provision of associated services such as the monitoring of performance and quality of service of the systems and supervision of the compatibility of the safety equipment. The same market may also develop in Portugal.

In order to ensure the good functioning of collocation, it is considered beneficial to provide associated facilities such as power with or without interruption, acclimatisation and internal and external tie cables (which can also be supplied by the RO or by a third party).

Fig. 2 Physical and remote collocation diagram.

5.2. Quality of service

Question 9.

What parameters and quality of service indicators do you consider relevant to define in the scope of the LLU?

The various respondents identified a wide set of parameters and service quality indicators that can be considered for LLU, of which the following are highlighted:

- (i) the time to provide local loops;
- (ii) the time to provide collocation;
- (iii) the repair time of the local loop in the event of failures;
- (iv) the downtime;
- (v) the transmission quality.

ICP UNDERSTANDING

In principle the service quality indicators applicable for the subscribers line arising from the implementation of the LLU must be compatible, in similar situations, with the service quality indicators that the NO fulfils in complying with the applicable regulatory stipulations of the organisations notified as having significant market power in the relevant market.

However, the use of metallic pairs to provide high bit rate services may demand the adoption of additional procedures (e.g. tending to confirm the suitability of metallic pairs for the provision of the aforementioned services). Equally, the procedures applicable to the maintenance and repair of the local loop in a LLU situation is not always similar to the maintenance and repair of other services provided on metallic pairs, namely analogue access carried out in the absence of LLU. As such, the application of service quality indicators currently existing for LLU must be carefully thought out.

It is considered that the definition of non discriminatory SLAs which represents a commitment from the NO to guarantee a given level of quality of service through the specification of conditions aimed at ensuring clear and unequivocal strict compliance with the defined conditions, may prove an important tool for LLU.

5.3. Electromagnetic compatibility

Question 10.

Which eventual impairments must be taken into account with regard to compatibility of equipment and its electromagnetic characteristics? In the event that such impairments exists,

what solutions do you propose to minimise them? What types of test may be needed to analyse the technical feasibility of the provision of a service on a certain copper pair?

According to the NO there should not be any impairment in terms of electromagnetic compatibility of the equipment, provided that it complies with the legislation concerning electromagnetic compatibility. The organisation also suggests that, in order to guarantee physical compatibility of the equipment in terms of better rationalising of space, it should be installed in 2200×600×300mm ETSI type facilities, in accordance with the ETS 300 119 standard. This organisation believes that the adoption of “power spectral density masks” for the new equipment to be introduced onto the network can be a way of minimising possible interference, thus guaranteeing spectral compatibility between services and technologies that use the same cable. However, according to the NO, a frequency plan for the access network should be defined to complement the existing systems.

According to certain ROs, in order to minimise possible impairments with regard to compatibility of equipment and its electromagnetic characteristics, it will be necessary to standardise the electromagnetic characteristics of the different equipment. These organisations consider that the technical specifications associated with the matter of electromagnetic compatibility should be developed in the LLU working group.

In order to analyse the technical viability of the service provision on a given metallic pair, the NO pointed out the need to carry out:

- (i) physical tests (including attenuation tests, DC resistance, impedance characteristic, return losses, insulation resistance, near-end cross talk and far-end cross talk);
- (ii) integration tests (aimed at checking the performance of the service and checking that the performance of the other services already installed on the cable are not effected following the installation of the new service).

ICP UNDERSTANDING

With regard to the tests aimed at identifying the technical viability of service provision on a given metallic pair, it is considered that these must ensure compatibility and interoperability of the services. They must not exceed that strictly necessary for the respective operability.

The equipment to be installed in the NO’s infrastructures must be compatible with the existing equipment, namely with regard to electromagnetic compatibility. Measures should be implemented that minimise possible interference, specifically between services and technology that use pairs of the same cable.

In order to guarantee the safety and integrity of the network, the NO must supply, if necessary, a “power spectral density mask”, which must not be restrictive thus preventing the use of new technology on the access network¹⁷.

¹⁷ See, for example, the debate on this matter in the United Kingdom (www.oftel.gov.uk/competition/anfp0600.htm).

5.4. Relevant information and procedures needed for service provision

Question 11.

In your view, how should the entire commercial relationship proceed between the parties involved: OLO, notified operator and user? Which aspects do you consider vital to preserve as regards this issue?

With regard to this matter, most organisations consider that contact between the end-user and the RO should be given priority and all questions linked to the LLU should be dealt with between the NO and the RO. Some organisations believe that it would be important for the RO to provide in an efficient manner, up to date information that enables them to define the offer and act commercially with the end-user without creating false expectations.

ICP UNDERSTANDING

Considering that a healthy working relationship should be promoted between the end-user and the RO, in cases in which the end user intends to change the network operator, the contacts needed with the NO must be undertaken through the RO. The procedures will be put into place by the RO upon request from the end user duly validated through a contract between the two. In principle, there is no reason against the contracts drawn up between the end-user and the RO not being written.

5.5. Reference offer for local loop unbundling

Question 12.

Which aspects do you feel should form part of a Reference Offer for local loop unbundling in addition to those set out in the Annex to the European Commission Recommendation?

The majority of the organisations believe that the aspects dealt with in the public consultation and which are included in the Annex to the European Commission Recommendation concerning LLU are sufficient for the NO to be able to prepare a Reference Offer for Local Loop Unbundling. According to the NO, access to the operational support systems of the NO must be excluded from the minimum elements to be included in the Reference Offer for Local Loop Unbundling.

Several ROs also suggested the inclusion of other specific matters in the minimum aforementioned elements such as the inclusion of penalties for the possible non-compliance of provision deadlines by the NO or the inclusion of suspension or interruption procedures for the service and litigation resolution.

ICP UNDERSTANDING

It is believed that the minimum elements identified in the consultation document, and which are generically encompassed in the Annex to the European Commission Recommendation concerning LLU are the elements needed for the NO to be able to present a project of Reference Offer for Local Loop Unbundling on schedule.

5.6. Supervision and implementation for the LLU

Question 13.

Do you consider it necessary to establish a working group within the scope of the LLU? Which specific issues do you think could be discussed by this working group beyond those identified in this public consultation? How do you think that its operation could be optimised?

All the respondents considered it necessary to set up a working group for LLU.

The NO and the companies in which it has a holding and/or its subsidiaries believe that the working group can discuss matters such as:

- (i) the establishment of technical and operational interfaces with the RO;
- (ii) the definition of the concrete conditions of interoperability and compatibility of equipment and technology;
- (iii) the mode of access to LLU;
- (iv) The tests and procedures that require harmonisation between the operators.

According to the ROs, in addition to the issues identified by the NO and by companies in which it has a holding and/or its subsidiaries, the following matters can be discussed:

- (i) attribution of space;
- (ii) costs associated to LLU and collocation of equipment;
- (iii) service quality.

ICP UNDERSTANDING

In order to properly monitor the development of the implementation of LLU, in a suitably swift and transparent manner, and in line with that suggested by the European Commission, it was believed, when the public consultation was launched, that the setting up of a working group would be appropriate.

The setting up of a working group was proposed at a time when the European Commission Recommendation concerning LLU was being discussed. Taking into account the subsequent development, namely with the publication of the proposal of Regulation of the European Commission concerning LLU, and in view of the deadlines set for the implementation of LLU in the full unbundling variant, it has become necessary to reassess the scope of the working group. In this background it is considered that aspects that require harmonisation and co-operation among the parties must be discussed. The setting up and functioning of the working group must, as a consequence, take place simultaneously and in parallel with the operability of LLU, in order to effectively implement LLU in the defined time limit.

This working group must have representatives from ICP, from operators/service providers and from other market agents, namely manufacturers of equipment and associations defending interests of the end-user among others.

III. CONCLUSIONS AND PROPOSALS FOR ACTION

ICP once again thanks the interest shown by the various organisations and users in this public consultation, in sending their contributions and comments. They greatly enhanced this process contributing actively to the development of LLU in Portugal.

This Institute considers that the aims of global promotion to competition, innovation in technology and services, info-inclusion and the development of the Information Society can be better achieved with the implementation of LLU.

In order to meet the proposed deadlines, ICP requests that the NO prepare a project of Reference Offer Local Loop Unbundling, in compliance, namely with the elements that make up the Annex to the European Commission Recommendation concerning LLU by 30/11/2000.

ANNEX I

SUMMARY OF RESPONSES

ANNEX II

LIST OF RESPONDENTS

NOTIFIED OPERATOR, COMPANIES IN WHICH IT HAS A HOLDING AND/OR ITS SUBSIDIARIES

Portugal Telecom, S.A.

TMN – Telecomunicações Móveis Nacionais, S.A.

PT PRIME – Soluções Empresariais de Telecomunicações e Sistemas, SA

OTHER LICENSED OPERATORS/SERVICE PROVIDERS

ONITELECOM – Infocomunicações, S.A.

TELEWEB – Comunicações Interactivas, S.A.

SONAE - Redes de Dados, S.A. (NOVIS)

OPTIMUS – Telecomunicações, S.A.

TELECEL – Comunicações Pessoais, S.A.

JAZZTEL PORTUGAL – Serviços de Telecomunicações, S.A.

MAXITEL – Serviços e Gestão de Telecomunicações, S.A.

NETRAIL – Telecomunicações, S.A.

EQUIPMENT MANUFACTURERS

LUCENT TECHNOLOGIES INC. Sucursal

ALCATEL Portugal, S.A.

ERICSSON – Telecomunicações Lda

CONSUMER PROTECTION ASSOCIATIONS

FENACOOOP – Federação Nacional das Cooperativas de Consumo, FCRL

UGC – União Geral de Consumidores

OTHER ORGANISATIONS

CTT- Correios de Portugal, S.A.

DGCC – Direcção Geral do Comércio e da Concorrência

GENERAL CONTRIBUTIONS

CATVP – TV Cabo Portugal, S.A.

CIP – Confederação da Indústria Portuguesa

DECO – Associação Portuguesa para a Defesa do Consumidor

IC – Instituto do Consumidor

MADEM – Comunicações da Madeira, S.A.

Sr. Filipe Seara Cardoso

Sr. Manuel Silva

Sr. João Macedo